Women’s mental health and resilience in the perinatal period and five years after first-time motherhood: a mixed methods study.

Thesis submitted in fulfilment of the requirement for the

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Declaration

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Summary

Background: Although motherhood is associated with joy and celebration, adverse mental health outcomes are widely documented in international literature. Yet, publications concerning maternal mental health in an Irish context are sparse and incongruous. Additionally, both Irish and international literature most often take a pathology focused approach and concentrate on the perinatal period, with less attention to mental health and well-being through the motherhood journey.

Design: A multistage mixed-methods design.

Aim: The research aimed to identify the prevalence and change of first-time mothers' mental health symptoms in the perinatal period, and their mental health symptoms and well-being five years after first-time motherhood. Additionally, the research aimed to develop a deeper understanding of resilience in a maternal context through exploration of women's views on, and experience of, mental health and resilience in the motherhood transition.

Setting: Three maternity hospitals in the Republic of Ireland.

Sample: Fourteen women took part in the participatory research component of phase 1; twenty-three women took part in the in-depth interviews of phase 2. Samples sizes for analysis of the quantitative data of phase 3 were defined by survey completion. Perinatal data analysis comprised 2380 participants and five-year follow-up analysis comprised 1155 participants.

Methods: This study used a multistage mixed-methods design combining explanatory-sequential and convergent approaches, with a participatory research component. Three phases of research were embedded within the longitudinal MAMMI study. Phase 1 consisted of two steps; the first entailed conducting a concept analysis of the concept of resilience within the context of the perinatal period and early motherhood. The second step involved presenting the findings of the concept analysis to fourteen mothers to ascertain their perspectives on the literature, and operationalise their feedback to inform the subsequent phases of the research. Phase 2 consisted of in-depth interviews with twenty-three mothers to develop a detailed understanding of women's life-course experiences of mental health, and the processes involved in navigating to and negotiating for mental health and well-being. Phase 3 involved analyses of quantitative mental health symptomatology and socio-demographic data collected during pregnancy and at four intervals in the first year postpartum (perinatal data). Additionally, phase 3 involved analyses of mental health symptomatology, mental well-being, socio-demographic, and emotional and relational data at five years after first-time motherhood (five-year follow-up data).

Findings: *Phase 1: Concept analysis and women's views:* The concept analysis found that resilience literature in the area of maternal mental health often adopted trait-based conceptualisations; whereas women viewed resilience as influenced by multi-systemic processes. Linguistically, 'coping', 'adaption', 'resistance' and 'protection' were words associated with resilience in the included literature. Some women voiced negative connotations around the term 'coping' in relation to motherhood. Analysis of the logical principle illustrated that illness absence was frequently, though not exclusively, equated to resilience. However, women were resistant to this conceptualisation and suggested alternatives in relation to well-being and functioning. Pragmatic application of resilience research was not well developed within the literature, and women expressed wariness that research may be used to reduce or remove practical and mental health supports for mothers and families.

Phase 2: In-depth qualitative interviews: How women navigate to, and negotiate for, what they need for their mental health and well-being in motherhood underpinned the qualitative data analysis, where navigation and negotiation were understood to underlie the processes of resilience. Thematic analysis generated seven themes and ten sub-themes. Before navigating towards the needs that sustain their own well-being, mothers must first negotiate with internalised social and cultural narratives of the ideal mother. Internalised narratives were reinforced by deficits in policy and services, which conveyed society's unrealistic expectations of mothers. Mothers negotiated to establish an equal partnership of mutual responsibility for parenting with their parent-partner in motherhood, which had implications for their career development, maintaining social relationships, and managing multiple roles and responsibilities. Motherhood introduced social isolation, which required efforts to navigate towards building new social supports. Mothers who sought professional resources had to navigate and negotiate gaps in mental healthcare service provision; gaps that were typified by narrow gateways to accessing care, and narrow pathways of treatment options.

Phase 3: Quantitative data analysis:

Perinatal data: The prevalence for depression, anxiety and stress was 14.2%, 9.5%, and 19.2% respectively. Depression and stress were lowest in pregnancy and higher in the postpartum, anxiety was relatively constant through the perinatal period. Comorbid anxiety/depression (CAD) prevalence was 1.5% in pregnancy and almost 2% in the postpartum year. Younger maternal age, being single/not living with a partner, not having a postgraduate education and being unemployed during pregnancy were associated with higher odds of reporting symptoms of depression, anxiety, stress and CAD in the postpartum year. Being born in a non-EU country was associated with higher odds of reporting anxiety, pre-term birth with higher odds of reporting depression, and caesarean birth with higher odds of reporting depression and stress. Experiencing mental health problems in the *year prior* to pregnancy were associated with increased odds of reporting depression, anxiety, and stress in the postpartum year. Experiencing mental health problems, relationship problems or fear of a partner *during pregnancy* were associated with increased odds of reporting depression, anxiety and stress. Increased reports of mental health symptoms were associated with reporting a higher number of physical health problems.

Five-year follow-up data: The prevalence for depression, anxiety and stress was 11.2%, 12.6%, and 14.2%, respectively. Prevalence of flourishing mental health was 60.4%. Younger maternal age and not obtaining a postgraduate education before index pregnancy were associated with increased odds of depressive, anxiety and stress symptoms at five-year follow-up. Postgraduate education attainment was associated with increased odds of flourishing mental well-being reports at five-year follow-up. Women who completed the five-year data collection after the introduction of Covid-19 health restrictions were more likely to report depressive, anxiety and stress symptoms. Women who had one child at five-year follow-up were also less likely to have a partner or postgraduate education, and had higher odds of reporting depressive symptoms. Having a lesser number of practical social supports, less practical and emotional partner support, and infrequent personal time were associated with reports of depression, anxiety and stress. While increased frequency of personal time was associated with increased odds of flourishing mental health. Dissatisfaction with a partner's contribution to household tasks, childcare or the parenting role, and negative perception of emotional support and relationship satisfaction were associated with increased symptomatology reports and decreased flourishing.

Conclusion: Substantial proportions of mothers experience physical and mental health symptoms throughout the first year postpartum, and reports of mental health symptoms increase at five-year follow-up. Women with less socio-economic resources are at increased risk of reporting clinically significant symptoms. Women who experience mental health problems beyond current maternity care service provision are not supported by a system that is enabled to readily detect and offer treatment. Rather, women must self-identify if they require assistance. Additionally, women in the perinatal period and at five-year follow-up must navigate and negotiate with disjoined, confusing, and costly service and care pathways to seek treatment.

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List of abbreviations

- **AD:** Anxiety Disorder
- **AG:** Agoraphobia
- **BAME:** Black, Asian and Minority Ethnic
- **BPAD:** Bipolar Affective Disorder
- **CAD:** Comorbid Anxiety and Depression
- **CWIUH:** Coombe Women and Infants University Hospital
- **DPO:** Data protection officer
- **EPDS:** Edinburgh Postnatal Depression Scale
- **FHS:** Faculty of Health Sciences
- **GMM:** Growth mixture modelling
- **GUH:** Galway University Hospital
- **HIC:** High-income Countries
- **ICSI:** Intracytoplasmic sperm injection
- **IT:** Information technology
- **LBW:** Low birth weight
- **MABISC:** Mother and baby interaction scale
- **MBU:** Mother and Baby Unit
- **MHC-SF:** Mental Health Continuum-Short Form
- **MS:** Microsoft Office
- **NMS:** National Maternity Strategy
- **OCD:** Obsessive Compulsive Disorder
- **PD:** Panic Disorder
- **PIL:** Participant information leaflet
- **PNMH:** Perinatal Mental Health
- **PPD:** Postpartum Depression
- **PPI:** Patient and Public Involvement
- **PS1:** Perinatal Sample One
- **PSA:** Pregnancy specific anxiety
- **PTE:** Potentially traumatic event
- **PTSD:** Posttraumatic Stress Disorder
- **REC:** Research Ethics Committee
- **RSA:** Resilience Scale for Adults
- **SPMHS:** Specialist Perinatal Mental Health Service
- **UK:** United Kingdom
- **ADD:** Attention deficit disorder
- **AVBs:** Assisted vaginal births
- **BMI:** Body mass index
- **BRS:** Brief Resilience Scale
- **CD-RISC:** Connor-Davidson Resilience Scale
- **DASS- 21:** Depression, Anxiety and Stress Scale
- **DSM:** Diagnostic Statistics Manual
- **EU:** European
- **GAD:** Generalised Anxiety Disorder
- **GP:** General Practitioner
- **HCPs:** Healthcare professionals
- HSE: Health Service Executive
- **IPV:** Intimate Partner Violence
- **IVF:** In vitro fertilization
- **LMIC:** Low and Middle Income Countries
- **MAMMI:** Maternal health And Maternal Morbidity in Ireland
- **MDD:** Major depressive disorder
- **MHPs:** Mental Health Problems
- **NICU:** Neonatal Intensive Care Unit
- **NWIHP:** National Women & Infants Health Programme
- **PASTOR:** Positive appraisal style theory of resilience
- **PEIN:** Prevention and Early Intervention Network
- **PMHP:** Perinatal Mental Health Problems
- **PP:** Postpartum Psychosis
- **PPED:** Postpartum Emotional Distress
- **PRA:** Pregnancy related anxiety
- **PS2:** Perinatal Sample Two
- **PTB:** Preterm birth
- **PTS:** Post-traumatic stress
- **QoL:** Quality of Life
- **RH:** Rotunda Hospital
- **SOC:** Sense of Coherence
- **TCD:** Trinity College Dublin
- **WHO:** World Health Organisation

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Chapter 1: Introduction to the thesis

1.1 Introduction to the topic

Pregnancy, childbirth and motherhood are pivotal life events; they entail seasons of transition, involving major hormonal, physical, psychological, social, and relational changes and challenges, and the integration of new and multiple roles and identities (Jomeen & Martin 2008, Parfitt & Ayers 2014, Hodes & Epperson 2019, Hwang *et al.* 2022). In other words, motherhood is a substantial period of psychosocial transition and development (Moyer & Kinser 2021). Medical anthropologist, Dana Raphael, introduced the term 'matrescence' in the 1970s to encapsulate this evolution as *'the time of mother-becoming'* (Raphael 1975, p. 66), and to bring attention to the personal, social and cultural significance of this developmental experience within a woman's lifespan. For Raphael, and the researchers who expanded on the concept of matrescence, 'mother-becoming' is neither a singular event confined to the birth of an infant nor is it constrained to the perinatal period. Rather, it is a series of events, and a series of actions and interactions imbued with personal, social and cultural meanings, which unfold uniquely to each individual and unfold again with each new arrival (Mercer 2004, Athan & Reel 2015).

In the initiation to motherhood, women must navigate unfamiliar physical, social and psychological experiences. These experiences can result in feelings of empowerment, self-efficacy, satisfaction, and a sense of fulfilment and achievement (Nieuwenhuijze & Leahy-Warren 2019, Hosseini Tabaghdehi *et al.* 2020). They may also produce feelings of doubt, worry, fear, desperation, and distress (Mannix & Jackson 2003, Olza *et al.* 2018). The emotions elicited by the experiences and responsibilities of motherhood are complex. Motherhood can be gratifying yet taxing, and a medley of strong emotions, positive and negative, can live alongside one another (Luthar *et al.* 2001, Nelson 2013). Despite recognition in scholarly and public discourse that motherhood may bring about intense, conflicting and confusing emotional experiences, expressing emotions that diverge from a socially prescribed version of idealised motherhood are typically not deemed acceptable (Nelson 2013, César *et al.* 2018). For example, this is common for most western societies that subscribe to an intensive motherhood model. Intensive motherhood or intensive mothering is a socially constructed normative standard for motherhood and mothering expectations (Budds 2021), it is child-centred and privileges the needs and demands of the child over, and at the expense of, the mother (César *et al.* 2018). Intensive mothering expectations reduce the complexity of emotional experiences of motherhood to a binary of acceptable or unacceptable emotions. Such that mothers' feelings are scrutinised; positive feelings are positioned as mandatory for a child's well-being and development while negative feelings are considered as bringing detriment to the child (César *et al.* 2018). Thus, not only must mothers navigate the challenges of motherhood as novices, but they must do so in a constrained and socially acceptable way.

Yet adverse mental health outcomes in the perinatal period[1] and motherhood are widely recognised and documented. During the first postpartum year, women are at greater risk of developing a mental health problem in comparison to pre-pregnancy (Munk-Olsen *et al.* 2016) and perinatal mental health problems (PMHPs) are the most common maternal health issues related to childbearing (Howard & Khalifeh 2020). International studies report concerning prevalence figures for perinatal depression (Halbreich & Karkun 2006, Abdollahi *et al.* 2011, Underwood *et al.* 2016, Woody *et al.* 2017) and anxiety (Austin *et al.* 2010, Falah-Hassani *et al.* 2016, Dennis *et al.* 2017, Falah-Hassani *et al.* 2017). Additionally, research shows that for a meaningful number of women, symptoms of depression and/or anxiety develop or persist well beyond the first year postpartum (Giallo *et al.* 2014, Vliegen *et al.* 2014, Giallo *et al.* 2017, Mughal *et al.* 2018, Wajid *et al.* 2020).

The high prevalence, and the impact of mental health problems (MHPs) on women's well-being (Meltzer-Brody & Stuebe 2014), the mother-infant dyad (Cirulli *et al.* 2003, Fernandes *et al.* 2021) and child development (Surkan *et al.* 2011, Schuurmans & Kurrasch 2013, Betts *et al.* 2015, Conners-Burrow *et al.* 2016, O'Connor *et al.* 2016, Granat *et al.* 2017, Liu *et al.* 2017) make this issue an important area of research. However, the dominant focus of maternal mental health research is on pathogenesis and sequela of mental illness. Additionally, the literature's emphasis on the implications of maternal MHPs on child behavioural and emotional development, may contribute to an unintended reinforcement of the intensive motherhood model by the research community (Luthar *et al.* 2001, Nelson 2013, César *et al.* 2018). It potentially perpetuates a stigmatising outlook that views women's experiences of PMHPs as the cause of developmental disadvantage for her child. This risks dissuading women from seeking support for mental distress and further burdens them to adhere to an unrealistic construct of motherhood (Budds 2021). Indeed, women express guilt and shame when they feel that they have failed to bring an internalised idealisation of mothering to fruition (Liss *et al.* 2013). Additionally, research from a pathological perspective decentralises women from the research process by presenting the validation for conducting research with women through the benefits for child or partner, rather than for the sake of women themselves.

There has been growing recognition that mental health inquiry must encompass positive aspects of mental health and well-being in order to progress understanding beyond the dualistic and out-dated conceptualisation of mental health as either illness or illness absence (Keyes 2002, World Health

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[1] Mental health research in this context typically defines the postpartum as including up to one year after birth, and the perinatal period as pregnancy and up to one year after birth. (Thomson G. & Schmied V. (2017) *Psychosocial resilience and risk in the perinatal period: Implications and Guidance for Professionals*. Routledge: Taylor & Francis Group, New York, United States.)

Organization 2021). Yet relatively few studies have researched maternal mental health from a health-orientated or strengths-based perspective (Phua *et al.* 2020). Similarly, research that centres women's voices for their sake, and research that prioritises women's perspectives as to what it means to be mentally well or resilient, or their insights on the factors that lend themselves to mental well-being in the perinatal period and motherhood, are less common features within the literature.

In recent years a small, though growing, body of literature on mothers' well-being has emerged to contrast the common morbidity focus on mental health. It would appear that this emergence is motivated, at least in part, by the acknowledgment that supporting mothers also sustains families and improves outcomes for the whole family unit (Luthar & Ciciolla 2015). Fundamental to this approach is the call to centre mothers' resilience and psychosocial well-being as *the outcome of interest*, and to focus on the needs and supports essential to sustain mothers' mental health for *their benefit* (Luthar 2015).

The concept of resilience has become a popular topic of study over the past 60 years (Thomson & Schmied 2017). It has been framed as a salutogenic[2] or well-being focused approach to mental health (Eriksson & Lindström 2011), beneficial in shifting investigative foci away from 'deficit' models of illness and psychopathology (Fergusson & Horwood 2003, Fergus & Zimmerman 2005, Windle 2011), by re-orientating towards a better understanding of the processes or assets that enable mental health to be maintained or regained despite encountering adversity or challenge (Luthar *et al.* 2000). The extent to which resilience, as a concept aligned with a salutogenic perspective, has been applied to the context of motherhood is a matter for discussion. At the genesis of this project in 2019, there were a small number of research studies specifically exploring women's resilience in the perinatal period and early motherhood. However, the unfolding of the Covid-19 pandemic from 2020 saw a notable increase in publications concerning mothers' resilience (Hannon *et al.* 2022a). Whether this proliferation was due to a sudden scholarly embrace of the importance of women's mental health and well-being in motherhood, or the result of resilience becoming an academic buzz-topic during that period of global upheaval (Cai 2020, Phillips & Chao 2022), remains to be determined.

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[2] Salutogenesis is public health concept which aims to understand the underpinnings of good health in order to focus on health promotion rather than disease analysis (Antonovsky A. (1987) *Unraveling the mystery of health: How people manage stress and stay well.* Jossey-Bass, San Francisco, California, United States.). There are facets of commonality between the concepts of salutogenesis and resilience, however, the key difference is that resilience is understood through the experience of adversity, whereas salutogenesis focuses on general health promotion without a focus on that which may challenge good health (Eriksson M. & Lindström B. (2011) Life is more than survival: Exploring links between Antonovsky's salutogenic theory and the concept of resilience. In *Wayfinding Through Life's Challenges: Coping and Survival. Gow, K.M & Celinksi, M.J*, Nova, New York, pp. 31-46.).

1.2 Background

The state of perinatal and maternal mental health in the Republic of Ireland (hereafter referred to as Ireland or Irish) and its comparison internationally is unclear. At present, data concerning prevalence or long-term development of PMHPs are not collected or published at a national level in Ireland. Reports on perinatal mental health (PNMH) come from disparate research projects and individual hospital/unit studies (Department of Health 2016) which, when compared and contrasted, show considerable variation and notable gaps (Huschke *et al.* 2020). For example, the prevalence of depression antenatally and/or postpartum has been reported as ranging from as low as 1% (McAuliffe *et al.* 2011) to as high as 86% (Carolan-Olah & Barry 2014). Similarly, antenatal anxiety has been reported from 27.3% (Togher 2017) to 75% (Carolan-Olah & Barry 2014), while stress varies from 8% (Bennett & Kearney 2018) to 75% (Carolan-Olah & Barry 2014).

Such contrasting data obscure the landscape of PNMH and PMHPs among mothers giving birth in Ireland. This should be a cause for concern when considered in light of the impact that the absence of clear local and contextual Irish data may have for maternal mental health service provision and policy development. For example, it is stated that the Specialist Perinatal Mental Health Model of Care for Ireland is '*informed by national and international epidemiological evidence of need*' (Health Services Executive 2017, p. 7). However, the scarcity of Irish data required the authors of the document to extrapolate from UK data such as Prevention in Mind (Hogg 2013), and the UK's Joint Commissioning Panel for Mental Health (Joint Commissioning Panel for Mental Health 2012) in order to estimate the numbers of women affected by perinatal mental illnesses in Ireland.

Similar to international research, what is available within Ireland has predominately focused on the early postpartum period and mainly on depressive symptoms and disorders (Huschke *et al.* 2020). Prior to publication of data resulting from the current research project there was a paucity of data for anxiety prevalence in the postpartum period, and a complete absence of comorbid anxiety and depression (CAD) data in the antenatal or postpartum periods for women giving birth in Ireland (Hannon *et al.* 2023a).

There is a growing international research interest in documenting women's mental health beyond the perinatal period to gain insight on temporal developments and to identify risk factors associated with trajectories of mental ill-health (Wajid *et al.* 2020). Contrary to conventional assumptions that ill-effects (mental and physical) associated with pregnancy and childbirth will resolve in the short-term, there is evidence that, for a sizable proportion of women, depression and anxiety symptomatology continue far beyond the first postpartum year (Vliegen *et al.* 2014, Giallo *et al.* 2017).

Additionally, quantitative research appears to be the prevailing methodology of PNMH research in an Irish context (Huschke *et al.* 2020). While this is also true of the international literature, the consequence is that the omission of mothers' lived experiences of, and their insights as to the causes or factors associated with, mental ill-health or well-being are implied to be of little value. Huschke et al. (2020) aptly compare the omission of women's voices within Irish research as mirroring the absence of women's voices within the maternity care system in Ireland.

The Republic of Ireland's first National Maternity Strategy (NMS) was introduced in 2016 (Department of Health 2016). This strategy aims to i) adopt a health and well-being focus for babies, mothers and families, ii) ensure access to safe, consistent and high quality woman-centred care, iii) facilitate women's choices and recognise pregnancy and birth as a normal physiological process and iv) provide a well-resourced maternity service delivered by a skilled workforce '*in partnership with women'* (Department of Health 2016, p. 4). With regards to mental health, the strategy identified that (at time of publication in 2016) there were only three perinatal psychiatrists employed within the maternity care system for all of Ireland. All were based in the county of Dublin and on a part-time basis. The Strategy also outlined other areas for improvement, such as increasing mental health supports in the community and awareness of PNMH among women, their families and healthcare professionals (HCPs), the implementation of standardised national screening procedures, and improved access to mental healthcare services.

The NMS (2016) was followed shortly by the publication of the Specialist Perinatal Mental Health Model of Care for Ireland (Health Services Executive 2017). The model, implemented by the National Women & Infants Health Programme (NWIHP) is an ambitious plan to create a nationally cohesive PNMH service with the capacity to provide timely and high quality mental health care and treatment to women in pregnancy and the early postpartum throughout Ireland. Although framed with a specific focus on serving women with moderate to serious mental illnesses, the plan also considers the needs of women with milder MHPs through the addition of mental health midwife roles nationally.

1.3 Purpose of the thesis

As previously stated, pregnancy and motherhood are times of transition when women are faced with challenges and upheaval that leaves them especially susceptible to developing MHPs. Perinatal and maternal mental health research from a salutogenic approach is uncommon in the literature. Not only do the traditional pathology-focused models fail to provide a holistic account of mental health experiences in general, but pathology-focused approaches in the context of motherhood may actually perpetuate unhelpful and harmful ideologies around motherhood and mental health experiences during this life transition. Placing emphasis on child health and developmental outcomes in relation to mothers' mental health risks laying blame with mothers if child outcomes are less than optimal. Additionally, the infrequency of outcomes measuring a *mother's* health or well-being further adds to the decentralisation of mothers from research that concerns them. That is not to say that the accrual of data relating to mental ill-health is unimportant. Maternal mental health data in Ireland is sparse and data on prevalence is essential to inform the scope and extent of services and resources that are required to meet women's needs in pregnancy, the postpartum period and early motherhood.

This research therefore aims to situate the mental health of women giving birth in Ireland within a life-course perspective by examining heterogeneous patterns of mental health and the associated risk and protective factors, in the perinatal period and at five-years postpartum. Additionally, the research aims to develop a woman-informed understanding of resilience and mental well-being in the perinatal period and motherhood through an incorporated Patient and Public Involvement (PPI) design, and to make recommendations for future research, practice and policy.

The objectives of the research are as follows:

Objective 1: to determine how resilience in the context of the perinatal period and early motherhood is currently conceptualised within research by conducting a principle-based concept analysis.

Objective 2: to explore the perspectives of women who are mothers on the current state of resilience research in the perinatal period and early motherhood, seek their opinions on the ways in which they believe research on resilience in this context should be advanced and, through PPI, operationalise women's feedback to inform the subsequent phases of the research.

Objective 3: to develop a detailed understanding of women's life-course experiences of mental health problems, (e.g., new onset, persisting ill-health, recovery, relapse) and how these experiences impact their mental well-being, careers, relationships and quality of life, through in-depth recorded qualitative interviews with a sub-sample of 23 women around five years after first-time motherhood.

Objective 4: to investigate the self-help and health-seeking behaviours of 23 women in order to gain insights into the motivations and barriers to the help-seeking process, the solutions that worked/did not work for whom and why, the factors that exacerbated or improved their mental health, and the factors that are associated with mental resilience or vulnerability during the perinatal period and at five years postpartum.

Objective 5: to determine prevalence and map trajectories of women's mental health problems before and during their first pregnancy, during the first perinatal year (at 3, 6, 9, 12 months postpartum) and at five years postpartum.

Objective 6: to identify the potential risk factors for mental health problems and the potential protective factors for mental resilience in the perinatal period and at five years postpartum (including mental health history, socio-demographic-economic, pregnancy and birth-related factors, quality of partner relationship, and psychosocial support).

1.4 Structure of the research

A multistage, mixed-methods design composed of three integrated phases (figure 1.1) was used to meet the research objectives. The three phases of research were embedded within a longitudinal cohort study of nulliparous (first-time mothers) women, called the Maternal health And Maternal Morbidity in Ireland (MAMMI) study[3]. The MAMMI study is a multi-site, multi-strand study examining the health and health problems of first-time mothers giving birth in Ireland. The study involved survey based data collection during pregnancy and at 3, 6, 9 and 12 months postpartum (perinatal data collection), and at five-years after first-time motherhood (five-year data collection). The surveys collect information in relation to a range of health issues, which have informed the different strands of research within the MAMMI study such as; incontinence, pelvic girdle and lower back pain, caesarean section, nutrition and exercise, sexual health, and physical health. The current research uses and builds on the mental health data collected by the study's surveys.

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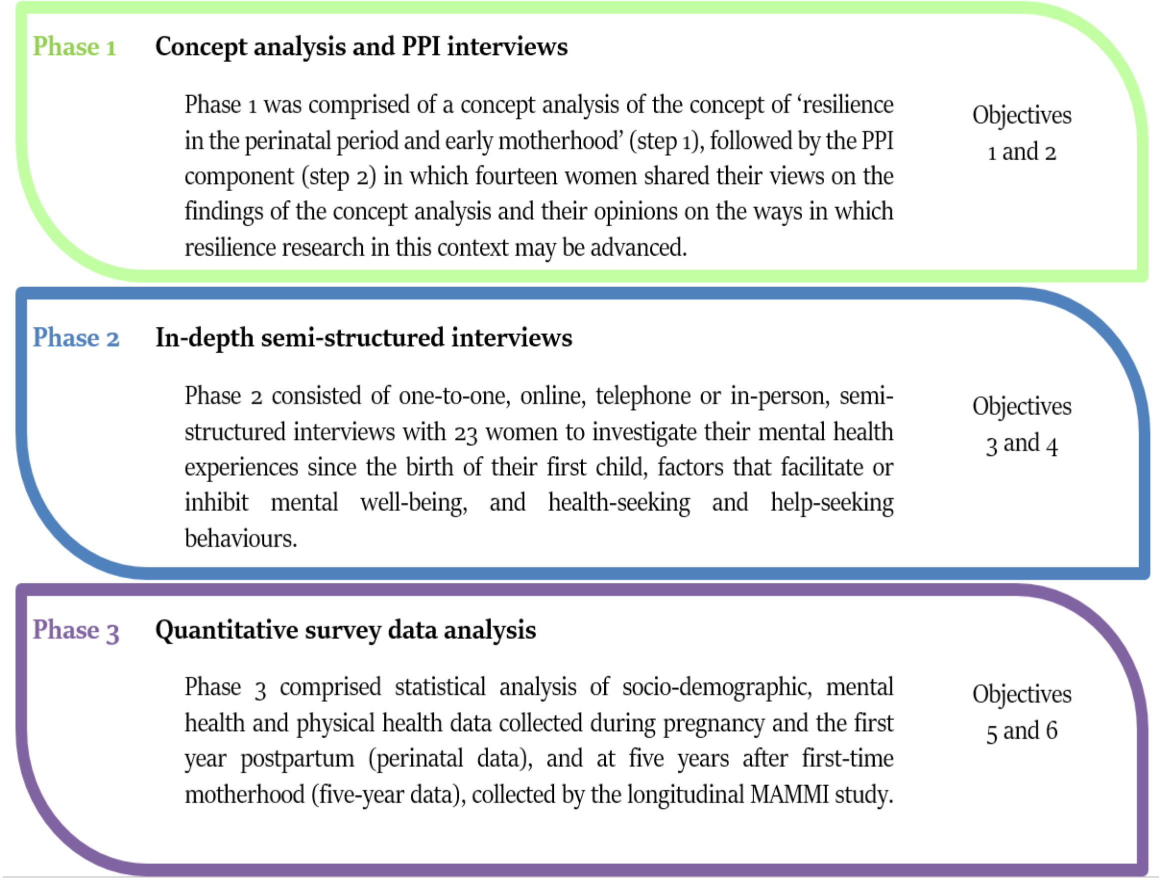
[3] The MAMMI study (https://www.tcd.ie/mammi/)



Phase 1 **Concept analysis and PPI interviews**

Phase 1 was comprised of a concept analysis of the concept of ‘resilience in the perinatal period and early motherhood’ (step 1), followed by the PPI component (step 2) in which fourteen women shared their views on the findings of the concept analysis and their opinions on the ways in which resilience research in this context may be advanced.

Objectives 1 and 2

Phase 2 **In-depth semi-structured interviews**

Phase 2 consisted of one-to-one, online, telephone or in-person, semi-structured interviews with 23 women to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours.

Objectives 3 and 4

Phase 3 **Quantitative survey data analysis**

Phase 3 comprised statistical analysis of socio-demographic, mental health and physical health data collected during pregnancy and the first year postpartum (perinatal data), and at five years after first-time motherhood (five-year data), collected by the longitudinal MAMMI study.

Objectives 5 and 6

Figure 1.1: Three phases of the study design

Phase 1 of the current research involved a two-step approach which consisted of 1) conducting a concept analysis on resilience in the perinatal period and early motherhood (Objective 1). Then 2) presenting the findings of the concept analysis to participants from the MAMMI study in one-to-one online interviews (PPI interviews). These interviews sought women’s views and opinions regarding the development of the resilience concept within perinatal and motherhood literature to examine if, how, and in what ways the literature reflects or diverges from how resilience manifests in women’s lives, and the ways in which women wish for the research to be developed (Objective 2). Women’s feedback from these interviews was used to design a semi-structured interview guide for the qualitative phase (phase 2). Women’s feedback was also used to inform the addition of two psychometric tools in the five-year follow-up surveys (phase 3).

Phase 2 consisted of one-to-one, semi-structured interviews with participants of the MAMMI study to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours (Objectives 3 and 4). These interviews were conducted following the development of the semi-structured interview guide that resulted from the PPI component of phase 1.

Phase 3 used socio-demographic, mental health and physical health data collected within the MAMMI study during pregnancy and across the first year postpartum to describe the prevalence of PMHPs, physical and mental health interactions, and risk or protective factors for mental health issues (perinatal data). In addition, socio-demographic and mental health and mental well-being data collected five years after the birth of participants' first child describe the prevalence of, and risk or protective factors for, mental health issues and mental well-being five years after first-time motherhood (five-year data) (Objectives 5 and 6).

1.5 Format of the thesis

This thesis is organised into nine chapters. In chapter two, topics in relation to mental health in general and in the context of the perinatal period and motherhood are considered; such as the epistemological conceptualisations of mental health, mental illness and mental well-being, as well as the implications of gender, socio-economic deprivation, identity and stigma on mental health outcomes. In addition, the national and international literature on mental health symptomatology in the perinatal period and motherhood transition are presented. These topics are essential in providing context to the literature on perinatal and maternal mental health literature.

Chapter 3 contains an introduction to the concept of resilience and its association with mental health. This chapter includes an overview of the etymological and conceptual development of the concept within the social sciences, and a rationale for studying resilience in the context of perinatal period and early motherhood. Current theories, ethical concerns, limitations and criticisms of the concept and its application are also considered.

Within chapter 4, the methodological and philosophical considerations reflected and decided upon in the planning, development and conduct of the research are presented. The chapter contains the outline of the philosophical underpinnings that guided the methodological choices made, and a detailed description of, and rationale for, the multistage mixed-methods design, as well as a discussion concerning PPI in research and ethical considerations specific to the research project.

Chapters 5, 6 and 7 contain the study's findings. Chapter 5 is concerned with objectives 1 and 2 of the research. This chapter presents the findings of the concept analysis on 'resilience in the perinatal period and early motherhood' (objective 1) and, subsequently, the findings from the PPI strand of the research; namely, women's perspectives and feedback concerning the epistemological, linguistic, pragmatic and logical findings from the concept analysis (objective 2). The implications of women's feedback for phase 2 and 3 of the research are also presented. Chapter 6 describes the findings from the in-depth qualitative interviews (objectives 3 and 4) with 23 mothers on women's experiences of navigating to and negotiating for what they need for mental well-being in motherhood. Chapter 7 outlines the quantitative data findings (Objectives 5 and 6) from the mental health data collected in the perinatal period and at five years after first-time motherhood.

Chapter 8 summarises and integrates the main findings of the qualitative and quantitative aspects of the mixed-methods research, and discusses these findings in relation to existing research.

Chapter 9 concludes the thesis, recommendations for future research, healthcare service provision, education and training, and policy development are provided. The chapter closes with a personal reflection on the research journey.

1.6 Personal journey to the topic

As a woman and a feminist, I have long held an interest in women's mental health. I began working as a research assistant for the MAMMI study shortly after completing my undergraduate degree in psychology and continued working with the study while I pursued my master's degree in cognitive science. In my early days working with the team, I was involved in the practical day-to-day activities of running the large longitudinal study. However, as the study expanded and developed new project strands, so too did my roles and responsibilities. In 2018, I was involved in the conduct of the MAMMI study's first purposeful Patient and Public Involvement (PPI) project designed to identify what maternal health-related research mattered most to women in the first year postpartum. This was a pivotal moment for the study, and for me.

Prior to the PPI project the participants of the MAMMI study were, for the most part, anonymous numbers on a survey. That is not to say that the participants and their experiences were impersonal to me. I was often paused while inputting data by distressed responses to the mental health scales, by comments left by participants about receiving a diagnosis of a life-limiting illness for themselves, their child or partner, or about experiencing family or partner bereavement, miscarriages and infant death, intimate partner abuse, homelessness, and mental health issues that women felt completely blind-sided by in the postpartum period. But I also smiled at the many comments from women about how their baby was the smartest and cutest of all babies. I have stopped my colleagues to share funny and witty notes made by women in the booklets, or memorably, an (intentionally) humorous illustration to depict a woman's exact birthing position.

The PPI project, however, brought a new depth to my understanding of mental health in motherhood. Although its focus centred on identifying the maternal health-related research issues that matter to women in the transition to motherhood, I saw numerous, interconnected links between the issues raised and their implications for women’s mental health. For example, some women spoke about how postpartum care in Ireland is almost exclusively concentrated on the baby; this prompted discussion on how family and friends also become baby-focused, and how women rarely received enquires about their own health following birth. These disclosures encouraged more women to speak about how this social and healthcare professional focus on child health and development promoted a message that they, as mothers, were secondary and delved deeper into the ramifications. Women talked about the sense that they internalised and adopted this message as an expectation of themselves, to the degree that needing help, practically or emotionally, became framed in their mind as both weakness and selfishness. Even the idea of needing help induced anxiety for some women, and that anxiety was doubly problematic as they believed that ‘good mothers’ do not experience anxiety, and do not ‘need help’. So women kept silent about their struggles, their anxiety or depression, and refused to ask for help, which led to a sense of ‘self-imposed’ isolation and further anxiety, depression, stress, resentment or anger. The idea that struggle in motherhood was common and to an extent even normal was, for many women, a realisation that arrived disappointingly late in their journey. But it was one that acted as a catalyst to women understanding that their silence and isolation were ‘self-imposed’ only to the extent that it was a conforming response to socially accepted expectations of them as mothers.

Importantly, these were realisations that the participants of the PPI project wanted other women to be aware of, which they could only do by bravely challenging the fear and stigma associated with sharing their struggles of motherhood. Some women in the PPI group had already sought out forums in which to share their knowledge with the aim of changing attitudes and improving care, but were frustrated to find that other mothers had come before them with the intention of doing the same, with limited success. They were also frustrated to find that they were once again met with expectations that they should remain silent about experiencing MHPs or other struggles in motherhood. Despite those experiences, women persisted. Several saw the MAMMI study’s PPI project as an avenue for activism and promoting change. Their courage in giving voice to a stigmatised topic, their determination to bring about change, not for themselves but for other women, and their confidence in the researchers of the MAMMI study to handle respectfully their stories and use them with conscientiousness was both humbling and inspiring. My experience of conducting the PPI project, and learning from senior researchers, led me to realise that not only is maternal mental health an important and essential area of research for society, but centring women’s voices is foundational in creating research that is relevant and beneficial to women as they navigate a normal and yet hugely challenging life stage.

Chapter 2: Mental Health and Maternal Mental Health in Context

2.1 Introduction

The aim of chapter 2 is to contextualise the area of maternal mental health within wider conceptual approaches and discourses pertaining to mental health. This was achieved through a consideration of both the historically dominant and challenging positions and frameworks through which mental health has been understood. The role of gender is especially salient in this regard, as are the topics of societal expectations of mothers and stigma surrounding mental health and motherhood. International and national data on depression, anxiety, stress and comorbid anxiety and depression (CAD) in the perinatal period and motherhood transition are presented. The chapter also provides some context on PNMH policies and services in the Republic of Ireland.

2.2 Mental Health

The vocabulary of mental health is broad, featuring terms such as mental illness, mental disorders, mental distress, mental health problems, mental health issues, mental hygiene, mental well-being and positive mental health, and associated concepts such as psychopathology, vulnerability, liability and resilience among others (Borsboom 2017). There are rich and nuanced discussions concerning the definitions and constituents of mental health vocabulary, and the limitations and merits of the terms that have developed over time and between different fields of knowledge (Bertolote 2008, Manderscheid *et al.* 2010). Conceptualisations vary by the psychological, sociological or biomedical/ psychiatric frameworks from which they are developed and, importantly, are influenced by differing cultural and social values (Bhugra *et al.* 2013, Aultman 2014, Fernando 2014).

Historically, interest in mental health has concentrated on abnormality, deviance or dysfunction. Ancient philosophers were concerned with *'diseases of the soul'* (Ahonen 2019, p. 4), yet a clear definition of mental health or illness is not provided in antiquity writings. Terms were used interchangeably, such that words implying mania or madness could be used in reference to so-called behaviours of excess, as well as for medical disorders (Ahonen 2019). Early philosophers also viewed human behaviours through a moralistic lens. For example, Plato, who is generally considered to have introduced the idea of mental health (Malla *et al.* 2015), viewed immoral behaviour as akin to (mental) disease that could be treated, and thought that the 'soul', like the body, required balance (through self-mastery) to remain healthy (Seeskin 2008). Aristotle similarly linked immorality to mental health, viewing immoral behaviours as contrary to both social convention and to one's natural state (Seeskin 2008). These associations are reflected in the approaches that society, particularly western societies, took with regards to the treatment of persons with mental illness, which involved incarceration, confinement and exclusion from society, even torture and death (Rössler 2016).

Shifts in perspective and evolution in theory were neither linear nor uniform. There continued to be associations made between morality and mental illness, and continued imprisonment and mistreatment of individuals who were mentally ill, or who did not conform to social convention, beyond dates that are typically presented as ushering in changed thinking and progressive approaches to mental health (Paris 1998, Rössler 2016). With that contraindication in mind, the 1900s are generally stated as introducing the growth of international movements focused on improving care for people experiencing mental illness, as illustrated by the mental hygiene movement (Bertolote 2008). The World Health Organization (WHO), established in 1948, convened the first Expert Committee on Mental Health in 1950. The committee defined mental hygiene as all '*activities and techniques which encourage and maintain mental health*' and mental health as a '*condition, subject to fluctuations due to biological and social factors, which enables the individual to achieve a satisfactory synthesis of his own potentially conflicting, instinctive drives; to form and maintain harmonious relations with others; and to participate in constructive changes in his social and physical environment*' (World Health Organization 1951, p. 4).

These definitions were of course not satisfactory to all and deliberations continued. A particular point of conflict relating to mental health approaches is the predominate focus on illness, disease and disorder; mental health was, and in some cases continues to be (Cattan & Tilford 2006), regarded as an either/or state, where one is either mentally ill or not. This dichotomous style conceptualisation therefore defaults mental well-being as the '*absence of mental illness/disease/disorder*' (Manwell *et al.* 2015, p. 5). Psychopathology absence as a proxy for well-being has been argued by both HCPs and people with lived experience of mental health problems to be limited and insufficient for understanding mental health (Bertolote 2008, Bhugra *et al.* 2013). Some suggest that health or well-being should be denoted by the presence of *'something positive in the domain of subjective well-being'* (Keyes 2007, p. 98) rather than the absence of illness. The debate with, and challenge of, the prevailing pathology focus of the medical/psychiatric model is on-going, with hopes of encouraging meaningful embrace of person-centred strengths-based frameworks (Slade 2009, Slade 2010, Kleinman 2012, Priebe *et al.* 2014, Johnstone & Boyle 2018, Boyle 2022).

Currently, the WHO includes positive function in its consideration of mental health, and define it as a *'state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community'* (World Health Organization 2018). Mental health is considered an integral component of one's overall health. Though the definition has its critics (Manwell *et al.* 2015, Galderisi *et al.* 2020), the conceptualisation extends beyond a disease or disability focus and, importantly, includes a social dimension (Bertolote 2008).

Scholars develop on this perspective and attempt to portray the complexity of what is encompassed by mental health. Namely, that it affects the whole person and every aspect of their life, that it cannot be separated from matters of health and disease or function and dysfunction and, importantly, that it is inherently value-laden and influenced by social, religious, cultural and political factors (Aultman 2014, Galderisi *et al.* 2020).

2.3 Conceptualisations of mental health, mental illness and mental well-being

Discussions as to what constitutes mental health can be examined in terms of categorical or continuum conceptualisations. Categorical conceptualisations adopt the *either/or* perspective where if one does not have mental illness, then the person must have mental health (one *either* has a mental illness, *or* not). Categorical positions on mental health are mostly associated with (though not directly endorsed by) the biomedical/psychiatric model (discussed in section 2.4.1) which can be broadly described as viewing mental illness as a biological illness, and differentiates qualitative differences in health by presence or absence of illness (Fernandez *et al.* 2023). A binary categorisation of mental illness/health forms much of the basis on which mental health and psychiatric knowledge was developed, indeed the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association 1994) was critiqued for this reason (Krueger & Bezdjian 2009). The continuum view considers mental illness and health, or ill-being and well-being as a single continuum (univariate bipolar continuum) or as two continua (bivariate unipolar) (Zhao & Tay 2022).

2.3.1 Single continuum and two continua models

The single continuum view presents mental health as a spectrum that slides from Mental Disorder to Languishing (conceived as stagnation or emptiness in life rather than illness), to Moderate Mental Health and, finally, to Flourishing, which is a high degree of well-being (Huppert 2009). In this view, mental disorder cannot coincide with flourishing and proponents operationally define flourishing in opposition to the symptoms and dysfunction of common mental disorders (Huppert & So 2013). In this way, health is not absence of disorder, but opposite of disorder.

The two continua model, posited by Westerhof and Keyes (2010), considers mental health as consisting of two related though distinct concepts, mental illness and mental well-being (Westerhof & Keyes 2010). In this view, mental well-being is not mutually exclusive of mental illness, positive experiences relating to one’s emotional, psychological and social well-being can co-occur with mental distress (Keyes 2005). Therefore, mental health is any combination of one’s mental illness state (high, low) and mental well-being state (Flourishing, Moderate Mental Health, or Languishing) (Keyes 2002).

2.3.2 Mental well-being definitions

In both the single and two-continuum perspectives, the term flourishing houses several aspects of well-being. Linguistically, Huppert & So (2013) define flourishing as '*the experience of life going well. It is a combination of feeling good and functioning effectively'* (p.838). Operationally, flourishing is composed of two factors: the first is 'positive characteristics' and contains measures related to vitality, optimism, emotional stability and positive emotions, as well as self-esteem and resilience and the second factor relates to 'positive functioning', such as maintaining positive relationships, engagement with the world, competence and meaning (Huppert & So 2013).

Keyes defines mental health by three well-being components. First is emotional well-being, in the same vein that depression is identified by anhedonia, emotional well-being is identified by hedonia (Keyes 2005) which, in this theorisation, consists of a sense of satisfaction and interest in life, and feelings of happiness (Keyes 2007). Psychological well-being is related to functioning and encompasses self-acceptance, personal growth, a sense of purpose, autonomy and an ability to form positive relationships. Social well-being comprises beliefs about people and one's place in society, for example viewing people and society positively, believing that both have a coherent meaning and growth potential and that one's role in society is useful (Keyes 2007).

Debates concerning the definitions of, and clarity between, mental illness, mental health and mental well-being are on-going. Achieving consensus is met by many challenges, these terms are often used interchangeably within the literature, which limits a clear understanding of conceptual discussions (Cattan & Tilford 2006), and may even become reflected in methodologies used to study mental health or illness (Stewart-Brown 2002).

2.4 Models of mental health

A recent quasi-systematic review of theoretical approaches to mental health identified thirty-four models developed to explain mental illness among published literature from 2000 to 2020. These models could then be presented as sub-groups within five broad categories; Biology, Psychology, Social, Consumer and Cultural (Richter & Dixon 2022). For example, approaches falling under Biology include neurobiology, neuroscience and computational neuroscience. Psychology approaches include perspectives such as salutogenesis, cognitive psychology and psychoanalysis. Social models involve social disability and critical realist models. The Consumer category encompasses service user or survivor studies, recovery models, and neuro-diversity models. Finally, Cultural approaches relate to cultural, traditional or spiritual interpretations of experiences that, in Western cultures, might be deemed illness (Richter & Dixon 2022).

The authors further elucidate that '*three sets of models sit between the five categories*' (p.9); biopsychology, psychosocial, and radical or anti-psychiatry approaches. Though scholars' discourse recognise that there are a range of approaches constellated within the larger categories, typically, discussions in the literature centre on biomedical and biopsychosocial categorisations.

2.4.1 Biomedical model of mental health

The biomedical position on mental health and disorder can be characterised by three assumptions. First, that mental illnesses or disorders are rooted in a biological brain-based dysfunction caused by abnormalities of brain structure, genetic anomaly or neurotransmitter function (Deacon 2013). Essentially, mental illness is considered biological brain disease, which is the crux of the second assumption; the biomedical approach does not make a distinction between physical illness and mental illness, as both are positioned as biologically based. Therefore, the third assumption follows that as mental illness is biologically based, it must be biologically treated and pharmacological treatments are emphasised (Deacon 2013). The biomedical model has also been referred to as the disease model (Kiesler 2000) as it focuses on the aetiology, pathogenesis, and treatment of disease, disorder, abnormality or dysfunction. Although biomedical approaches have expanded to acknowledge social determinants of health, it remains the dominant approach in the field of psychiatry (Borsboom 2017), and Deacon (2013, p848) links psychiatry's embrace of the biomedical model to '*threats to its status as a legitimate branch of scientific medicine*'. Proponents of a biological basis for mental illness contend that, despite a lack of evidence that biology definitively underpins mental illness, continued investigations will bring cogency to psychiatry (Williams 2016).

The biomedical model is sometimes commended as a helpful tool in preventing stigmatic perceptions of mental illness, by positioning symptoms as based in an ailment beyond an individual's control, rather than as behaviours occurring by choice (Lebowitz & Appelbaum 2019). This approach is common in stigma prevention discourses, as advocates believe that promoting mental illness as akin to physical illness '*legitimizes the individual's experience of helplessness, undermines the assumption that those with mental illness are simply weak-willed, and increases accessibility to health-care services*' (Thachuk 2011, p. 143). However, there is some contention concerning the effectiveness of the biomedical approach to mental illness in reducing stigma, as some research indicates that adopting this message in public communication has not resulted in lessening stigmatising views (Pescosolido *et al.* 2010, Schomerus *et al.* 2012).

On the other hand, there is some discussion concerning the effect of patients' beliefs about prognostic expectations. For example, if patients believe that the cause of their mental distress is biologically based and they believe they are receiving ‘effective’ treatment designed to address a biological source, then, similar to research concerning placebo effects (Rutherford *et al.* 2017) those beliefs may influence positive clinical improvements (Lebowitz & Appelbaum 2019). However, a systematic review found that while biogenetic explanations for psychological problems help to reduce blame, they also induced negative stereotypes about mental illness and dangerousness, as well as increased prognostic pessimism (Kvaale *et al.* 2013).

2.4.2 Biopsychosocial (BPS) model of mental health

Some scholars argue that the primacy of the biomedical model in psychiatry and as an approach to mental health has relegated psychological, social and ecological considerations as superfluous (Deacon & McKay 2015, Lilienfeld & Treadway 2016). Indeed, funding allocations illustrating a preference for biomedical frameworks and the investigation of mental health from a psychopathology perspective would appear to convey this message (Schwartz *et al.* 2016).

BPS perspectives consider the causes of health and illness to be multifactorial, and include interacting factors arising from biological, psychological, social, cultural and environmental domains (Bolton & Gillett 2019), which may function to ameliorate, exacerbate, or course alter disease progression or resolution. Additionally, BPS approaches counter the longstanding biomedical conceptualisation of health as disease absence to include a wider lens on health and illness (Fava & Sonino 2008).

Questioning of the biomedical approach is most notably attributed to George Engel, who published a series of papers from 1960 and 1980 in which he commented on the limitations of biomedical model and its exclusion of psychological and social factors that influence health and behaviour (Engel 1960, 1978). Scholars continue to reference such limitations in contemporary discourse; critiquing its narrow focus and organ-based orientation as offering little in the way of prevention, reduction or control (Havelka *et al.* 2009). Engel felt that a wider approach to health and illness offered a more holistic scope from which to treat patients by attending to individual and social factors that may have a role in their experiences of ill health (Farre & Rapley 2017).

Criticisms of the BPS model include contentions that it lacks conceptual coherence (Benning 2015) and standardised operationalisation (Farre & Rapley 2017). In other words, that its generality and inclusiveness makes the model too cumbersome for professionals to use, as multiple factors exist at multiple levels and identifying the most salient is time-consuming and inefficient in practice (Kontos 2011). However, acknowledgement of the BSP model as a salient approach to population health, (buoyed by decades of empirical evidence that determinants of, and factors that influence, health and illness exist in domains beyond biology (Wade & Halligan 2017)), appears repeatedly in global and local policy (World Health Organization 2002, Goverment of Ireland 2022). Additionally, scholars have offered pragmatic approaches to operationalising BPS theory in clinical settings (Smith *et al.* 2013), which have been demonstrated to be effective in practice and research (Smith *et al.* 2006, Smith *et al.* 2009).

Despite vast evidence of relevance and provision of methodological solutions, Wade & Halligan, (2017) lament that the BPS model has had little impact on the ways in which health care services are structured and delivered at an organisational level. Though the BPS model has been shown to be effectively applied to specific healthcare pathways such as oncology (King 2016) and obstetrics and gynaecology (Edozien 2015), there remains the need to take a whole systems approach healthcare management and delivery (Farre & Rapley 2017).

2.4.3 Social-ecological perspectives

Just as there are multiple fields held under the umbrella of the BPS model, social-ecological perspectives are also multiple and include areas such as ecological community psychology, eco-epidemiology, ecological psychology, ecological transition, ecological public health, and embodiment among others (McLaren & Hawe 2005). A detailed delineation of the differences and tenets of each is beyond the scope of the current thesis, however social-ecological perspectives can be considered as including and extending the BPS model (Lehman *et al.* 2017). For example, an ecological model can be defined as *'a conceptual framework designed to draw attention to individual and environmental determinants of behaviour. The visual metaphor is a series of concentric or nested circles which represents a level of influence on behaviour'* (McLaren & Hawe 2005, p. 9). The 'nested circles' in social-ecological considerations are informed by Bronfenbrenner's ecological theory of development, which considers the influence of factors existing at individual, microsystem, mesosytem, exosystem and macrosystem levels (Bronfenbrenner 1986). Theory has developed since Bronfenbrenner, and scholars place greater emphasis on the continual interaction that occurs between multiple factors both *within* a domain and *between* domains, and consider the risk or protection that factors arising and interacting might confer on the individual (Ungar 2011). Importantly, contemporary social-ecological perspectives give attention to the role of physical environments and the implications of local and government policy on health outcomes (Beyera *et al.* 2022), and some regard factors within the social, cultural and physical environment as more salient to the consideration of individual outcomes than factors that exist at the individual level (Glass & McAtee 2006).

The comprehensiveness of social-ecological perspectives invoke some limitations; it can be difficult to determine what factors at which levels are most critical to health and there is limited explanation detailing the interactive processes occurring between factors (Sallis *et al.* 2008). Additionally, the complexity of social-ecological perspectives make it difficult to operationalise for empirical investigation (Beyera *et al.* 2022).

However, a key benefit of social-ecological perspectives is that expanded consideration also provides expanded opportunities for intervention (Sallis *et al.* 2008). Rather than placing focus on the individual, interventions aimed at social, environmental and policy levels offer greater reach and benefits to a population as a whole (Beyera *et al.* 2022). Additionally, recognising the importance of how individual factors (sex, gender, ethnicity, age, etc.) interact and intersect with social and cultural factors may lead to improved understanding as to how interventions might be best applied for populations with shared characteristics and shared risks (Connell 2012, Bailey *et al.* 2017).

2.5 Women's mental health

Through history, women's behaviour has been medicalised and pathologised; attitudes and beliefs concerning women's mental health have been tied to fallacies concerning conception, their reproductive organs and sexuality, as well as to religious and supernatural beliefs (Tasca *et al.* 2012). Hysteria is infamous as a mental disorder specifically ascribed to women. It was first described in ancient Egypt as an affliction of erratic emotions and seizures caused by the uterus roaming about a woman's body causing havoc with her other organs. Hysteria found its name with Hippocrates, who also endorsed the wandering womb hypothesis and suggested the cure to be marriage and motherhood (Novais *et al.* 2015). History shows centuries of the enigma of women's bodies and minds being explained by their supposed inferiority to men and 'deficiency' of their anatomy, by their envy of penises, or by accusations of witchcraft and demonology (Tasca *et al.* 2012). Theories emerging during the Enlightenment postulating a brain-based rather than gender-based aetiology of hysteria had minimal impact in shifting predominate thought on the matter (Brambilla 2003). The 19th and 20th Centuries however, saw increased acceptance that 'hysterical' symptoms could present in men, particularly in the aftermath of the World Wars (Crocq & Crocq 2000, Tasca *et al.* 2012). One may cynically note that 'hysterical' symptoms, long deemed the result of inherently flawed biology in women, received a compassionate reassessment to consider the influence of trauma when presenting in male veterans.

Despite advances in society and progressive developments in mental health, the 19th and early 20th century is marred by women being imprisoned in asylums and receiving dangerous treatments for non-conformance, disobedience to men or independent thought (Taylor 2022). Those with power have used thinking, feeling or behaving in a way that might challenge the status quo as 'evidence' of mental disorder. History shows repeated examples of mental health labelling employed as a tool of oppression of

Blackness (Segrest 2020), homosexuality (Carr & Spandler 2019) and female gender (Bondi & Burman 2001).

Treatments for women's 'mental health' followed an alarming trend of being lauded for producing compliant women (Tone & Koziol 2018). For example, lobotomies were considered ideal in correcting 'disturbed behaviour', which female patients apparently presented an abundance of; an 18 month review of psychiatric units in the United States between 1949 and 1951 found that a disproportionate number of lobotomy patients, nearly 60%, were women, even though the majority of patients in institutions at the time were men (Braslow 1997). A review of rates in France, Switzerland and Belgium between 1935 and 1985 found that women made up 84% of subjects (Terrier *et al.* 2017). The introduction of chemical tranquilizers dramatically reduced the number of performed lobotomies, but the subdual of women as the desired outcome of such treatments remained as strong as ever. By the 1970s, the 'mild' tranquilizer Valium (diazepam) was twice as often prescribed to women than to men (Herzberg 2006), it was also heavily marketed toward use in women (Tone 2008) and presented as a solution to '*the excessively ambitious, the visually unkempt, the unmarried and the menopausal'* (Tone & Koziol 2018, p. 1) woman.

It would be optimistic to suppose that misogyny in psychiatry, in mental health treatment and services has resolved with time. Hysteria became 'hysterical personality disorder' in the DSM-2, and later 'histrionic personality disorder' which remains in the DSM-5 iteration (Novais *et al.* 2015). Supposed symptoms include behaviours that were attention-seeking, '*flirtatious, seductive, charming, manipulative, impulsive, and lively'* (French & Shrestha 2022, p. 1), a list which is reminiscent of accusations leveraged at witches and unruly women. Women were diagnosed as 'histrionic' at four times the rate that men were (Nestadt *et al.* 1990). Similar patterns have been highlighted in the typifying of borderline personality disorder (BPD) which features a misogynistic caricature of female traits, and a diagnosis rate that disproportionality skews towards women (Ussher 2013).

Thus how HCPs and researchers think about and present women's mental distress and suffering needs to be considered with an eye to the historical development and gendered motivations in the development of certain mental health constructs. This is particularly pertinent in regards to constructs that are presented as integrally tied to the individual, such as personality traits and especially disorders of personality, the diagnosis of which may omit the relevant influence of historical, contextual and social factors in the explanation of certain 'symptoms' or behaviours (Taylor 2022).

2.5.1 Gender: a social determinant of mental health

Mental distress is not gender specific; however, there are significant gender differences in the reported prevalence of some mental illnesses and symptomatologies. For example, depression is reported as twice as likely to occur in women (Weissman & Olfson 1995, Ferrari *et al.* 2013, Salk *et al.* 2017) and women are up to three times more likely to experience posttraumatic stress disorder (PTSD) symptoms (Christiansen & Hansen 2015, Olff 2017). Additionally, women are more likely to be given a diagnosis of bipolar depression (Parker *et al.* 2014), anxiety disorders (Lépine 2002, Seedat *et al.* 2009), eating disorders (van Eeden *et al.* 2021), and report somatic symptoms in comparison to men (Riecher-Rössler 2010).

It is salient to address that, at times, ‘gender’ and ‘sex’ are used as interchangeable terms in the literature. Sex denotes biological characteristics whereas gender relates to the social construction of what certain sex-based biological characteristics mean in terms of the societal roles women or men are expected to occupy, or behaviours to which they should conform (Vlassoff & Garcia Moreno 2002, Phillips 2005, Afifi 2007). Scholars increasingly draw attention to how there are social and economic disparities associated with gender that make it a strong determinant of both physical and mental health (Denton *et al.* 2004). Women encounter gender-specific challenges which hinder their economic independence and security, and their physical, sexual and emotional safely (Moss 2002). There are notable disparities between the allocation of responsibilities in comparison to power in society between women and men (Rosenfield & Smith 2010). Factors such as socio-economic inequality, lower social status, disproportionate familial and care responsibilities, and gender-based violence are prominent contributors to the incidence of mental health problems for women (Kaur 2019). In addition, socio-economic disparities lend significantly to the differences in risk and susceptibility, onset and development, help-seeking behaviour, diagnosis, treatment and adjustment to mental distress and illness experienced between the genders (Rosenfield & Smith 2010, Yu 2018).

Women face greater exposure to poverty throughout their lives, they receive less education, less pay, and are more likely to hold less stable employment (World Health Organization 2000). In the workplace, not only does the wage gap leave women susceptible to ‘in-work poverty’, pay differences also reflect gender disparities in anxiety and depression (Platt *et al.* 2016). Women are more likely to be a single parent, which increases their risk for poverty (Brown & Moran 1997) as well as for poorer physical (Broussard 2010) and mental health (Crosier *et al.* 2007). In heterosexual two parent homes, women shoulder the majority of parenting, caring and household responsibilities (Occhiuto 2021), leading to increased stress and decreased time availability to engage in health promoting activities (Arber 1991, National Women's

Council of Ireland 2018), which contributes to women's experiences of depression (Bebbington 1999), anxiety and poorer physical health (Mann 2005). Domestic and sexual violence disproportionately affect women and girls (Garcia-Moreno *et al.* 2006, United Nations 2018), both of which are correlated with depressive, anxiety and substance use disorders, and suicidality (Tolin & Foa 2006, Campbell *et al.* 2009, Jina & Thomas 2013, Spencer *et al.* 2019). Irish data also show that being a black and/or ethnic minority woman, LGBTQIA woman, Traveller or Roma woman, asylum seeker, experiencing homeless or having a disability, add social complexity and disadvantage which imply increased risk for experiencing MHPs (Higgins *et al.* 2016a, Department of Justice & Equality 2017, Murphy *et al.* 2017, National Women's Council of Ireland 2018).

2.5.2 Gender expectations and motherhood

The determinants of one's physical and mental health are complex and influenced by both the past and present social, cultural and political circumstances in which one lives. The psychological and social experience that is pregnancy and motherhood (and the particular vulnerabilities or strengths that this experience exerts on an individual woman's well-being), cannot, and should not, be extricated from the wider context of women's lives, especially in research endeavours.

The ability to bear a child is predicated on the characteristics of one's biology, whereas expectations that women should become mothers, when they should become mothers, which women should be mothers and how they should mother are based in social and cultural demands of gender (Russo 1976, Phillips 2005, Gimenez 2018). This is to the extent that womanhood and motherhood are regarded as '*synonymous identities and social categories*' (Goodwin & Huppatz 2010, p. 3); women who choose not to have children are perceived as '*failed*' and '*selfish*' women (Gotlib 2016, p. 327), and women who cannot have children may face distressing psychological challenges to their gender identity (Bell 2019).

Pregnancy and motherhood are imbued with powerful socially idealised perceptions (Glenn 1994), and certain ideologies arising from social and cultural milieus become internalised and inform what each individual considers is involved in being a 'good mother' (Miller 2000, p. 10). There are hegemonic societal demands around the 'good mother' ideology which are linked to images of a hetero-normative, white, middle-class housewife as the template of the 'good mother' (Arendell 2000, Goodwin & Huppatz 2010). So-called 'good mothers' are conceived as being naturally self-sacrificing and devoted to child rearing (Nichols *et al.* 2015, Dow 2016). 'Good mothers' are solely responsible for the health, development and success of their children (regardless of degree of partner involvement) (César *et al.* 2018, Budds 2021, Constantinou *et al.* 2021), and should be perpetually accessible (Kielty 2008) in terms of time, money, and labour in raising their children (Hays 1998).

In short, there is an historical and social expectation that women should become mothers and the kind of mother she should be. Mothers who do not fit the constrictive social directive report experiencing judgment and stigmatisation; for example, mothers who have been incarcerated (Mitchell & Davis 2019), mothers who do not reside with their children (Kielty 2008), mothers of colour who are poor (Keefe *et al.* 2018), adolescent mothers (SmithBattle 2020), and mothers who have acute physical illness (Power *et al.* 2015). The impact of pressure to conform, even for women who might be considered to be in possession of the characteristics of the 'good mother' template, is lower perceptions of self-efficacy, higher stress and anxiety, and feelings of guilt (Henderson *et al.* 2016).

2.5.3 Motherhood, mental illness and stigma

The perception of being 'marked' in some way by experiencing mental distress, receiving a mental health diagnosis, or treatment for a MHP in motherhood is salient to descriptions of stigma as a 'mark' on an individual's identity (McLoughlin 2013). Stigma is '*a culturally bound and context-specific process that functions to identify, distance, and dis-empower people who have or express attributes and characteristics considered undesirable by society'* (Nichols *et al.* 2021, p. 20). Stigma involves the enforcement of social norms by individuals within society via social exclusion (McLoughlin 2013). However, stigma may also become internalised. Individuals, as social actors themselves, are aware of social expectations associated with their identity and the stigmas attached to non-conformance, and they may come to agree with the stigma and apply it to themselves resulting in a poor view of one's self and decreased self-esteem (Rössler 2016).

The experience of mental health issues in motherhood sits incongruously with an idealised perception of motherhood (McLoughlin 2013). In qualitative research women report feeling that a PNMH diagnosis marks them as a 'bad mother', weak and unable to cope, even as a potential threat to the safety of their child or children (Edwards & Timmons 2005, McCarthy & McMahon 2008, Bilszta *et al.* 2011), all of which contribute to reluctance in seeking treatment. Some women report feeling embarrassment and shame about their symptoms when disclosing to trusted family or partners (Barrera & Nichols 2015); feelings of guilt and shame are predictive of hesitancy towards seeking help for postpartum depression (PPD) (Dunford & Granger 2017). Women cite fear of initiating child protection involvement as a barrier to making disclosures to HCPs about PMHPs (Shakespeare *et al.* 2003, Edwards & Timmons 2005, Bilszta *et al.* 2011, Jones 2022), and anticipation of negative attitudes or judgement from friends or family as a barrier to social support help-seeking (Daehn *et al.* 2022).

2.5.4 Mental health help-seeking in pregnancy and motherhood

'*In the mental health context, help-seeking is an adaptive coping process that is the attempt to obtain external assistance to deal with a mental health concern*' (Rickwood *et al.* 2012, p. 6). Women in motherhood face a number of barriers to help-seeking for their mental health. The effect of stigma is frequently cited (Felder 2014, Button *et al.* 2017), as is fear of losing child custody (Bilszta *et al.* 2011) and of being suggested only medication as a treatment (Ta Park *et al.* 2017). A lack of mental health literacy and inability to recognise symptoms are also influential (Daehn *et al.* 2022, Jones 2022). Women report socioeconomic barriers relating to treatment costs as well as lack of childcare and time to attend appointments (Felder 2014). Structural barriers include inadequately resourced and fragmented mental health services and poor cultural sensitivity in services offered (Sambrook Smith *et al.* 2019). Women in the perinatal period appear to prefer informal help-seeking, from family and friends, before seeking formal supports from HCPs (Jones 2019, Daehn *et al.* 2022).

2.6 Perinatal mental health (PNMH)

The perinatal period encompasses pregnancy through the first postpartum year and PMHPs are those which occur at any point during this timeframe (O'Hara & Wisner 2014). PMHPs are considered to include a wide spectrum of disorders; such as anxiety, generalised anxiety disorder (GAD), and panic disorder (PD), obsessive compulsive disorder (OCD), PTSD, eating disorders, substance use disorders, and mood disorders such as depression and bipolar affective disorder (BPAD), and postpartum psychosis (PP) (O'Hara & Wisner 2014, Paschetta *et al.* 2014).

PMHPs are the most frequent peri-partum complication of childbirth (Howard & Khalifeh 2020), and maternal suicide is the leading cause of direct deaths in the United Kingdom and in Ireland (O'Hare *et al.* 2018, Knight *et al.* 2022). The most recent MBRRACE report from UK and Irish data on maternal deaths and morbidity was particularly concerning, as risk of suicide during pregnancy and the first six postpartum weeks had tripled in the year 2020 in comparison to previous years (Knight *et al.* 2022). The increase in maternal suicide is, worryingly, in line with a general trend that pre-dates the Covid-19 pandemic, in particular for teenage suicides (De Backer *et al.* 2023). Additionally, younger mothers and women who experienced multiple adversities such as such as substance misuse, mental ill health, domestic violence and child loss were most at risk (Knight *et al.* 2022).

Evidently, PMHPs are a significant public health concern. Experiencing a PMHP has consequences for a woman's overall well-being (Farias *et al.* 2013, George *et al.* 2013); it can affect the mother-infant bond and relationship (Cirulli *et al.* 2003, Hazell Raine *et al.* 2020, Lutkiewicz *et al.* 2020), intimate partner relationship (Lilja *et al.* 2012), and the family unit as a whole (Yeaton-Massey & Herrero 2019). Additionally, the implications that PMHPs have on the physical, social and cognitive development of the child has been extensively documented (Hay *et al.* 2010, Surkan *et al.* 2011, Schuurmans & Kurrasch 2013, Betts *et al.* 2015, Conners-Burrow *et al.* 2016, O'Connor *et al.* 2016, Granat *et al.* 2017, Liu *et al.* 2017, Slomian *et al.* 2019). There are substantial economic costs; a systematic review of economic burden of maternal morbidities found that for MHPs there were incremental costs to women as payers ranging from €452 to €794 up to one year postpartum in Ireland (Moran *et al.* 2020). An analysis of lifetime social and health care expenses was estimated at £75,728 per woman for perinatal depression and £34,840 per woman for perinatal anxiety in the UK (Bauer *et al.* 2016). The wealth of evidence documenting the individual, relational, social and economic impacts of PHMPs validate the argument that PNMH is not simply a woman's issue, but an issue of societal well-being (McNab *et al.* 2022).

Depression is the most commonly researched PMHP in the perinatal period, and, until relatively recently, was thought to be the most commonly occurring MHP in the perinatal period. Depression is followed in research interest and prevalence by anxiety. Prevalence estimates of PMHPs vary, and international reports are influenced by a range of factors relating to definitions used, measures and timeframe of data collection, methodology, socio-demographic features of women/research participants, and context of investigation (Howard *et al.* 2014).

2.6.1 Perinatal depression: Symptomatology and Prevalence

The most recent edition of the Diagnostic Statistics Manual (DSM-V) (American Psychiatric Association 2013) replaced the previous entry of 'Postpartum Depression' with 'Perinatal depression' to illustrate that onset and symptoms are not limited to the postpartum period. Perinatal depression essentially refers to the occurrence of a major depressive episode or major depressive disorder (MDD) in pregnancy or postpartum (Kendig *et al.* 2017). The DSM-V limits the onset of symptoms to within four weeks postpartum in order for an occurrence to be considered 'perinatal depression' (American Psychiatric Association 2013), However, both clinical practice (Milgrom & Gemmill 2014) and epidemiological research typically extend this timeframe up to one year postpartum (Wisner *et al.* 2010). Aside from the context in which it is experienced, namely the perinatal period, the diagnostic criteria for perinatal depression are identical to MDD. An individual may experience persistent depressed mood or anhedonia (loss of or diminished interest or pleasure in all/almost all activities) and at least four additional symptoms such as; unintentional weight loss or weight gain, decreased or increased appetite, insomnia or hypersomnia, psychomotor agitation, fatigue, feelings of worthlessness, thoughts of death or suicide. Symptoms must present for at least two weeks, impact daily and social functioning, and not be the product of substance use or a medical condition (American Psychiatric Association 2013). ‘Baby blues’ is common, and experienced by up to nearly 70% of women in the early postpartum period. However, it is differentiated from perinatal depression in that it is markedly less severe and typically resolves within two weeks (Marcus & Heringhausen 2009).

Perinatal depression is reported to affect up to 20%, or one in five women, in the antenatal and/ or postpartum period (Gavin *et al.* 2005). Gaining a clear picture of the scope and prevalence of perinatal depression worldwide from the literature can be a challenge for a number of reasons. First; prevalence varies across the antenatal and postpartum period (Underwood *et al.* 2016) and low and middle income countries (LMIC) report higher prevalence than high-income countries (HIC) (Woody *et al.* 2017). Socioeconomic factors, such as income level and resource availability are strongly implicated in prevalence reports, additionally, studies indicate that Black, Asian and Minority Ethnic (BAME) women present with higher incidence of perinatal depression than their white counterparts (Masood *et al.* 2015).

Gavin et al.’s (2005) systematic review of perinatal depression research is widely cited with regards to prevalence; however, the data only included studies conducted within HIC. The review found that point prevalence for major and minor depression ranged from 8.5% - 11.0% during pregnancy and 6.5% - 12.9% during the first postpartum year (Gavin *et al.* 2005). Whereas, Gelaye et al.’s (2016) systematic review of studies concerning the epidemiology of perinatal depression indicate a considerably higher prevalence for women in LMIC; reporting a pooled prevalence of antenatal depression of 25.3% and 19% for postpartum depression (Gelaye *et al.* 2016). Similarly, a review of non-psychotic mental disorders in the perinatal period in LMIC reported antenatal depression at 15.9% and postpartum depression at 19.8% (Fisher *et al.* 2012). More recently, a systematic review including HIC and LMIC research studies found an overall pooled prevalence of 11.9% for perinatal depression, with depression in women in LMIC (13.1%) coming in higher than in HIC (11.4%) (Woody *et al.* 2017). Moreover, authors identified that prevalence of depression in the antenatal and postpartum are double for women in LMIC in comparison to women in HIC (*Antenatal:* LMIC= 19.2%, HIC= 9.2%; *Postpartum:* LMIC= 18.7%, HIC=9.5%) (Woody *et al.* 2017).

Most often, research projects examine depression in the antenatal or the postpartum only, relatively few collect data across the whole perinatal period. Cross-sectional data comparisons present an issue for a consolidation of data as different participants are assessed using different scales and at different points in time (Schmied *et al.* 2013). Underwood et al. (2016) reviewed only longitudinal studies of perinatal depression and found average percentages of 17.2% for antenatal depression and 13.1% for PPD (up to one year postpartum) (Underwood *et al.* 2016). Though this review included data from HIC and LMIC, it did not compare between HIC and LMIC.

Though variations between studies hinder grasping a fixed view of perinatal depression prevalence, these differences highlight some important considerations. First, that perinatal depression is not static. Timeframe and differing social and economic resources are factors in prevalence variation and should be acknowledged in research design and reporting. Second, these differences demonstrate the importance of collecting locally-specific data in order to inform locally relevant policy and service development.

2.6.2 Perinatal anxiety: Symptomatology and Prevalence

Anxiety-related mental health issues are the most commonly occurring psychiatric conditions worldwide (Remes *et al.* 2016), and women are more likely to be given a diagnosis of an anxiety disorder (AD) than men (Kessler *et al.* 2005). Anxiety in the perinatal period is receiving increased research interest, as literature indicates that women are especially vulnerable to experiencing anxiety during this period (Byrnes 2019), and report higher prevalence of anxiety than depression both during (Lee *et al.* 2007) and after pregnancy (Wenzel *et al.* 2003).

Though researchers emphasise the importance of understanding anxiety separately from depression, to identify its distinct aetiology and develop appropriate treatment approaches (Milgrom 1999), quantifying 'perinatal anxiety' presents some important considerations. First, pregnancy and motherhood is (often) a life-changing event, such that anxiety during this time is considered common and even normal (Harrison & Alderdice 2020). Typically, anxiety is considered to be problematic when it is persistent, causes considerable discomfort, and affects social or daily functioning (Harrison & Alderdice 2020). While this differentiation is a useful benchmark, problematic anxiety during this period may still go undetected. For instance, somatic symptoms of anxiety such as tiredness, insomnia, irritability and difficulty concentrating may be dismissed as normal to pregnancy and the postpartum period (Misri *et al.* 2015).

Anxiety is not a singular classification; rather it is the core feature of several different MHPs categorised as anxiety disorders within the DSM-V, such as panic disorder (PD), generalized anxiety disorder (GAD), agoraphobia (AG) and social phobia. GAD is characterised by excessive anxiety and worry (occurring for at least six months) that the individual has difficulty controlling and includes experiencing at least three somatic, cognitive or sleep symptom disturbances, which lead to impaired social and/or occupational function. PD is recognised by episodes of intense fear or discomfort and is accompanied by four or more somatic symptoms (American Psychiatric Association 2013). OCD and PTSD are not categorised along with anxiety-related disorders in the DSM-V, unlike in previous versions. However, some systematic reviews group OCD and PTSD under anxiety disorders when reporting combined prevalence (Fawcett *et al.* 2019).

Recognising the distinctiveness of anxiety is especially relevant in a perinatal context as several studies indicate that experiencing prenatal anxiety can reliably predict if mothers will experience postpartum depression, this remains true after controlling for prenatal depression (Matthey *et al.* 2003, Sutter-Dallay *et al.* 2004). Pregnancy Specific Anxiety (PSA), and a similar term/construct Pregnancy Related Anxiety (PRA), are considered distinct from generalised anxiety, as they emerge during pregnancy and the reasons that underpin the anxiety are linked specifically to issues of pregnancy, birth, infant health, and future parenting (Chandra & Nanjundaswamy 2020). In HICs, PSA is reported around 29% (Arch 2013) and PRA at 26.5% (Naja *et al.* 2020), both have been reported at 55.7% in LMICs (Madhavanprabhakaran *et al.* 2015, Khalesi & Bokaie 2018, Nath *et al.* 2019).

Similarly to depression research, research concerning anxiety prevalence in the perinatal period show considerable variation. Individual studies report prevalence of ADs in the antenatal period between 20% and 35% (Sutter-Dallay *et al.* 2004, Grant *et al.* 2008, Giardinelli *et al.* 2012, Nakić Radoš *et al.* 2018) while pooled prevalence from systematic reviews of antenatal anxiety show lower figures for individual disorders [PD: 0.2%–5.7%; GAD: 0.0%–10.5%; OCD: 0.2%–5.2%; PTSD: 0.0%–7.9%] (Goodman *et al.* 2014). Similarly, a recent systematic review of ADs in the antenatal found that PD, GAD, OCD and PTSD each had the same prevalence of 3% (Viswasam *et al.* 2019). For the postpartum period, individual studies cite figures for any AD at 17.1% (Fairbrother *et al.* 2016) and 31.6% (Figueiredo & Conde 2011). A systematic review for AD prevalence postpartum found a pooled prevalence of 8.5% for any AD, with rates for specific ADs as follows; PD: 1.6%, GAD: 3.5%, OCD: 2.4%, PTSD: 1.7% (Goodman *et al.* 2016).

A systematic review of studies of anxiety found that in the antenatal period the prevalence of a clinical diagnosis for any AD was 15.2%, self-reported anxiety symptoms was 22.9%, and prevalence for GAD was 4.1% (Dennis *et al.* 2017). However, prevalence also varied by the trimester of data collection (Dennis *et al.* 2017). Similarly, prevalence of a clinical diagnosis of any AD postpartum was 9.9%, self-reported anxiety symptoms were 17.8% and GAD was 6.7%. As with depression research, the authors found variation in prevalence between HIC and LMIC; for example *Antenatal period:* Anxiety symptoms: (LMIC=34.4%; HIC=19.4%); any AD: (LMIC= 18.2%; HIC= 13.4%). *Postnatal period:* Anxiety symptoms: (LMIC= 25.9%: HIC=13.7%); any AD: (LMIC= No data; HIC= 8.4%) (Dennis *et al.* 2017). Recently, Fawcett et al (2019) reported prevalence of 20.7% for a clinical diagnosis of any AD in pregnancy or postpartum (Fawcett *et al.* 2019), which is 2.5 times higher than Dennis et al.'s (2017) analysis, which the authors suggest is likely due to the greater number of prevalence estimates included in their systematic review in comparison to older studies.

2.6.3. Perinatal Comorbid Anxiety and Depression (CAD): Symptomatology and Prevalence

Anxiety and depression are two distinct MHPs; however they may also co-occur across the life span (Moses & Barlow 2006), and in the perinatal period (Figueiredo & Conde 2011, Farr *et al.* 2014). Research indicates high rates of comorbid anxiety and depression (CAD), for example a Dutch cohort study of 1783 psychiatric patients, found that 67% of individuals with a depressive disorder also presented with an AD, and 63% of individuals with an AD also presented with a depressive disorder. Additionally, anxiety symptoms preceded depression for 57% of those with CAD (Lamers *et al.* 2011). Outcomes appear worse for CAD than experiencing anxiety or depression alone (Lamers *et al.* 2011), with individuals reporting longer and more severe periods of depression, increased psychosocial impairment, and less frequent recovery (Pollack 2005). Additionally, CAD is associated with poorer responses to treatment (Coplan *et al.* 2015, Ramakrishna *et al.* 2019).

Though there has been less research conducted among perinatal women, research indicates concerning prevalence. For example, a recent meta-analysis found self-reports of CAD symptoms of 9.5% in pregnancy and 8.2% postpartum (Falah-Hassani *et al.* 2017). The authors also found antenatal prevalence of 9.3% for a clinical diagnosis of any AD and depression, and 1.7% for a clinical diagnosis of GAD and depression. In the postpartum period, a prevalence of 4.2% was found for a clinical diagnosis of CAD (Falah-Hassani *et al.* 2017). However, few of the studies included in the meta-analysis were conducted in LMIC; typically, sociocultural disadvantage results in higher prevalence and more challenges in the experience of perinatal MHPs (Lasater *et al.* 2017). Recent investigations demonstrate that this is also the case for CAD; Premji et al. (2020) found that among women in Pakistan, a LMIC, prevalence for CAD at any point in pregnancy was 13.5% (Premji *et al.* 2020), while González-Mesa et al. (2020) compared antenatal CAD between pregnant women in Spain (HIC) and Turkey (LMIC) and found a significantly higher prevalence among Turkish women (47.6%) in comparison to Spanish women (9.5%) (González-Mesa *et al.* 2020).

2.6.4 Perinatal stress: Symptomatology and Prevalence

Lovibond and Lovibond (1995) consider stress to be a negative emotional state distinct from anxiety and depression, which entails persistent, non-specific tension and arousal coupled with a low threshold for irritability and frustration (Lovibond & Lovibond 1995, Lovibond 1995). Stress may also be defined as an adaptive or maladaptive response to an internal or external stressor. Prolonged maladaptive responses may result in dysfunction and psychiatric disorder (Lehti 2016). Although there is a considerable body of research investigating antenatal or prenatal stress and associations with unfavourable birth outcomes (Dunkel Schetter & Tanner 2012), such as preterm birth (PTB) and low birth weight (LBW) (Dunkel Schetter & Lobel 2012, Bussieres *et al.* 2015), extracting prevalence of perinatal stress from the literature is a challenge. Stress is frequently subsumed under anxiety and reported as 'distress' (Bryson *et al.* 2021), a term which has also been used to define subclinical depressive symptoms (Ogbo *et al.* 2019) within perinatal research. Woods et al (2010) found that 78% of women reported low-to-moderate psychosocial stress (PSS) while 6% reported high PSS (Woods *et al.* 2010). Recent Australian-based research reports prevalence of stress among women exposed to adversity at 18.9% and 15% in pregnancy and the first year postpartum, respectively (Bryson *et al.* 2021).

2.6.5 Risk and protective factors for perinatal mental health

A risk factor may be understood as a variable which precedes a disorder/health problem and represents an increased probability of a disorder occurring. Protective factors may be considered those which make an appreciable difference to the adverse influence of risk factors, and mediate or ameliorate against maladaptive outcomes (Mrazek & Haggerty 1994). The medicalised model of pregnancy and birth in most Western countries (Johanson *et al.* 2002, Espinosa *et al.* 2022) is associated with increased focus on physiological processes and risk more so than identifying supportive or protective factors that may facilitate well-being. However, there is also the argument that knowledge of risk is important to establishing effective screening assessment to enable early detection, timely referral and treatment, and antenatal and postpartum management planning (Paschetta *et al.* 2014).

Prior MHPs are consistently recognised in the literature as a risk factor for PMHPs. Having a mother or sister who experienced (family history) psychosis or depression postpartum, experiencing domestic violence, a past history of abuse, recent adverse life events, low socioeconomic status, poor partner relationship, and inadequate social support (Fisher *et al.* 2012, Paschetta *et al.* 2014, van der Waerden *et al.* 2015, Gartland *et al.* 2019) are repeatedly reported to be risks for PMHPs. The presence of one risk factor increases the risk for others to co-occur, which increases the risk for poor maternal and infant outcomes, and adds complexity to treatment and support needs (Johnson *et al.* 2012). Additionally, risks are noted to have cumulative implications for health behaviours, timely diagnosis, use of health services and equitable access to services (Chartier *et al.* 2010, Ye *et al.* 2012, Mersky *et al.* 2013).

Less is known of protective factors for perinatal mental health; however research implicates the roles of some internal factors, such as optimism (Grote & Bledsoe 2007), self-esteem (Leigh & Milgrom 2008), trait resilience (Sexton *et al.* 2015) and spirituality (Cheadle & Schetter 2018). External protective factors include dependable social support (Bartlett & Easterbrooks 2015) from family (Bublitz *et al.* 2014) and a partner (Guyon-harris *et al.* 2017).

Social support takes a focus in protective factor research, as support appears to have a robust effect even where risks co-exist. For example, Razurel and colleagues (2017) found that though women reported high levels of perinatal stress they experienced less depression and anxiety symptoms if they received good support from a partner. The authors also found that women who had support from their own mothers experienced a greater sense of parental self-efficacy than those who did not. Moreover, receiving satisfactory emotional support from HCPs was associated with experiencing less stress during the postpartum period (Razurel *et al.* 2017). This illustrates that social support from different and multiple people may have different and multiple effects. Another example comes from Badr et al's (2018) investigation of the cultural universality of impaired mother-infant bonding due to PPD. The authors found that in a population where extensive social support in the perinatal period is the cultural norm, social support acts as a protective factor against the effect of PPD on mother-infant bonding, thus protecting maternal and child outcomes (Badr *et al.* 2018).

Research finds that appraisal or comparison support (encouragement and advice from those who have experienced similar situations) are key in facilitating open discussion for first-time mothers and provide an opportunity for women to feel heard and validated in their experiences (De Sousa Machado *et al.* 2020).

Qualitative research exploring the factors that women identify as being protective or promotive of maternal well-being found that women value and are supported by respectful, family-focused care from an attentive HCP in the immediate postpartum period. Women report that access to professional postpartum supports and services in the community provides emotional and information support that acts to allay fears and anxieties in the motherhood transition (Hannon *et al.* 2022b).

2.7 Impact of perinatal mental health problems

PMHPs have a range of consequences for women's relationships, their physical and mental health, and for the physical, social and cognitive development of their children (Slomian *et al.* 2019). Women with depressive symptoms report more relationship problems (Lilja *et al.* 2012) and sexual health issues (Khajehei *et al.* 2015). Emotional and mental distress is associated with physical health implications, for example depressive symptoms are associated with greater weight retention postpartum (Biesmans *et al.* 2013), and perinatal stress and anxiety are associated increased alcohol consumption (Westerneng *et al.* 2017) and increased smoking and decreased exercise (Rodriguez *et al.* 2000). Women report that stress and anxiety decrease their engagement in health-promoting behaviours, which induces additional stress (Chang *et al.* 2015, Copeland & Harbaugh 2019). Likewise, experiencing physical health issues has implications for women's emotional and mental well-being; for instance, women identify painful physical health issues as the trigger for their depression and low mood (Shepherd 2005, Wuytack *et al.* 2015). Experiencing one form of mental distress increases the likelihood of others occurring. Depression in pregnancy predicts PPD (Koutra *et al.* 2013). Postpartum stress and anxiety increases a woman's risk for developing depression (Norhayati *et al.* 2015). Depressive symptoms in the early postpartum are associated with elevated anxiety even 3.5 years after birth (Vliegen *et al.* 2013), and with mothers' decreased sense of competence in their maternal role (Ngai & Chan 2011). Women with PPD report lower self-esteem than mothers without PPD (Wang *et al.* 2005) and perinatal stress is linked to depressive and anxiety symptoms and reduced sense of self-efficacy (Razurel *et al.* 2017).

There is an extensive body of literature concerning the influence of PMHPs on birth and child development outcomes. Foetal exposure to suicide attempts increases risks for arrested cognitive development and congenital abnormalities (Gidai *et al.* 2010, Petik *et al.* 2012). Data link perinatal depression, anxiety, CAD, and stress to increased risk of preeclampsia, miscarriage, PTB and LBW (Alder *et al.* 2007, Field *et al.* 2010, Grote *et al.* 2010, Gress-Smith *et al.* 2012, Hu *et al.* 2015a, Premji 2015, Fairbrother *et al.* 2016, Dowse *et al.* 2020). Anxiety during pregnancy has been linked to a range of adverse birth outcomes such as PTB, LBW, prolonged labour and increased caesarean section births (Catov *et al.* 2010, Hernández-Martínez *et al.* 2011, Rauchfuss & Maier 2011). PMHPs have been linked to disruption of the mother-infant bond (O'Higgins *et al.* 2013, Dubber *et al.* 2015) which is associated with negative emotional, social and cognitive outcomes for children (Abdollahi *et al.* 2016, Kerstis *et al.* 2016). Maternal depression has long term, negative associations extending beyond the perinatal period and early childhood (Weissman 2020) and negative effects on school performance, physical health, and increased depressive and anxiety symptoms, substance abuse and suicidal behaviours have been reported in pre-adolescent, adolescent and adult offspring (Tronick & Reck 2009, Stein *et al.* 2014, Shen *et al.* 2016, Goodman & Garber 2017, Ranning *et al.* 2020, Rogers *et al.* 2020).

It is important to bear in mind that findings are not uniform across studies; for example Slomain et al's (2019) systematic review found that, in relation to child cognitive outcomes, 11 studies illustrated significant negative association between PPD and child cognitive development (Slomian *et al.* 2019). However, three studies found no significant correlation, with one indicating that quality of the home environment may be a better indicator of cognitive development (Piteo *et al.* 2012). Additionally, Rees et al's (2019) systematic review of perinatal anxiety and children's emotional problems found only small adverse effects and, importantly, authors also identified that methodological issues within the included studies made it difficult to establish this effect as a definitive association (Rees *et al.* 2019).

2.7.1 A note on maternal mental health and child outcomes

Though there are nuances and methodological concerns to be weighed when considering the evidence of the impact of PMHPs, there is ample data to demonstrate the negative outcomes of PMHPs not only for children, but also for women themselves. The emotional, social, developmental and economic implications of PMHPs have led researchers to reasonably define PMHPs as a significant public health concern and repeatedly call for meaningful investment to improve treatment access, and develop preventative interventions. The following discussion is not a dispute of the need for such research; rather it is an ethical consideration as to the purposes and dissemination of research linking maternal mental distress to adverse child outcomes. This discussion centres on cultures of blaming mothers, and researchers' responsibilities.

Research concerning parental mental health and associations to child outcomes has concentrated on mothers' more so than on fathers' (Gutierrez-Galve *et al.* 2015, Sweeney & MacBeth 2016). Even though research demonstrates that paternal depression also negatively impacts father-infant bonding (Wells & Jeon 2023), and that paternal MHPs are associated with behavioural and emotional problems in children at similar rates to mothers' (Ramchandani & Psychogiou 2009). Additionally, these effects persist through early childhood (Ramchandani *et al.* 2005, Ramchandani *et al.* 2008b), and remain when controlling for maternal depression (Ramchandani *et al.* 2008a).

Women as mothers are the recipients of scrutiny, blame and liability for the behaviours and health of their children in a way that fathers are not (Jackson & Mannix 2004, Soubry 2018). This is not an argument to shift focus to father-blaming, but a call to recognise the real-world implications for mothers (Azzopardi 2022) and their children (Reardon *et al.* 2017). Researchers should consider the role of this disproportionate research focus on sequela of mothers' distress on child outcomes in the larger historical and cultural context of 'mother blaming' (Sommerfeld 1989). Sharp et al. (2018) argue that the research fixation reflects '*implicit and deeply-held assumptions'* (p.1) about the primacy of the maternal influence to the neglect of other factors, and works to reinforce rather than test assumptions (Sharp *et al.* 2018). Academics should also keep in mind that research linking mothers to child health has a history of hyperbolic dissemination in mainstream media, which typically ignore nuance, confounding factors, external influences and research limitations (Richardson *et al.* 2014, Winett *et al.* 2016).

Additionally, much of the research indicates correlation rather than causal evidence, which should be a cause for concern as research informs practice and policy (Sharp *et al.* 2018). Myopic research fails to produce comprehensive knowledge and risks ineffective policy and practice, and ill-informed theory. Research repeatedly shows that social environment and the resources that are, or are not, available to mothers and children have determining and lasting effects on health (Barker 2007, Fisher & Baum 2010). Therefore, researchers have a responsibility to consider and communicate the important role of the social and ecological milieu, *in which both mother and child are situated*, in the conception and dissemination of research (Winett *et al.* 2016).

2.8 Perinatal mental health in an Irish context

Published data concerning perinatal and maternal mental health in the Republic of Ireland is sparse and found in disparate sources. There are no national PNMH data collection strategies or repositories from which to build an understanding of prevalence or progression of women's MHPs, from pregnancy through motherhood and beyond, or provide insight as to the contextual, social, demographic or economic factors that may influence prevalence and progression (Department of Health 2016).

2.8.1 Perinatal mental health prevalence and research in Ireland

A recent scoping review by Huschke et al. (2020) of PNMH research in Ireland demonstrates extreme variability in prevalence reported by individual studies. For example, highest and lowest reported rates for depression, anxiety and stress in the antenatal and postpartum are presented in Table 2.1.

Table 2.1 Lowest and highest reported figures in Irish perinatal mental health data (Huschke et al. 2020).

		Lowest figures reported	***Highest figures reported***
Depression	*Antenatal*	**1%** (McAuliffe *et al.* 2011)	**86%** (Carolan-Olah & Barry 2014)
	Postnatal	**11%** (Cruise *et al.* 2018)	**28.6%** (Cryan *et al.* 2001)
Anxiety	*Antenatal*	**27.3%** (Togher 2017)	**75%** (Carolan-Olah & Barry 2014)
	Postnatal	*No data available*	*No data available*
Stress	*Antenatal*	**8%** (Bennett & Kearney 2018)	**75%** (Carolan-Olah & Barry 2014)
	Postnatal	**8%** (Bennett & Kearney 2018)	*No data available.*
CAD	*Antenatal*	*No data available.*	*No data available.*
	Postnatal	*No data available.*	*No data available.*

Authors of the review note difficulty in establishing the basis for such variation and comment on wide margins even between studies employing the same tools and same cut-off scores. However, the authors posit that significant differences between studies' data collection points may have an influence and observe that only one used a sample representative of the population of interest (e.g. (Cruise *et al.* 2018)), a study which reported prevalence similar to international statistics (Huschke *et al.* 2020).

Overall, Irish based studies echo several risk factors for perinatal mental distress found in international literature; these include a previous history of MHPs and insufficient social, emotional and appraisal support. The review, published in 2020, also demonstrated that quantitative approaches dominate Irish-based perinatal research and show limited inclusion of minority voices such as Irish women of colour, Irish Traveller women, migrant women and non-English speakers. Finally, authors drew attention to the absence of participatory and qualitative research designs in Irish-based literature (Huschke *et al.* 2020).

2.8.2 Covid-19 and maternal mental health in Ireland

Since Huschke et al.'s (2020) publication, the context in which any psychosocial data may be collected is vastly different. At the end of 2019, the coronavirus disease or Covid-19, a respiratory illness cause by the SARS-CoV-2 virus, was quickly spreading around the world. By early 2020, the scale and fatal consequences of infection were undeniable and most countries implemented movement restrictions, stay-at-home orders, social distancing and facial masking in an attempt to slow infection spread. The social and economic impacts of the colloquially-termed 'lockdowns' were significant (Kithiia *et al.* 2020, Sandeep *et al.* 2020, McBride *et al.* 2021), but failure to act in a timely fashion also demonstrated regrettable consequences (Kompas *et al.* 2021). As the pandemic progressed, academic communities turned to documenting and understanding the mental health implications of the unprecedented global turmoil. International research quickly detailed increases in MHPs among general (Hyland *et al.* 2020, Clemente-Suárez *et al.* 2021) and maternal populations (Davenport *et al.* 2020, Racine *et al.* 2021, Tomfohr-Madsen *et al.* 2021, Otu & Yaya 2022, Wall & Dempsey 2022), and demonstrated the cumulative impact of social-economic disparity worsened by the pandemic (Bambra *et al.* 2020, Hou *et al.* 2020, Tai *et al.* 2021, Jaspal & Breakwell 2022, Tibber *et al.* 2023, Xiao *et al.* 2023).

Therefore, publications examining maternal health in Ireland since Huschke et al.'s (2020) review were conducted in the context of the pandemic, its impact and aftermath. Few studies specifically examined women's mental health; a key area of concern during the pandemic appeared to be women's experiences of pregnancy and birth, and their views on maternity care provision (Cullen *et al.* 2021, Panda *et al.* 2021, Flaherty *et al.* 2022, Keating *et al.* 2022, Meaney *et al.* 2022). For additional context, social health measures in Ireland were among the strictest and longest in place in Europe (Cullen 2021). Restrictions across maternity hospitals were especially challenging; partners were prohibited from attending antenatal appointments and the postpartum ward, and partners were only allowed to enter the hospital when women were in established labour (Panda *et al.* 2021). Maternity hospital restrictions were not applied uniformly, and there were reports of birthing partners being banned from attending childbirths entirely, which led to national protests (Matvienko-Sikar 2021, Pollak & O'Halloran 2021). Findings from the research are mixed; Cullen et al (2022) found that most women felt that their hospital was prepared, that restrictions were a good idea, and that they felt safe. They also found that while most women felt their partners should have been enabled to attend antenatal appointments (61.4%) and visit the postnatal ward (90.2%), women also enjoyed having more alone time with their baby during their hospital stay (83.7%) (Cullen *et al.* 2021). Similarly, qualitative research reported that women described being deprived of the support of their partner as leaving them feeling terrified (Keating *et al.* 2022), anxious, lonely and isolated (Panda *et al.* 2021). However, having less visitors in the postpartum period came as an unexpected benefit as it facilitated infant-bonding without being overwhelmed by visitors (Panda *et al.* 2021, Keating *et al.* 2022).

In terms of prevalence of MHPs among mothers in Ireland during the pandemic; online survey-based research with pregnant and breastfeeding women from five European countries found that women in the UK and Ireland had substantially higher scores for depressive, anxiety and stress symptoms than women from Norway, the Netherlands and Switzerland (Ceulemans *et al.* 2021). For example, overall prevalence for depressive symptoms was 14%; however, prevalence reported for women in Ireland was 26%. Similarly, women in Ireland reported (averaged) prevalence of 15.6% for anxiety, and 16.9% for stress (Ceulemans *et al.* 2021). These proportions are significantly higher than pre-Covid-19; however, the authors note that data were collected at a time when greater restrictions were in place in Ireland and the UK than in the rest of Europe. Thus, the differences may function as a cross-comparison of restriction effects rather than an overall indication of prevalence across high-income countries (Ceulemans *et al.* 2021). Online research with 761 pregnant women from Ireland only, found that 43% reported clinically significant depressive scores (≥13) measured by the Edinburgh Postnatal Depression Scale (EPDS), 20% for anxiety symptoms measured by the Generalised Anxiety Disorder-7 scale and 7.5% for scores in the high stress range, measured by the Perceived Stress Scale (Crowe & Sarma 2022). A cross-sectional survey conducted in one large maternity hospital in Ireland during the third pandemic wave also indicated high self-reported prevalence of depression (20.4%), anxiety (23.7%), and obsessive-compulsive symptoms (10.3%) (Hinds *et al.* 2021). Hinds et al (2021) suggest that the higher anxiety prevalence in their study may be a result of data collection timing, as the third wave was the most severe in Ireland in terms of infection spread.

Matvienko-Sikar et al. (2021) compared stress symptomatology among pregnant women in Ireland before and during the pandemic and found that while women reported higher stress during the pandemic (M=14.0) than before (M=12.8), the difference was not statistically significant. Authors also tracked stress levels at different phases of the pandemic and found higher stress during the third wave (M=14.1) than at the second (M=13.9) (Matvienko-Sikar *et al.* 2021). Meaney et al (2022) reported on social support data from women in the same study, and found that decreased social support was associated with increased mental health symptomatology scores (measured by the mental health component of the 12-item Short Form Survey (Ware *et al.* 1996)) (Meaney *et al.* 2022).

2.8.3 Irish Perinatal mental health policies and services

As previously stated, Ireland welcomed its first National Maternity Strategy (NMS) in 2016 (Department of Health 2016). The strategy acknowledged the gaps and failings of maternity care in Ireland that undermined public confidence in maternity services and disillusioned the staff tasked with delivering quality care. The strategy proposed a woman-centred partnership approach to a restructured maternity care framework consisting of three care pathways delineated by need and risk. In relation to PNMH however, the strategy provided only minimal detail, with recognition of the paucity of PNMH data availability in Ireland at that time, and mainly cited the need for increased or improvement in awareness, screening and support for MHPs.

The Specialist Perinatal Mental Health Model of Care for Ireland (Health Services Executive 2017) was launched one year later. The model outlined plans to develop a unified PNMH service throughout the Republic of Ireland, staffed by highly skilled interdisciplinary teams with the ability to detect and treat pregnant and postpartum women experiencing a range of mental health concerns. The plan involved the implementation of a 'hub and spoke' model of service provision (Figure 2.1), in which the six maternity units with the highest number of births per annum in Ireland are designated a 'hub' with a specialist multidisciplinary mental health team led by a perinatal psychiatrist.

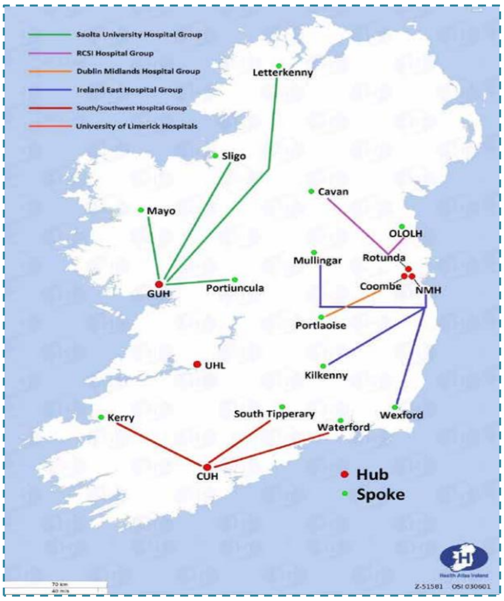


Figure 2.1: Hub and Spoke Specialist Perinatal Mental Health Network Model (Health Services Executive 2017)

The mental health staff within the remaining 13 maternity units, or ‘spokes’ are linked to the specialist mental health teams from a designated hub for advice, training, education and clinical opinions. Women may access Specialist Perinatal Mental Health Services (SPMHS) through referral from any HCP involved in their maternity care provision, such as a Midwife, Obstetrician or General Practitioner (GP). Although the SPMHS are tailored more towards attending to the needs of women identified as having moderate and serious mental illnesses, the model of care identified the need to provide support for women with milder MHPs as an important severity-prevention measure. Mental health midwives are the point of contact to the ‘hub’ hospitals from the ‘spoke’ hospitals. The specialist PMH team in the ‘hub’ hospitals are staffed by an interdisciplinary team of ten (Figure 2.2), including; a perinatal psychiatrist, a higher specialist training registrar, two clinical nurse specialists in mental health, two PNMH midwives, a mental health social worker, a psychologist, an occupational therapist and an administrator (Wrigley & O’Riordan 2022). Relevant HCPs may advise on and/or prescribe psychiatric medication in pregnancy and postpartum, and others may offer talk therapies or aid in liaising with community supports. If a woman requires mental health treatment and support beyond the timeframe for postpartum services offered by a particular unit then; i) if she is receiving treatment in the SPMHS, she may receive a referral through the SPMHS team to the adult community mental health services, or ii) if she has not been receiving treatment in the SPMHS, then she may contact her GP or PHN for a referral to the adult community mental health services. Currently, systems of referral within each hospital unit are being brought in line to achieve the standards outlined by the SPMHS model of care, this involves all units accepting referrals and offering mental health services up to twelve months postpartum (HSE 2017).

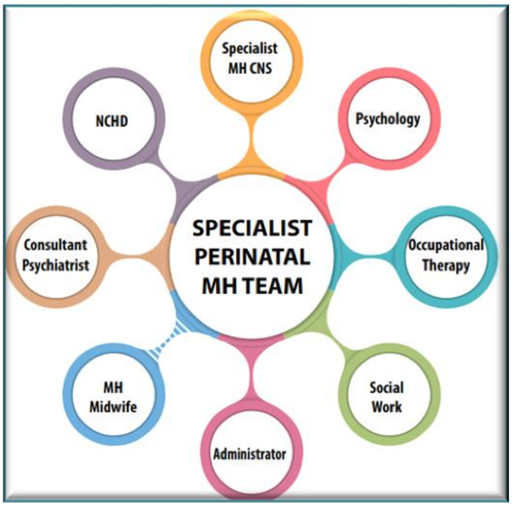


Figure 2.2: Multidisciplinary team at each specialist perinatal mental health hub (Health Services Executive 2017)

The National Maternity Strategy’s Revised Implementation Plan 2021-2026 (Department of Health 2021b), released in 2021, details the progress made to date in achieving the goals of the NMS (2016). The mental health objectives in this document (staff training, mother-infant bonding facilitation, bereavement support and traumatic birth support) are indicated as in, or ahead of, progress. In late 2022, the then National Clinical Lead of the SPMHS presented the progress made in the service's development. Three of the SPMHS hubs were fully staffed by a multi-disciplinary team, and the other three were 90% staffed and were recruiting for the final posts. The communication and referral channels between 'spokes' and 'hubs' were reported as well established and further funding had been secured. Additionally, an electronic training application was in development to provide PNMH specific information to frontline and SPMHS staff. Cascade training for community-based healthcare staff, the development of a bespoke IT database, and the establishment of Ireland's first national Mother and Baby Unit (MBU) (planned to be located on St. Vincent's Hospital Campus, Dublin) were detailed as progress pending (Wrigley & O'Riordan 2022).

2.9 Maternal mental health beyond the perinatal period: prevalence of mental health problems

There are several cohort studies following women's mental health patterns beyond the first postpartum year that offer a better understanding of chronological developments in women's life courses, and identify the role of psychosocial risk factors correlated to emergent patterns (Wajid *et al.* 2020). Although studies show that most women's patterns of depression and anxiety are stable-low or resolving within first year after birth (Bayrampour *et al.* 2016, Santos *et al.* 2017), longitudinal research extending beyond this time period show that the prevalence of clinical and sub-clinical symptom levels are maintained or emerge. For example, a review of longitudinal research found that up to 60% of women with a PPD diagnosis continued to meet the criteria for major depression at 15 months postpartum, as did 25% of women at 24 months, and between 39-58% at 3.5 years after birth (Vliegen *et al.* 2014). At three years' postpartum, 13% of women in United States research reported increasing or persistently high depression symptoms (Putnick *et al.* 2020).

Data from the Longitudinal Study of Australian Children found that 32% of first–time mothers in Australia presented with sub-clinical depression symptoms and 9% with persistently high symptoms at 4 years postpartum (Giallo *et al.* 2017). Analysis of data from the same cohort of women compared prevalence of depression symptoms at four years postpartum with prevalence in the perinatal period and found increases from 8-11% to 15% (Woolhouse *et al.* 2015). Additionally, when children in the cohort were between 6-7 years old, 16% of mothers were experiencing persistent high symptoms of depression (Giallo *et al.* 2014). Follow up at 10 years found that 66.8% of mothers showed minimal symptoms of depression and anxiety, while 33% showed transient or chronic symptoms (Wajid *et al.* 2020).

Longitudinal research measuring anxiety and stress is uncommon; Canadian-based research found that, at 3 years' postpartum, mothers reported persistently high anxiety (8%) and stress (13%) symptoms (Mughal *et al.* 2018). Additionally, women's mental health as they progress through motherhood is often examined alongside concurrent adversity or socio-economic deprivation. For example, a longitudinal study of 1507 first-time mothers in Australia found that 18.6% of the cohort had been subjected to intimate partner violence (IPV) in the year prior to their child turning 10 years old. Authors compared prevalence of symptoms of depression, anxiety and post-traumatic stress (PTS) between the women who reported IPV and women who never reported IPV. They found that depression, anxiety and PTS was double for women who reported IPV within the year prior to survey completion in comparison to women who never experienced IPV [*Subjected to IPV*: Depression: 38.9%, Anxiety: 28.1%, PTS: 41.9%. *Never subjected to IPV*: Depression: 14.2%, Anxiety: 8.5%, PTS: 11.3%] (Brown *et al.* 2020).

Bryson et al (2021) reported depression, anxiety and stress data from mothers experiencing adversity in Australia at 11 time points from pregnancy to 5 years postpartum. Authors describe finding '*striking patterns of persistent, high, mental health symptoms, beyond the first year postpartum*' (p. 9) and reported that the highest rates of depression, anxiety, and stress symptoms were found during pregnancy and 5 years postpartum (Bryson *et al.* 2021) (Table 2.2).

Table 2.2 Prevalence of maternal depression, anxiety, and stress symptoms from pregnancy to 5 years. Adapted from Bryson et al (2021)

Data Collection Point	**Depression**	**Anxiety**	**Stress**
Pregnancy collection	15.9%	41.5%	18.9%
1 Year collection	9.7%	22.2%	15%
2 Year collection	10.5%	22.2%	13.7%
3 Year collection	24.3%	32.1%	23.3%
4 Year collection	23.3%	28.7%	20.7%
5 Year collection	24.7%	32.6%	26.1%

2.9.1 Maternal mental health beyond the perinatal period: risk and responsibilities

Studies examining risk factors for poor maternal mental health outcomes beyond the perinatal period show that risks are similar. For example, a previous history of MHPs (psychopathology), experiencing mental health symptoms during pregnancy, experiencing sleep disturbance, lower education attainment, and young maternal age are risk factors for reporting high symptom severity (Baron *et al.* 2017, Santos *et al.* 2017). Kiviruusu et al (2020) found that low income, distressing life events, poor family atmosphere, insomnia, and experiencing pregnancy-related health problems were associated with increased risk of reporting moderate and high trajectories of depressive symptoms across 24 months postpartum (Kiviruusu *et al.* 2020). In United States-based research, Linares et al (2020) investigated the impact of some social determinants effecting maternal mental health up to 5 years after birth and found that younger maternal age, low social capital and having a child with special healthcare needs were associated with poorer mental health outcomes. Additionally, experiencing food insecurity and poor maternal physical health presented the greatest risk for poor maternal mental health (Linares *et al.* 2020). Exposure to one socioeconomic risk can have a chain effect in introducing additional risks. For example, poverty is associated with increased risk for mental illness which in turn has the potential to impact earning ability and therefore access to childcare and other resources, creating a bidirectional effect on mothers' employment and earning opportunities (O'Campo *et al.* 2016, Daniel *et al.* 2018).

Motherhood itself represents a risk to mental health as motherhood entails the introduction of new stressors and responsibilities that place substantial demands on women's time, and personal, social and financial resources (Marcil *et al.* 2020), which appear to have been worsened by the pandemic (Cummins & Brannon 2022). In heterosexual partnerships, mothers are disproportionately more responsible for the physical labour of household management, which negatively impacts their well-being (Ciciolla & Luthar 2019, Ruppanner *et al.* 2019). Additionally, mothers shoulder more of the invisible cognitive and emotional labour, or '*mental load*' of coordinating the care of family members and maintenance of a household (Dean *et al.* 2022, p. 13).

2.10 Conclusion

Despite the demands that women conform to a restrictive and oppressive socially idealised version of motherhood, mothers are not a homogenous group. Women of all ethnicities, cultures, religions, sexualities, mental health histories and socioeconomic backgrounds become mothers and bring an accumulation of their lived experiences, whether these experiences represent strengths or vulnerabilities, with them into motherhood. Becoming a mother is a life-altering transition, filled with rewards and challenges. While some degree of mental distress is normal as one navigates changes to identity, roles and responsibilities, national and international estimates demonstrate that substantial numbers of women experience high and prolonged symptoms of ill-health.

Chapter 3: Resilience in perinatal period and early motherhood

3.1 Introduction

The aim of this chapter is to explain the relevance of the concept and the study of resilience in the context of the perinatal period and early motherhood via an overview of the historical and conceptual development of resilience in the social sciences. To demonstrate the complexity of conceptualisations and research approaches to the concept, consideration is given to the challenges and implications of the differing definitions and operationalisations of resilience within mental health research. Additionally, a summary of some models of resilience is provided to furnish the reader with a deeper understanding of how definitions and operationalisations are situated within broader conceptual approaches. The chapter concludes with a return to resilience research in the context of the perinatal period and early motherhood.

3.2 Resilience: relevance to the perinatal period and early motherhood

The concept of resilience has been situated in mental health research as a salutogenic or strengths-based approach to mental health and well-being (Bonanno *et al.* 2015). It is considered complementary to the on-going philosophical and research shifts, which diverges from the historical focus on supposed deficits of people with mental ill-health (Windle 2011) by drawing attention to the processes, strengths and resources that may enable recovery or maintenance of mental health despite being faced with challenges and hardship (Luthar *et al.* 2000).

Resilience has been explored in a range of populations, circumstances and life stages (Shaikh & Kauppi 2010b). There is a strong rationale for examining resilience in association with stressors occurring during epochs of growth and change across the lifespan, such as foetal development, early childhood, adolescence, and senescence; as these periods pose a particular vulnerability to the harmful effects of stress exposure (Hodes & Epperson 2019). There is a wealth of literature documenting the rates, range and deleterious sequela of maternal MHPs (Howard & Khalifeh 2020), and yet, there is a noticeable scarcity of literature situating resilience in the context of pregnancy and motherhood. This is despite pregnancy and motherhood being recognised as major life events involving substantial hormonal activation and fluctuation (Hodes & Epperson 2019) and transformation to one's physical and psychological states, and social and personal identity (Jomeen & Martin 2008).

The shift in focus from mortality and morbidity to strengths and positive health is increasingly echoed in health policy and practice (Ayed *et al.* 2019). This is also true of maternal mental health research, policy and practice (Wadephul *et al.* 2020). Therefore, resilience may offer a timely and contemporary perspective on mental health in the context of the perinatal period and early motherhood, drawing new focus to the facilitators of well-being so that mothers may experience this life transition in positive health.

3.2.1 Resilience: Ethmology and transition to social sciences

The term resilience stems from the Latin word '*resilire*', which is composed of '*re*' meaning 'back' and '*salire*' meaning to 'leap', together the word means 'to leap back' (Manyena *et al.* 2011, Hu *et al.* 2015b). The linguistic usage of '*resilire*' varied through the centuries and between European languages, holding meanings such as '*to leap*', '*to shrink or contract*', '*to avoid*' '*to desist*' or '*return to a former position*' (Alexander 2013, p. 2708). Migration of the term into scientific lexicon appears to originate in the field of mechanical engineering, and was used to describe material properties. By the 20th Century the most common meaning was '*to bounce back*' (Alexander 2013, p. 2708).

Use of resilience as a concept within the social sciences began around the 1950s, and can be linked to the fields of anthropology and developmental psychology via Emmy Werner's Kauai Longitudinal Study (Werner & Smith 1982, Werner 1993) and Norman Garmezy's Project Competence (Garmezy 1974). Neither research project specifically set out to examine resilience; both aimed to follow the development of children exposed to biological and psychosocial risk factors with the assumption that risk and adversity in childhood precede pathology in adulthood. However, the Kauai study found that despite psychosocial risk exposure many children became healthy and functional adults. Similarly, Project Competence illustrated that a substantial group of children with mothers with schizophrenia developed positive adaptive patterns in adulthood even though they were at high risk for developing severe psychopathology (Bern 2021). This early work and ideas of 'resilient' and 'invulnerable' children prompted enthusiasm for exploring positive psychological and social outcomes in children exposed to a range of chronic and multiple psycho-social and economic risk factors (Shaikh & Kauppi 2010b).

3.2.2 Resilience: Early research focus and the 'role' of mothers in child resilience

Initial resilience research privileged the exploration of internal attributes that could facilitate positive or resilient outcomes (Herrman *et al.* 2011). However, as research developed, researchers began to consider the influence of external systems and the many dynamic factors emerging from contextual, social and cultural domains that influence an individual's adaptation to adversity (Luthar *et al.* 2000, Luthar & Zelazo 2003, Shaikh & Kauppi 2010b). The relationships children have with their parents, particularly mothers' parenting behaviours, mothers' mental health, mother-child bonding and relationship, and the risk or protection that these dynamics might offer children, took centre focus (Luthar 2015). Research exploring outcomes among children with mothers experiencing a psychiatric disorder (Rutter 1979), schizophrenia (Garmezy 1987), postpartum depression (Carro *et al.* 1993), mothers with little formal education, single mothers, and working mothers (Werner & Smith 1982) are some examples. In this way, mothers were a feature of interest in resilience research in the context of being a risk or protective factor having impact on child resilience outcomes; there was a notable lack of exploration of mothers' resilience.

The accumulation of child developmental resilience research strongly supports the conclusion that the relationship between a child and a parental figure is a foremost influential factor affecting children's resilience (Luthar 2015). However, the disproportionate focus on the mother role, particularly the positioning of maternal factors as risk to child outcomes, is (as previously highlighted) a matter of ethical concern, as it potentially perpetuates mother-blaming attitudes and neglects the broader social, economic, political and cultural environment in which both mother and child are situated (Sharp *et al.* 2018). With this in mind, some researchers call on an exploration of maternal mental health from a perspective of positive health and well-being. The rationale for this renewed consideration is based in the awareness that a well mother often underpins a well family, and, as such, effective interventions aimed at promoting resilience in children must take into account the whole family context and dynamic (Luthar 2015). Additionally, there is a need to prioritise mothers' resilience as the area of research interest, with the aim of comprehending women's life course mental health in a way that may be leveraged specifically for their benefit (Luthar 2015, Luthar & Ciciolla 2015).

3.3 Resilience: Challenges of definitions and operationalisations

Issues of definition, conceptualisation and operationalisation have posed a challenge to building consensus in resilience research. Resilience is the theme of concern for a host of discursive reviews, critiques and analyses (Tusaie & Dyer 2004, Vanderbilt-Adriance & Shaw 2008, Cabanyes Truffino 2010, Windle 2011, Fletcher & Sarkar 2013, Hu *et al.* 2015b, Aburn *et al.* 2016, Hornor 2017). Some publications explore the concept from a generalised perspective (Earvolino-Ramirez 2007), whereas others have developed upon the application and relevance of resilience to specific contexts or populations, for example, in adolescence (Olsson *et al.* 2003), mental health settings (Davydov *et al.* 2010), and among HIV/AIDs patients (Garcia-Dia *et al.* 2013). Evaluating resilience in different life stages or settings is a relevant endeavour as how resilience is measured in one context or population may not be suitable for another (Luthar *et al.* 2000), indeed trends in operationalisation differ by context (Birkeland et al. 2005). Additionally, knowledge of the impact that differences in stressor exposure, resource availability and accessibility, and socio-cultural norms and expectations have for individuals and their mental well-being, should subsequently influence the form that resilience promoting interventions take (Ungar 2019).

Several scholars have published commentary on the challenges present within resilience enquiry. For example; multiple definitions, inconsistent use of definitions, and the many ways in which resilience is operationalised have created a confusing landscape for researchers to navigate, which poses complications for synthesising and evaluating research in this area (Salisu & Hashim 2017, Ye *et al.* 2020, Den Hartigh & Hill 2022).

Though there are many variations in the wording of resilience definitions, they are often categorised as taking 'trait' or 'process' orientations (Aburn *et al.* 2016). Trait conceptualisations view resilience as a relatively stable characteristic specific to the individual (Ong *et al.* 2006) or a personal asset which enables one to endure through adversity (Herrman *et al.* 2011). Whereas process conceptualisations attempt to account for the interactive effect of factors existing at biological, psychological, social, cultural and contextual levels on the individual's experience (Herrman *et al.* 2011, Fletcher & Sarkar 2013). There is some commonality between the two conceptual positions. Both consider the experience of adversity as an antecedent to the phenomenon, and positive adaptation as the central component (Luthar *et al.* 2014), such that, resilience may be regarded as *'positive adaptation despite adversity'* (Luthar 2006, p. 739).

Establishing uniformity in operationalising this 'positive adaptation' remains elusive. Typically, authors' conceptual definition is associated with their chosen operationalisation of resilience; for example, trait orientations often employ a psychometric scale designed to measure a constellation of internal attributes conceived as composing the concept of resilience. Process orientations occasionally make use of measures of mental health, well-being, and/or functionality. For example, researchers may determine that no or low-levels of depression or anxiety following adversity are suitable outcomes which demonstrate resilience. Some specifically include indicators of well-being or positive function to demonstrate the adaptive component of resilience definitions, such that the absence of a negative effect and the presence of a positive outcome may be combined to indicate a resilient response (Vanderbilt-Adriance & Shaw 2008).

3.3.1 Trait conceptualisations and operationalisation

Trait perspectives conceptualise resilience as being dispositional (Bartone *et al.* 1989), a personality trait (Ong *et al.* 2006, Maltby *et al.* 2015), an internal strength, (Herrman *et al.* 2011) or an innate psychological mechanism (Werner & Smith 1979).

Trait-resilience is typically operationalised using specifically designed scales comprised of multiple cognitive and behavioural factors (Leys *et al.* 2020). Scales are created from the conceptual viewpoint of the researchers, and the number and type of dimensions that comprise each scale vary (Ahern *et al.* 2006). For example, in the development of the Connor-Davidson Resilience Scale (CD-RISC) the authors understand resilience as a constellation of '*personal qualities that enable one to thrive in the face of adversity'* (Connor & Davidson 2003, p. 1). Thus, these personal qualities are considered to be comprised of five factors; personal competence, stress tolerance, acceptance of change, control, and spiritual influences (Connor & Davidson 2003). Whereas the Resilience Scale for Adults (RSA) considers equanimity, perseverance, self-reliance, meaningfulness and existential aloneness as the five factors that compose resilience (Wagnild & Young 1993). Operationalising resilience through a single scale is an attractive choice for researchers; several validated resilience scales exist and offer a concise and easy-to-apply method of operationalising resilience (Ahern *et al.* 2006, Windle *et al.* 2011). Though different scales may share in the idea of resilience as a composition of internal traits, the factors believed to comprise that composition vary scale to scale, which limit researchers' ability to assess and compare findings between studies, even those conducted with comparable populations (Shaikh & Kauppi 2010b). There are a small number of scales which include dimensions beyond the individual level and include familial and social factors (Windle *et al.* 2011), both of which have been found to have an important influence on resilience (Levine 2003). However, the most commonly used scales are those developed from a trait-resilience perspective (Salisu & Hashim 2017).

A key argument in support of resilience as a trait is its correlation with other personality traits (Leys *et al.* 2020). The Big Five model (Costa & McCrae 1992) has been explored in trait-resilience research; studies have found trait resilience to be positively associated with openness to experience, conscientiousness, extraversion, and agreeableness (Campbell-Sills *et al.* 2006), and negatively associated with neuroticism (Singh & Yu 2010), which would indicate that resilience is, at least in part, influenced by personality (Oshio *et al.* 2018). Interestingly, resilience has also been negatively correlated to one of the so called 'dark triad' (Paulhus & Williams 2002) of personality traits, narcissism (Sękowski *et al.* 2021, Szabó *et al.* 2022). Additionally, trait-resilience is linked to mental health outcomes. A meta-analysis of trait-resilience research found that lower scores of trait resilience were correlated with indicators of mental ill-health such as depression and anxiety, while higher scores were correlated to positive indicators of mental health such as life satisfaction and positive affect (Hu *et al.* 2015b).

3.3.2 Process conceptualisations and operationalisation

As resilience research has evolved scholars continually look beyond individual level traits towards the influence and complex interaction of factors existing at biological, psychological, social, cultural and ecological levels. There is increasing support and investigation for understanding resilience as an on-going process of adaptation in contrast to the idea of resilience as exclusively a trait of personality (Windle 2011, Kalisch *et al.* 2017). Process conceptualisations conceive resilience as a dynamic process of adaptive responses to the risk factors and protective resources that ebb and wane as individuals traverse life and life events (Cicchetti 2010). Such that mental well-being and positive function is maintained or regained despite exposure to adversity and stressors (VanMeter & Cicchetti 2020), and includes a recognition that availability and accessibility of external resources vary by life stages and circumstances (Stainton *et al.* 2019).

Importantly, process perspectives involve identifying i) *protective factors;* where protective factors are considered the (context and time varying) personal or environmental assets available for an individual to utilise to benefit their well-being and/or functioning (Luthar *et al.* 2000) and ii) the *mechanisms* that underlie resilience processes; where mechanisms are the processes '*by which a protective factor exerts a positive effect on an individual's mental health or long-term functioning. Mechanisms may function by moderating a risk factor, or mediating the effect of the risk factor on a long-term outcome*' (Stainton *et al.* 2019, p. 726).

In this way, process perspectives consider the individual, their environment, and the interaction between the two in creating adaptive outcomes. For example, Fergus and Zimmerman (2005) differentiate between assets and resources; certain assets (static and non-static) may exist at the individual/ internal level such as coping strategies, while resources and protective factors may exist at the social-ecological/external level; the *resilience process* is the positive and adaptive exploitation of internal assets and external resources to produce a desirable outcome (Fergus & Zimmerman 2005).

Operationalisation of resilience from process perspectives can vary widely. Resilience is often operationalised as absence or decreased incidence of mental illness (Cosco *et al.* 2017). Certainly, the absence of psychopathology is a desirable, and, even exceptional, outcome following adversity and arguably justifiable as a standalone indicator. However, approaching resilience as the absence of mental illness or psychological distress replicates some concerns highlighted in discussions around mental illness and mental well-being (Vanderbilt-Adriance & Shaw 2008) (discussed in section 2.1). Additionally, conceiving resilience only in terms of illness absence disregards the positive adaptation definitional component, and salutogenic orientation, of the concept (Davydov *et al.* 2010). These concerns have led some researchers to include measures to demonstrate a positive mental health component such as quality of life (QoL) (Haase *et al.* 1999), or mental well-being (Luthar 2006), so that the absence of illness and the presence of well-being may be combined to indicate a resilient response.

Some seek to extend resilience research further and suggest a demonstration of positive function or adaption. The rationale to this inclusion is that people are unlikely to show homogenous positive function across domains. Measures of functionality may be tailored to the specific context in which resilience is under investigation to provide a context relevant reflection of resilience (Luthar 2006, Vanderbilt-Adriance & Shaw 2008). Often, domains of adaptation or function relate to certain societal expectations around success (Srivastava 2011). For example, academic performance among adolescent populations is a commonly used context specific gauge (Olsson *et al.* 2003), which reflects societal expectations of disadvantaged teenagers to maintain school attendance or grades at similar or higher levels as their more resourced peers. In these ways, illness absence, well-being presence, and the use of '*meaningful adaptive criteria*' (Masten 2021, p. 117) in relation to adaptive function may be used individually, or in combination, to operationalise resilience.

3.3.3 Outcome resilience

Orientations of resilience are mainly described as taking trait or process stances (Aburn *et al.* 2016). However, some suggest that perspectives can be organised by '*trait, process, or outcome*' (Fletcher & Sarkar 2013, p. 3). Outcome resilience is variably defined within the literature and used in reference to both trait and process orientations. For example, Hu et al. (2015b) assert that that the '*outcome-oriented approach regards resilience as a function or behavioral outcome that can conquer and help individuals to recover from adversity*' (Hu *et al.* 2015b, p. 18), however, this delineation speaks to the individual level.

Attempts to distinguish 'outcome' from 'process' conceptualisations of resilience can be challenging. For example, Chmitorz et al. (2018) define an outcome-oriented approach as '*health is maintained or regained despite significant stress or adversity*' (Chmitorz *et al.* 2018, p. 79). This view requires the experience of adversity, regards resilience as modifiable, and implicates the role of multiple 'resilience factors' which are resources at the biological, psychological, social and environmental levels that protect against the negative effects of stressors (Chmitorz *et al.* 2018). Overall, it is a description that echoes process delineations (e.g. (Luthar & Cicchetti 2000)).

Others directly tie outcome resilience to process orientations. For example, Linnemann and colleagues (2022) specifically describe outcome resilience as repeated observations over time of better, or lower than expected, symptom levels, and go on to state that '*if outcome resilience is observed repeatedly over* *longer periods, it can be considered a process that varies ("process resilience")'* (Linnemann *et al.* 2022, p. 796).

Zautra et al. (2008) offer a pragmatic methodological differentiation, positioning outcome resilience as the dependant variable of interest; it is the '*outcome of successful adaptation to adversity revealed by either sustainability, recovery or both'* (p. 45). Whereas 'resilient processes' (the independent variables) '*are those that have garnered empirical support as variables that increase the likelihood of those outcomes'* (p. 45), again, this distinction acknowledges that resilience involves a process and external influences (Zautra *et al.* 2008). Similarly, Masten's (2021) description helps the reader make sense of how 'outcome' and 'process' resilience fit together. Using the term 'manifested resilience' rather than 'outcome'; Masten states that '*The goal of identifying manifested resilience typically is to advance the search for processes that made it possible for the system to adapt. In other words, it is important to distinguish manifested resilience from the resilience processes that made it possible for the person or other system of interest to adapt to serious challenges*' (Masten 2021, p. 117).

Operationalised and conceptualised in this way, one can see how the 'outcomes' of resilience are integral to the 'process' of resilience. A metaphor may be useful here; the 'outcome' of resilience may be considered a 'destination' while the 'process' is the 'pathway' one takes to reach it. However, the 'outcomes' considered to reflect adaptive function may shift over the course of one's lifetime. Academic performance and ability to form secure social relationships in childhood and adolescence (Walsh *et al.* 2010), problem solving and social support-seeking in early adulthood (Leipold *et al.* 2019), and maintaining physical mobility and social connections in senescence (Fry & Keyes 2010) are some non-exclusive examples of potential 'outcomes' of resilience across the lifespan. Such that, once one outcome/destination has been reached, a new process/pathway may begin to the next. Additionally the benefits of having reached a previous outcome/destination, and the skills acquired on the process/pathway to achieving it, may act as facilitators to achieving the next outcome.

3.3.4 Implications of definitions and operationalisations

Although there is research to support trait and process conceptualisations of resilience (Leys *et al.* 2020), proponents of the process perspective argue that there are ethical implications and pragmatic limitations to subscribing to a purely trait conceptualisation. First, framing resilience as a quality and thus categorising individuals as either in possession of or lacking resilience implies that some individuals have a personal deficiency and are consequently responsible for their mental distress (Luthar *et al.* 2000). Furthermore, if resilience is indeed a static attribute of personality then attempts to progress a pragmatic application through development of interventions to promote resilience are futile.

The array of methods in which resilience is operationalised is an issue for both trait and process orientations which pose a challenge to synthesising resilience research as a whole. As previously mentioned, resilience scales are typically developed from a trait orientation, however the factors that each scale is composed of can be widely different which limits researchers' ability to evaluate findings between comparable studies (Shaikh & Kauppi 2010b). Additionally, there are few tools that include factors beyond the individual level to capture protective factors at familial, social or ecological levels (Windle *et al.* 2011). Among studies that operationalise resilience as a process and/or outcome there is also considerable variability; methodologies include examples of illness absence being equated to resilience (Cosco *et al.* 2017), integrated use of both ill-health and well-being scales (Cabanyes Truffino 2010), and use of scales relating to positive adaption or function (Vanderbilt-Adriance & Shaw 2008).

There are germane criticisms concerning the, at times, vague and varying definitions, conceptualisations and operationalisations of resilience within the literature. Although these differences add complexity to assessing, comparing and interpreting resilience literature, these challenges are not insurmountable. The multiplicity of approaches and research methodologies can be viewed as providing a wider foundation of knowledge, which has the potential to inform the different perspectives as well as other areas of research associated with resilience (Vanderbilt-Adriance & Shaw 2008). Additionally, evaluation by specific context may be a potential approach to establishing commonality within the diversity (Vanderbilt-Adriance & Shaw 2008).

3.3.5 Convergence of conceptualisations

Discussion concerning the varying definitions and operationalisation are necessary to build a view of the landscape, limitations and development of the concept within research. Although there is certainly polarity between trait and process definitions, it is less common for contemporary researchers and theories to take exclusively trait-based perspectives on resilience. Indeed, scholars note that conceptualisations of resilience are showing a trend of convergence, recognising that resilience involves '*complex interactions within and between individuals and socio-ecological determinants*' (Liu *et al.* 2020, p. 3).

Several scholars call on researchers to move beyond matters of definition and suggest that though there are many variations in wording, a consolidation of definitions reveals several core similarities (Herrman *et al.* 2011) and in fact '*converge around three main factors: first, the presence of an adversity or specific risk for the development of mental illness; second, the influence of protective factors that supersede this risk; and finally, a more positive outcome than might be expected in the context of such a risk*' (Stainton *et al.* 2019, p. 726). A number of definitions propositioned in the past twenty years attempt to encapsulate the comprehensiveness of the resilience concept and, in doing so, illustrate a trend towards a multimodal (resilience can be evidenced in different areas of functioning), dynamic-process conceptualisation (Stainton *et al.* 2019).

Importantly, the strengths-based philosophy that underpins these converging conceptualisations is intended to orientate the concept beyond simply being the opposite of risk or symptom absence (Bonanno 2004, Bonanno *et al.* 2015). Protective factors are similarly understood, not as the reverse of risk factors but as any personal, social or environmental resource that can be employed to the benefit of one's mental health and functioning (Stainton *et al.* 2019). Protective factors (sometimes called resilience factors) are not the absence of a risk factor but the presence of a resource that can be utilised or functions to counter the negative *effect* of a risk factor, risk and protection can *simultaneously exist*. For example, one may live in a community with high crime (risk factor) but have access to nature and green space, and opportunities for volunteerism (protective factors). Therefore the risk still exists but protective factors can counter or be used to mitigate the effect (Zautra *et al.* 2008). Additionally, there is a particular salience placed on the strength of and *accessibility* to protective factors which are continually subject to change by life stage and context (Masten 2021), individuals need to be able to access and use resources in an adaptive and contextually appropriate manner (Ungar & Theron 2020), again emphasising the dynamic nature of resilience processes.

Therefore, though definitions may vary, approaches to the concept appear to be converging and are increasingly sharing a focus on conceptualising resilience at multiple levels, identifying dynamic interactions across levels and domains, and working to implement resilience conceptualisations from individual to wider social and environmental levels to the benefit of population health (Denckla *et al.* 2020).

3.4 Resilience frameworks/ models

While resilience conceptualisations and approaches are converging towards providing comprehensive biopsychosocial and ecological accounts of resilience processes, a singular cohesive framework is yet to emerge. Resilience is researched in a range of fields, including psychiatry, clinical and developmental psychology, social work and disaster preparedness (Mittelmark 2021). Psychological resilience research can be situated within biomedical, biopsychosocial and social-ecological paradigms of mental health/ illness. There are a number of posited resilience models (Fletcher & Sarkar 2013), which take different forms in attempting to explain the operations and mechanisms of resilience (Masten 2021). Some models are developed with specific contexts in mind. For example, there are models to explain resilience for operating room nurses (Gillespie *et al.* 2007), sports performance (Fletcher & Sarkar 2012), preterm children (Poehlmann *et al.* 2014), law enforcement (Paton *et al.* 2008), and adolescences (Fergus & Zimmerman 2005) to name a few. Though a description of the many and varied resilience frameworks/models is beyond the scope of the current thesis, the following paragraphs aim to provide a flavour of some that have been developed within resilience research.

3.4.1 Intrapersonal models: A neurobiological framework example

Intrapersonal models or intrapersonal resilience can be described as the '*personality process that determines stress appraisal and its emotional outcomes, including the capacity to modulate effect'* (Cui & Xie 2022, p. 2484). Intrapersonal models do not necessarily exclude the role of external factors implicated in resilience, nor do they necessarily exclude resilience as a process, however they give primacy to personal attributes and processes occurring at the individual or microsystem level (Wu & Ou 2021).

One example is Kalisch et al's (2015) PASTOR (positive appraisal style theory of resilience) model. This neurobiological framework is grounded in cognitive neuroscience and draws on evidence from trans-diagnostic psychiatry, behavioural and cognitive neuroscience, and emotion research to explain resilience mechanisms. A simplified explanation of the PASTOR framework is that it is rooted in appraisal theory and hypothesises that multiple cognitive processes involved in producing a positive appraisal (how one evaluates and interprets potentially threatening stimuli or situations) underpin the resilience mechanism. Positive appraisal (as opposed to a negative appraisal) produces a positive emotional response. In some cases, a reappraisal is required, prompting a change in one's initial appraisal to produce a less negative emotion. Positive appraisal (or reappraisal) mediates the effects of resilience factors as it enables an individual to recognise that certain resources may be of benefit to them when confronted with adversity (Kalisch *et al.* 2015).

This framework offers some insight on the potential cognitive processes involved in individual assessment of negative stimuli and trends towards positive adaptation rather than decline; however it is critiqued for being simplistic (Troy 2015, Ungar 2015). Though the authors acknowledge empirical research implicating the role of social and environmental factors on resilience, they regard them as having '*distant influence*' (Kalisch *et al.* 2015, p. 22) and focus the model exclusively on mechanisms occurring within the individual without providing an account of the function of interpersonal and socio-environmental resources (Bennett & Windle 2015).

3.4.2 Psycho-social and social-ecological based models

Research increasingly leans towards understanding resilience as arising from interactive processes occurring between the individual and the risks and, importantly, the resources that exist in the social, cultural and ecological milieu in which they live (Masten 2011, Ungar 2021b). Psycho-social and social-ecological models are supported by research which illustrates that the social and ecological environment that a person inhabits (such as a person's socioeconomic status (Wister *et al.* 2016), home/familial dynamic (Kassis *et al.* 2013), and community/neighbourhood (Abramson *et al.* 2010) to name some relevant factors), account for equal or greater variance in positive outcomes than individual differences do (Ungar 2015).

There are numerous contributors to the discussion of biopsychosocial-ecological factors and processes involved in resilience, and models developed are complex. However, it is generally accepted that two kinds of models have steered the development of psychological resilience research; these are Person-focused (sometimes called pathway or trajectory) models and Variable-focused models (Masten 2021).

3.4.3.1 Person-focused models

Earliest person-focused models centred on the comparison of individual case studies to identify reoccurring patterns among children with similar adversity or risk (Sikorska 2014). Early approaches also utilised quantitative data to examine different patterns of adjustment (and maladjustment) to adverse circumstances over time, and in life-course data (Masten 2021). Recent approaches documenting trajectories have illustrated several potential pathways. Most notable in this area is the work of George Bonanno (2004), using growth mixture modelling (GMM) to distinguish four trajectories of adaptive function or symptomatology following adversity. These trajectories have been labelled Resilience: defined as stable psychological health following a potentially traumatic event (PTE). Recovery: an initial distress response to a PTE followed by a return to pre-trauma health and functioning. Chronic: high and prolonged levels of distress, and Delayed: moderate distress following a PTE which increases in severity over time (Bonanno 2004, Galatzer-Levy *et al.* 2018). Trajectories have been investigated alongside personal traits (Bonanno *et al.* 2005, Shi *et al.* 2021) and psychosocial resources (Hobfoll *et al.* 2009) to uncover the roles of internal and external factors on the development of different pathways.

3.4.3.2 Variable focused models: Compensatory, protective, and challenge models

Models that attempt to explain the psychosocial-ecological processes involved in how protective/ promotive /resilience factors function to intercede in pathways of risk leading to negative outcomes can be classed as compensatory, protective, or challenge models (Fergus & Zimmerman 2005, Ledesma 2014).

Compensatory models are described as those which view resilience factors as acting in opposition to risk effects; that is not to say the factor is the opposite of a risk factor, rather that the resilience factor acts counter to the *negative effect* that a risk factor may incur (Fleming & Ledogar 2008).

Protective models consider how certain protective factors (assets or resources) may i) act to neutralise (a protective-stabilizing model (Luthar *et al.* 2000)) or moderate (a protective-reactive model (Luthar *et al.* 2000)) the effects of risks in creating negative outcomes, or ii) improve the positive effect of another protective factor (protective-protective model (Zimmerman 2013)).

The *challenge or inoculation model* was developed within the context of adolescent resilience (Rutter 1987). This model considers that some risk may make a beneficial contribution to resilience. For example, exposure to risk can lead to learning and skill acquisition which will benefit youths when faced with reoccurring or similar adversity. The strength of the risk is important; too little a risk will not stimulate an adaptive response, while too great a risk will overwhelm and lead to a negative outcome, whereas moderate risk may provide an opportunity to practice skills or utilise resources (Fergus & Zimmerman 2005). Though this model was established in the context of adolescent development, research has demonstrated inoculating effects of risk exposure in adult populations (Palgi *et al.* 2015).

Protective-stabilizing, protective-reactive and protective-protective processes are not uniform across contexts, the effect that a protective factor might have in one circumstance may be negative in another. For example, among adolescents growing up in poverty, parental monitoring may moderate against adverse outcomes, such as peer substance use (Kumpfer & Alvarado 2003) and risk-taking behaviour (Griffin *et al.* 1999, DiClemente *et al.* 2001), whereas for middle-income and suburban adolescents parental monitoring may be perceived as overbearing and result in defiant behaviours (Fleming & Ledogar 2008). These differences also illustrate the necessity of examining resilience by context and why a singular resilience model is unlikely to account for resilience outcomes and processes at every life stage or context.

3.4.3 Thinking systemically about resilience

The course of resilience research through the decades demonstrates a progression towards situating psycho-social and social-ecological approaches *within a systemic* understanding of resilience.

The work of Ann Masten provides an illustration of this development. Her early research explored intrapersonal and interpersonal psychosocial resources in promoting children's' resilience (Masten *et al.* 1999), and progressed to include the protective and promotive processes occurring between biological, psychological, social, economic, and political levels (Masten & Monn 2015, Masten & Barnes 2018). Masten's current work takes a developmental systems perspective on resilience and is underpinned by principles from developmental systems theory (Masten & Cicchetti 2016). For example, these principles include the view that multiple, complex, interacting systems shape the development of resilience in living systems. She defines resilience as '*the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development*' (Masten 2014, p. 6). This 'system' referencing definition and theory speaks to interactions between multiple, nested and co-occurring systems, which enable adaption and continued positive function when faced with threat. Capacity to adapt is dependent on these interconnected systems and extends beyond the individual to interactions and connections with other systems. Resilience is dynamic because the systems involved are dynamic; resilience develops and changes as a person develops and changes. Adaptive capacity may be conceptualised at multiple levels and take multiple forms such as; return to equilibrium, reduced levels of function, death, or transformation (Masten 2021).

Similarly, Michael Ungar's social-ecological framework takes an explicitly systemic approach. Ungar defines resilience as '*both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways*' (Ungar 2011, p. 2). This view takes into consideration the interactive exchanges that occur across psychological, sociocultural, and institutional systems, and incorporates issues of social justice (Ungar 2021b). Key to Ungar's framework are the four principles of decentrality, complexity, atypicality and cultural relativity (Ungar 2011). For Ungar, research trends of focusing on changes (outcomes/dependant variable) or factors at the individual level is problematic as doing so places the locus of change and responsibility with the individual. Decentrality aims to redirect research attention to the role and influence of social and ecological resources which may oppress or assist well-being (Ungar 2011). In this way, family and community resources, healthcare and education availability, legal institutions etc. and the interaction between the individual and the environment takes the central focus. Such that resilience is '*understood as a process involving multiple systems, the responsibility for optimal functioning (whether psychological well-being or peace and security) under stress is shared across many different systems and at different scales*' (Ungar 2021a, p. 23).

The principle of complexity echoes Masten's assertions that resilience-related outcomes are context and life-stage dependant (Masten & Powell 2003). Ungar posits the need to move beyond associations between factors and outcomes and draws attention to the need to assess capacity, interaction and change; capacity of the individual to exploit opportunities, capacity of the environment to nurture well-being, interaction between the individual and environment, and the change that occurs *in both* as a result of that interaction (Ungar 2011). Atypicality focuses on the functionality of outcomes as opposed to determining that some outcomes are 'good' or 'bad'. In other words, there are '*functional but culturally non-normative substitute adaptations*' (Ungar 2011, p. 8) which may not necessarily be considered desirable, but which function to enable protective processes in adverse environments. For example, school leaving may be a protective response for Black students in racially oppressive school environments (Dei *et al.* 1997). Finally, cultural relativity refers to the cultural and temporally changing values, beliefs, and customs that inform what it means to be resilient (Ungar 2011). Local context and power differences are important; power expression in negotiation for resource access leads to trade-offs with other systems. For example, criminal behaviour may be valued in certain systems as a means of adaptation to social marginalization, but criminal behaviour may not be appreciated by social systems and viewed as maladaptive (Ungar 2021b).

3.5 Resilience theory in the context of pregnancy and motherhood

The literature is sparse in regards to descriptions of theoretical frameworks specific to the context of the perinatal period and early motherhood. A scoping review examining the uptake of resilience theory within the transition to parenthood (parenthood being defined as encompassing conception to one year postpartum and using both mothers' and fathers' data) literature, found that only six of the seventeen included studies explicitly used a resilience theory (Young *et al.* 2019). The authors noted that there are '*few explorations of parental resilience as a unique and individual construct. Instead, it has generally been subsumed under family resilience and examined in the context of unusual parenting trajectories such as illness, disability, abuse, domestic violence, poverty, separation and divorce*' (Young *et al.* 2019, p. 140). Indeed, some examples of theories employed by the included studies were Family resilience (Hawley & DeHaan 1996), and the Resilience Model of Family Stress, Adjustment and Adaptation (Mc Cubbin & Sussman 1983) but also a biopsychosocial model of pregnancy-anxiety (Dunkel Schetter 2011) and Bronfenbrenner's Social Ecological Model (Bronfenbrenner 1977). Additionally, the authors later noted that most studies included in the review operationalised resilience through low scores of distress measures (illness absence) or high scores of positive outcome measures (such as self-efficacy) (Young & Ayers 2021).

3.5.1 A multi-level theoretical approach to pregnancy anxiety and preterm birth

Dunkel Schetter's (2011) multi-level theoretical approach to pregnancy anxiety and preterm birth (PTB) takes a systemic view of chronic pregnancy-related stress. The model attempts to incorporate biological, behavioural, social and relational, and cultural factors and processes in explaining pathways from pregnancy-anxiety to PTB and chronic stress and depression to low birth weight (LBW) (Dunkel Schetter 2011). In this model, resilience resources are described mainly at the individual level; for example i) ego-related resources (self-efficacy, perceived control), ii) personality factors (optimism, conscientiousness), iii) constitutional resources (cognitive ability), iv) beliefs and values (including culturally-based values), but also, v) social constructs (social integration, connectedness) (Dunkel Schetter 2011). Additional factors include socioeconomic status in childhood and in adulthood, partner relationship, community and social support (Dunkel Schetter 2011) and the model draws on multiple examples from the literature to support the validity and mechanisms of each resilience resource. Although the model is thorough and identifies areas for future research to extend and strengthen its hypothesis, ultimately its focus stays with birth and child outcomes. Mothers' well-being is not the objective, maternal well-being is considered in relation to the mediating effect that reduced maternal stress has for assisting optimal birth outcomes.

3.5.2 The Preconception Stress and Resiliency Pathways Model

Similarly, Ramey and colleagues' (2015) Preconception Stress and Resiliency Pathways model is also concerned with pregnancy outcomes and child behavioural, health and neurodevelopmental outcomes, and takes a multi-level approach to stress and resilience with the aim *'to improve intergenerational health and reduce disparities'* (Ramey *et al.* 2015, p. 1). For example, individual level factors are concerned with maternal allostatic load (biological 'wear and tear' due to chronic and acute stress) and coping mechanisms, but also includes the role of fathers/partners, partner allostatic load, the parental relationship, and the home environment. Additionally, the resources that are available to parents within their the social, community and physical environments (employment opportunities, healthcare, housing, education) are integrated to inform how multiple factors combine and interact (framed as non-static and reciprocal in nature) to influence child outcomes. Interestingly, the model was derived from a community-based participatory research process in which inter-disciplinary researchers and clinicians collaborated with local community representatives to foster *'a sense of shared innovation and insight'* (Ramey *et al.* 2015, p. 5) in its development. Though the physical and mental health of mothers and partners/fathers are valued in the model, they are weighed by their contribution to the resiliency pathway of child outcomes, rather than as the focal outcome.

Though both Dunkel Schetter's (2011) and Ramey et al's (2015) models are situated in the space of pregnancy and the early postpartum; neither makes mothers' resilience the focus. Both consider the reduction of maternal mental distress as a desirable aim, but the primary rational for doing so is linked to optimising birth and child outcomes. To date, and to this author's knowledge, there are no models which account for resilience of mothers either in pregnancy and birth, or the perinatal period and early motherhood. Wrapping mothers' well-being and resilience within family resilience models (Young *et al.* 2019) or child models creates a challenge for researchers attempting to compile a meaningful synthesis on mothers' resilience when it is so integrated with associated constructs, and impedes the ability to extract the factors and processes specifically involved in mothers' resilience from the literature. Additionally, both models are constrained to pregnancy and the early postpartum and do not account for the on-going transition that motherhood entails.

3.5.3 Resilience factors in the context of pregnancy and motherhood

As addressed previously, the exploration of risk factors take greater prominence in PNMH research than protective or resilience factors do. There are a growing number of studies taking a salutogenic approach to PNMH and several have reported internal and external protective factors (see section 2.6.5) and while their findings could be argued as related to resilience, few explicitly position their objectives or results within the resilience concept or a resilience framework.

Descriptions of resilience enhancing factors at psycho-social levels can also be found in the transition to parenthood (involving both mothers and fathers) literature. Young et al (2021) created a thematic network from qualitative interview data exploring parents' recollections of resilience enhancing experiences in the first year of parenthood, and present two organising themes. 1) Personal factors which was further divided by i) personal outlooks and traits and ii) engagement with resources and supports, and 2) Support factors, consisting of relational or structural factors which was further divided by i) engagement style of the support provider (i.e. sensitivity and attunement of support provider to parent's needs) and ii) sources of support, such as family, partner, peer groups, healthcare providers, books and internet resources (Young *et al.* 2021).

The objective of Young et al's (2021) work is to identify resilience enhancing factors, not to identify resilience processes, and the authors present an excellent thematic framework of resilience factors in parenthood. The following is not a criticism of the authors' work, merely an observation that may have applicability to future investigation. Young et al (2021) note that they '*did not identify any particular differences between parents in their general accounts of resilience but there were persistent gender differences in parent's experiences*' (p. 367). Therefore, it may be inferred that though both genders may have similar outlooks on *what it means* to be resilient in parenthood, the *differences in their experiences* may be essential in understanding if, and how, *processes* of resilience may differ for mothers and fathers.

More specifically with regards to research with mothers, Atzl et al (2019) conducted a narrative systematic review of quantitative literature on protective and promotive factors that support maternal mental health and maternal-infant bonding, although this investigation was limited to women who were exposed to childhood adversity and included child outcomes, the criteria encompassed up to three years postpartum. The authors took a multilevel resilience approach and found that factors could be organised by three categories; 1) women's internal capabilities (self-esteem, trait resilience, reflective functioning), 2) external early resources (specifically, positive childhood experiences and positive relationships with caregivers in childhood despite or during adversity), and 3) external contemporaneous resources (frequency of, satisfaction with, and perceived social support were the most commonly explored current resources, less often studied were satisfaction with housing, school, work, and community resources) (Atzl *et al.* 2019).

3.5.4 Resilience beyond the perinatal period

Luthar et al (2015) state that '*motherhood is a decades-long developmental task, yet little is known about the factors that best help women maintain equanimity of spirit despite the myriad challenges inevitably encountered'* (Luthar & Ciciolla 2015, p. 1). There are few studies which purposefully set out to examine mother's resilience beyond the perinatal period. Luthar's work is notable in this endeavour as it is underscored by '*an unambiguous emphasis on ensuring the well-being of those primarily charged with raising the next generation: typically, mothers'* (Luthar 2015, p. 1).

Indices of support have especially strong protective or resilience effects for women's well-being in motherhood, for example unconditional acceptance, receiving comfort when needed, satisfaction with friendships and, importantly, authenticity in relationships, all had positive effects on mothers' depression, anxiety, stress, feelings of loneliness and emptiness, sense of fulfilment and life satisfaction. Additionally, close friendships offered more promotive effects than partner satisfaction (Luthar & Ciciolla 2015).

Luthar's work illustrating that receiving regular and emotionally meaningful support from others facing similar life challenges (Luthar & Ciciolla 2016, Luthar & Eisenberg 2017) informed the development of intervention programmes aimed at facilitating authentic and supportive relationships between mothers (Luthar *et al.* 2017, Luthar *et al.* 2019, Chesak *et al.* 2020).

3.6 Conclusion

The purpose of this chapter was to provide an account of the historical development of resilience research in the social sciences, and an overview of the key conceptual orientations and the models/ frameworks that have featured in, and guided, this field of research thus far. Additionally, the chapter aimed to present to the reader some theoretical approaches to resilience in the context of the perinatal period and early motherhood.

Chapter 4: Methodology

4.1 Introduction

The aim of chapter 4 is to describe the structure of this multistage mixed-methods project, and how each stage contributed to achieving the six research objectives. The chapter commences with an outline of the complementary aims and objectives of the three phases of the research, the methods used to achieve them, and the multiple points of integration between the qualitative and quantitative methodologies. The philosophical underpinnings that guided the methodological choices are explained, and the rationale for using a mixed-method design with combinations of sequential and convergent approaches is presented. Finally, ethical considerations are discussed.

4.1.1 Aim and objectives

The research aimed to identify the prevalence and change of first-time mothers' mental health symptoms in the first postpartum year, and mental health symptoms and well-being five years after first-time motherhood. Additionally, the research aimed to develop a deeper understanding of women's mental health and resilience, and women views on and experience of, mental health and resilience in the motherhood transition. As previously outlined, the research had six objectives:

Objective 1: to determine how resilience in the context of the perinatal period and early motherhood is currently conceptualised within research by conducting a principle-based concept analysis.

Objective 2: to explore the perspectives of women who are mothers on the current state of resilience research in the perinatal period and early motherhood, seek their opinions on the ways in which they believe research on resilience in this context should be advanced and, through PPI, operationalise women's feedback to inform the subsequent phases of the research.

Objective 3: to develop a detailed understanding of women's life-course experiences of mental health problems, (e.g., new onset, persisting ill-health, recovery, relapse) and how these experiences impact their mental well-being, careers, relationships and quality of life, through in-depth recorded qualitative interviews with a sub-sample of 23 women around five years after first-time motherhood.

Objective 4: to investigate the self-help and health-seeking behaviours of 23 women in order to gain insights into the motivations and barriers to the help-seeking process, the solutions that worked/did not work for whom and why, the factors that exacerbated or improved their mental health, and the factors that are associated with mental resilience or vulnerability during the perinatal period and at five years postpartum.

Objective 5: to determine prevalence and map trajectories of women's mental health problems before and during their first pregnancy, during the first perinatal year (at 3, 6, 9, 12 months postpartum) and at five years postpartum.

Objective 6: to identify the potential risk factors for mental health problems and the potential protective factors for mental resilience in the perinatal period and at five years postpartum (including mental health history, socio-demographic-economic, pregnancy and birth-related factors, quality of partner relationship, and psychosocial support).

4.2 Study design: multistage mixed-methods design

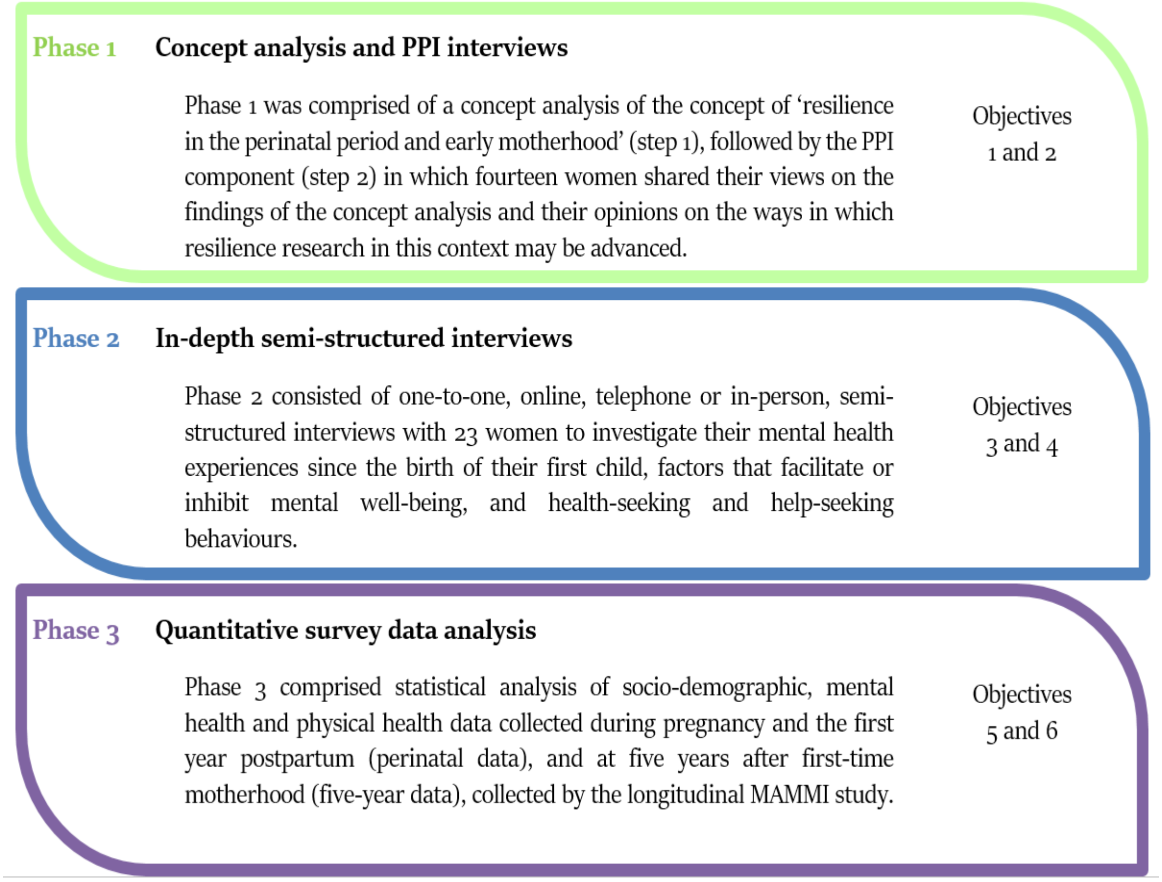
The study design is a multistage mixed-methods design. Mixed-methods research has been defined as a '*class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study*' (Johnson & Onwuegbuzie 2004, p. 17). Mixed-methods research is widely termed a third paradigm or third methodological movement (Tashakkori & Teddlie 2010) in that it holds a defined set of approaches and practices that make it distinct from other paradigms (Denscombe 2008). Denscombe (2008) consolidates these '*defining characteristics of the mixed methods approach*' (p. 272) as involving, i) quantitative and qualitative methods within the same project, ii) a research design where the sequencing of, and priority given to, the quantitative and qualitative components in terms of data collection and analysis are clearly stated, iii) a description of the connection and integration of qualitative and quantitative components, and iv) pragmatism as the philosophical underpinning (Denscombe 2008).

The following sections will endeavour to illustrate how these *defining characteristics* appear in the current research study to help contextualise the rationale for the current design. The methods used, the sequencing and priority, and the integration between qualitative and quantitative components will be described. A detailed description of the study design is provided in section 4.4.

4.2.1 Structure and sequencing

Typically, multistage mixed-methods research are composed of two or more stages and may involve a mix of sequential or convergent components (Nastasi *et al.* 2007, Fetters *et al.* 2013). This study used a multistage mixed-methods design combining explanatory-sequential and convergent approaches with a

PPI component. The structure consisted of integrating three phases of research; each phase was embedded within the MAMMI study (Figure 4.1).



Phase 1 **Concept analysis and PPI interviews**

Phase 1 was comprised of a concept analysis of the concept of 'resilience in the perinatal period and early motherhood' (step 1), followed by the PPI component (step 2) in which fourteen women shared their views on the findings of the concept analysis and their opinions on the ways in which resilience research in this context may be advanced.

Objectives 1 and 2

Phase 2 **In-depth semi-structured interviews**

Phase 2 consisted of one-to-one, online, telephone or in-person, semi-structured interviews with 23 women to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours.

Objectives 3 and 4

Phase 3 **Quantitative survey data analysis**

Phase 3 comprised statistical analysis of socio-demographic, mental health and physical health data collected during pregnancy and the first year postpartum (perinatal data), and at five years after first-time motherhood (five-year data), collected by the longitudinal MAMMI study.

Objectives 5 and 6

Figure 4.1: Three phases of the study design

4.2.2 Rationale for a multistage mixed-methods design

Mixed-methods research involves the intentional integration of both qualitative and quantitative data in the processes of collection, analysis and interpretation, with the aim of enabling the emergence of new knowledge which may otherwise not have been possible to acquire using a single method (Moseholm & Fetters 2017). A mixed-method design using combinations of sequential and convergent approaches was appropriate to the present study as the research objectives could be broadly arranged into three groups;

i) To identify the current state of, and women's views on, resilience research in a maternal context (Obj. 1 &2)

ii) To explore women's experiences of mental health and well-being in the perinatal period and at five years after first-time motherhood (Obj. 3 & 4).

iii) To identify the prevalence of common mental health issues, and associated risk or protective factors in the perinatal period and at five years after first-time motherhood (Obj. 5 & 6).

Each group of objectives required the gathering of different kinds of data. For example, the first required quantitative and qualitative data collection in the form of a concept analysis, followed by a PPI component using qualitative methods to establish women's views on the literature (Obj. 1 & 2). Similarly, a detailed exploration of the lived experiences of mental health and well-being (Obj. 3 & 4) were more appropriately met by qualitative methods, while questions around prevalence and risk or protective factors (Obj. 5 & 6) were best met using quantitative research, In this way, the objectives of the study necessitated the use and integration of quantitative and qualitative methodologies.

4.2.3 Defining the multistage mixed-methods design

Multistage mixed-method research is an advanced framework that may be employed in longitudinal studies. It consists of multiple stages and combinations of sequential or convergent approaches (Fetters *et al.* 2013). In explanatory-sequential designs quantitative research precedes and then informs qualitative research, while in exploratory-sequential designs qualitative research is conducted first and followed by quantitative research (Hafsa 2019). Convergent mixed-method designs are those in which the collection and analysis of the quantitative and qualitative data occur within similar timeframes, and findings from both are merged and presented together to offer a thorough conclusion to the research questions (Fetters *et al.* 2013, Maarouf 2019).

The exact description of a mixed-methods study is determined by i) the timeframe with which each component is carried out in relation to other components and ii) the ways in which components are integrated (Creswell 2013).

4.2.3.1 Timing of data collection

Timing in the current research project was partially dependant on the design of the longitudinal study that each phase was embedded in. Perinatal data collection was completed in 2017, and data collection for the five-year follow-up commenced at the end of 2017. The current project began in 2019, and data collection for the qualitative interviews occurred concurrent to data collection for the five-year follow-up (Figure 4.2).

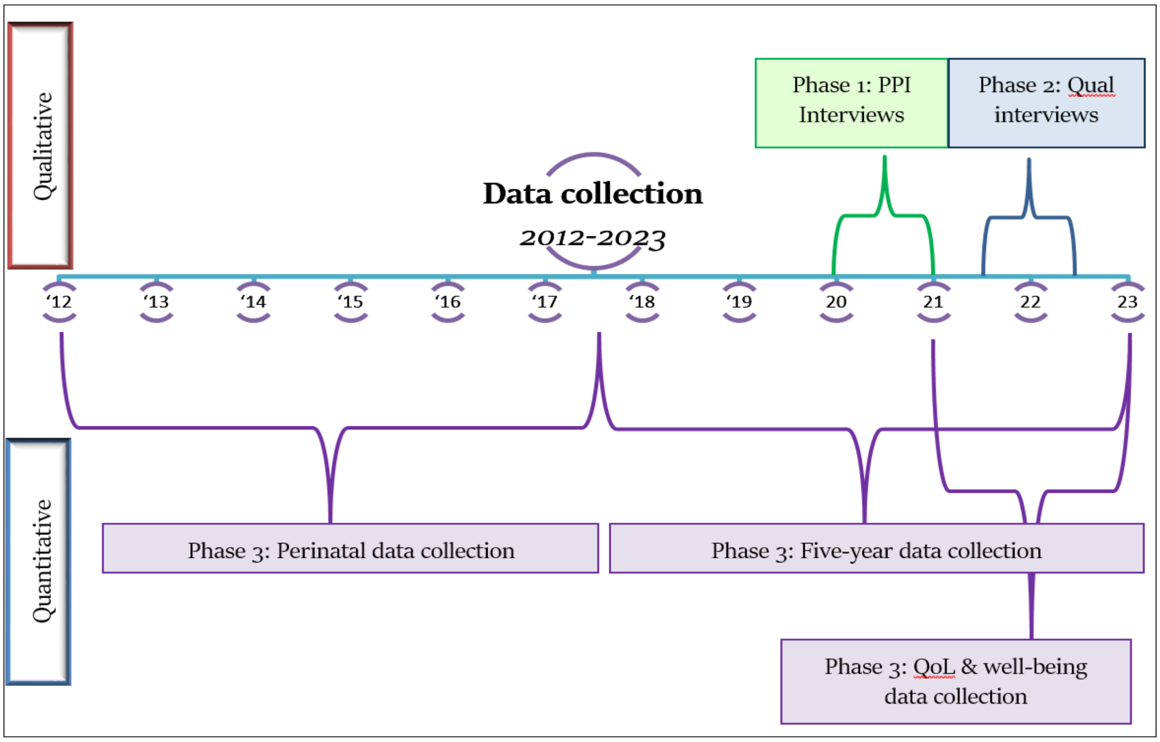


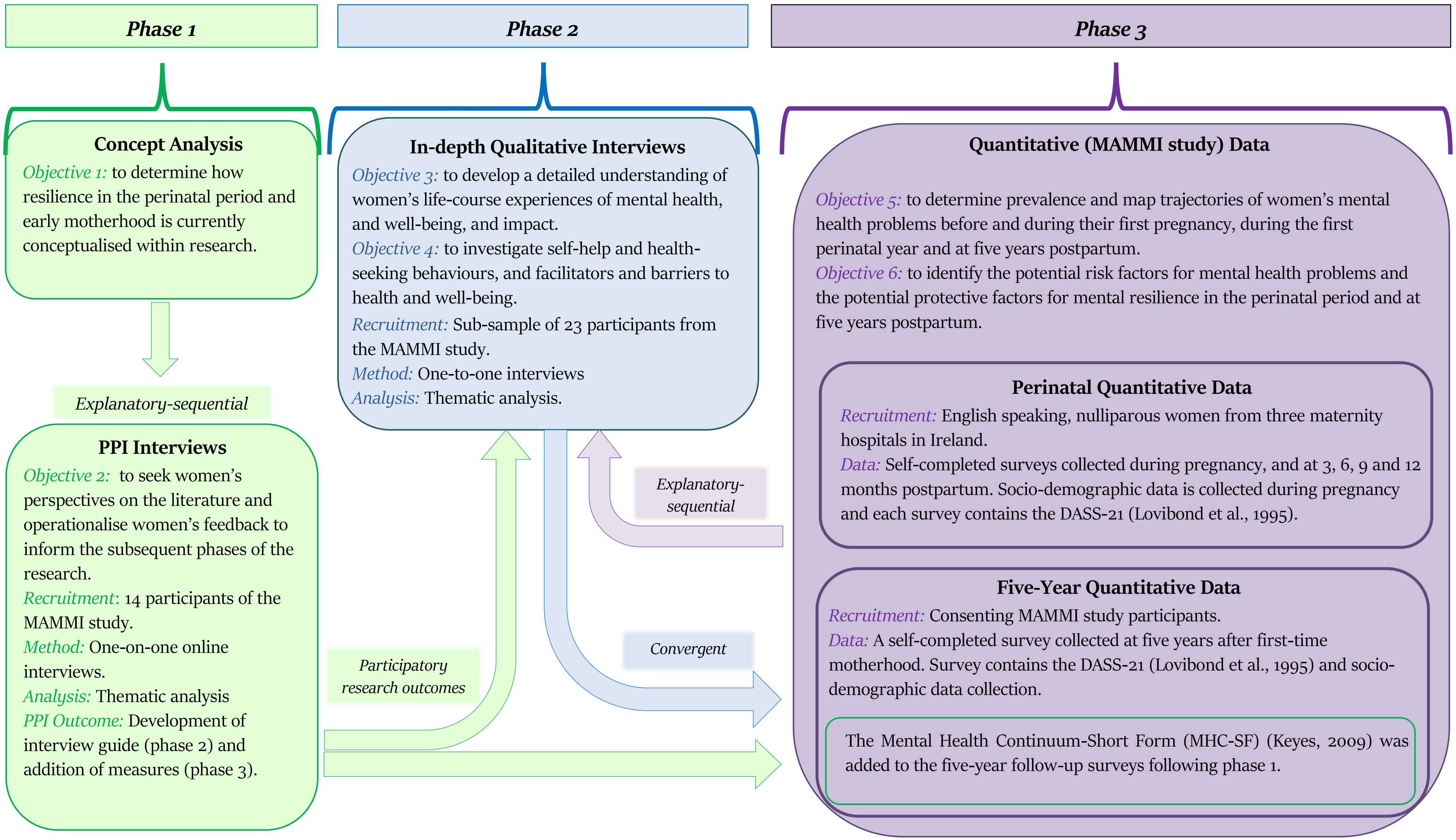
Figure 4.2: Timeframe of data collection

4.2.3.2 Integration of phases

Phase 1 consisted of two steps; the concept analysis informed the (qualitative) PPI step, making this phase *explanatory-sequential* in design. Data from the PPI interviews then informed the formulation of questions for the in-depth interviews in phase 2, and the addition of mental well-being and quality of life measures to the five-year data collection of phase 3. This demonstrated *public participation in research*.

Although phase 2 was sequential to phase 1, it did not fit the definition of either exploratory or explanatory design. However, phase 2 involved the collection and analysis of data within a similar timeframe as the five-year follow up step of phase 3, thus the integration of phase 2 to phase 3 can be described as a *convergent design*.

The in-depth interviews of phase 2 built on the perinatal data of phase 3 to provide greater detail on the risk and protective factors for mental health and well-being in the first postpartum year. As the perinatal data were collected and analysed before phase 2, the design between these phases is *explanatory-sequential* (Figure 4.3).



Concept Analysis

Objective 1: to determine how resilience in the perinatal period and early motherhood is currently conceptualised within research.

PPI Interviews

Objective 2: to seek women's perspectives on the literature and operationalise women's feedback to inform the subsequent phases of the research.
Recruitment: 14 participants of the MAMMI study.
Method: One-on-one online interviews.
Analysis: Thematic analysis
PPI Outcome: Development of interview guide (phase 2) and addition of measures (phase 3).

In-depth Qualitative Interviews

Objective 3: to develop a detailed understanding of women's life-course experiences of mental health, and well-being, and impact.
Objective 4: to investigate self-help and health-seeking behaviours, and facilitators and barriers to health and well-being.
Recruitment: Sub-sample of 23 participants from the MAMMI study.
Method: One-to-one interviews
Analysis: Thematic analysis.

Quantitative (MAMMI study) Data

Objective 5: to determine prevalence and map trajectories of women's mental health problems before and during their first pregnancy, during the first perinatal year and at five years postpartum.
Objective 6: to identify the potential risk factors for mental health problems and the potential protective factors for mental resilience in the perinatal period and at five years postpartum.

Perinatal Quantitative Data

Recruitment: English speaking, nulliparous women from three maternity hospitals in Ireland.
Data: Self-completed surveys collected during pregnancy, and at 3, 6, 9 and 12 months postpartum. Socio-demographic data is collected during pregnancy and each survey contains the DASS-21 (Lovibond et al., 1995).

Five-Year Quantitative Data

Recruitment: Consenting MAMMI study participants.
Data: A self-completed survey collected at five years after first-time motherhood. Survey contains the DASS-21 (Lovibond et al., 1995) and socio-demographic data collection.

The Mental Health Continuum-Short Form (MHC-SF) (Keyes, 2009) was added to the five-year follow-up surveys following phase 1.

Figure 4.3: Integration and structure of the multistage mixed-methods design

4.2.4 Integration in mixed-methods research

Integration in mixed-methods refers to '*the linking of qualitative and quantitative approaches and dimensions together to create a new whole or a more holistic understanding than achieved by either alone*' (Fetters & Molina-Azorin 2017, p. 293). Integration is a key feature of the framework; it is an intentional process to demonstrate coherence between the qualitative and quantitative methods used, and establishes transparency in the structure of the particular mixed-methods design (Creswell 2013, Fetters *et al.* 2013).

Integration can occur at the levels of philosophical underpinning, research design, methods and data collection, interpretation and reporting (Doyle *et al.* 2016). Mixed-methods researchers are called to illustrate the level at which integration is achieved in their design (Moseholm & Fetters 2017). Points of integration were planned at several stages of the current research process.

4.2.4.1 Integration of phase 1, phase 2 and phase 3

Integration of epistemological positions: The epistemological position of pragmatism underpins the current mixed-methods research design (Section 4.3). Pragmatism emphasises the '*shared meaning and joint action'* (Moseholm & Fetters 2017, p. 2) through the complementary strengths of qualitative and qualitative approaches.

Sampling and data collection: The sample for each phase involved participants of the MAMMI study. Additionally, the data collected for phase 1 and 2 were intentionally related to the concept of resilience, to achieve integration through the matching of constructs between methods (Fetters & Molina-Azorin 2017).

Literature: The concept analysis and reviewed literature was inclusive of qualitative, quantitative and mixed-methods research, which illustrated the strengths of quantitative research in identifying trends, risk and protective factors for mental health and resilience, and qualitative research in providing contextual variability.

Study Objectives: The qualitative objectives (Obj. 3 & 4, phase 2) and quantitative objectives (Obj. 5 & 6, phase 3) were intentionally complementary. For example, objective 5 aimed to determine prevalence and trajectories using quantitative data, while objective 3 aimed to delve into the lived experiences of those trajectories. Objective 6 aimed to identify risk and protective factors in quantitative data, and objective 4 used the qualitative interviews to investigate the facilitators or inhibitors of maternal well-being.

Interpretation: Both the quantitative and qualitative findings are presented in an integrated discussion.

4.2.4.2 Integration of Patient and Public Involvement

Descriptions of participants' roles in research receive several terms in the literature including Lay Involvement, Citizen Science, Community Science, and Patient and Public Involvement (PPI). PPI is characterised by the '*active involvement of patients, service users, carers or family members in activities done with or by, rather than to them*' (Baines & Regan de Bere 2018, p. 328). The inclusion of (PPI) is becoming a preferred feature of health research (Health Research Board 2022) and frequently, a requisite from research funding bodies (NIHR 2022). PPI is not a methodology; it may be integrated into different research designs, rather it is an approach to research where the foundational idea is that patients or members of the public will hold active and influencing roles within the research. In short, the aim is to ensure that research is carried out *with* or *by* the public, rather than *on, about* or *for* them (INVOLVE 2015).

A PPI contributor may be involved at multiple stages of the research cycle, and while continuous, active involvement throughout the research is ideal, it is not always feasible. Time and financial constraints, for both researchers and contributors, are notable barriers. Additionally, approaches to PPI are broad and the implementation of PPI in one context may not work in another (Moss *et al.* 2017).

There are practical benefits (Value) and ethical considerations (Values) to motivate the inclusion of PPI into research. For example, PPI leads to research aims that are relevant to the lived experiences of the population of interest, better recruitment and retention, a wider dissemination of research findings, and greater impact on policy and service development (Brett *et al.* 2014a, Brett *et al.* 2014b, Absolom *et al.* 2015, Nijjar *et al.* 2017). The principles that underlie PPI include respect, support, transparency, responsiveness, fairness of opportunity and accountability (INVOLVE 2015), which are linked to democratic principles (Ives *et al.* 2013, Russell *et al.* 2020) emancipatory perspectives (Gibson *et al.* 2012), and epistemic injustice (Fricker 2007).

The integration of PPI in the current project may be considered in terms of the value it brings to research and the values of the researcher, which motivated its inclusion. The methods used to incorporation PPI within the research are outlined in section 4.4.1, the implications that the PPI had for the research development are described in section 5.5 (Value) and further discussion of the ethical considerations that underpin PPI inclusion within the research are provided in section 4.5.4 (Values).

4.2.5 Assessing quality in mixed-methods research

Assessing quality in mixed-methods research is a subject of on-going consideration among mixed-methods researchers. Though there are criteria for assessing quality among qualitative and quantitative methods individually, the challenge for mixed-methods research lies in reconciling the inferences made by the inductive and deductive approaches and establishing legitimacy and credibility of the knowledge developed from the use of methods positioned as philosophically opposed (Plano Clark & Ivankova 2016). Assessing quality is relevant to establishing transparency and formally setting research standards with the aim of contributing to, and strengthening, the maturation of mixed-methods research as a field (Fàbregues & Molina-Azorin 2017).

Bryman (2014) suggests six core criteria for assessing mixed-methods quality which will be used to address quality in the current research (Bryman 2014). In one regard, this choice is pragmatic; though a variety of assessment frameworks have been developed, the content and number of assessment criteria suggested by each range widely. In the name of comprehensiveness, several frameworks contain numerous assessment items which make for difficult application in practice (Fàbregues & Molina-Azorin 2017). Though Bryman's framework was developed to be pragmatically economical, there are strengths to this approach; first, more streamlined assessment frameworks which centre select core criteria, rather than multiple specific criteria, are more likely to be utilised by researchers (Bryman 2014), which supports the adoption of a unified perspective within the research community while also giving flexibility to nuanced and individual viewpoints among mixed-methods perspectives. It would appear that this is actively the case in the literature, as a systematic review by Fàbregues and Molina-Azorin (2017) found that the Bryman's core criteria are already shared by multiple quality frameworks (Fàbregues & Molina-Azorin 2017). Table 4.1 provides an overview of the Bryman's six core criteria and indicates where each criterion is addressed within this thesis.

Table 4.1 Mixed-methods core quality criteria: Adapted from (Bryman 2014, p. 125)

Core Criteria	***Appraisal Criteria***	***Corresponding thesis sections***
(1) Need for the quantitative and qualitative components of a mixed-methods project to be implemented in a technically competent manner.	Have the standards for the qualitative and quantitative methods (sampling, data collection, analysis etc.) been executed proficiently?	*Section 4.4:* Methods
(2) Need for transparency.	Has the structure, sequencing and phases of the qualitative and quantitative components been clearly described?	*Section* 4.2.1: Structure and sequencing. *Section 4.4:* Methods.
(3) Need for mixed-methods to be linked to research questions.	Is the use of mixed-methods rooted in the research questions?	*Section 4.2.2:* Rationale for a multistage mixed-methods design
(4) Need to be explicit about the nature of mixed-methods design employed.	What is the specific mixed-method design?	*Section 4.2.3:* Defining the multistage mixed-methods design
(5) Need for a rationale for the use of mixed-methods research.	Is there a clear rationale for using mixed-methods?	*Section 4.2.2:* Rationale for a multistage mixed-methods design
(6) Need for integration.	Have points of integration been clearly articulated?	*Section* 4.2.3.2: Integration of phases

4.2.5.1 Quality in phase 1 and phase 2

Lincoln & Guba's (1981) four-dimension (credibility, dependability, confirmability and transferability) framework is a frequently cited approach to assess quality and rigour in qualitative research (see section 4.3.1.6). To ensure credibility, I conducted, transcribed and analysed all interviews which supported a prolonged and interactive interaction with both the data and the analysis of the data. Additionally, the findings of the analysis of the qualitative data in both phases were returned to participants for correction and/or elaboration. To support dependability a detailed record of the steps taken to conduct the qualitative research was kept and informed the description of the research methods. During analysis, detailed notes ensured an audit-trail of the process of refining and defining themes. The use of memos and a reflective journal aided in establishing confirmability, as did investigator triangulation in the analysis process. Finally, transferability was addressed through purposeful sampling in the second recruitment period of phase 1, and throughout phase 2. In both phases data collection concluded with data saturation.

4.2.5.2 Quality in phase 3

Validity, reliability and generalisability are salient when considering the rigour of quantitative research. Validity can be defined as '*the extent to which a concept is accurately measure*d' (Heale & Twycross 2015, p. 1) it is concerned with whether the quantitative research measures what it claims to measure. Reliability is concerned with the accuracy of the measure, whether it is consistent over time (Heale & Twycross 2015). Validity and reliability of the quantitative data are discussed in section 4.4.3.4. Generalisability is the extent to which the predictions or findings that emerge from a sample's data can be generalised to the population from which the sample was drawn. In others words, the extent to which one can make '*broad conclusions from particular instances'* (Polit & Beck 2010, p. 1451). Generalisability was assessed by comparing the characteristics of the study's participants with national data were possible, this is presented in chapter 7.

4.3 Philosophical underpinning- Pragmatism

The philosophical underpinning for a body of research denotes the researcher's positions concerning knowledge acquisition, the nature of reality and knowing the nature of reality (Saunders 2007, Kaushik & Walsh 2019). Philosophical underpinnings, also referred to as a research paradigm or world view (Morgan 2007), consists of a group of ontological, axiological and epistemological assumptions that form a cohesive basis for methodological strategies when investigating the research question (Aliyu *et al.* 2015). Ontological assumptions refer to the researcher's beliefs concerning the nature of, or what constitutes reality, epistemological stances encompass understandings on 'how we know what we know' with regards to the objectivity or subjectivity of the researcher in relation to the researched, and axiological views relate to the weight and role of values and biases in research (Creswell 2013).

Quantitative and qualitative research paradigms are typified by particular ontological, axiological, epistemological assumptions concerning reality, values and knowledge (Scotland 2012). The different paradigms that underlie quantitative (such as the Post/positivist paradigms) and qualitative (such as constructionist paradigms) research often hold opposing views (Feilzer 2010). Positivism dominated social research from the 1950s to roughly the mid-1970s. Constructionism and qualitative methodologies developed as a recognised alternative through the mid-1970s to early 1990s. Mixed-methods research is typically cited as emerging in the early 1990s as a '*third paradigm for research'* (Denscombe 2008, p. 271) in response to the 'paradigm war' between positivism and constructionism. The colloquially named paradigm war is based in the '*incompatibility thesis'* (Liu 2022, p. 1) the idea that quantitative and qualitative methodologies and the philosophies that underlie them are at opposing ends of the research continuum and cannot be combined to make for cohesive research.

As a philosophical movement, however, pragmatism appeared in the later 1800s as a rejection of traditional assumptions concerning knowledge and the nature of reality in the works of William James, Chauncey Wright, Nicholas St. Johns Green and others (Kaushik & Walsh 2019). Notably, the work of John Dewey, a social reformer and educationalist, informed the development of pragmatism used in social sciences (Morgan 2014).

In research, the philosophical underpinning of pragmatism is frequently (though not exclusively) partnered to mixed-methods research as it provides a set of assumptions that allow for the flexible integration of quantitative and qualitative methods and their associated philosophies (Mitchell 2018) in a way that challenges the '*unproductive dualisms*' of traditional quantitative and qualitative paradigms (Denscombe 2008, p. 273). Researchers argue that mixed-methods, through a pragmatic view, support a more comprehensive understanding of a phenomenon (Molina-Azorin 2016), as using a combination of data collection and analysis methods enables the strengths of each method to support issues of weakness in the other, thus offering a more complete consideration of the research question and improved research quality (Johnson & Onwuegbuzie 2004).

Others, however, suggest that pragmatism is a weak philosophical justification for mixed-methods research in that it merely permits the mixing of quantitative and qualitative methods (Shan 2022). Pragmatism has, at times, been regarded in a somewhat reductive manner, as an underpinning that supplies a so-called 'anything goes' approach to research, which may be erroneously extrapolated from the common definitional meaning of the word, rather than the philosophical meaning of pragmatism (Denscombe 2008, Biesta 2010). Such perspectives risk reducing mixed-methods research to a matter of practicality without a firm rationale for the validity of the methodological approaches taken in addressing the research question (Denscombe 2008). For this reason, researchers are urged to acknowledge and establish a link between the philosophical assumptions (ontology, epistemology and axiology) of pragmatism and their chosen methodology to enhance the credibility of knowledge developed (Lipscomb 2008, Cameron 2011, Hall 2013).

With this in mind, a discussion concerning the differences between the three research paradigms with regards to ontology, epistemology, axiology and methodology, and a consideration as to how the current research is located within a pragmatic worldview, is presented.

4.3.1 Ontology

Ontology is concerned with what comprises reality and what can be known (Crotty 1998). Positivism holds the ontological position of realism; that what can be known exists free from the potential knower,[4] there is one truth or reality independent of the researcher (Sale *et al.* 2002). In contrast, constructionist's view reality as socially constructed and in a stage of continual change; realities and truths are multiple, varying by individual (Sale *et al.* 2002).

At times, a neglect in developing a deeper understanding of the ontological assumptions of pragmatism have aided the perception that '*to a pragmatist, the mandate of science is not to find truth or reality, the existence of which are perpetually in dispute, but to facilitate human problem-solving*' (Powell 2001, p. 884). While the pursuit of problem-solving is acceptable to many, some scholars worry that relinquishing a position on truth/reality potentially pigeon-holes pragmatism as '*anti-philosophical*' (Hathcoat & Meixner 2017, p. 435).

Maarouf (2019) develops the conversation by stating that the concept of 'the reality cycle' gives depth to pragmatism's view, and use, of multiple ontological positions. The reality cycle holds that there is '*one reality and multiple perceptions of this reality in the social actors' minds*' (Maarouf, 2019, p7). In this view, certain points in time and certain contexts allow for a single reality to exist. However, as reality is time and context dependant, both change reality, therefore the '*existence of multiple contexts means the existence of multiple realities*' (Maarouf, 2019, p7). Additionally, social actors perceive reality differently. Subjective perceptions of reality influence social actors' behaviour and, over time, social actors' behaviour construct new contexts, which in turn generates new realities, which are then subjectively experienced and influence behaviour, thus the reality cycle continues (Maarouf 2019).

The reality cycle takes a practical view that, most of the time, reality is stable; holding that there is a single external reality and multiple subjective perceptions of that reality. Thus, researchers may flow between ontological stances and research approaches; a quantitative method may theory test a single reality view of a phenomenon, whereas a qualitative method might draw out a detailed understanding of the contextual variables that fashion the social actor's perceptions of their reality (Maarouf, 2019). Maarouf (2019) also note that multiple perceptions of reality are based in the social actors' minds and not in the researcher's construction of reality.

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[4] Post-positivism emerged as a response to the critiques of positivism. Positivism and post-positivism are similar in that both view empirical observation and measurement as essential in gaining knowledge. However, post-positivism rejects the idea of objective reality as an absolute certainty, acknowledges the influence of values, and that knowledge is subject to revision when met with new evidence. Rahman M. (2023) Navigating the Landscape of Research Paradigms: An Overview and Critique. *The Journal of Educational Studies* **6**(1), 1-16.

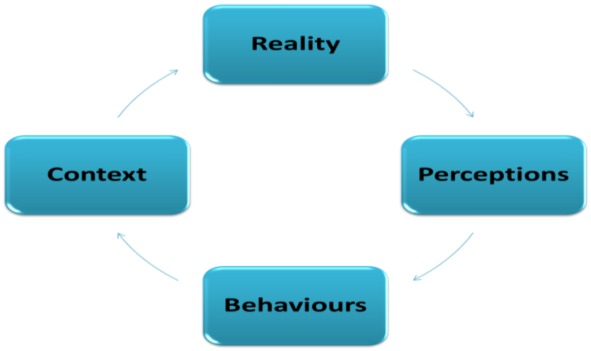


Figure 4.4: The reality cycle. Adapted from Maarouf (2019).

This understanding of pragmatism's ontological position underpins the methodological decisions for the preparatory phase of the current research project; conducting a concept analysis of resilience in the context of the perinatal period and early motherhood (Objective 1) and subsequently inviting women's perspectives on the findings (Objective 2). A principle-based concept analysis is a method which aims to provide researchers with a 'snapshot' of the current state of empirical research on a given topic or issue. It may be considered to reflect the single reality state. However, in this case, this single reality may also be considered to be a researcher's construction, as research is predominately developed, decided on and driven by researchers. Seeking women's views on the state of the resilience research in this context takes a step towards accepting that multiple realities are situated with the social actor, not with the researcher.

Additionally, the qualitative (objectives 3 and 4) and quantitative (objectives 5 and 6) research objectives are complementary and mirrored. Though using different methods and positions, the same phenomenon is being explored. The quantitative methods may provide a description of prevalence, risk and protective factors, and common trajectories of perinatal and maternal mental health among women giving birth in Ireland (single reality), while the qualitative methods recognise that women's differing mental health experiences (multiple realities) provide an equally valid exploration of their reality.

4.3.2 Epistemology

Epistemological assumptions are those concerned with '*the very bases of knowledge- its nature and form, how it can be acquired and how* (it is) *communicated to other human beings'* (Cohen *et al.* 2007, p. 7). Researchers' epistemological assumptions are reflected in the ways in which they believe that knowledge can be acquired. Positivist paradigms maintain that knowledge is attained objectively, the researcher takes the role of observer and there is no interaction between the researcher and the researched (Cohen *et al.* 2007). Conversely, constructionists view knowledge as mutually generated by the researcher and the researched in the context of the area of enquiry; researcher and knowledge are subjective, and reality a co-construction (Sale *et al.* 2002). Pragmatism takes a continuum view of objectivity and subjectivity, with the researcher again flowing between varying degrees of interaction with the researched at different points in the research process (Maarouf 2019).

Variables in social science often relate to attitudes, beliefs, feelings, motivations or intentions and, though tools are designed to measure them, they are not observable in the same way as variables in natural sciences. Rather, tools and surveys are developed to fit these variables within set units to make them measurable. Though quantitative researchers may claim to accept only observable knowledge, it can be argued that survey data are not necessarily observable, as attitudes and beliefs etc. (unobservable mental variables) must be quantitatively operationalised in order to become measured (Ma 2012). Likewise, qualitative exploration is not limited to the unobservable but often includes observable human actions (Austin & Sutton 2014).

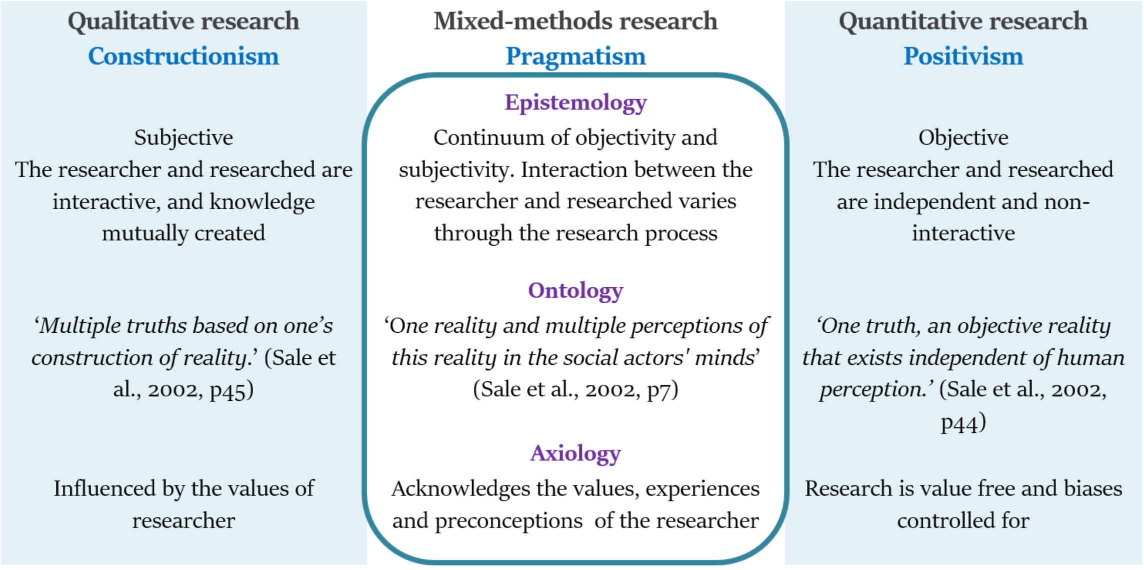
Pragmatism embraces epistemological oscillation by centring the research questions and outcomes rather than the pre-prescribed assumptions of a paradigm. As Marrouf (2019, p9) explains, at times the goal of a research question is to describe in '*like-law generalizations for practical benefits and other times we are examining social actors' perceptions for more detailed and deep understanding of this reality'*. The epistemological rationale for mixing methods in social research in particular is found in the rejection of the idea that truth can be obtained through the use of one scientific method (and its associated philosophical assumptions) alone (Maxcy 2003), and is based in Dewey's conceptualisation of a '*concept of inquiry'* (Morgan 2014, p. 1047). As a method of inquiry, pragmatism is orientated towards effective problem solving, where enquiry is considered useful, practical or effective if its purposes have been achieved. This is a key point of consideration: some research questions are unlikely to be achieved using a qualitative approach and are best investigated using a quantitative method and vice versa. Therefore, if a method can achieve the research objectives then that method or a mixing of methods is the pragmatic, and logical, choice (Kaushik & Walsh 2019). In this way, pragmatism positions the method of inquiry as more salient than the ontological or epistemological assumptions traditionally linked to the method employed (Morgan 2014). Put more succinctly, pragmatists are not concerned with committing to one 'side' or the other and choose a third option. Epistemology encompasses beliefs as to how knowledge *can be acquired,* pragmatists believe that knowledge *can be acquired* using quantitative methods, and that knowledge *can be acquired* using qualitative methods. What pragmatists reject is the notion of either positivist or constructionist paradigms that knowledge can *only* be objective or subjective, observable or unobservable.

The current research recognises that quantitative or qualitative methods alone are insufficient to portray the totality of women's perinatal and early motherhood mental health experiences. Rather the research goals are best met through a pragmatic application of differing methods that are best suited to achieve the research goals, with the additional benefit that embracing the complementary aspects of quantitative and qualitative methods (Johnson & Onwuegbuzie 2004) may assist in obtaining a fuller understanding of women's mental health in this context.

4.3.3 Axiology

Axiological assumptions encompass beliefs about the role of values, morals and bias, and how they are expressed, in research (Kaushik & Walsh 2019). The positivist tradition contends that quantitative methods are value free and post-positivism contend that biases can be controlled for (Rahman 2023); whereas constructionists accept that the values and biases of the researcher have an influence on inquiry and individual values are honoured (Creswell 2013). Pragmatism takes a value-oriented approach by acknowledging that values influence what researchers chose to investigate and that each individual brings experiences, preconceptions and personal interpretations of a phenomenon with them into the process of inquiry (Johnson & Onwuegbuzie 2004). Pragmatism regards bias as unavoidable; with this in mind some scholars suggest that bias may, in some instances, be mitigated through rigour processes and in other instances, bias may be used to enhance research (Maarouf 2019). For example, it would be unethical for a researcher to formulate results with the intention of reflecting a personal belief. Whereas pragmatically, it is acceptable to develop research inquiry based in a particular value, for example to choose to conduct research among underrepresented communities.

In this regard, the current research acknowledges principles that underlie participatory research as having a role in the research design. Specifically, i) the democratisation of research with the aim of co-creating knowledge and ii) social justice and social inclusion by valuing the lived experiences of lesser heard populations (Groot & Abma 2021). At the same time, steps were taken to mitigate undue influence of biases in the collection and analysis of data, for example using rigour processes in qualitative data analysis (see table 4.2) and validity and reliability processes in quantitative research and data analyses (see section 4.4.3.4).



Qualitative research **Constructionism**	**Mixed-methods research** **Pragmatism**	**Quantitative research** **Positivism**
Subjective The researcher and researched are interactive, and knowledge mutually created	**Epistemology** Continuum of objectivity and subjectivity. Interaction between the researcher and researched varies through the research process	Objective The researcher and researched are independent and non-interactive
'Multiple truths based on one's construction of reality.' (Sale et al., 2002, p45)	**Ontology** *'One reality and multiple perceptions of this reality in the social actors' minds'* (Sale et al., 2002, p7)	*'One truth, an objective reality that exists independent of human perception.'* (Sale et al., 2002, p44)
Influenced by the values of researcher	**Axiology** Acknowledges the values, experiences and preconceptions of the researcher	Research is value free and biases controlled for

Figure 4.5: Synopsis of philosophical underpinnings of three research paradigms

4.3.4 Methodology

Methodology refers to the action plan, or strategy for the particular methods employed to investigate the research questions; it is concerned with *how* the knower might go about obtaining what they believe *can become* known (Guba & Lincoln 1994). Methodology involves questions as to what data are collected and analysed, from where, when, how and for what reason (Scotland 2012) while the methods are the techniques used to execute the methodology (Crotty 1998). Importantly, methodology can be considered the area that '*connects abstract philosophical issues to actual mechanical methods*' (Kaushik & Walsh 2019, p. 6). Typically, methodology is presented as either quantitative or qualitative following (post)positivist or constructionist paradigms and as supporting either deductive ((post)positivist) or inductive (constructionism) reasoning (Kaushik & Walsh 2019). Pragmatism supports a process of abduction or abductive reasoning (Rahman 2023), which is a process of reflection on the part of the researcher who must i) consider the research question and the nature of the problem, ii) reflect on their pre-existing beliefs, iii) evaluate potential courses of action, iv) connect the methods most appropriate for answering the question to the research problem, and v) establish how these methods will formulate the overall research design (Kaushik & Walsh 2019).

Pragmatists embrace the use of both qualitative and quantitative methods. There are two rationales for doing so. The first concerns the practical, 'what works' approach mentioned in the discussion concerning epistemology, in that the method that best fits the criteria for answering the research question is the method for use. Another justification for a mixed-methods methodology is that of 'complementary strengths': multiple methods of data collection and analyses provide the researcher with a methodology that leverages the strengths of each approach and decreases overlapping points of weakness (Johnson &

Onwuegbuzie 2004). Pragmatism accepts the differences between (post)positivist and constructionist approaches while promoting and '*creating shared meaning and joint action*' (Moseholm & Fetters 2017, p. 2) through the mixing of approaches.

Mental health is frequently situated and researched from a (post)positivist bio-medical perspective, which has been criticised for ignoring the heterogeneity of the human experience and cultural influences, and for creating ethnocentric bias (McCann 2016). Research has approached the topic of resilience in much the same way, despite recognition of the importance of context to the processes and outcomes of resilience (Aburn *et al.* 2016). However, maternal mental health data in Ireland is sparse and evidence of prevalence is essential to identify if women have unmet health needs. A mixed-methods approach therefore may provide a rounded view on experiences of mental health and resilience in motherhood.

The research objectives of the current study required the use, and integration, of both quantitative and qualitative methodologies. For example, quantitative methods are ideal in addressing Objectives 5 and 6, where statistical analyses of quantitative data may derive an approximated truth as to the prevalence, trajectories, and socio-economic and demographic risk or protective factors for mental health among women giving birth in Ireland. Qualitative methods are better suited to Objectives 3 and 4, which are concerned with women's experiences of mental health before and during motherhood, the key factors that women perceive to promote or inhibit well-being in motherhood, self-help and health-seeking behaviours, and the barriers or facilitators present in the help-seeking process. These objectives, addressed using qualitative methods, align with constructionist paradigms which view knowledge as created via social processes and shaped by preceding historical and political contexts, and social and cultural environments (Stam 2001). Thus, the multiple realities of social actors are acknowledged and explored to provide a deeper understanding of individual experiences which build the whole. Additionally, Objective 1 of the research is best addressed with a quantitative approach, namely a concept analysis of empirical research identified through a systematic search of the literature and evaluated using a principle-based framework. While Objective 2 was investigated using a qualitative approach in the form of one-to-one interviews with women who are mothers.

A mixed-methods investigation of the concept of resilience in this context also speaks to axiological considerations; a quantitative description of positive outcomes and the factors that support or inhibit positive adaptation in the perinatal period and early motherhood is vital in a context in which little or conflicting maternal mental health and well-being data currently exist. Such data may provide evidence of need, and a basis for intervention around malleable protective or risk factors. Qualitative investigation facilitates a bias check, by delving into understanding how resilience, as it may be defined and experienced by women as mothers, might differ or align with how the concept is currently researched within this population.

4.4 Methods

The following sections will outline the methods of sampling, inclusion and exclusion criteria, recruitment, data preparation and data analysis used to conduct each phase of the research.

4.4.1 Phase 1: Public and Patient Involvement (PPI) interviews

A concept analysis to establish how women's resilience is conceptualised and measured in the perinatal period and early motherhood literature was conducted with the intention of informing the PPI step of phase 1. The PPI step involved one-to one interviews to obtain the views of women who are mothers on the ways in which resilience is currently researched in this context, and seek their opinions on how they believe resilience research should be advanced (Chapter 5). Additionally, women's feedback informed the development of research questions for the semi-structured interview guide used in the in-depth interviews (phase 2, chapter 6), and the addition of quantitative measures for data collection at five years after first-time motherhood (phase 3, chapter 7).

4.4.1.1 Sampling approach, selection criteria and sample size

Participants for phase 1 were recruited from the MAMMI cohort. Initially, convenience sampling was used. The researcher issued an invitation to all MAMMI study participants who had consented to being contacted about taking part in research, via email. Participants for phase 1 were self-selected. This form of non-probability sampling may introduce motivation bias to the study as an individual's motivation to participate may be influenced by their experiences, desire to express certain opinions, and interest in the research area (Stratton 2021). It became apparent that the majority of women who responded to the research invitation were White-Irish, had male partners, and living in dual-income households. Subsequently, an ethics amendment was submitted to the university's ethic committee to extend the sampling size and change the sampling approach to purposeful sampling (Appendix 4.1). Purposeful sampling is another non-probability sampling in which participants are selected by the researcher to include information-rich cases and representation of specific groups (Patton 2022). The second invitation requested for potential participants who were interested in taking part to identify if they belonged to one or more of the following groups;

- Ethnic minority (Irish traveller, BAME: Black, Asian, Ethnic Minority groups),
- Migrant (of any ethnicity),
- Seeking/ received asylum or refugee status in Ireland,
- 30 years of age or younger when they had their first child,
- Did not have a postgraduate (third level) education,
- LGB (Lesbian, Gay or Bisexual) identifying.

Fourteen participants were interviewed, seven from the first recruitment period and seven from the second period.

4.4.1.2 Inclusion and exclusion criteria

Participants were sent the study information for phase 1 if i) they were an active participant (had not withdrawn participation from the longitudinal study) in the MAMMI study and ii) had given consent in their original consent form for the researchers to send them invitations to take part in additional research (Appendix 4.2). In the first recruitment period participation was open to all consenting participants in the study without exclusion. In the second period, participants were excluded from participation if they did not meet one or more of the diversity groups.

4.4.1.3 Recruitment

The first recruitment period took place in November 2020 and the second in April 2021. Forty-one women responded to the first invitation and seven women were interviewed. In order to recruit women from more ethnically and socio-economically diverse groups, a second invitation was sent in June 2021, 18 women responded and another seven women were interviewed.

Women interested in participating contacted the researchers by text or email. On receipt of an expression of interest potential participants received all the study information digitally, this included a formal invitation letter, a participant information leaflet (PIL) (Appendix 4.3), a soft-copy consent form for the participants' own retention (Appendix 4.4) and a link to an online electronic consent form. Participants also received a summary of the concept analysis findings and a copy of the semi-structured interview guide (Appendix 4.5). All participants completed the electronic informed consent form.

4.4.1.4 Data collection

Data were collected using one-to-one semi-structured interviews; twelve were conducted using Microsoft Office (MS) teams (an online conference calling application approved for research use by the university's information technology (IT) services). Two interviews were conducted via telephone and recorded using a dictaphone. Use of MS teams or telephone depended on the participant's preference. In-person interviews were not possible at the time of data collection due to national Covid-19 health and safety measures.

Two weeks prior to each interview a synopsis of the findings of the concept analysis (Chapter 5) was sent to each interviewee via email. It contained an introduction explaining what the concept analysis was about and why women's perspectives were being sought. The next four sections of the synopsis corresponded to the findings from the four philosophical principles of the concept analysis. The structure of the synopsis was also the structure of the interview guide. Each interview commenced with a brief verbal reiteration of the purpose of the concept analysis and the interviews. Participants were invited to share their own perspectives on resilience and how they felt it presents in everyday life, then participants were asked their thoughts on the research findings under each principle.

4.4.1.5 Data Preparation

MS teams interviews were recorded and transcribed within the application, whereas dictaphone recorded interviews were transcribed verbatim by the researcher. Transcripts produced by the MS teams application were checked for accuracy, errors were corrected and details such as interruptions, crying or laughing were added where applicable. Potentially identifying information was removed from the transcripts. All transcripts were read against the audio recordings to ensure accuracy and to begin the data immersion process. Data were managed and analysed in Microsoft Excel.

4.3.1.6 Data Analysis

Data were thematically analysed using the six-step methodology described by Braun and Clarke (2006) Analysis commenced when the first interview was transcribed and continued concurrently throughout data collection. I transcribed each interview which supported a deep engagement and iterative interaction with the data and the analysis (step 1: data familiarity) (Braun & Clarke 2006). Then my supervisors coded two transcripts from the first recruitment period and another two from the second period (step 2: generating initial codes). After independently coding, we met to compare differences and similarities between our coding, and to discuss, compare, and then refine codes and themes (step 3: searching for themes, step 4: review the themes, step 5: defining and naming the themes) (Braun & Clarke 2006). Following analysis, each participant received a detailed synopsis of the key findings, supported by anonymised illustrative quotes. Participants were asked if they felt that the findings were representative of their views and/or if they felt that the researchers had under or over emphasised findings. The findings were returned to participants with the aim of further integrating their involvement within the research process and ensuring the credibility of the research findings through member-checking (Goldblatt *et al.* 2011) (see Table 4.2). Four women responded, each remarked that they believed the findings were reflective of their opinions. One woman commented: *'I thought the findings of the study reflected my thoughts, even though I might not have mentioned certain things.'* Two women made comments regarding where greater emphasis could be placed, namely on resilience language use (avoiding deficit implications), measure of resilience (emphasis on women's fulfilment beyond motherhood), and cultural influences/differences as an avenue for future research. Participants were also provided with a copy of the interview guide developed for phase 2 for commentary, no amendments were suggested.

Data from the interviews were analysed in sections according to participants' feedback regarding the findings contained by the four principles of the concept analysis (Epistemological, Linguistic, Logical and Pragmatic). There was fluidity in women's conversations, and dialogue contained overlap between principles therefore data were coded to acknowledge intersection between principles (discussed further in Chapter 5). Data saturation was reached after 12 interviews (Bowen 2008).

Table 4.2 Phase 1 and Phase 2 rigour strategies (Adapted from (Forero *et al.* 2018))

Rigour Criteria	Aim	Actions implemented	Phase 1	Phase 2
Credibility	Ensure that the findings, from the participants' perspectives, are reflective of their data, are credible and believable.	Extended and iterative engagement with the data and the analysis.	✓	✓
		The findings were returned to participants and they were invited to submit corrections or new data.	✓	✓
Dependability	Ensure that the qualitative study can be replicated by other researchers, and thus the findings repeatable if the study were conducted with the same cohort of participants, with the same coders and in the same context.	A detailed description of the study methods was recorded.	✓	✓
		During inter-coder meetings, minutes were taken to establish a record of the process of refining and defining themes.	✓	✓
Confirmability	Ensure that the results can be confirmed or substantiated by other researchers.	Immediately following each interview, short memos were made which formed part of the reflexive journal.	✓	✓
		Investigator triangulation was employed in analysis; the researchers are maternal health researchers with backgrounds in psychology, midwifery and mental health nursing, these differing areas of expertise brought multiple observations and viewpoints to the analysis.	✓	✓
Transferability	To extend the degree to which the results can be generalized or transferred to other contexts or settings.	Purposeful sampling.	*	✓
		Data collection concluded with data saturation.	✓	✓

**The second recruitment period of phase 1 used purposeful sampling.*

4.4.2 Phase 2: In-depth qualitative interviews

Phase 2 involved in-depth qualitative interviews with the aim of developing a rich description of mental health experiences in motherhood, and to understand how resilience is experienced and facilitated in this transitional period of life.

4.4.2.1 Sampling approach, selection criteria and sample size

Phase 2 employed purposeful sampling. Purposeful sampling is common in qualitative research as it enables researchers to identify and then select participants most relevant to the research area (Palinkas *et al.* 2015). Purposeful sampling was used to avoid homogeny with regards to ethnicity and socio-economic characteristics. Participation was open to all consenting participants in the MAMMI study; however half of all spaces for the interviews were reserved for participants who self-identified as belonging to one or more of the following groups:

- Ethic minority women (Irish traveller, BAME: Black, Asian, and Minority Ethnic groups)
- Migrant women (of any ethnicity)
- Women seeking/ received asylum or refugee status in Ireland
- Women who were less than 30 years of age when they had their first child
- Women who did not have a third level (postgraduate) education
- Single mothers
- Women who experienced mental health problems
- Women with a disability
- Women who identify as LGB (Lesbian, Gay or Bisexual)

Quantitative research is concerned with gathering data from a large number of participants to establish generalisability, whereas this is not a focus for qualitative research, rather importance is placed on obtaining data that are contextual and information-rich (Palinkas *et al.* 2015). Although the projected recruitment for this phase was between 25 and 30 participants, the specific number of participants to recruit for a qualitative study may be determined by data saturation. Data saturation occurs when i) enough information to replicate the study has been obtained, ii) when no new information is obtained, and iii) when new coding is no longer feasible (Guest *et al.* 2006, Fusch & Ness 2015). Data saturation was reached at the nineteenth interview, a further four interviews were conducted, no new content and themes were evident, data collection ceased when 23 interviews were completed.

4.4.2.2 Inclusion and exclusion criteria

Participants were sent the study information for phase 2 if i) they were an active participant (had not withdrawn participation) in the MAMMI study and ii) had given consent in their original consent form for the researchers to send them invitations to take part in additional research. Participants of the

MAMMI study who had not given consent for the researchers to contact them about joining research were not sent the research invitation.

4.4.2.3 Recruitment

An email invitation to take part in the in-depth interviews was sent to women who were on-going participants in the MAMMI study in February 2022. Participants were asked to indicate if they fit one or more of the sampling categories in their expression of interest. Thirty-eight women responded to the invitation by text or email. On receipt of an expression of interest, potential participants were posted the study information pack. This pack included a formal invitation letter (Appendix 4.6), the PIL (Appendix 4.7), two consent forms (Appendix 4.8) and the interview guide (Appendix 4.9). Over the course of the recruitment period, 29 women received the information pack and consent form. Nine women consented for their names being placed on a wait-list. A total of 27 women returned a completed consent form; four of these women did not respond to confirm an interview date and did not respond to a gentle reminder. Twenty-three women confirmed an interview date and completed the interview. The nine women on the wait-list were contacted, thanked for their interest and informed that the data collection goals had been reached.

4.4.2.4 Data collection

Depending on participants' preferences, interviews were carried out in-person in a conference room at Trinity College Dublin (two participants), via telephone (two participants), or online using MS teams (19 participants).

The development of the interview guide was guided by the research project's objectives, women's feedback from the PPI interviews, knowledge of the literature, and discussions with supervisors (Bryman 2012). The interview guide (Appendix 4.9) contained six sections; first an introduction and explanation as to the purpose of interviews. Followed by an invitation for each participant to share their personal understanding of the meanings of terms such as mental health, mental illness and resilience. This was included as several women in the PPI interviews of phase 1 mentioned that these terms may hold different meanings in research versus 'lay' contexts, and may differ person to person. The third section; '*Mental Health and Motherhood; Culture and Society'* was developed following analysis of the phase 1 PPI interviews, in which the majority of women supported a social-ecological view of resilience (Chapter 5). This section asked women to speak about the supports that were, or were not, available to them in the motherhood transition, with focus on how supports exist/ do not exist at interpersonal, social, cultural, community, organisational and policy levels. The aim was to identify factors that may facilitate or inhibit maternal well-being and resilience, and how women were navigating to resources. Additionally it was informed by psycho-social (Thomson & Schmied 2017) and social-ecological literature (Ungar 2004, Ungar 2011, Ungar & Theron 2020). This section also incorporated a two-part question, which was; 'Do you think that your/our culture and society in general, places value on, and supports, women as mothers?' And 'Do you think that value and support is reflected in the health and community resources or services available to women, or in government policies?' This inquiry was born out of the social-ecological definition of resilience as a process of navigating to and negotiating for resources (Ungar 2011). The aim was to draw out how women were negotiating for their needs, and to gauge women's perceptions and experiences of the willingness of their social, cultural and political environments to engage in negotiation and provision of resources (Chapter 6).

The fourth section asked women to describe their mental health journey, from pre-pregnancy, during pregnancy and though the first year of motherhood. The fifth section asked about women's current mental health (at the time of interview). There was a large degree of fluidity in conversations, and women moved back and forth through the sections. For example, using descriptions of their mental health journey to discuss resources and service provision, or the availability (or lack) of resources to explain their mental health experiences historically or currently. In this way health and help-seeking were addressed. The interview closed with asking each woman if she wished to share anything further or if she wished to redact any information.

4.4.2.5 Data preparation

The interviews conducted using MS teams were recorded and transcribed within the application, whereas telephone and in-person interviews were recorded using a dictaphone and transcribed verbatim by the researcher. All transcripts were checked for accuracy, and identifying information removed. Data were managed and analysed in Microsoft Excel.

4.4.2.6 Data analysis

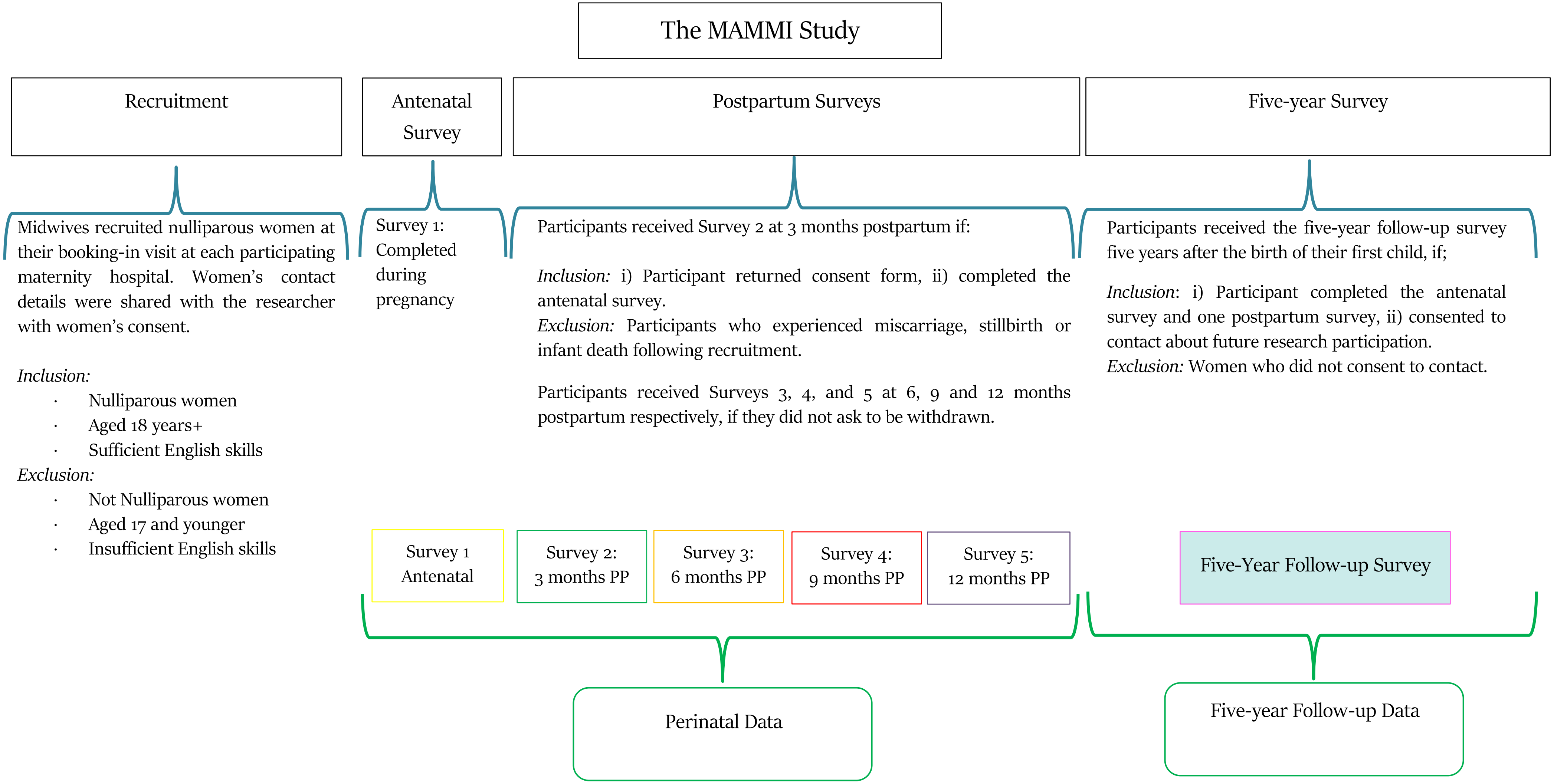
As in phase 1, data analysis commenced when the first interview was transcribed. Data collection, transcription and analysis occurred concurrently, which supported a thorough engagement with the data and comprehensive analysis (Morse *et al.* 2002, Maher *et al.* 2018). Data analysis followed the six steps of thematic analysis described by Braun and Clarke (2006). After six interviews had been conducted and transcribed, my supervisors and I independently coded two transcripts with the aim of comparing coding approaches. We then met to compare differences between our coding and confer on the initial codes. We met periodically to discuss the progress of the interviews, the development of, and/ or merging of codes, the development of themes and sub-themes, and examples of confirmatory and contrary cases.

Data collected by the in-depth interviews were guided by the semi-structured interview guide developed from women's views and opinions on resilience research collected in phase 1. A large volume of data was collected by the in-depth qualitative interviews; however, analysis for the current research was guided by a question that arose from consideration of a specific definition of resilience. This definition and its importance to data collection and analysis are discussed in detail in chapter 6.

Following analysis, each participant received a synopsis of the key findings, supported by anonymised excerpts. Participants were asked if they felt that the findings were representative of their views and/or if they felt that the researchers had under or over emphasised findings. No participant responded.

4.4.3 Phase 3: Survey-based longitudinal cohort data

Phase 3 utilised data collected from the longitudinal survey-based cohort study named the Maternal health And Maternal Morbidity in Ireland study (MAMMI) study. The MAMMI study is a multi-centre, prospective study that recruited 3131 nulliparous women during pregnancy from three maternity hospitals in Ireland between 2012 and 2017. The study involves data collection using self-completion surveys during pregnancy (which included questions relating to pre-pregnancy health and health during pregnancy) and at 3, 6, 9 and 12 months postpartum (perinatal data), data collection from consenting women's pregnancy and birth records, and includes data collection at five years after first-time motherhood (five-year data). Figure 4.4 illustrates the MAMMI study structure. The surveys collect information in relation to prevalence and risk factors for a range of morbidities including, but not limited to, urinary and anal incontinence, pelvic girdle and lower back pain, physical health complaints, sexual health, and mental health issues. Demographic information including age, country of birth, relationship status, educational attainment and employment status was collected at enrolment. The MAMMI surveys were adapted from the Maternal Health Study (MHS) (Brown *et al.* 2006) based in Australia, with permission from Professor Stephanie Brown, by Dr Deirdre Daly; the Principal Investigator of the MAMMI study. Sampling, inclusion and exclusion criteria, recruitment, data preparation and analysis were different for the perinatal data and the five-year data. For, clarity, the approaches to the perinatal and five-year data are described separately in the following sections.



The MAMMI Study

Recruitment

Antenatal Survey

Postpartum Surveys

Five-year Survey

Midwives recruited nulliparous women at their booking-in visit at each participating maternity hospital. Women's contact details were shared with the researcher with women's consent.

Inclusion:

- Nulliparous women
- Aged 18 years+
- Sufficient English skills

Exclusion:

- Not Nulliparous women
- Aged 17 and younger
- Insufficient English skills

Survey 1: Completed during pregnancy

Participants received Survey 2 at 3 months postpartum if:

Inclusion: i) Participant returned consent form, ii) completed the antenatal survey.
Exclusion: Participants who experienced miscarriage, stillbirth or infant death following recruitment.

Participants received Surveys 3, 4, and 5 at 6, 9 and 12 months postpartum respectively, if they did not ask to be withdrawn.

Participants received the five-year follow-up survey five years after the birth of their first child, if;

Inclusion: i) Participant completed the antenatal survey and one postpartum survey, ii) consented to contact about future research participation.
Exclusion: Women who did not consent to contact.

Figure 4.6: *MAMMI study structure*

4.4.3.1 Sampling approach, selection criteria and sample size

- *Perinatal data*

Nulliparous women attending the three recruitment sites, Rotunda Hospital (RH), the Coombe Women and Infants University Hospital (CWIUH) and Galway University Hospital (GUH) were conveniently sampled for participation in the MAMMI study. This was a systematic non-randomised sampling approach. Consenting participants completed data collection during pregnancy and at 3, 6, 9 and 12 months postpartum. This study aimed to describe prevalence and change of mental health across the perinatal period, therefore, data from participants who completed the antenatal survey and at least two postpartum surveys comprised the sample for analysis in the current research. The sample comprised 2380 women.

- *Five-year data*

Participants who completed the antenatal survey and at least one postpartum survey in the first postpartum year collection were eligible to receive the five-year follow-up survey. Data from participants who completed and returned the five-year follow-up survey before January 31st 2023 comprised the sample for five-year data. The sample comprised 1155 women.

4.4.3.2 Inclusion and exclusion criteria

- *Perinatal data*

Eligible women were nulliparous, aged 18 years and over, and able to read and understand English sufficiently to complete the written surveys (Table 4.3). Women were eligible for participation if they completed and returned the study consent form and the antenatal survey.

Table 4.3 The MAMMI study perinatal data inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
· Nulliparous women. · Women aged 18 years and over. · Women with English language skills sufficient to complete the surveys. · Women who completed and returned the antenatal survey and consent form.	· Women who were not nulliparous. · Women under 18 years. · Women without English language skills sufficient to complete the surveys. · Women who did not consent to participation. · Women who experienced miscarriage, stillbirth or infant death following recruitment to the study.

- *Five-year data*

The MAMMI study launched the five-year follow-up survey in 2017. Inclusion criteria for this survey were; women who i) had completed the antenatal survey and at least one postpartum survey from the first year data collection, and ii) had consented to the retention of their data and receiving information about future MAMMI study research in their original consent form (Table 4.4).

Table 4.4 The MAMMI study five-year data inclusion and exclusion criteria

Inclusion criteria	**Exclusion criteria**
· Participants who completed the antenatal survey and at least one postnatal survey. · Participants who consented to the retention of their personal data and being contacted to participate in future MAMMI study research.	· Participants who did not consent to being contacted to participate in future MAMMI study research. · Women who withdrew from the MAMMI study.

4.4.3.3 Recruitment

- *Perinatal data*

Midwives in the three participating maternity hospitals acted as the study gatekeepers and offered all women meeting the study's eligibility criteria a study information pack at their first antenatal appointment. Recruitment took place between January 2012 and March 2017. Midwives explained the purpose of the study, offered the information pack, and asked women if they would consent to having their information shared with the researchers, and for a researcher to contact them to enrol them into the study. Approximately 8,243 women received the information pack. In total 3,131 participants completed and returned the antenatal survey (response rate: 38%). Response rates for the perinatal surveys are provided in Table 4.5.

Table 4.5 Recruitment and retention rates from the three hospital recruitment sites

Recruitment site	**RH**		**GUH**		**CWIUH**		**Total**	
Survey	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Survey 1	1824	*100%*	*332*	*100%*	853	*100%*	*3009**	*100%*
Survey 2	1486	*81.5%*	287	*86.5%*	701	*73.6%*	*2474*	*82%*
Survey 3	1387	*76%*	260	*78%*	651	*68%*	*2298*	*76.4%*
Survey 4	1302	*71.4%*	239	*72%*	604	*63.4%*	*2145*	*71.3%*
Survey 5	1226	*67%*	219	*66%*	558	*58.6%*	*2003*	*66.6%*

**Figures do not include cases excluded due to miscarriage, stillbirth or infant death.*

- *Five-year data*

Participants were recruited to the five-year follow up strand if they were a participant of the MAMMI study and met the inclusion criteria (Table 4.4). Eligible participants received the five-year follow-up survey, a letter of introduction, a participant information leaflet, and two consent forms by post the same month that their first child turned five years old (Appendices 10 and 11). Approximately 1850 participants received the five-year follow-up survey and 1167 completed and returned the survey. As of January 2023, data entry was completed for 1155 surveys. A decision was made to close the dataset to enable time for data cleaning and analysis. Data from the 1155 surveys serves as the sample for analysis of the five-year follow-up strand. Additionally, the Mental Health Continuum-Short Form (MHC-SF) (Keyes 2009) and the Multicultural Quality of Life Index (MQLI) (Mezzich *et al.* 2011)[5] were added to the five-year follow-up data collection survey following the PPI interviews of Phase 1. A total of 277 participants completed surveys containing these additional scales.

4.4.3.4 Data collection

- *Perinatal data*

The perinatal data was comprised of two sources i) hospital data collected from consenting women's hospital records, and ii) survey data collected during pregnancy and at 3, 6, 9 and 12 months postpartum. Only infants' birth weight data were taken from hospital records to use for the current analysis. The perinatal surveys collected socio-demographic and socio-economic data, data in relation to conception, pregnancy and birth factors, self-report of mental and relationship experiences in the year prior to and during the pregnancy, and physical health prior to and after pregnancy.

Reliability and validity

Face and content validity of the MAMMI surveys were assessed by Dr Daly prior to the study recruitment. Face validity of the surveys was assessed by 15 pregnant or recently postpartum women. The content validity of the antenatal (survey 1) and first postpartum survey (survey 2) were assessed by a panel of 18 experts, 15 completed the assessment involving rating items according to relevance (E.g. Likert scale 1-4:

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[5] The Multicultural Quality of Life Index (MQLI) (Mezzich J.E., Cohen N.L., Ruiperez M.A., Banzato C.E. & Zapata-Vega M.I. (2011) The Multicultural Quality of Life Index: presentation and validation. *Journal of Evaluation in Clinical Practice* **17**(2), 357-364.) was added to the five-year follow up survey following the PPI interviews of Phase 1. However, due to the volume of data collected by the current project, analysis of the MQLI data will be retained for post-doctorate research.

1) the item is not relevant; 2) the item needs major revision; 3) the item needs minor revision and 4) the item is relevant). An item content validity index (I-CVI) and a scale content validity index (S-CVI) score was calculated from the responses. The I-CVI was calculated as 0.93, which indicates a high level of agreement that items were relevant to the topics. The S-CVI for survey 1 was 0.97 (range 0.73-1.0), the S-CVI for survey 2 was 0.97 (range 0.80-1.0), which indicates a high level of agreement between experts as to the relevance of the overall surveys.

The test-retest reliability of the MAMMI surveys was assessed in 2011. Ten pregnant/postpartum women completed survey 1 twice, with approximately 14 days waiting period in between completion points. The Cohen's kappa coefficient ranged from 0.87-1.0, which indicates strong consistency.

Mental health symptomatology: Depression, Anxiety and Stress Scale (DASS-21)

The short-form Depression, Anxiety and Stress Scale (DASS 21) (Lovibond 1995, Henry & Crawford 2005) was used to assess prevalence and change in mental health symptoms relating to depression, anxiety and stress from pregnancy through the first postpartum year. The DASS-21 contains three sub-scales that consist of seven items each. Responses are measured on a four-point Likert scale from '*Did not apply to me at all*' to '*Applied to me very much or most of the time*'. The Depression sub-scale includes statements aimed to detect hopelessness, self-deprecation, devaluation of life and dysphoria (distress/discomfort). The Anxiety sub-scale includes statements concerning autonomic arousal (physical sensations of anxiety such as heart palpations or dry mouth) and situational anxiety. The Stress sub-scale includes statements relating to difficulties with relaxing, and threshold for agitation.

The DASS-21 was considered useful and suitable for use among with the current cohort for several reasons. The DASS-21 offers a concise means of measuring multiple constructs (depression, anxiety, stress, CAD). This is relevant as depression in the perinatal period has received more research interest than anxiety and stress (Falah-Hassani *et al.* 2016), and CAD is increasingly recognised as requiring further investigation (Falah-Hassani et al. 2017). Additionally, the DASS-21 does not include items relating to somatic complaints common in pregnancy which are also associated with depression, such as appetite and weight changes, sleep difficulties, or fatigue. Therefore, pregnancy related confounding variables, which would be poor indicators for mental distress among pregnant and postpartum women (Klein & Essex 1994), are avoided by the DASS-21. Good reliability and discriminant validity have been reported for the DASS-21 (Brown *et al.* 1997, Crawford & Henry 2003, Henry & Crawford 2005). It is suitable for use among pregnant and postpartum populations as the cronbach's alpha coefficients for each of the sub-scales have been reported as very good with pregnant (Depression; α= 0.82, Anxiety; α= 0.79, Stress; α= 0.89) (Xavier *et al.* 2016) and postpartum (Depression: α= 0.84, Anxiety: α= 0.77, Stress; α= 0.86) (Miller *et al.* 2006) cohorts.

- *Five-year Follow-up*

The five-year data was comprised of survey data collected from MAMMI study participants at five years after first–time motherhood. The survey collected socio-demographic and socio-economic data, data in relation to mental health symptomatology and well-being, social factors and emotional and relational factors. The five-year follow-up survey contained the same data collection tools and structure as the perinatal surveys with the exception of the inclusion of two sections (Treatment and Costs of Care: Part H and Views on Data Sharing: Part I) not included in the current analysis. Additionally, the Mental Health Continuum Short-Form was added in 2021. Prior to developing the five-year follow-up survey, MAMMI study participants were invited to review the content and structure, and suggest amendments. Two face-to-face meetings were held with a total of 8 women, and 12 women offered feedback via email or by phone. All of them found the content of the survey acceptable. Women's main comments related to the format and wording of the correspondence with women who may have experienced miscarriages, termination of pregnancy, fertility issues or decided not to have additional children.

Mental health symptomatology: Depression, Anxiety and Stress Scale (DASS-21)

The DASS-21 was included in the five-year follow-up survey. The DASS-21 is not diagnostic tool; however it is a broad-spectrum measure which has been applied in clinical and public health research settings (Henry & Crawford 2005). Additionally, it has been utilised to examine mental health symptomatology among mothers beyond the perinatal period (Alibekova *et al.* 2022) with good reliability (α= 0.936) (Ansari *et al.* 2021), and to track mothers' mental health symptomatology trajectories from pregnancy to five years after motherhood (Bryson *et al.* 2021).

Mental well-being: Adult Mental Health Continuum Short-Form (MHC-SF)

The Mental Health Continuum-Short Form (MHC-SF) (Keyes 2009) is a fourteen-item scale containing three sub-scales relating to emotional well-being, social well-being and psychological well-being (Keyes 2009). Emotional well-being consists of a three-item sub-scale that asks about one's happiness, interest in and satisfaction with life. Social well-being is composed of a five item sub-scale examining ones sense of belonging and contribution to society, and psychological well-being entails six items relating to self-acceptance, competence and direction in life, and positive interpersonal relationships (Keyes 2009). Each statement asks the responder to rate the frequency of well-being experiences within the last month (e.g. during the past month, how often did you feel... That your life has a sense of direction or meaning to it). Responses are recorded along a six-point Likert scale ranging from 'never' to 'everyday'.

Keyes developed the scale to align with the conceptualisation that mental illness and mental well-being as two correlated though independent dimensions of mental health (Keyes 2002, Westerhof & Keyes 2010) and outcomes are categorised as Languishing, Moderate Mental Health or Flourishing. The three sub-scales of the MHC-SF are designed to reflect '*two compatible traditions*' (Keyes *et al.* 2008, p. 182) of subjective well-being. Hedonic well-being refers to positive feeling towards life and happiness, while eudemonic well-being refers to human potential and positive functioning in life (Keyes *et al.* 2008).

The MHC-SF is theoretically grounded and aligns with growing research emphasis on multidimensional assessments of psychosocial functioning (Jovanović 2015). The MHC-SF is a widely used instrument in the area of positive mental health (Hone *et al.* 2014) and reliability and construct validity of the scale has been demonstrated in clinical (Franken *et al.* 2018) and non-clinical samples in 38 countries (Żemojtel-Piotrowska *et al.* 2018), as well as in Ireland (Donnelly *et al.* 2019). Additionally, the MHC-SF has high validity among pregnant (α= 0.93) (Monteiro *et al.* 2023) and postpartum (α=0.96) (Monteiro *et al.* 2021b) cohorts. Permission for research use of the MHC-SF is granted in Keyes (2009, p2). Following an ethics amendment application and approval from the Faculty of Health Sciences Trinity College Dublin (FHS-TCD), the MHC-SF was added to the five-year follow-up survey in June 2021.

4.4.3.5 Data preparation

- *Perinatal data*

Data were coded and entered into SPSS Version 22 (IBMC 2013). A number of steps were taken to clean the data and prepare it for analysis. First, the accuracy of data entry was monitored using spot checks. Five per cent of the perinatal surveys were spot-checked and the data entry error rate[6] was low across all surveys (Survey 1: 0.45%; Survey 2: 0.83%; Survey 3: 0.27%; Survey 4: 0.06%; Survey 5: 0.44%). An error rate of between 1 and 5 per cent is acceptable in quantitative data (Chapman 2005). Second, all variables that were intended for analysis in the current study were checked using descriptive statistics; for example, a frequency analysis was conducted on variables for minimum and maximum values, and

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[6] The error rate is calculated as the total number of errors divided by the total number of items.

missing values, this process highlighted data entry errors which were corrected. Following data cleaning, the data were then prepared for analysis. In some instances, collected data were too broad to enable a meaningful analysis, for example, region of birth resulted in more than fifty different countries. For the purposes of comparison to national data, and to enable logistical regression, the data were collapsed into three categories (Ireland, European countries, and non-European countries) and re-named Region of Birth.

Additionally, it became clear that some variables did not have enough responses to produce meaningful results. For example, computation of the scores from the DASS-21 can be ordered into five severity levels; 'Normal, 'Mild', 'Moderate', 'Severe' and 'Extremely Severe'. The frequency of women being categorised as 'Severe' and 'Extremely Severe' were too few to conduct a linear regression analysis, therefore a dichotomous variable was created for each sub-scale to regroup the five levels into two levels of 'No/low symptomatology' and 'moderate/severe symptomatology' (adhering to the recommended cut-of scores proposed by (Lovibond & Lovibond 1995, Lovibond 1995)). This approach enabled a series of binomial regression analyses to be conducted (see appendix 4.12 for a list of re-categorised and re-coded perinatal variables).

- *Five-year data*

Data were coded and entered into SPSS Version 25 (IBMC 2017). The same process for checking the accuracy of data entry of the perinatal data was used for the five-year data. A total of 5.1 % (n=59) of five-year follow up surveys were spot-checked and the data entry error rate was 0.002%. Frequency statistics were used to identify anomalous data entry for more than two-hundred variables, few errors were found[7]. Variables were re-categorised and re-coded to enable analysis.

Steps to prepare the data for analysis were the same as for the perinatal data. A dichotomous variable was created for each sub-scale in the DASS-21; this was a pragmatic decision based on the low frequency of 'severe' and 'extremely severe' symptomology reports, which also enabled cohesion between the perinatal data analysis and the five-year data analysis (see appendix 4.13 for a list of re-categorised and re-coded five-year variables).

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[7] 150 errors/256410 items = 5.85000585000585e-4

4.4.3.6 Data analysis

- *Perinatal data*

The perinatal data were transferred to and analysed using Stata 17 (StataCorp 2021). Descriptive statistics were used to analyse the socio-demographic and socio-economic characteristics of the sample and are presented as frequency and percentages in comparison to national data where possible to assess the representativeness of the study sample and thus generalisability of the findings. The extent and prevalence of mental health symptomatology were described using frequency distributions and percentages. A series of binomial regressions were conducted to identify associations between demographic factors, birth outcomes, and preceding maternal (social, physical, mental) factors and mental health symptomatology in the first year postpartum. A series of Chi-square tests were conducted to identify associations between reports of physical health issues and mental health symptomology in the first year postpartum.

- *Five-year data*

Data were analysed using IBM statistical software SPSS version 25. Socio-demographic and socio-economic characteristics of the sample were analysed using descriptive statistics. Data are compared to national data where possible. The extent and prevalence of mental health symptomatology and mental well-being were described using frequency distributions and percentages. A series of binomial regressions were conducted to identify demographic, social, and relational factors associated with mental health symptomology and mental well-being at five-years after first-time motherhood.

4.5 Ethical considerations

4.5.1 Ethics approval

Ethics approval for conduct of the MAMMI study (Perinatal data) was sought from the Faculty of Health Sciences Trinity College Dublin (FHS-TCD) Ethics Committee, and to the ethics committees of the Rotunda Hospital, the Coombe Women and Infants University Hospital, and Galway University Hospital. Approval for conduct of the MAMMI study five-year follow-up (five-year data) (and amendments), the PPI interviews (and amendments), and the in-depth interviews were sought from FHS-TCD. Details of ethics applications and associated appendices are outlined in Table 4.6.

Table 4.6 Ethics applications by year

	Study strand or phase	***Ethics committee***	***Application reference***	***Date of approval***	***Appendix***
Phase 3	MAMMI (Perinatal data)	FHS-TCD	N/A	16th May 2011	Appendix 4.14
	MAMMI (Perinatal data)	RH	N/A	3rd October 2011	Appendix 4.15
	MAMMI (Perinatal data)	GUH	CA-900	31st May 2013	Appendix 4.16
	MAMMI (Perinatal data)	CWIUH	Study no 9. 2014	2nd April 2014	Appendix 4.17
	MAMMI (Five-year data)	FHS-TCD	170603	July 2017	Appendix 4.18
	MAMMI (Five-year data) *(MQLI & MHC-SF amendment)*	FHS-TCD	170603	3rd June 2021	Appendix 4.19
Phase 1	PPI Interviews	FHS-TCD	2020503	13th August 2020	Appendix 4.20
	PPI Interviews *(sample amendment)*	FHS-TCD	2020503	16th March 2021	Appendix 4.1
Phase 2	In-depth qualitative interviews	FHS-TCD	210509	June 2021	Appendix 4.21

4.5.2 Informed Consent

4.5.2.1 Phase 1 and phase 2: Informed consent

The data protection officer (DPO) reviewed and approved the consent forms for phases 1 (Appendix 4.4) and 2 (Appendix 4.8), before the ethics application for either phase was submitted to FHS-TCD ethics committee. The PPI interviews of the phase 1 were conducted from November 2020 and completed by May 2021. Due to national Covid-19 health and safety measures, the usual standards of requiring hardcopy written consent forms from participants was lifted to enable the continuation of research. Participants of the PPI interviews received a soft copy consent form for their own retention to their personal email, and a link to an electronic consent form captured by Microsoft forms, all participants completed the consent form. Participants who took part in the phase 2 in-depth interviews received hard-copy consent forms via post, interviews were only conducted with participants who completed and returned the consent form.

The PIL of phase 1 (Appendix 4.3) and phase 2 (Appendix 4.7) contained an extensive list information and support services available in Ireland.

Immediately prior to each interview participants were reminded of their right to withdraw without needing to provide an explanation to the researcher, they were informed that they had the right to decline to answer any question and that their decision would be respected by the researcher. Participants were also reminded of the intention to record the interview, but were given the option to conduct the interview without it being recorded. Each participant verbally consented to recording, and reconfirmed their consent on the recorded audio. Following each interview, the right to withdraw from the study prior to data anonymisation was reiterated by the researcher. Participants were directed to the information and support contacts listed in the PIL. No participant opted to withdraw from phase 1 or from phase 2.

4.5.2.2 Phase 3: Informed consent

Hard copy, written informed consent was obtained from every participant recruited to the MAMMI study. The consent form, provided in the study information pack, was comprehensive and developed with expertise from a medical lawyer (Appendix 4.2) (Daly 2014). General Data Protection Regulations (GDPR) were introduced to European Union countries in May 2018. In preparation for the implementation of the regulations, TCD's DPO reviewed the MAMMI study's processes and data protection procedures. Minimal changes were suggested for the five-year follow-up consent form (Appendix 4.11).

4.5.3 Ensuring confidentiality and secure personal information and data storage

All data collection, storage, and retention procedures set out in the ethics applications and data protection impact assessments for each phase of the current study were strictly adhered to. As required by GDPR (2018) all personal details databases for phases 1, 2 and 3 are encrypted, password protected, stored on university servers, and accessible only to the researcher or in the case of phase 3, to the researcher and nominated research staff. Hardcopy consent forms and survey data are stored in locked files in a locked storage facility accessible only to the nominated research staff. Electronic personal details databases and SPSS survey databases are not linked, both are encrypted, password protected, stored in separate folders on the university's server, and accessible only to the researcher and nominated staff with access permissions. Participants' confidentiality and anonymity are maintained through the use of non-linked identification codes. Interviews were recorded and transcribed using devices and applications approved by TCD IT services. Digitalised audio recordings and transcripts produced by the research were password protected, stored on the university server, and accessible only to the researcher. Transcripts were fully anonymised before sharing with supervisors for analysis, as were illustrative excerpts returned to participants for confirmation of the research findings. To maintain anonymity, pseudonyms were used and the contents of quotations used within the thesis or journal publications were reviewed to ensure that participants could not be identified.

4.5.4 Patient and Public Involvement and ethical considerations

There is a pragmatic (value) rationale to including PPI in research, in that involving stakeholders may improve the quality and reliability of research outputs. As there is an ideological or ethics based rational (values), which views PPI as a means of democratising research and supporting the representation of people whose lives are most impacted by research findings, service provision and policy change (Ives *et al.* 2013, Russell *et al.* 2020).

PPI can be seen as a development from the patient advocacy group movements of the 1950s when services users became increasingly vocal about the lack of autonomy and decision-making power in their own healthcare. At the core of this movement was the challenge of the paternalistic idea that the clinician or that the research knows best (Entwistle *et al.* 1998). Some ethics-based underpinnings for PPI have been founded on democratic principles linked to the concepts of rights and citizenship; in that the groups affected by research have a right to make decisions on how it is undertaken to ensure that it is relevant to, and serves, those whom it impacts (Wilson *et al.* 2015). PPI has been positioned as a solution to the '*democratic deficit*' (Martin 2008, p. 35) in research by centring the involvement of those most affected by research outcomes (Ives *et al.* 2013, Russell *et al.* 2020). Similarly, emancipatory approaches challenge traditional models of medical knowledge and give explicit primacy to the subjective knowledge of seldom-heard groups (Gibson *et al.* 2012), while epistemic injustice speaks to failing individuals in their capacity as knowers holding experiential knowledge (Flinterman *et al.* 2005, Fricker 2007).

These values influenced the inclusion of a PPI component in the current research. Being a woman (Holdcroft 2007), being pregnant (Brandon *et al.* 2009, Blehar *et al.* 2013), or having mental health issues (Harris *et al.* 2021) have been regarded, at times, as the basis for exclusion from research. There is a gender gap in research; evidence shows that that funding, recruitment and reporting of gender-related data have eschewed women (Holdcroft 2007). Being a woman and pregnant has been presented as an ethical consideration for the intentional exclusion of women from certain research, such as clinical trials (Brandon *et al.* 2009, Blehar *et al.* 2013), which has subsequent ethical implications for women receiving safe and effective treatments for pre-existing or new onset physical and MHPs during pregnancy (Little & Wickremsinhe 2017). With this knowledge as to the exclusion of women, pregnant women, and people with mental health issues from research, the current project strived to facilitate a measure of co-involvement and co-creation in the research space (method: *section 4.4.1*, implications: *section 5.5*).

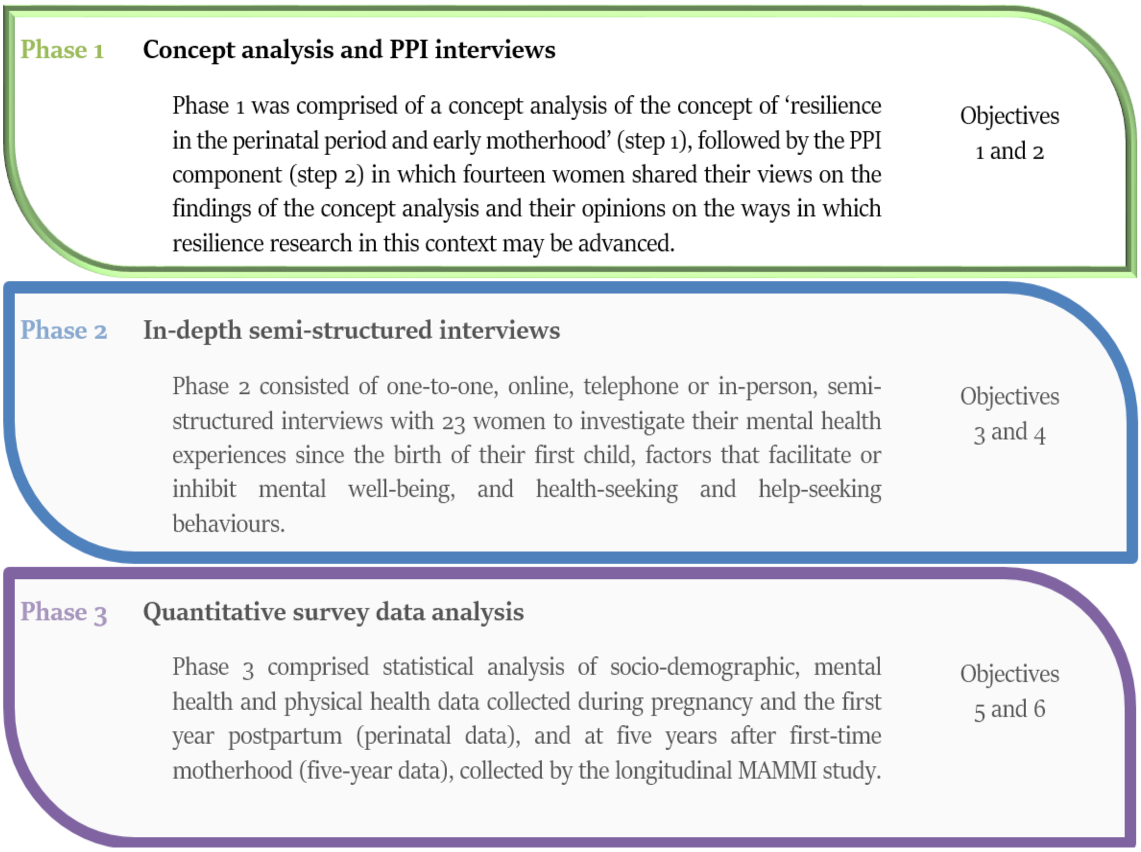
4.6 Conclusion

This multistage mixed-methods study incorporates explanatory sequential and convergent designs to achieve the research aims and objectives. Philosophically situated within the paradigm of pragmatism the content of this chapter demonstrates the rationale for and means of integrating the qualitative and quantitative methods taken to address the research questions. The research structure and methods were described in detail and ethical considerations discussed.

Chapter 5 Women's perspectives on resilience and research on resilience in motherhood [8]

5.1 Introduction

The aim of this chapter is to present the findings from Phase 1 of the research. The chapter commences with step 1 of Phase 1; the conduct and findings of a concept analysis of resilience in the context of the perinatal period and early motherhood. The findings of step 1 are followed by the findings of a qualitative study of women's perspectives on resilience and resilience research in the context of the perinatal period and early motherhood (PPI Interviews, step 2). The chapter concludes with an outline of the implications of the findings for the next stages of the research, namely the development of a semi-structured interview guide for phase 2, and the addition of psychometric tools for phase 3.



Phase 1 **Concept analysis and PPI interviews**

Phase 1 was comprised of a concept analysis of the concept of 'resilience in the perinatal period and early motherhood' (step 1), followed by the PPI component (step 2) in which fourteen women shared their views on the findings of the concept analysis and their opinions on the ways in which resilience research in this context may be advanced.

Objectives 1 and 2

Phase 2 **In-depth semi-structured interviews**

Phase 2 consisted of one-to-one, online, telephone or in-person, semi-structured interviews with 23 women to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours.

Objectives 3 and 4

Phase 3 **Quantitative survey data analysis**

Phase 3 comprised statistical analysis of socio-demographic, mental health and physical health data collected during pregnancy and the first year postpartum (perinatal data), and at five years after first-time motherhood (five-year data), collected by the longitudinal MAMMI study.

Objectives 5 and 6

Figure 5.1: Three phases of the study design

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[8] This chapter forms the basis for the follow publications:

- Hannon S. Daly D. & Higgins A. (2022) Resilience in the Perinatal Period and Early Motherhood: A Principle-Based Concept Analysis. *International Journal of Environmental Research and Public Health* **19**(8), 4754.
- Hannon, S, Higgins, A, Daly, D. (2023) Women's perspectives on resilience and research on resilience in motherhood: a qualitative study. Health Expectations **26**(4), 1575-1583

5.2 Phase 1; step 1: A concept analysis of resilience in the perinatal period and early motherhood

As resilience research in the area of the perinatal period and motherhood continues to grow, ensuing investigation may benefit from a context-specific concept analysis to provide a description of the current state of the empirical literature within this domain. Resilience literature in this context may be subject to, or have overcome, the limitations and criticisms surrounding definition and operationalisation that appear in wider resilience research. If the resilience concept is to be usefully applied to perinatal and maternal mental health then a clear understanding of the current state of the empirical literature in this area is beneficial to advancing the field of enquiry.

Existing, and essential, work on resilience in the transition to parenthood requires a comment here, as does the potential criticism that a special focus on resilience in motherhood is so-called 'salami slicing' the area of parenthood. Despite changing social attitudes towards gender roles and responsibilities in parenting, mothers remain, disproportionally, the primary caregivers to children (Bianchi *et al.* 2006). Additionally, women are situated in a socio-historical context that has placed greater responsibility for children's health and behavioural problems on mothers than on fathers (Henderson *et al.* 2016), a dynamic which is also evident in research development and theory (Soubry 2018). These are pertinent factors to consider when approaching parenthood; the roles and responsibilities that mothers and fathers experience, and are expected to carry, in this life transition differ by gender. Therefore, a specific and separate consideration of resilience in motherhood is a relevant and necessary pursuit. This view is not to minimise the importance of fathers' resilience in their transition to fatherhood, the factors and processes involved in paternal resilience are a valid and meaningful area of research. However, as other researchers have highlighted, we should not presume that '*what works best for men is the same as what works best for women*' (Luthar 2015, p. 1). Indeed, as previously mentioned (chapter 3), the literature concerning parenthood has acknowledged differences between mothers' and fathers' experiences of resilience (Young *et al.* 2021). These considerations, taken together, substantiates the need for a specific contemplation of resilience in motherhood as it is experienced by women who are mothers.

The aims of the concept analysis were three-fold: i) to analyse how women's resilience is defined, conceptualised and researched within the empirical literature as it relates to the perinatal period and early motherhood, and evaluate the concept's degree of maturity in relation to its epistemological, logical, linguistic and pragmatic use using a principle-based framework (Objective 1), ii) to share the findings of the concept analysis with women who are mothers, and obtain their views on the ways in which resilience is currently researched and conceptualised in the perinatal period and early motherhood, and to seek their opinions on the ways in which they believe resilience research should be advanced and iii) incorporate women's feedback into the development of research questions for the qualitative phase (phase 2) of the research, and the addition of psychometric tools for quantitative data collection (Objective 2).

It is also salient to add that the concept analysis did not aim to add another definition of resilience to the literature; rather the primary aim was to provide a clear description of current trends with regards to how women's resilience is conceptualised and measured in this context.

5.2.1 Choosing a concept analysis framework

A principle-based approach to concept analyses developed by Penrod and Hupcey (2005) was chosen to assess the degree of maturity of resilience research in the perinatal period and early motherhood. This framework employs scientific literature as data to reveal the '*existing state of the science'* (Penrod & Hupcey 2005, p. 403) and determine the epistemological, linguistic, pragmatic, and logical use of a concept within empirical literature. Other frameworks were considered, such as Walker & Avant (2005), Rodgers (1989), and Rodgers & Knafl (2000) (Rodgers 1989, Rodgers & Knafl 2000, Walker 2005), however each of those frameworks involves identification of attributes frequently associated with the concept. This feature was considered unsuitable to the current research as attributes that appear to emerge from analyses may actually be a result of frequently used measures. Additionally, unlike other frameworks, Penrod and Hupcey's methodology does not require researchers to compose hypothetical case studies to exemplify the concept. This was considered ideal to the research aims as it prevents a researcher-produced, and potentially skewed, interpretation of the manifestations of resilience.

5.2.2 Data sources and search strategy

A protocol and search strategy was developed *a priori.* CINAHL, Medline, PsychInfo, EMBASE, ASSIA, Web of Science, Scielo, Maternity and Infant Care, the Cochrane Library and the WHO Library and Digital Information Networks were systematically searched. As the population of interest was women in the perinatal period and the first five years postpartum, keywords for the first string were: (pregnan*) OR 'pregnant wom*' OR primigravid* OR primipara* OR 'gravid*' OR multigravida* OR multipara* OR nullipara* OR nulligravid* OR childbearing OR child-bearing OR antenatal OR ante-natal OR prenatal OR pre-natal* OR 'expect* mother*' OR perinatal* OR peri-natal* OR postnatal* OR post-natal* OR post-partum OR post-partum* OR 'new mum*' OR maternal* OR mother*. Keywords for the second string were ('psychological resilience'/exp OR resil*.). Search strings were combined using the Boolean operand 'AND'. No date limit was applied in order to capture all citations relevant to the analysis and identify development of the concept over time. Data were collected in January/ February 2020 and March 2022.

5.2.3 Inclusion criteria

Primary research published in English where there was a clear expression that at least one phenomenon examined or discovered was psychological/mental resilience of pregnant women and mothers up to five years postpartum. Research involving mothers and partners were included only where mothers' data could be separated from partner data.

5.2.4 Exclusion criteria

Articles were excluded if; i) resilience was examined during pregnancy only, ii) mothers' resilience was explored in relation to infertility, miscarriage, stillbirth, or a child's death, or iii) operationalised by child health or development outcomes and iv) the population was adolescent mothers. The final exclusion was intended to avoid skewing analysis; motherhood in adolescence involves navigation of dual adolescent and maternal identities (Birkeland *et al.* 2005), which women who become mothers in adulthood do not confront. Additionally, education-related outcomes are common in adolescent resilience literature (Olsson *et al.* 2003) and unlikely to feature as a life-stage appropriate outcome for most mothers in adulthood. Finally, articles evaluating interventions, or participants' satisfaction with resilience interventions, conference abstracts, case studies, theses, reviews and editorials were not included.

Table 5.1 Inclusion and exclusion criteria

Inclusion	**Exclusion**
· Pregnant women and women up to five-years postpartum. · Empirical research studies. · English language publications. · A clear expression that psychological resilience was studied or found.	· Publications in languages other than English. · Studies with women in pregnancy only. · Unclear expression that resilience is a feature of exploration or a result. · Mothers' resilience explored in relation to a child's death, stillbirth or miscarriage, or infertility or infertility treatment. · Mothers' resilience operationalised by child health or development outcomes. · Resilience of adolescent mothers · Studies exploring resilience related to immunology or biological health. · Studies testing interventions or evaluating participants' experiences or satisfaction with interventions. · Reviews and editorials, conference abstracts, case studies or theses.

5.2.5 Data extraction

Included articles were evaluated according to four philosophical principles described by Penrod & Hupcey's (2005) principle-based concept analysis: epistemology, linguistics, pragmatism, and logic. This framework allows for a degree of subjective interpretation in recognition that data salient to one principle may simultaneously hold relevance in another. A data extraction tool was adapted from (O'Malley *et al.* 2015). Data included lead author's discipline, study design, aim, sample characteristics and country of origin, and sections relating to the four philosophical principles. My supervisors and I independently analysed three articles using the data extraction tool, then we met to discuss points of consistency and divergence within and between analyses, minor amendments to the tool were agreed upon and I analysed the remaining studies. The analysis did not require a quality assessment of the articles, as the research aim was to identify and evaluate the predominant methodological and philosophical approaches towards resilience in this context as opposed to synthesising overall findings.

5.2.6 Results

A total of 23,080 citations were retrieved, following duplicate removal 15,051 citations remained. Title and abstract screening eliminated 14,830 citations, 221 articles full-texts were screened. Exclusion criteria removed 165, leaving 56 studies eligible for data extraction and analysis (Figure 5.2: Prisma 2020 flow chart) (Page *et al.* 2021).

The included data were 41 quantitative, 11 qualitative and four mixed-methods design studies conducted since 2004. Approximately half of the included studies were published before the year 2020 and 28 were published in the two years between 2020 and 2022. However, only eight of the 28 publications included data from women living through the Covid-19 pandemic (Farewell *et al.* 2020, Davis *et al.* 2021, Kinser *et al.* 2021, Ladekarl *et al.* 2021, Liu *et al.* 2021, Mollard *et al.* 2021, Puertas-Gonzalez *et al.* 2021, Werchan *et al.* 2022).

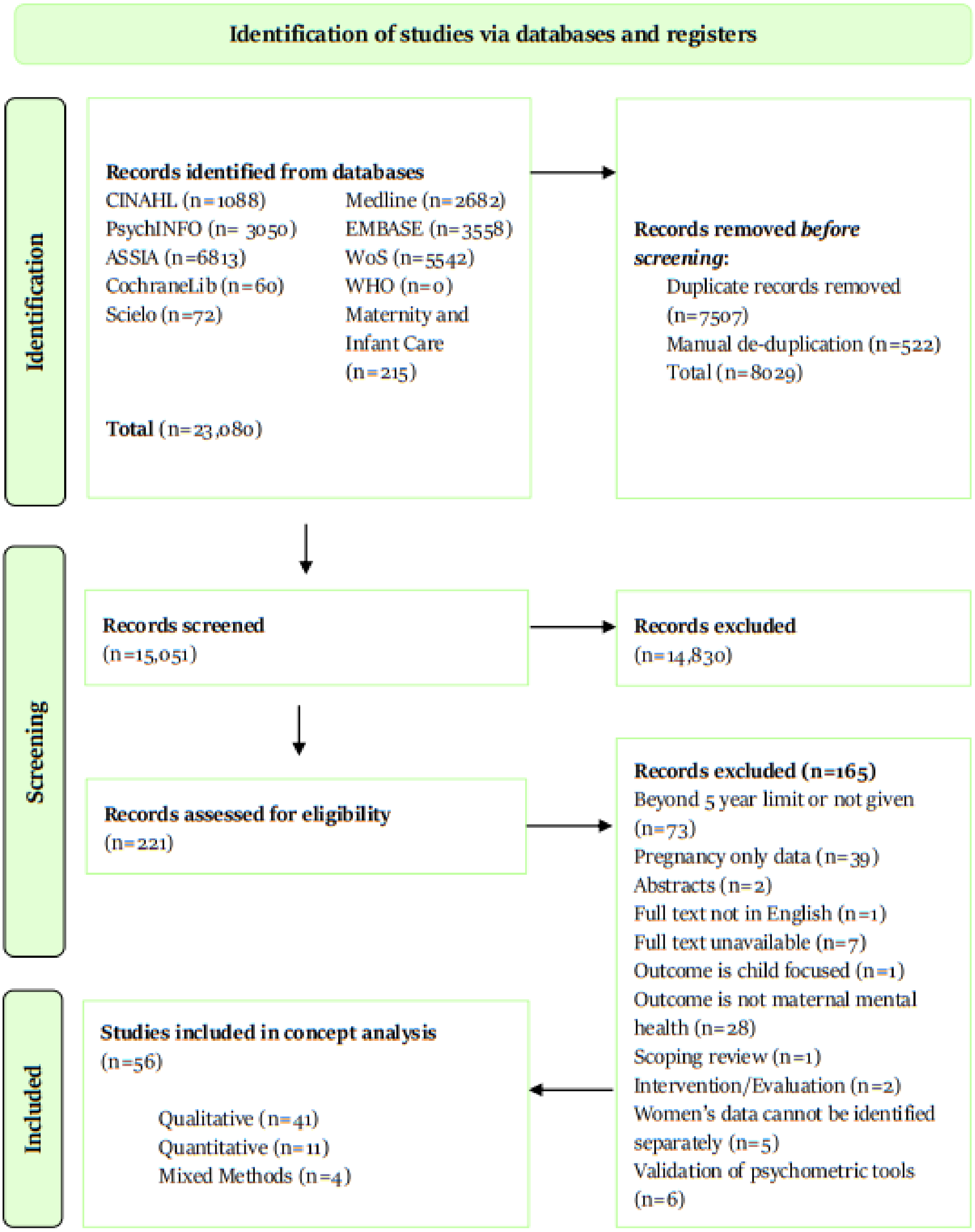

Figure 5.2 Prisma 2020 flow chart *(adapted from Page et al., 2021).*

5.2.6.1 Epistemological principle: Key findings

The epistemological principle assesses how a concept is defined and differentiated from similar or associated concepts (Penrod & Hupcey 2005). This presents two considerations for the analysis of the concept of resilience in the perinatal and maternal literature, first, is a formal definition provided and what is its orientation? Second, is consistency maintained between the definitions and the operationalisation and theoretical discussion of the concept?

Definitional categorisations were determined by the explicit definitions given by the authors of each paper. Of the 56 studies, 20 did not provide any definition. Thirty-four studies formally defined resilience; 22 definitions were from a trait perspective and ten provided a process definition. Two studies presented an operational definition of resilience (Appendix 5.1: Summary of Study Characteristics).

Orientations of resilience have been described as taking '*trait, process, or outcome*' perspectives (Fletcher & Sarkar 2013, p. 3). Analysis of resilience in the perinatal and early motherhood literature reveals similarity, but also some overlap, in those delineations. For example, resilience was conceptualised as a trait, which in some cases was simultaneously considered a protective factor. Process orientated definitions were accompanied by a mental health or well-being outcome operationalisation, and/or trajectory explorations exemplified by temporal patterns of low symptomatology.

Trait definitions were provided by 19 quantitative, two mixed-method, and one qualitative study. Resilience conceived as a trait makes the concept amenable to exploration of its function as a protective factor against negative outcomes, as illustrated by Angeles García-León et al. (2019) who explored trait-resilience as a protective factor against pregnancy-specific stress.

Process definitions were given by five quantitative studies and five qualitative studies, examples included social-ecological considerations posited by resilience scholars; for example '*psychological, social, environmental and biological factors interact to make an individual, at any stage of life, develop, maintain or regain their mental health despite exposure to adversity*' (Rodin & Stewart 2012, p. 1). Two studies gave dual definitions from both trait and process perspectives.

Twenty studies did not contain a formal definition of resilience, which necessitated inferences through assessment of each study's methodological approach. For example, resilience was suggested as a trait or protective factor through the use of validated resilience scales (nine studies), while others which operationalised resilience as low depressive (Miranda *et al.* 2012, Denckla *et al.* 2018, Assal-Zrike *et al.* 2021), or PTSD symptoms (Harville *et al.* 2010) implied a process or outcome orientation. Among the five qualitative and one mixed-method study that did not provide an explicit definition, coping was considered a manifestation of (Shaikh & Kauppi 2010a), or strongly associated with resilience (Keating-Lefler *et al.* 2004, Edge & Rogers 2005, Gewalt *et al.* 2018), or as a protective factor (Farewell *et al.* 2021, Shadowen *et al.* 2022).

Four studies utilised longitudinal data to trace patterns in mental health over time and each identified four temporal trajectories; three were defined by symptom levels (Denckla *et al.* 2018, Kikuchi *et al.* 2021, Perez *et al.* 2021), and one incorporated high scores of QoL (Fonseca *et al.* 2014). For example, though Denckla et al. (2018) did not provide a conceptual definition of resilience, the authors identified four trajectories of depressive symptoms in the perinatal period; 'resilient', 'improving', 'emergent' and 'chronic', and characterised the 'resilient' pattern as stable, low levels of depressive symptoms. Similarly Kikuchi et al.'s (2021) resilient trajectory was operationally defined as women who were '*not depressed throughout 1 year postpartum*' (p. 632). Defining resilience along a trajectory of mental health symptomatology or absence offers a degree of simplicity to an otherwise complex concept and allows researchers to apply a consistent and pragmatic methodology, which can be compared and evaluated across studies. However, both Fonseca et al.'s (2014) 'recovery' trajectory group and Denckla et al.'s (2018) 'improving' group could be suggested as equally valid demonstrations of resilience, as returning to baseline is indicative of a homeostatic response and thus a demonstration of the 'bouncing back' which is associated with resilience definitions.

- *Definitional Elements*

While the phrase 'maternal resilience' was found in six studies (Gagnon *et al.* 2013, Rossman *et al.* 2017, Bennett & Kearney 2018, Martinez-Torteya *et al.* 2018, Angeles Garcia-Leon *et al.* 2019, Nuyts *et al.* 2021), none provided a specified definition. The use of the term 'maternal resilience' suggests a differentiation from resilience in other contexts however; the term was employed as a matter of linguistic association rather than to denote unique definitional or conceptual features of resilience as it occurs within the perinatal period and early motherhood.

5.2.6.2 Linguistic principle: Key findings

The linguistic principle examines appropriate and consistent use of terminologies. Linguistic usage was not easily categorised, as there was fluid use between associated terms and concepts. Additionally, linguistic use of terms was often blended with operational approaches. The concept of coping is a primary example in this context, in some cases coping and resilience were used synonymously (Edge & Rogers 2005, Gagnon *et al.* 2013, Nishi & Usuda 2017, Gewalt *et al.* 2018, Yu *et al.* 2020). Some authors made subtle distinctions and considered coping to be a manifestation of resilience (Shaikh & Kauppi 2010a) or '*attribute of resilience rather than a concept in its own right*' (Rossman *et al.* 2017, p. 435).

The terms 'resistance', 'adaptation', and 'protection' were a frequent feature of the literature, and occasionally used interchangeably with resilience (Grote & Bledsoe 2007, Miranda *et al.* 2012, Muzik *et al.* 2016, Handelzalts *et al.* 2020, Kinser *et al.* 2021, Sahin 2022). In these cases, resilience was measured as positive patterns of scoring on mental health scales, which were considered illustrative of an adaptive or resistant response (Grote & Bledsoe 2007, Asif *et al.* 2020). Adaptation in qualitative data was associated with self-care or activities that the authors considered as 'resiliency building', such as optimal nutrition and exercise**,** use of mindfulness practices and accepting help (Kinser *et al.* 2021).

Resilience in research is considered an alternative approach to mental health discourses by offering a divergence from 'deficit' models of psychopathology (Windle 2011, p. 1). It is interesting then to note the use, though infrequent, of 'deficit' language in relation to resilience in the perinatal period and early motherhood. For example, Bennett and Kearney described some women as having '*shortcomings in their support network or resilience'* (Bennett & Kearney 2018, p. 8). Similarly, Asunción et al. (2016) when referencing Schachman and Lindsey's (2013) research, cite low 'self-resilience' as meaning women who '*lack a positive attitude, perseverance, self-efficacy, and the ability to adapt to the stress of having a new baby'* (Asuncion Lara *et al.* 2016, p. 831). However, Schachman and Lindsey did not employ language implying deficit but rather used affirming terms and describe mothers meeting hardship with 'self-reliant' and 'can-do' attitudes (Schachman & Lindsey 2013, p. 164). Additionally, there were instances where resilience scores were used to categorise women as possessing 'low', 'high' (Ladekarl *et al.* 2021, Mikuš *et al.* 2021, Sahin 2022), or 'normal' (Asif *et al.* 2020) resilience levels. While such phrasings and presentations may be a matter of oversight, the use of deficit language is inconsistent with resilience as a strengths-based approach.

5.2.6.3 Pragmatic principle: Key findings

The pragmatic principle brings attention to the application of the concept within research and clinical practice. Among the forty-one quantitative studies, one study equated the sense of coherence (SOC) scale as resilience (Margalit & Kleitman 2006) and 23 employed a resilience scale alongside one or more measures of mental health or functioning outcomes. Seventeen operationalised resilience as mental health outcomes and/or positive functioning. Five qualitative studies linked resilience to evidence of coping or coping strategies (Keating-Lefler *et al.* 2004, Edge & Rogers 2005, Shaikh & Kauppi 2010a, Rossman *et al.* 2017, Gewalt *et al.* 2018, Schaefer *et al.* 2019), and/or to adaptation (Keating-Lefler *et al.* 2004, Keating-Lefler & Wilson 2004).

- *Operationalisation and Research Pragmatism*

Similar to the wider literature, low symptomology commonly featured as an outcome considered indicative of resilience. Context specific measures were also implemented; for example, pregnancy-specific stress (Angeles Garcia-Leon *et al.* 2019), pregnancy-related anxiety (Hain *et al.* 2016), pregnancy distress (Bennett & Kearney 2018), postpartum emotional distress (Assal-Zrike *et al.* 2021), maternity blues (Mikuš *et al.* 2021) and parenting stress (Margalit & Kleitman 2006, Gerstein *et al.* 2009). Additional measures included suicidal ideation (Muzik *et al.* 2016) and suicidal behaviour (Asuncion Lara *et al.* 2016), anxiety (Mitchell & Ronzio 2011, Yu *et al.* 2020, Assal-Zrike *et al.* 2021, Ladekarl *et al.* 2021), loneliness (Farewell *et al.* 2020) and psychopathological symptoms (Angeles Garcia-Leon *et al.* 2019, Puertas-Gonzalez *et al.* 2021). The most frequently used scales measured depression (21 studies) and PTSD (ten studies) (Appendix 5.1). Although low symptomatology is a common operationalisation of resilience in any context, this approach has been criticised, as it neglects to illustrate well-being or the successful adaptation component of many resilience definitions (Rutten *et al.* 2013).

Nineteen studies included well-being or adaptive outcomes. These involved scales developed to measure QoL (Mautner *et al.* 2013, Fonseca *et al.* 2014, Handelzalts *et al.* 2020), psychological well-being (Angeles Garcia-Leon *et al.* 2019, Farewell *et al.* 2020, Davis *et al.* 2021), posttraumatic growth (Nishi & Usuda 2017, Chasson & Taubman–Ben-Ari 2021), SOC (Andersson *et al.* 2021), self-compassion and mindfulness (Davis *et al.* 2021), and mastery (Mollard *et al.* 2021). Family function and perinatal specific tools were also used, such as postpartum mastery and family specific well-being (Sexton *et al.* 2016), family adaptation (Margalit & Kleitman 2006), postpartum sense of competence (Sexton *et al.* 2016, Martinez-Torteya *et al.* 2018), flourishing, maternal confidence, self-compassion, psychological flexibility (Monteiro *et al.* 2021a) and maternal attachment (Sahin 2022). Two studies considered an affirmative response to self-perceived benefits following natural disaster exposure as a positive outcome (Harville *et al.* 2010, Harville *et al.* 2011).

Two studies that intended to include a well-being element, misinterpreted the application of the scale they employed. Bennett and Kearney (2018) aimed to measure maternal well-being using the mother and baby interaction scale (MABISC) (Høivik *et al.* 2013), however this scale assesses maternal distress and suboptimal mother-infant bonding. Similarly, Gerstein et al. (2009) intended to determine parental well-being through the Symptom Checklist-35 (Derogatis 1993), which measures symptomatic distress (Sereda & Dembitskyi 2016).

- *Stakeholders' Interpretations of Resilience*

A strength of Penrod and Hupcey's (2005) principle-based method is that it includes direct assessment of whether or not relevant stakeholders recognise the '*manifestations of the concept; it should ring true with experience*' (p. 405). Beyond operationalisations of resilience as symptom absence and adaptation or positive functioning which is predominate in the quantitative literature, the qualitative literature may offer an opportunity to identify the stakeholders who have determined the manifestations of resilience within the perinatal and early motherhood literature, for example researchers, HCPs, or mothers.

Resilience themes emerged from researchers' inductive analysis of data in five qualitative studies. For example, Farewell et al. (2021) considered socio-ecological protective factors for mothers living in deprived areas through *a priori* codes linked to interpersonal supports and community level and societal-level resources (Farewell *et al.* 2021). Whereas other authors concluded that resilience is expressed in evidence of coping styles and strategies (Keating-Lefler *et al.* 2004, Edge & Rogers 2005, Shaikh & Kauppi 2010a, Gewalt *et al.* 2018).

Rossman et al. (2016) also related resilience to coping; however the researchers discussed coping's frequent synonymous use for resilience and provided a definitional and functional difference between the two concepts. For example, defining resilience as a contextually determined dynamic process that influences the way in which a potentially traumatic event is perceived, with orientation towards positive outcomes, while coping was understood as the behaviour and strategies employed in response to the stress-event, which may be maladaptive as well as adaptive. In addition, the authors firmly positioned the findings within the context in which they occur, by identifying external sources; such as the supportive role of breastfeeding peer counsellors and Neonatal Intensive Care Unit (NICU) nurses, and internal processes; acceptance of and navigation of discrepancy between expectations and reality, coping mechanisms and envisioning the future. This work, though particular to the complexities of mothering an infant in NICU, provided views from multiple stakeholders. Mothers identified the supports necessary for their mental well-being, and researchers provided explanation as to the processes that these supports facilitated, namely informational and emotional support through fostering mothers' sense of confidence as caregivers.

Schaefer et al.'s (2019) study provides an example of how resilience may be understood differently depending on stakeholder perspective. Researchers considered mothers subjected to IPV as displaying resilience if they were '*utilizing resources to keep moving forward*' (p. 13) and presented themes of perseverance, self-reliance, and reconnecting to community in this regard. Researchers noted that these themes were more likely to appear in data from service providers than in mothers' data. Although the authors suggest that women were less apt in recognising their own strengths, and that mothers' self-esteem could be bolstered by service providers drawing women's attention to their strengths and resourcefulness. One may observe that these resilience manifestations are situated at the individual level and do not address issues of availability, access or barriers to resources which may assist mothers to keep moving forward.

Although the data collection tool of one of the included studies contained the question '*What does perinatal resilience mean to you?*' (Nuyts *et al.* 2021, p. 3) the findings were not reported. Overall, none of the included studies examined mothers' interpretations, perspectives on, or lived experience of resilience.

- *Clinical Pragmatism*

The findings from the included studies and their relevance to a clinical setting varied. Few authors elaborated on how their particular findings could be useful in clinical practice. In some, there were no data which could be extracted to answer this question. However, two themes became apparent in authors' *recommendations* for the clinical application of their findings. These were that HCPs should '*support and inform'* women, and '*assess and screen'* them.

For example, Rossman et al. (2017) suggested that NICU nurses' have an influential role that can potentially promote women's resilience, and proposed that NICU nurses support resilience through validating women's emotional experiences and encouraging their sense of maternal self-efficacy. Bennett and Kearney (2018) urged HCPs to offer breastfeeding education to mothers in the hopes that doing so will prompt independent support building. Two studies recommended that mothers be informed of, and supported in, the use of coping strategies as resilience enhancing techniques (Edge & Rogers 2005, Shaikh & Kauppi 2010a). However, how and who might implement these recommendations was not described.

Several authors concluded that screening or assessment of mothers could be a practical application of their research (Fonseca *et al.* 2014, Asuncion Lara *et al.* 2016, Hain *et al.* 2016, Nuyts *et al.* 2021), and drew attention to some important considerations with regards to screening and assessment of mental health among mothers. For example, the need for PNMH screening to be culturally sensitive (Edge & Rogers 2005) and conducted at multiple time points beyond the six-week period when most postpartum care stops (Muzik *et al.* 2016). However, the range of ways in which resilience was conceptualised across the studies precluded a depiction as to how resilience screening might be achieved. Additionally, discussions concerning ethical issues such as acceptability of screening procedures to women and HCPs (El-Den *et al.* 2015) and consent and autonomy (Krantz *et al.* 2008) did not feature in the included texts alongside these recommendations.

5.2.6.4 Logical principle: Key findings

The logical principle considers the theoretical integration of the concept with associated concepts, and whether the integration of those concepts is logical to the area. Concepts relating to QoL, mental health, adaptation and adjustment, and coping often appeared concurrent to resilience within the included literature.

- *Mental Health*

Several authors considered that psychological outcomes, explored as part of the resilience concept, should reflect a positive or adaptive component and extend beyond psychopathology absence. For example, some used mental well-being measures (Angeles Garcia-Leon *et al.* 2019, Farewell *et al.* 2020, Davis *et al.* 2021), and specifically questioned if illness absence is a suitable substitute for resilience among postpartum women (Monteiro *et al.* 2021a). Although not an exclusive measure of mental health, QoL scales were utilised by three studies as a demonstration of a positive component of resilience (Mautner *et al.* 2013, Fonseca *et al.* 2014, Handelzalts *et al.* 2020), as were post-traumatic growth scales (Nishi & Usuda 2017, Chasson & Taubman–Ben-Ari 2021). However, the most frequently applied measures were those designed to measure mental distress/illness. Although the use of illness absence has long been commented on as failing to include the positive function or adaptation component which features in many resilience definitions (Luthar & Zigler 1991, Davydov *et al.* 2010), there were fewer articles published between 2020 and 2022 that contained measures of well-being or positive function than did the articles published between 2004 and 2019 (Appendix 5.1).

- *Adaptation and Adjustment*

Concepts of adaptation and adjustment were common and can be considered a reasonable feature, as motherhood is also considered a period of change requiring the integration of new roles and identities (Mercer 2004). However, how adaptation and adjustment (as synonymous concepts for resilience) were measured varied between studies. For example, Fonseca et al. (2014) operationalised parental adjustment through psychological distress and QoL scales, while resilience was considered evident in low distress and high QoL scores. In this way, parental adaptation and resilience were one and the same, without a linguistic or functional distinction. Handelzalts et al. (2020) devised a similar operationalisation, conceiving positive postpartum adjustment as low depression and high QoL.

Other scales used as indicators of adaptation were often specified to the perinatal period or mothering role, such as maternal role adaptation (Schachman & Lindsey 2013), family adaptation and cohesion (Margalit & Kleitman 2006) or postpartum positive functioning (Sexton *et al.* 2015) or maternal attachment (Sahin 2022). Context specificity is reasonable given the different ways that resilience may be considered manifest in different situations.

- *Coping*

The integration of the concept of coping varied across the included studies. In some cases, the operationalisation of coping outcomes as synonymous for resilience may be considered an intentional blurring of concepts (Shaikh & Kauppi 2010a, Nishi & Usuda 2017, Werchan *et al.* 2022). For example, Werchan et al. (2022) categorised perinatal women by behavioural profiles associated with coping styles, and Mikuš et al. (2021) explicitly equated stress coping ability with resilience. Some authors appeared to understand coping as held within the concept of resilience, but did not explicitly state this stance (Edge & Rogers 2005, Gewalt *et al.* 2018), whereas others researched the association of coping strategies with resilience (Yu *et al.* 2020, Kinser *et al.* 2021). Similarly, Rossman et al. (2017) made a distinction between resilience and coping; the authors considered resilience as a process, influenced by context, that is '*oriented toward positive outcomes*' (p. 435), whereas adaptive coping was deemed an attribute of resilience, and consisted of the active behaviours that follow appraisal of the context.

5.2.7 Discussion of concept analysis findings [9]

The concept analysis consolidates the findings of resilience in the perinatal period and early motherhood, it identifies reoccurring themes, limitations, and potential areas for development through the evaluation of the philosophical principles of epistemology, pragmatism, linguistics and logic, and offers a useful avenue through which the concept in this context may be advanced. Additionally, the analysis offers a timely summary of common epistemological and methodological trends as it reveals a surge of interest in

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[9] A indivudal discussion for step 1 and step 2 of phase 1 are presented within this chapter for the reader's clarity. An integrated discussion of phase 1 can be found in chapter 8.

this area in recent years; 28 of the 56 included studies were published between 2004 and 2019, a 15-year timespan, whereas the other 28 were published over the course of two years between 2020 and 2022.

A challenge for evaluating consistency in resilience research in this context, is that first, varying definitions and interchanging use of terms and concepts is an issue already remarked upon in relation to resilience in any context (Fletcher & Sarkar 2013). Second, authors' conceptualisations of resilience shape how it is used linguistically, and how it is researched practically and logically by individual studies. For example, the analysis revealed some overlap between the epistemological and linguistic principles, as demonstrated by the use of the term 'maternal resilience'. Epistemologically, the term implies the existence or examination of distinct elements of resilience specific to a maternal context. However, it became apparent that this term was not employed to denote unique definitional or conceptual features of resilience as it occurs within the perinatal period and motherhood. Rather its linguistic use was simply to place the phenomenon (resilience) within context (perinatal period and motherhood). The use of terminology that links resilience to the context in which it is being researched is encouraged by resilience researchers, as doing so brings specificity to findings and demonstrates established boundaries (Luthar *et al.* 2000). Although one study (Nuyts *et al.* 2021) utilised Van Haeken et al.'s (2020) definition of 'perinatal resilience' of mothers and partners in the first 1000 days of life as a '*circular process towards greater well-being'* (Van Haeken *et al.* 2020, p. 1), specific definitional elements, which may be inimitable to this timeframe, did not emerge in the analysis of the included studies. This is not a criticism of the research concerning the perinatal period and motherhood; rather it is a reflection on the emergent nature of the research in this context. Definitional conflicts of resilience are a matter of differing theoretical perspectives and are not limited to the context in which resilience is explored. However, the included studies rarely commented on definitional and operational issues within the wider literature, or the implications for research in the perinatal period and motherhood.

The inclusion criteria allowed for studies that did not provide a formal definition of resilience. This may be considered a limitation, particularly in light of on-going definitional debates. However, it potentially informed a more accurate representation of the current state of literature in this context. A practical step that researchers may take to improve conceptual clarity is to state their conceptual positions on resilience, and subsequently maintain consistency between the conceptual definitions and methods used to operationalise resilience within their research. With this in mind, researchers should also specify the relevance of associated areas or concepts in the operationalisation of resilience, and be conscious that the outcomes used to denote resilience may be better understood as compartmentalised, rather than global, indications of resilience (Vanderbilt-Adriance & Shaw 2008). In this regard, an acknowledgement of the capacity and limitations of tools designed to measure illness may also be useful, in order to avoid illness absence being conflated with resilience.

Pragmatic and logical analysis illustrated that resilience was operationalised most often by symptom absence. This approach has been critiqued for neglecting variables that contribute to the development and consolidation of resilience (Cabanyes Truffino 2010) and the differing domains, such as personal achievements, social competencies, or developmental milestones (Vanderbilt-Adriance & Shaw 2008) in which it may be considered manifest. The concept of coping appeared frequently, though with variability with regards to whether coping was considered distinct from, or integrated with, resilience. Adaptation and adjustment were commonly associated concepts which are logical in the perspective that motherhood is a period of transition. Their appearance may also be considered appropriate in light of the understanding of resilience as *'positive adaptation'* (Luthar & Cicchetti 2000, p. 108).

The research may be advanced through the inclusion of women's perspectives regarding resilience in this context. Though data from several qualitative studies were included, none specifically sought women's views on how resilience may be defined or manifest. Often, resilience was not the primary concept of interest in the qualitative studies; rather it developed from researchers' analysis of mothers' experiences and responses to multiple adverse life circumstances. Mothers' perspectives on resilience and their insights into the factors leading to vulnerability and protection have the potential to inform the development of research avenues, and effective prevention and intervention strategies.

Mental health is closely tied to resilience, and there are parallels in the discourses concerning the operationalisation of mental health, and the operationalisation of resilience. Mental health research has often focused on constructs of illness, disease or disorder such that their absence has become construed as health (Manwell *et al.* 2015). Likewise, methods that present resilience as illness absence neglect to provide evidence of the frequently used definitional component of the concept as a positive adaptation or function (Davydov *et al.* 2010). Therefore, future research may prioritise a focus on domains or manifestations which reflect, not only evidence of positive outcomes, but also positive outcomes that are specifically relevant to the perinatal period and early motherhood to the benefit and advancement of resilience theory in this context. That is not to say that an endeavour to identify positive outcomes was absent from the included literature. Several studies operationalised scales related to positive domains of functioning such as parental well-being (Gerstein *et al.* 2009) and postpartum sense of competence (Sexton *et al.* 2015). However, one point of observation is that investigation of positive outcomes were mainly centred on a woman's parenting and familial role. Future research may benefit from a wider exploration of the domains in which resilience manifests, including biological, social, and cognitive functioning. Additionally, this is another aspect of the research which may be enhanced with insights from mothers, as mothers' lived experience may fruitfully inform on domains or indicators that best reflect 'positive functioning' and resilience during this period.

At this point in time, the concept analysis would suggest that there is limited clinical pragmatic application of resilience in the perinatal period and early motherhood. Beyond advice to support and assess women, there was scant explanation as to how women might be supported or assessed using knowledge gained from resilience research. The variety of ways in which resilience was operationalised study-to-study limits recommendations as to ways that assessment might be achieved. Additionally, ideas around screening returned to the issue of identifying risk and psychopathology, as opposed to utilising findings to develop resilience promoting programmes, interventions, or models of care.

Overall, the included studies highlighted the heterogeneity of women's mental health experiences and patterns during the perinatal period and early motherhood and reveal that mental health and resilience outcomes during this time are complex. Psychological outcomes are not always negative even in the presence of known risk factors, and, importantly, are influenced by an array of nuanced social, economic, and cultural factors (Edge & Rogers 2005, Shaikh & Kauppi 2010a, Mitchell & Ronzio 2011, Martinez-Torteya *et al.* 2018, Goodman *et al.* 2020, Farewell *et al.* 2021, Shadowen *et al.* 2022). This heterogeneity helps to shape and build upon the current knowledge base, but also underscores the need for on-going research in order to achieve a complete understanding of resilience during the perinatal period and motherhood.

5.2.8 Limitations of the concept analysis

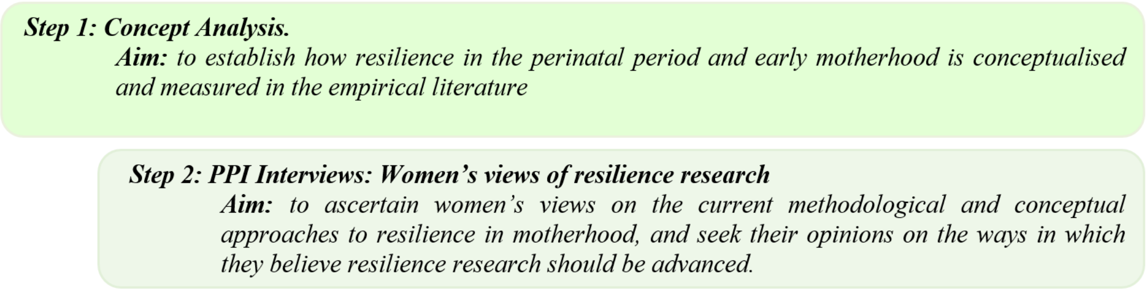
Non-English language publications were excluded; therefore, how the concept of resilience may be developed or understood differently in non-English speaking countries and cultures is not captured by the analysis.

5.2.9 Conclusion of the concept analysis

There is yet to be consensus regarding the operationalisation of resilience in the perinatal period and early motherhood. However, the study of resilience allows research to draw greater focus to the protective mechanisms and psychosocial factors that are present or emerge in this important life transition, over risk and vulnerability. It shifts the focus from pathogenic models, which have predominantly summarised this context thus far, to fostering positive adaptation and well-being. While the analysis demonstrates that this motivation features within the included research (approximately half of the studies contained positive outcomes of well-being, positive functioning, or exploration of protective factors), effort needs to be maintained to ensure that future research embraces the salutary orientation of the resilience concept.

5.3 Phase 1; step 2: Women's perspectives on resilience and resilience research in the perinatal period and early motherhood (PPI interviews)

Phase 1, step 2 involved sharing the findings of the concept analysis with women who are mothers to obtain their perspectives on the ways in which resilience is currently researched and conceptualised in the perinatal period and early motherhood, and seek their opinions on the ways in which they believe resilience research may be improved or advanced. The findings from women's views on the current state of the resilience literature in this context was intended to inform the development of research questions for the qualitative in-depth interviews with women (Phase 2, Chapter 6) and the addition of psychometric tools to quantitative data collection (Phase 3, Chapter 7).



Step 1: Concept Analysis.

Aim: *to establish how resilience in the perinatal period and early motherhood is conceptualised and measured in the empirical literature*

Step 2: PPI Interviews: Women's views of resilience research

Aim: *to ascertain women's views on the current methodological and conceptual approaches to resilience in motherhood, and seek their opinions on the ways in which they believe resilience research should be advanced.*

Figure 5.3: Two-step approach in phase 1

5.3.1 Summary of the PPI interview process

Methods for conducting the PPI interviews are described previously in section 4.3.1. Prior to the interview, each participant received a lay synopsis of the concept analysis findings and an interview guide (Appendix 4.5). The interview opened with an invitation for participants to share their own perspectives on what resilience meant to them. Then, the key findings under each principle were shared with participants, and they were asked related questions from the interview guide. Participants confirmed that they had shared all they wished to say before the next section was introduced. Before closing, participants were invited to speak on any issues that they may not have had an occasion to address within the interview. Interviews averaged 1 hour and 18 minutes (range: 44 min to 1 hr. 49 min) in duration.

5.3.2 Participants

Fourteen participants were interviewed. Participant characteristics are provided in Table 5.2. Eight participants were White-Irish; four were White-European, one was South-East Asian and one participant had a mixed ethnic background. Twelve participants were partnered, one was in a same-sex relationship, and two participants were single. Two participants disclosed their sexual orientation as bi-sexual. Participants' children were aged six months to seven years old.

Table 5.2 Participants' characteristics

Current partner status	*n*	**Ethnicity**	*n*	**Number of children**	*n*	**Sexual orientation**	*n*
Not in a relationship	2	White Irish	8	One child	5	Bi-sexual	2
Same-sex relationship	1	White European	4	Two children	2	Not disclosed	12
Heterosexual relationship	11	South-East Asian	1	Three children	3		
		Mixed ethnic background	1	Missing data	4		

5.4 Findings

The data were analysed in sections that corresponded to participants' responses to the findings of each of the four principles from the concept analysis[10]. Findings are presented accordingly. Participants' responses to the invitation to share their personal understanding of resilience are merged with their responses to the epistemological findings, as there was overlap and women frequently oscillated in conversation between personal definitions and their opinions of research definitions.

5.4.1 Women's perspectives on the Epistemological findings

Most women perceived resilience as a complex, multi-dimensional construct involving intrapersonal factors (the individual and their lived experiences), and as well as influences from family and culture, and social and professional supports. Intrapersonal factors considered to contribute to resilience included; optimism, positivity and a positive attitude, confidence, problem-solving abilities, help-seeking behaviours, emotional intelligence, a sense of purpose, a drive for independence, and having a strong work ethic. Additionally, some women described resilience as involving a personal outlook on life's challenges:

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[10] Additional supporting data may be found in Appendix 5.2: Phase 1, Women's perspectives on resilience and resilience research in motherhood- Four Principles

> *Resilience to me, would be about getting stressed over the things I should be stressed over and letting go of the stuff, the little things, that I can't change. (Avril)*

> *Being able to adapt and take on the challenges and being able to see that when they come again, that you're able to deal with them better, to know that there's good times ahead... that this will pass. (Catherine)*

Individual biological influences were mentioned; some women suggested that neurological differences are an important contextual consideration that should be nurtured by external factors to bring about resilience.

> *There is definitely some neurological or physical differences that can influence the trait. But that with, what you have for some reason, for some will be harder, but that you can work on it. Or you know, especially if it's a kid, it depends a lot on how you actually nurture them to be resilient. So that this is, definitely a bit of both. (Raquel)*

Though women spoke of the role of individual factors in resilience, as each interview progressed women drew multi-layered influences into their considerations. Some shifted in perspective as they developed their thoughts. For example, *Keva* initially considered resilience as '*just getting on with it*', but as she reflected on her own experiences she began revaluating this viewpoint:

> *Was it because I thought I was being resilient, that it led to that? That maybe if I had asked for more help from the beginning, it wouldn't have got to that? Say the downfall in my mental health because I was so used to being the person who was like 'Oh, it's grand! We can do it, it's fine, we don't need any help. I'm really strong, I'm well able for this'. And then... I wasn't. (Keva)*

Overall, a majority of women felt that a dynamic process perspective most closely aligned with their understanding of resilience.

> *I think it's more of a dynamic process. I don't think it's inherently an inbuilt trait, because I think it's definitely something that anybody can learn at any stage of their lifespan. (Sadhbh)*

In fact, women's conversations in relation to the definition of resilience were predominantly concerned with interpersonal and social factors. Women described how upbringing, family and culture were not only sources of resilience, but provided an exemplar of resilience.

> *I think it's something that you internalise, like I don't think you're born resilient or not resilient. I think that (you learn) through your experiences and through the way that you see other people dealing with experiences. (Evelyn)*

> *For me resilience really has been impacted and influenced heavily from a family, cultural, ethnic and religious point of view. And that's from my upbringing and the community I've grow up (in) and into, and the parental teachings. (Aashvi)*

> *I think it's all about our experiences and the way that we have been parented. And then when you are actually parenting, the kind of supports that you have. So I kind of don't... (believe that) resilience is something that some women just have and some women don't because (of) their personality. (Saoirse)*

In particular women emphasised that social support consists of combinations of *sources* and *type*. For instance, for women in this study, *sources* of support were partners, siblings, parents and in-laws, friends, peer groups, HCPs and social protection systems (charities, housing supports, legal aid etc.). The *types* of support offered were emotional, practical, informational, resource access and financial. Women considered social support as vital to understanding resilience and several spoke of (available and accessible) support as the key determinates of their resilience:

> *(I) tried to think about whether or not I was resilient, like, I have had a very satisfying mothering journey. But I know that that's because of the supports that I have. I don't feel like I'm more resilient than anybody else, I think I've been able to be resilient because of everything that I have. (Saoirse)*

> *Getting some level of strength from your relationships with other people as well. Close friends (and) family without them, I wouldn't be able to manage. (Eugenie)*

> *I think that I'm reasonably resilient, but a lot of this, I mean, this depends, on also, I mean... I'm very grateful for having fantastic people around me. So, friends, family, and I think that really, really helps. (Hania)*

Women were of the opinion that resilience in motherhood did not require a unique definition to separate its conceptualisations from other 'types' of resilience.

> *Becoming a parent or becoming a mother is a very unique episode in a person's life. But, I don't think that you need a unique type of resilience to bounce back from it. (Saoirse)*

However, they were of the opinion that resilience research in motherhood may require a different research approach in comparison to how it is currently being research, which is discussed further in the Logical findings.

5.4.2 Women's perspectives on the Linguistic findings

Terms that appeared in the resilience literature in the context of the perinatal period and early motherhood were: coping and coping strategies, adaptation and adjustment, and resistance and protection.

5.4.2.1 Coping

The topic of coping, though presented as a linguistic finding from the concept analysis, also generated discussion on its epistemological use. Two viewpoints became apparent. The first associated coping with negative linguistic connotations. Conceptually, coping appeared to be regarded as a concept in its own right, though componential to resilience. The second demonstrated neutral associations with coping and had a more integrated epistemological view of resilience and coping.

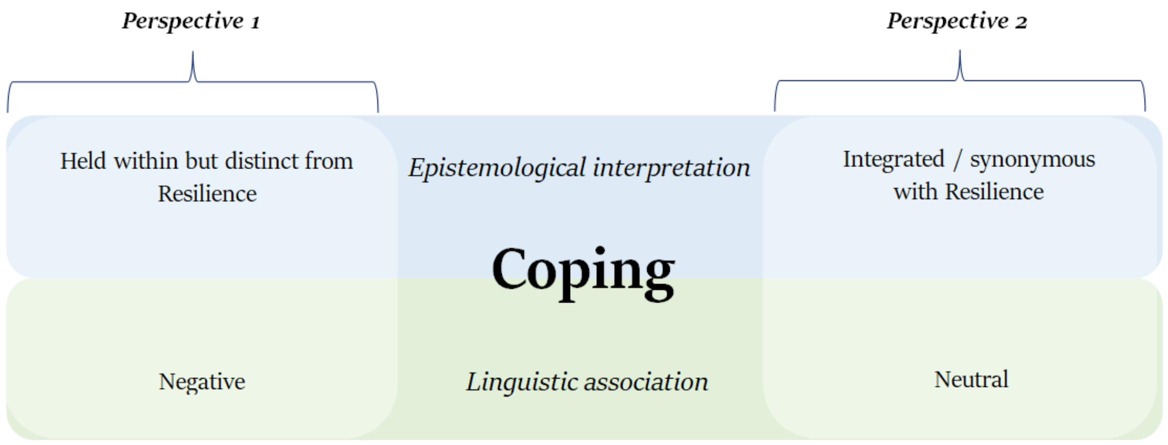

Figure 5.4: Two perspectives on the epistemological interpretation and linguistic association of 'Coping'.

- *Perspective 1: Coping: Linguistically negative, epistemologically distinct*

Several participants expressed negative connotations associated with the use of the word coping, particularly when it is used in the context of motherhood. Some felt that 'coping' is often introduced to the context of motherhood in the form of a question linked to a woman's ability as a mother, and presented with an air of judgement.

> *You're kind of (asking) you know, how (is) your ability as a mother? You know? People are saying how is she coping? What they're asking is... how are you... like, are you doing a good job at being a mum? Are you coping being a mother? You know, there is a judgment to it. (Avril)*

> *'It's clearly used like... a real hush, hush, 'Oh, she's not coping', you know? And it's clearly a negative, 'Oh, she's not doing well with this; she's not able to do it.' And it's kind of demeaning if you look at it really, because no one would... you wouldn't ring your Mam and say 'Oh god yeah, I'm coping really well with this.' It's not something I think people really use to describe themselves, but I think it might be used as something people use to describe others, as a negative thing.' (Keva)*

Presented in this way, women felt that being questioned about 'coping' was restrictive. It implied that there was only one acceptable response, and potentially hindered women's openness about the difficulties of being a parent and caring for a child.

> *It's not ok as a mother to say that you're not coping, where (it might be seen) that you're not doing a good enough job. (Saoirse)*

> *I hate that 'How are you coping?' Or like 'How are you finding it?' Like, what are they supposed to say other than 'Oh yeah, it's grand, it's great' you know? (Keva)*

From the first perspective, coping was seen as a necessary short-term strategy that offered temporary distress alleviation. Although 'coping' may offer something in terms of survival, it was perceived as inadequate for living, thriving, or the long-term solution finding that women of this view associated with the resilience concept.

> *For me... coping feels like, more short term? For me, coping is something that you do in the moment because you need a way out kind of thing. (Raquel)*

> *I just didn't like the word coping. Because, its used to... it's used too much as like... it's not like a resilience, like, a build-up, the resilience that you build and you, you see the challenges and you work through the challenges. (Catherine)*

> *I don't think that coping is the same as resilience, coping is, coping is um... barely scraping by, coping is surviving... Coping has to do with, with staying, you know, barely above the water. Resilience is being able to swim. You know, if you cope, you, you can fight off the waves and you can breathe, but*

> *you're not alive in any sort of way, and you're not about to, you're not about to become better or you're not about to fix the situation or handle the situation. (Sana)*

The distinction women made between coping and resilience also revealed a concern they had about the use of coping by researchers and HCPs. In this perspective, coping was viewed as being something that each individual woman 'does', it serves the short-term survival function and is generated within/from the woman. Importantly, coping was not associated with the involvement of external supports or resources. Thus, women were of the view that a focus on coping creates a perception that researchers and HCPs expect women to find or learn ways to cope without supports.

> *If you are asking people to constantly just cope, you are not getting to the root of the problem. If you're trying to get people to just focus on coping strategies you're kind of missing the point of resilience a bit. (Sadhbh)*

- *Perspective 2: Coping: Linguistically neutral, epistemologically integrated.*

Women, who presented a second perspective on coping, did not articulate positive or negative linguistic associations; rather their views were concerned with the conceptual integration of coping with resilience, which was synonymous.

> *Resilience is, to me, means… coping without breaking. That's my thing, like if I have an image, not necessarily in motherhood but generally, as in being strong… despite possible circumstances that are not necessarily positive or not necessarily nurturing. (Eleni)*

5.4.2.2 Adaptation and adjustment

Several women indicated a preference for the use of the words adaptation and adjustment in comparison to the term coping. They felt these words aligned with resilience and presented a compassionate view of motherhood as a transition that takes time to become accustomed to:

> *Something like adaptation makes it… gives you a lot more power in the situation because then you're able to change and make changes that you need. (Saoirse)*

> *I like the adjustment of it because I think it allows… if you told mothers that there would be a huge adjustment, it allows them to realise that things are going to change and that's OK. (Sadhbh)*

5.4.2.3 Protection and resistance

Women infrequently commented on protection and resistance; however one woman shared an interesting strengths-based perspective:

> *I like the word resistance; it feels more like a French revolution type of perspective (laughs). It's not something sad in the corner and I think the word resistance… there's a certain strength to it, isn't it? It's kind of the… it's a powerful word and I think a word like coping, is not so powerful, so I like the, the, idea of the word resistance and adaptation. I… they're more positive words. (Inés)*

5.4.2.4 Bouncing back

Women also shared opinions about the term 'bouncing-back', which is contained in some resilience definitions, in relation to both physical and psychological changes in motherhood. Women mentioned that the term is strongly associated with body image following birth and societal pressures to conform to unrealistic and narrow standards of beauty. Women felt that the expectation to physically 'bounce-back' fails to appreciate the major bodily transformation that pregnancy and birth entails. Women viewed the idea of psychologically 'bouncing-back' after motherhood was inappropriate, as motherhood brought an irreversible change in their life and identity, and this change was not viewed negatively. Rather, women preferred a growth perspective, seeing motherhood as something that added to their life;

> *I think sometimes you're trying to figure out how to get back to what you had before and that is… just always leads to heartache, whereas I think adjustment is a nicer word. (Saoirse)*

> *Motherhood is, I don't know, not the ultimate sacrifice or whatever and you sacrifice your life, but you actually you build… you add some new quality to your life to make it more fuller. (Hania)*

5.4.2.5 'Deficit' language

All women were of the view that the language used around resilience and women's mental health in motherhood should never suggest deficit, failing or personal responsibility for mental health challenges.

> *It might just take some people a little longer to adjust to it, you wouldn't like them to be labelled as being… you don't want someone to be labelled as weak because (they need) a bit longer to being used to be a mum, do you know what I mean? That's the sort of linguistic concern… (Evelyn)*

> *Mental well-being is seen in a positive light and mental health is seen as a… oh there's an illness there, there's something wrong there, you know? That person is not right. So, there is a mind-set around the language that's used. (Aashvi)*

5.4.3 Women's perspectives on the Logical findings

Women resisted a binary categorisation of mothers as resilient or not resilient based on scales that measure the symptoms of illness. They were of the view that, although measures of mental distress may assist in building a picture of one's overall experience, conceptualising resilience solely as illness absence was limited. Several women drew examples for their own life and spoke of their resilience while also experiencing mental health challenges. The idea that mental ill-health can co-exist alongside resilience was a strong and reoccurring message from women:

> *I don't think one thing invalidates the other, per say. So I think resilience and mental health can co-exist the same way that a person with a chronic illness can still be healthy as long as the chronic illness is maintained. So, I don't think one thing invalidates the other. (Inés)*

> *It is implying that you cannot be resilient… having mental health issues. But I actually believe that actually, a lot of people are more resilient because they have been struggling with mental health issues. (Raquel)*

> *Despite the fact that a woman might suffer from clouds of depression or panic attacks or whatever it is, and she copes despite, and she moves on and she feels well herself… Then she's definitely considered resilient, so I don't, I don't get that kind of a correlation. (Eleni)*

Beyond mental ill-health, the concept analysis found that several studies operationalised resilience using scales assessing maternal or parental adaptation. Adaptation to the mothering role was regarded as an expected and logical area of investigation for resilience and women were not opposed to its inclusion in the literature. However, they voiced some frustration that the mothering role appeared to be the predominant focus in the published literature. This approach was perceived as reducing women to a functional role, while neglecting to acknowledge the wholeness of the woman or explore other facets of her well-being and fulfilment.

> *Resilience has to kind of… widen to incorporate other aspects of a mother's life… that go beyond a persons, you know, being a mother and being a partner (Eleni)*

> *I mean, this is the 21st century. Should we really be looking at women in the context of their role as a mother, you know? What about a woman's self-fulfilment? What about her, her... you know career fulfilment? What about her life goals outside of motherhood? What about her life goals within motherhood? You know? I have so many ambitions for my family life that go beyond motherhood. (Sana)*

When asked how they would like to see resilience research in this context advanced, women had a number of suggestions. Themes relating to 'Creativity', 'Nurturing a Sense of Self and Identity' and 'Career or Personal Goals' were three interconnected areas that were proposed as potential domains in which to explore and develop a fuller understanding of mothers' resilience.

Creativity was considered a positive indication of mental well-being, which included i) maintaining, or taking up new hobbies or interests; which further supported social relationships and identity independent of the mother role, and ii) engaging in activism; which supports social interaction and a sense of purpose. For example, some women viewed taking part in the interviews was a kind of activism, as they hoped that sharing their insights might lead to improvements for other mothers. Creative pursuits were considered essential to 'Nurturing a Sense of Self and Identity', which further included fostering social relationship connections:

> *Beyond the mothering and the family role is their social circle, that I've already talked about, not only because of the support it can give her as a mother and with her new baby, but because it also allows for her to be that person who's not just a mother or a wife in the family role. So, it's like a reminder of this person that you used to be and that you still are, you've just added to it. (Sadhbh)*

For some women, 'Career or personal goals' played a significant role to their identity, and stepping away from that aspect of their identity was perceived as a loss of self. Career loss was also linked to reduced self-worth; some felt that they were not contributing members of the household if they were not doing so financially.

> *I'm a mam all the time but like, I'm no one else a lot of the time, which is hard to take when you've had a job for so long, or you've had a career. When you've had your own money for so long and you've always worked, it's hard to lose that side of you. (Keva)*

In some instances, this loss prompted exploration of new pathways to creativity and identity.

> *I can use my (career) experience, and my education to kind of create another... aspect to my life that's separate from being a mother, but also still contributes to the household. (Sadhbh)*

Some suggested that careers should be explored with regards to fulfilment and satisfaction, rather than in relation to income levels, professional titles or perceived prestige. Of particular note was the idea that researchers should examine if a woman is making decisions in her own interests rather than as a sacrifice for the family unit.

> *You might be providing perfectly for your familial and parental role, but not so much in terms of your own creation, which is your work really. (...) Not being able to provide (time and energy) to your friends and social environment because you're too engaged in whatever you're doing constantly within your home. Or to kind of... not being, or choosing work...choosing jobs that are not necessarily fulfilling... because you can't provide anymore (of) your energy there. (Eleni)*

Throughout the discussion of positive indications of resilience in motherhood, women returned to the idea of perceiving motherhood as an addition and integration to their life and identity:

> *That idea of accepting that there are new ways of doing things and (of) being, that it's not trying to get back to the person you were before you became a mother in that, it's an addition to your life. But you know... It's not an easy transition either. (Sadhbh)*

In sum, this is what women meant by suggesting that although resilience in motherhood does not require a unique definition, current research approaches may benefit from an expanded view. Women preferred the method of combining mental distress measures with positive indications of well-being in quantitative research to produce a more rounded understanding of resilience and mental health in motherhood.

> *I think it (using both positive outcomes and mental ill-health tools) can give us a flavour, because it gives you an idea of the challenges that the person is going through. (Inés)*

> *If you measure just my depression, you don't see the positive outcome that, you know, that I am able to... despite my mental health issues, or despite the results that resulted from the, you know, abuses I've suffered in my life. I'm still able to create positive outcomes, positive adaptations, a positive life for my children, they don't know or ever feel that my mental health is less than, you know, maybe perfect. So, yeah, if it's looked at, it needs to be looked at from both sides. (Sana)*

5.4.4 Women's perspectives on the Pragmatic findings

The concept analysis found that quantitative methodologies were most common. Operationalisations of resilience appeared determined by researchers; none described contributions from participant contributors, and none reported exploring women's views on resilience or mental health.

5.4.4.1 Women's voices in research

All women felt that centring a woman's voice as the expert of her lived experiences was fundamental.

> *I think they're (researchers) really overlooking a huge source of data there by not speaking to the women themselves. Surely to goodness, the women themselves will provide you with the best data. (Eugenie)*

> *That's how we move forward and try... and form support, if people need it or whatever the case may be. It's by finding out what... how can an academic know what... writing a paper... you know... what a traumatised mother goes through, you know? (Cassia)*

Women were of the opinion that qualitative and mixed-methods research are better suited to capturing the diversity of women, their circumstances and experiences.

> *I don't think it's as simple as trying to create this, kind of, one-size fits all scale or check the box, because there is just, unfortunately for researchers like yourself, there's just too much variety to represent all of the things in which a mother might be feeling or going through in one survey. I do think it has to come from focus groups, from women talking to each other, and talking to researchers and kind of... it's as they are only saying things out loud that they are realising what they have learnt. (Sadhbh)*

Women welcomed being involved in these interviews and appreciated having their knowledge contribution heard. They articulated that inclusion indicated respect for women and a progressive approach to research.

> *Everyone seems to speak for women in that regard. Like, even using the pandemic as an example, it's all men at the table, you know? No one thinks to ask the woman because she might actually know what she's talking about. (Keva)*

> *The participants should be central, so you know? You asking me what do you think resilience is, rather than getting a definition from a book, textbook or whatever and applying it to the woman.... So, I don't agree with the other kind of... more old fashioned kind of research. (Eleni)*

> *Fortunately, these days, women's representation in science is increasing. So, I think it's only natural that... the way that research is moving, is to get women's voices out there, and to have this wonderful group of people that for centuries has been, nearly put in second place and kind of in the background, although they are not the background, are they? (Inés)*

5.4.4.2 Applying resilience research to policy or practice

Women endorsed the idea of resilience research informing practice and the development of educational supports for women as mothers. However, there was a measure of cautiousness in women's thoughts as some worried that research could be used to justify local or social policy in which resources might be reduced or removed for mothers and families.

> *There's a bit of me that feels that... it's like that in motherhood, you know, that if you're trying to instil resilience in mothers, it's because you're not going to help them in other ways. Now, I know obviously that's not where your study is coming from, but my first reaction to that word 'resilience'... (it) always feels like it's putting the responsibility on the mother. And it feels kind of like another, just another responsibility that's being put on us, you know? (Saoirse)*

5.4.4.3 Applying resilience research to mental health screening

Several authors of studies included in the concept analysis suggested the need for screening or assessment of mothers' mental health or resilience. However, women queried the use of mental health assessments at all, irrespective as to whether tools were designed to measure ill-health, well-being or resilience. This was based in a number of concerns around service provision rather than the effectiveness of tools (Table 5.3). First, women were conscious that the appointments they had with HCPs were not amenable to screening as they were short and primarily focused on their child's health. Women's level of comfort with voluntarily disclosing issues around mental health to a professional varied. Although some championed challenging mental health stigma, others expressed hesitancy to disclose concerns if they did not have rapport with their HCP, or if their HCP appeared rushed.

Second, women repeated the issue that postpartum healthcare provisions for their own health were typically limited to the first six postpartum weeks. A number of women mentioned that six weeks was too short a timeframe after a major life event to properly assess one's well-being as emotional and mental changes may be considered normal. This point was reinforced by women who experienced MHPs in the postpartum, as they revealed that they did not come to the realisation that their mental health had deteriorated and that they needed, and wanted, to seek help until much further into the postpartum period.

> *I only became aware that it was a problem... maybe at 9 months or a year and at that stage, you're not meeting healthcare professionals in a postpartum way. (Saoirse)*

> *A doctor would look at you with two heads if you come to him after two years and say you're suffering from postpartum depression, you know? Why didn't you tell me this a month after you gave birth? But postnatal depression doesn't work that way. You know? It stays for years. (Aashvi)*

Finally, a number of women were sceptical of the usefulness of screening procedures without adequate care pathways to follow. Some shared disheartening stories where their experience of quality, timely service provision following a disclosure was severely lacking. A number of mothers struggled to access the mental health help that they needed; counselling services through the Irish public health system are limited, and costs of counselling services in the private sector are prohibitive for many. Women often felt alone, some felt dismissed or ignored and had been left distrustful of mental health services and unlikely to reach out again even though they still wished for support.

Table 5.3 Maternal health service barriers to disclosure and identification of mental distress

Barrier	***Effect***
1. Short and rushed appointments	· Focused on child health, woman's health as secondary. · Little time to develop rapport with HCP and become comfortable with making a disclosure.
2. Conclusion of postpartum care at 6 weeks	· Women believe that their emotional changes are normal and a result of a major life event. · Women don't have enough time to assess their mental health and how it may be affecting them until later in the postpartum.
3. Poor access to mental health care	· Women feel alone, dismissed or ignored, and distrustful of mental health services.

5.4.5 Discussion of the PPI interview findings [11]

In the context of maternal health, research has sought pregnant and postpartum women's opinions on, and experiences of, healthcare services or care models (Larkin *et al.* 2012, Barimani *et al.* 2015, Higgins *et al.* 2016b). One may regard these examples as incorporating women's contributions to research, however, women and their priorities are not centralised; in fact, little is known of the maternal health research that woman wish to see conducted (Daly *et al.* 2021). Research that directly invites feedback and critique from the population of interest in regards to the prevalent epistemological or philosophical underpinnings of the research in which they are a feature, does not appear to be common within the literature.

The findings of this research show that there is some disparity between the ways in which resilience in motherhood *is currently researched*, and the ways in which women believe resilience *should be researched*. For example, the findings provide evidence that women support biopsychosocial and ecological investigations of resilience (Ungar & Theron 2020) in the context of the perinatal period and early motherhood. As women emphasised the interactive roles of family, community, culture, and religious upbringing as salient areas of investigation, and that the factors or processes that emerge or are woven through these different domains should not be viewed in isolation. Socio-economic factors linked to service provision and access were points of interest; being able to access the right resources (mental health care, housing, domestic abuse supports, community supports) at the right time was pivotal in determining outcomes for women's mental well-being. In contrast, a recent scoping review of studies applying resilience theory to the transition of parenthood found that resilience factors are more commonly explored at the intrapersonal level (Young *et al.* 2019). The same review however, provides some optimistic indication that progress is being made towards mapping interpersonal and contextual resilience factors in the context of parenthood transition (Young *et al.* 2019).

This study's approach offers a unique advantage to research and researchers beyond the present study, as the data from women underline several ways in which future research may be refined to better align with the epistemological and ethical approaches women want to see in resilience and maternal mental health research. For instance, literature on the topic of coping is extensive within maternal mental health research. However, there is currently no research on how women, with or without MHPs, feel about the use, and investigation, of the term coping in clinical and research settings. This research provides some

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[11] A indivudal discussion for step 1 and step 2 of phase 1 are presented within this chapter for the reader's clarity. An integrated discussion of phase 1 can be found in chapter 8.

insight that some women may experience inquiries of 'coping' as a judgement-laden surveillance of their capabilities as a mother. Additionally, women echoed ethical concerns with trait conceptualisations also mentioned within the literature (Luthar, Cicchetti & Becker, 2000). Although women named some personal factors as having a role in resilience, they were concerned that a trait perspective alone is reductive. They were wary that classifying women as either 'resilient' or 'not resilient' further implies that women are responsible for their resilience, or perceived lack thereof.

Though concerns were raised that resilience research could be used to burden women with responsibility for their experiences of distress, at the same time there was eagerness among women for this topic to be researched. Indeed women demonstrated a deep engagement in appraising empirical research, provided constructive criticisms, and suggested avenues for future development. Consistent throughout the discussions was women's rejection of the consideration of maternal mental health in simplistic terms. Women's preferences for future research leaned towards qualitative and mixed methods research, which they felt would enable a holistic approach to mental health in motherhood. There was a sense that surveys and questionnaires attempt to produce a 'one-size fits all' understanding of resilience and mental health in motherhood, which risks missing the nuance of individual experience and minimising women's needs. Women were of the opinion that a greater focus on women's experiences and their inclusion within research not only benefits data acquisition, but benefits women. Conducting research with women enables them to have a say on how research is conducted with women in future. Women were disappointed, but not surprised, that there were few studies included within the concept analysis that featured women's input beyond survey completion. There was an impression that quantitative study is researcher determined and somewhat patriarchal, while qualitative research provides a space for respecting women's experiences and wishes.

5.4.6 Limitations

The study design included sharing the findings of a concept analysis with women participants, although the findings were shared in a synopsised 'lay' format, this structure potentially excluded women who did not feel that they possessed sufficient English skills. All women who participated stated that the content was concise and clear; however, three expressed concern that some women might find the content 'academic'. While the study included women with differing levels of education, most disclosed having a third-level education qualification. Additionally, participants within the study were predominately White-Irish or White-European and other ethnicities were not well represented. Consequently, the findings should be considered with the view that women who have less socio-economic resources to avail of further education, and women from non-western cultures, may interpret resilience differently and have alternative views as to how resilience should be researched.

5.5 Implications of the findings for the next stage of the research

The interview findings were intended to add to the literature by sharing women's insight on the ways in which they believe resilience research with mothers may be advanced, and to i) inform the development of research questions for the in-depth qualitative interviews (phase 2), and ii) the addition of measures for quantitative data collection (phase 3).

An interview guide was developed incorporating women's views and feedback relating to the epistemological, linguistic, logical and pragmatic principles. It was returned to the participants for correction and/or confirmation of the content. The participants who responded were satisfied with the guide and confirmed that it was reflective of their views on how resilience research may be advanced.

The interview guide for the in-depth qualitative interviews (phase 2) was structured in six sections. (Appendix 4.9). Sections were titled 1) Introduction and purpose of interview, 2) Mental Health Concepts, 3) Mental Health and Motherhood; Culture and Society, 4) Your Mental Health Journey, 5) Your Mental Health and Resilience Now, 6) Closure.

While there were *a priori* objectives for the phase 2 interviews, women's feedback from each of the principles were integrated in the development of the sections. For example, women's feedback from the epistemological and linguistic principle were key in the addition of section ii) Mental Health Concepts. Women's epistemological feedback demonstrated that terms used in mental health discourse may have differing meanings person-to-person and this may be reflected in their linguistic use. Therefore, section 2 of the interview guide was developed with this in mind. Questions were structured to enable participants to share their personal understandings of mental health terms and to link these terms in a tangible way to their lived experiences.

Analysis of the PPI interview data demonstrated that women wished for the interactive nature and influence of family, society, community, culture, and religious upbringing to take focus in resilience research with mothers. Therefore, section 3: Mental Health and Motherhood; Culture and Society was constructed to delve into the social and cultural factors that might inhibit or facilitate women's well-being. It included a visual aid to help women think about how they are situated within a larger social/cultural context and to explore the sources of support that reside at intrapersonal, interpersonal, social, cultural, organisational or political levels, which are, or are not, available to women.

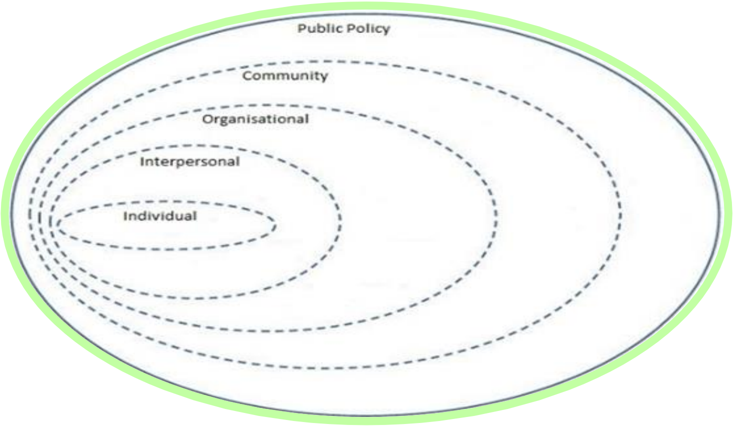


Figure 5.5: Visual aid in the semi-structured interview guide

Section 4: Your Mental Health Journey and the first part of section 5: Your Mental Health and Resilience Now, contained the *a priori* aims for the interview, namely to qualitatively explore mental health trajectories from the perinatal period to approximately five years after first-time motherhood, and women's health and help-seeking behaviours or strategies during that time.

The second part of section 5 reflected women's feedback concerning the logical principle findings. The themes of 'Creativity', 'Nurturing a Sense of Self and Identity' and 'Career or Personal Goals' were considered as appropriate domains in which to explore positive outcomes and develop a fuller understanding of mothers' resilience.

The direction that underpinned the analysis of the data collected using the semi-structure interview guide is outlined in chapter 6.

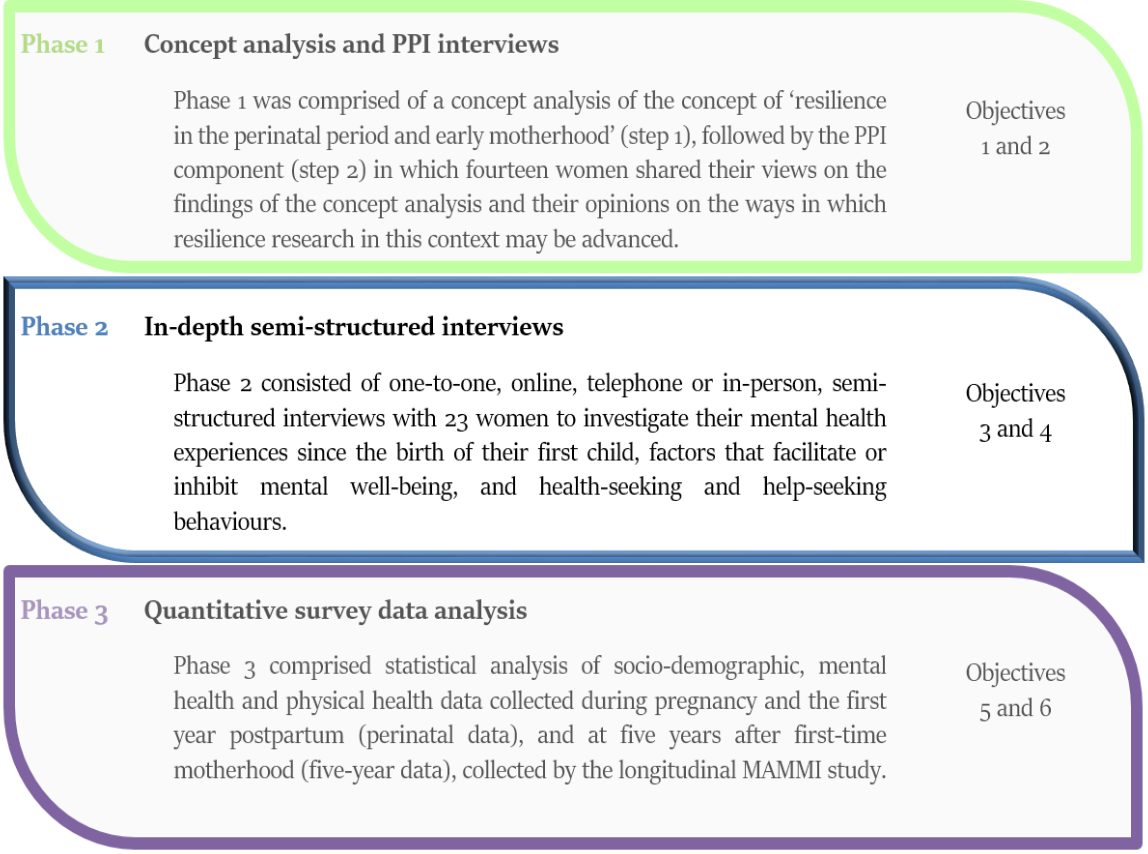
5.6 Conclusion

The content of chapter 5 fulfils the objectives stated for phase 1 of the current research, namely to conduct and present the findings of a concept analysis on resilience in the perinatal period and early motherhood, followed by an exploration of women's views as to the current state of resilience research in this area and their perspectives as to how the research may be advanced. Finally, the implications of these findings for the next stages of the research were outlined.

Chapter 6: Qualitative Interview Findings

6.1 Introduction

Chapter 6 contains the qualitative findings from Phase 2 of this study (Figure 6.1). The interview guide for phase 2 was developed using the feedback elicited in the PPI interviews from Phase 1 (Chapter 5). Additionally, women's responses and evaluations of the empirical literature concerning resilience in the perinatal period and early motherhood were influential in the approach taken to the analysis of the data presented in this chapter.



Phase 1 **Concept analysis and PPI interviews**

Phase 1 was comprised of a concept analysis of the concept of 'resilience in the perinatal period and early motherhood' (step 1), followed by the PPI component (step 2) in which fourteen women shared their views on the findings of the concept analysis and their opinions on the ways in which resilience research in this context may be advanced.

Objectives 1 and 2

Phase 2 **In-depth semi-structured interviews**

Phase 2 consisted of one-to-one, online, telephone or in-person, semi-structured interviews with 23 women to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours.

Objectives 3 and 4

Phase 3 **Quantitative survey data analysis**

Phase 3 comprised statistical analysis of socio-demographic, mental health and physical health data collected during pregnancy and the first year postpartum (perinatal data), and at five years after first-time motherhood (five-year data), collected by the longitudinal MAMMI study.

Objectives 5 and 6

Figure 6.1: Three phases of the study design

6.2 Presentation of findings

Methods for conducting phase 2 are described in section 4.4.2. Interviews took place between February and June 2022, and averaged 65 minutes (range= 39 min to 1 hr. 43 min). Public health measures in response to the Covid-19 pandemic were largely rescinded in Ireland by March 6th 2022. However, participants were provided with the option of conducting their interview according to their preference. Nineteen chose to interview online, two via telephone and two chose an in-person interview in an office on campus at Trinity College Dublin. Direct quotes from women's interviews are presented to illustrate the themes. To ensure anonymity, all names are replaced with pseudonyms.

6.2.2 Interviewee demographics

Twenty-three women participated in the interviews. Women's ages at the time of interview ranged from 28 to 50 years of age (M=39 years). Two women had three children, 14 had two children and seven had one child, children's ages ranged from one to eight years old. All but two of the interviewees were in full or part-time paid employment. Twelve women identified as White-Irish, six as White-European, one woman as Japanese, one woman as Brazilian, one woman as Southeast African, and two women identified as having a mixed ethnic background. Three women identified as gay or bi-sexual. Twenty women were married or in long-term relationships with male partners, one woman was in a same-sex marriage and two women were not in relationships at the time of interview.

Half of all spaces for the interviews were reserved for participants who self-identified as belonging to one or more specified groups (section 4.4.2.1) to ensure that women of diverse backgrounds had opportunity to participate. However, participants in the interviews reflected greater heterogeneity than the initial categories accounted for. Some correspondence from women who expressed interest in taking part in the interviews included mention that the 'diversity' groups were limited, and drew attention to additional contexts that they felt were relevant to discussions of mental health in motherhood, such as experiencing a chronic physical illness, miscarriages, traumatic births or having a child with atypical neurodevelopment. Some of these contexts are listed in Table 6.1 to describe the diversity of women's mental health experiences and social contexts. Others did not self-identify as fitting one or more of the groups in their expression of interest but then disclosed, immediately prior to or during the interview, that one or more categories were applicable to them. Additionally, some contextual information that women disclosed that was relevant to their mental health; such as experiencing suicidal ideation pre-pregnancy or in the postpartum, thoughts of self-harm, IPV, past substance misuse, alcohol misuse, homelessness or human trafficking have been omitted to protect participant anonymity.

Approximately half of the participants disclosed experiencing MHPs, some received a diagnosis in the years before becoming pregnant, and others experienced the onset of MHPs during pregnancy or in the postpartum period.

Table 6.1 Participants' demographic details

Participant Pseudonym	**Age**	**Number of Children**	**Children's ages (yrs)**		**Ethnicity**	**Current Employment**	**Highest Education**	**Partner Status**	**Partner Employment**	**Mental Health and self-described context**
			Youngest	**Oldest**						
Renelle	34	3	3	8	White-French	Yes	Postgraduate degree	Married/ husband	Yes	· <30 yrs. at first-time motherhood · Migrant
Clara	37	2	2	4	White-Irish	Yes	Primary Degree	Married/ husband	Yes	
Olivia	30	2	4	7	Indian-Australian	Yes	Leaving certificate equivalent	Single	N/A	· Postpartum Depression · BAME/ Migrant · <30 yrs. at first-time motherhood · Single mother
Clodagh	42	2	7	8	White-Irish	Yes	Diploma	Married/ husband	Yes	· Traumatic birth
Emi	48	2	2	7	Japanese	Yes	Postgraduate degree	Cohabiting/ male partner	Yes	· BAME/ Migrant
Tami	43	2	2	6	Malawi	Yes	Primary Degree	Married/ husband	Yes	· BAME/ Migrant
Alina	38	2	3	6	White-Romanian	Yes	Primary Degree	Married/ husband	Yes	· Child with diagnosed atypical neurodevelopment · Migrant
Eliza	35	2	1	4	White-Irish	Yes	Primary Degree	Married/ husband	Yes	· Postpartum onset of anxiety
Hazel	47	1	N/A	5	White-British	Yes	Primary Degree	Married/ Wife	No	· Postpartum onset of anxiety · Migrant
Maeve	33	2	1	4	White-Irish	Yes	PhD	Married/ husband	Yes	· <30 yrs. at first-time motherhood · Child with diagnosed atypical neurodevelopment
Kayla	34	2	5	5	White-Irish	Yes	Primary Degree	Married/ husband	Yes	· Pre-pregnancy diagnosis of bipolar ii disorder · Postpartum Depression
Valentina	42	2	1	5	White-Spanish	Yes	Primary Degree	Married/ husband	Yes	· Migrant

Orla	46	2	6	7	White-Irish	Yes	Primary Degree	Divorced	N/A	· Pre-pregnancy history of depression · Traumatic birth · Single mother
Catherine	50	1	N/A	8	White-British	Yes	Primary Degree	Cohabiting/ male partner	No	· Undiagnosed postpartum depression · Miscarriage · Migrant
Dawn	41	1	N/A	6	White-Irish	Yes	Postgraduate degree	Married/ husband	Yes	· Pre-pregnancy history of depression · Chronic physical illness · Diagnosis of Attention Deficit Disorder (ADD)
Sanam	45	1	N/A	5	Asian-Irish	Yes	Primary Degree	Married/ husband	Yes	· BAME · Miscarriage
Noeleen	34	1	N/A	6	White-Irish	Yes	Primary Degree	Married/ husband	Yes	· Pre-pregnancy history of depression.
Gemma	28	2	2	5	White-Irish	No	Primary Degree	Cohabiting/ male partner	Yes	· <30 yrs. at first-time motherhood · Depression
Grace	37	3	3	7	White-Irish	Yes	Primary Degree	Married/ husband	Yes	· Postpartum onset of anxiety and Obsessive Compulsive Disorder (OCD)
Camila	36	2	3	5	Latina/ Brazilian	Yes	Primary Degree	Married/ husband	Yes	· <30 yrs. at first-time motherhood · BAME/ Migrant
Grainne	48	1	N/A	8	White-Irish	No	City and Guilds- 3rd level	Cohabiting/ male partner	Yes	· Pregnancy onset of depression.
Audrey	34	1	N/A	8	White-Polish	Yes	Leaving certificate	Cohabiting/ male partner	Yes	· <30 yrs. at first-time motherhood · Migrant
Madison	38	2	5	5	White-Irish	Yes	Primary Degree	Married/ husband	Yes	

** BAME: Black, Asian and Minority Ethnicity*

6.3 Data collection and approach to analysis

The interview guide was informed by data collected in the Phase 1 PPI interviews (Chapter 5). Feedback relating to the epistemological and logical principles especially demonstrated that women favoured a social-ecological perspective on resilience. Women repeatedly gave reference to the influential roles of family, society, community and culture on their mental health and well-being and discussed how factors may interact between domains, and change as a result of individuals' own interactions. Additionally, women directly advocated for research to take a specific focus on the factors that exist in these domains. Section 3 of the interview guide contained a visual aid to help participants reflect on and explore the various sources of support that reside at intrapersonal, interpersonal, social, cultural, organisational or political levels, which are, or are not, available to women (Appendix 4.9). The visual aid, and questions contained in section 3 of the interview guide, were influenced by consideration of the bio-ecological model of human development posited by Bronfenbrenner and Morris (Bronfenbrenner 1998), which is compatible with social-ecological perspectives of resilience (see chapter 2, section 2.4.3). It served a pragmatic function of collecting data which would enable an examination of how the individual is situated within, and encompassed by, interactive systems. In other words, to identify the factors evident at and interacting across, individual and social/cultural levels that may enable or inhibit mental well-being.

Women's views that resilience research should take a social-ecological perspective also prompted the researcher to make a closer investigation of social-ecological frameworks and definitions of resilience. Theories increasingly approach resilience as influenced by the environment that individuals are situated in (Denckla *et al.* 2020) (see Chapter 3). However, the approach of Michael Ungar was particularly salient for two reasons. First, Ungar's framework prioritises resilience research from a constructionist paradigm that rejects cultural hegemony, and values maintaining '*openness to a plurality of different contextually relevant definitions of health, offering a critical deconstruction of the power different health discourses carry*' (Ungar 2004, p. 5). Second, Ungar's (2011) definition for resilience is notable as it explicitly directs focus towards the interactive exchange that must occur between the individual and their social and cultural environment in order to secure the resources or supports necessary for well-being. For example:

> '*Resilience is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and*

collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways' (Ungar, 2011 p.10).

This definition is also notable for the use of the terms 'navigate' and 'negotiate'. Ungar (2011) describes navigation and negotiation as dual processes of resilience, with both being dependant on the inhibitive or facilitative qualities of the individual's physical and social milieu in fostering desirable and culturally meaningful outcomes. This definition of resilience speaks to the interactive exchanges occurring between the individual, their strengths and personal assets, and the resources made available within their social, cultural and physical environments. This orientation emphasises the nurturing potential of the environment and the processes or mechanisms through which individual skills or qualities and external assets may be utilised (Ungar 2011). The intention of this focus is to decentralise the individual in resilience theory, to shift away from ideas of changing the individual and towards designs for developing social, cultural and physical environments that are supportive of positive development (Ungar 2011, Ungar 2021a).

With this understanding in mind (that navigation and negotiation underlie *the processes* of resilience), the question of how women navigate to, and negotiate for what they need for their mental health and well-being in motherhood came to underpin the analysis of the qualitative data. It also offered a first opportunity, to this researcher's knowledge, to make a qualitative descriptive investigation of resilience processes in motherhood.

6.3.1 Approaching Navigation, Negotiation and Needs in analysis

At first glance, one may interpret the notion of navigation as recentralising the individual as the source of motivation for change or help-seeking. However, in order for navigation to occur, there must be some resource *to navigate to*. Similarly, in order for an individual to negotiate for access to, or the provision of, a resource, that resource must exist and be accessible, and the systems with whom the individual is negotiating with must be willing to engage in negotiations for providing access to, or developing, the resource required. Thus the receptiveness of social, cultural and political systems towards negotiation and provision is as, or arguably more, salient to resilience as the individual and their capacities (Ungar 2021a).

In this way, navigation and negotiation are interlinked processes in resilience, and this duality was apparent in women's narratives of mental health experiences and seeking mental well-being in motherhood. Often, navigating to resources or needs involved elements of negotiation, thus processes of navigation and negotiation are not entirely separable.

To navigate is '*to steer a course through*' (Merriam-Webster 2022a) and, for the purpose of this analysis, navigation is considered actions or processes involved in resource and information seeking, resource accessing, problem solving, and negotiating for resources and access to resources.

To negotiate is a verb with several definitional wordings; '*to confer with another so as to arrive at the settlement of some matter*', '*to deal with some matter or affair that requires ability for its successful handling*', and '*to arrange for or bring about through conference, discussion, and compromise*' (Merriam-Webster 2022b). Interestingly, both 'negotiation' and 'navigation' share connotations of a journey, as 'negotiation' can also mean '*to successfully travel along or over*' (Merriam-Webster 2022b). For this analysis, negotiation was defined as actions or processes of mediation, discussion, compromise or co-operation taken to resolve barriers or gain access to needs or resources. A consideration of negotiation must also account for inequitable social, cultural and economic power structures and systems in which individuals are not afforded opportunities to negotiate. For this reason, examples of negotiation were not confined only to 'successful' outcomes of negotiation, but included examples where negotiation attempts were 'unsuccessful' or denied.

Although most women in the study described having access to basic physiological and safety needs at the time of interview, the diversity of women's circumstances, experiences and socio-economic resource accessibility meant that their continued access to needs (housing, income, physical health, stable partner relationship) were not a certainty, which caused worry and anxiety for some. Whilst the heterogeneity of women's lives precluded an individualised examination of needs in the current analysis, for generalisability and pragmatism, women's needs were self-identified and considered broadly in relation to the individual, social, cultural and ecological levels in which they might occur.

6.4 Findings: Themes and sub-themes

The data presented in this chapter detail the findings from the 23 participants in respect to the question of 'How do women navigate to, and negotiate for, what they need for their mental health and well-being in motherhood?'

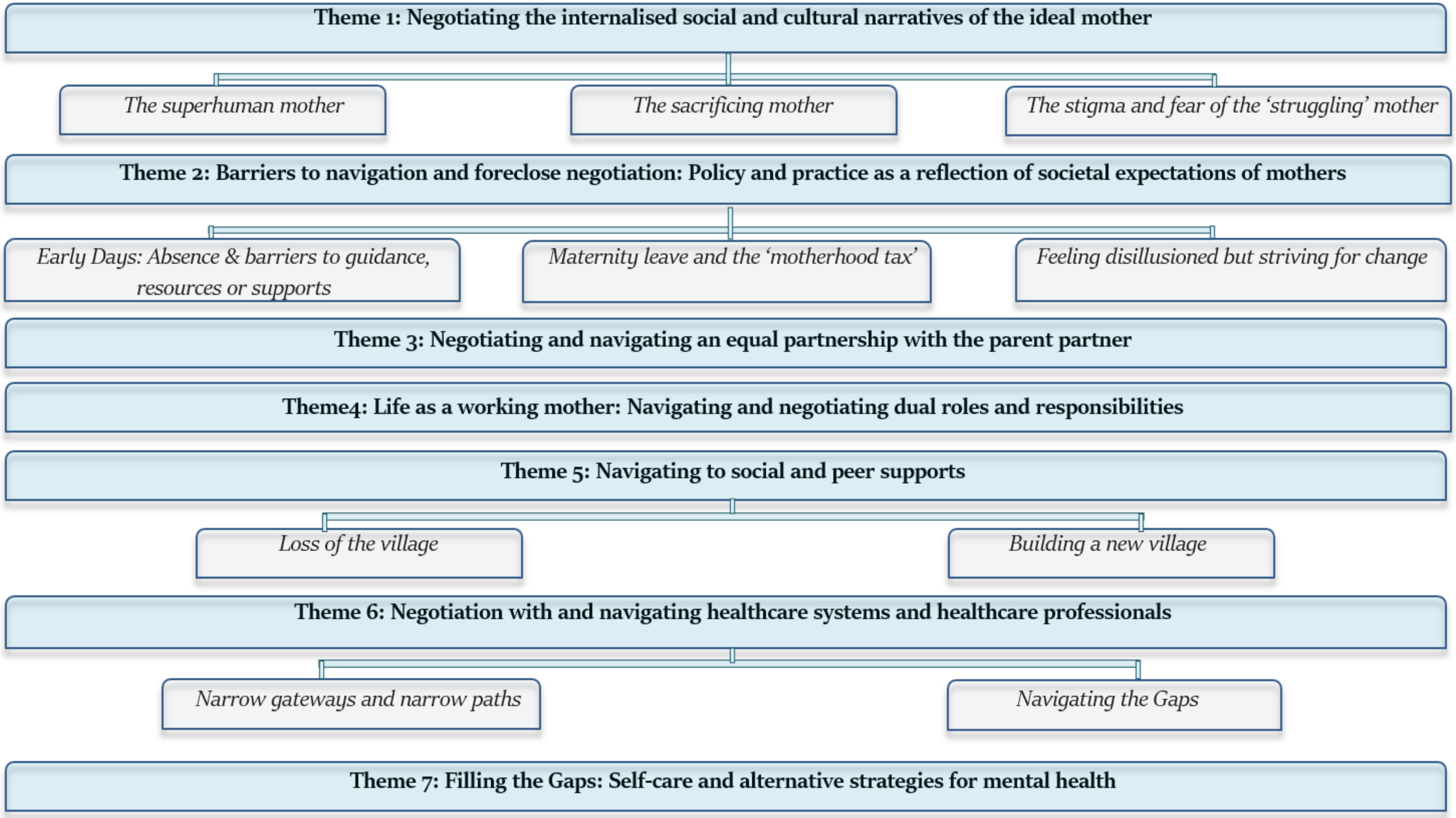


Figure 6.2: Themes and sub-themes

6.4.1 Theme 1: Negotiating the internalised social and cultural narratives of the ideal mother [12]

Before women could begin to navigate towards their self-identified well-being needs, they often described having to first negotiate with internalised social and cultural narratives of the ideal mother[13]. Women described struggling with ideas of what they owed to, and should sacrifice for, their family, and expectations (internalised from society and culture, and reinforced through interactions with family, friends, HCPs, and various media portrayals and images) of what it means to be a good mother. Additionally, women were acutely aware of the role of stigma associated with motherhood and mental health as an internally-based, though socially sown, barrier to navigating towards both informal and formal support.

6.4.1.1 Sub-theme 1: Internalised narrative: The superhuman mother

For some women, their conceptualisations of motherhood were grounded in social and cultural expectations which presented mothers as almost superhuman in their capabilities. This was evident for women who were Irish, non-Irish and women who identified with more than one culture. They felt that cultures and societies strongly portrayed a message that women as mothers should be, or strive to be, flawless and all-capable.

> *I think there's a historical... Irish mammy being the Superwoman. (...) But I don't know whether there's the Portuguese mammy as well, because I have had this conversation with my friend, who's Portuguese, and she's kind of modelled the same thing where it's this Wonder Woman kind of vibe. (Clara)*

> *Society just expects this of us. And I can tell you, because I come from a different ethnic background, it is even more frowned upon us Eastern Europeans. We need to be these really strong figures in the household that holds everything together. (Alina)*

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[12] Additional supporting data for Theme 1 (including sub-themes 1, 2 and 3) can be found in Appendix 6.1

[13] In this case, cultural and social idealisations are the attitudes, ideals or values around motherhood that are transmitted both generationally (vertical) and/or by peers (horizontally) (Crafa D., Liu J.Q. & Brodeur M.B. (2019) Social Values and Determinants of Cultural Fit in Quebec: The Roles of Ancestry, Linguistic Group, and Mental Health Status. *Frontiers in Psychology* **10**, 1-13.)
In the data, social idealisations of motherhood did not differ from cultural idealisations of motherhood, hence the use of both terms. However, women in the study from non-Irish or intersecting cultures (e.g. Irish-Asian) articulated that they felt that motherhood idealisations were more potent for them because they felt that these ideals were a belief of, or based in, their culture.

Within this narrative, women felt mothers are expected to be resilient and unbreakable;

> *(There is) an understanding or a given that mothers or women... that she'll be able to cope with everything. It's kind of like; that's what you're built for. (Clodagh)*

> *I think resilience in motherhood.... It's not something that you choose, it's something that's expected from you. I think people just expect mothers to be resilient, that they can just get on with whatever is thrown at them. (Gemma)*

These socialised, unrealistic 'superhuman' ideas of motherhood led, for some, to damaging, self-critical judgements. As struggle is incongruent with women's views of how motherhood 'should' be experienced, any degree of struggle could be perceived by women as an illustration of their 'lack' and often led to upsetting thoughts around their 'fitness' as a mother.

> *We just have such a false view of how glowing and... 'earth-mother' people are (as mothers) and when you don't live up to that, you're just kinda like; what's wrong with me? I'm a woman; I'm supposed to do this in a traditional kind of.... (Dawn)*

> *(I thought that) If I was a better mother, this wouldn't be happening... there must be something that's wrong with me' (Catherine)*

6.4.1.2 Sub-theme 2: Internalised narrative: The sacrificing mother.

Women felt that there was a social expectation for them to be able to handle all challenges (superhuman mother) while also foregoing their own needs for the benefit of the family (sacrificing mother). Sacrifice in motherhood is complex and overlaps with other domains such as partner relationship, career progression, personal goals, and personal financial well-being. Women described social expectations and social mechanisms in place which force mothers into positions where they are at a disadvantage and cannot negotiate better terms for themselves without implications for the well-being of their children or family unit.

For example, some women struggled to justify the costs or time taken to engage in therapy, especially if they perceived doing so as decreasing resources for the family unit. Instead, they may rationalise that they should simply endure mental distress (superhuman mother) so as not to 'take away' resources from their family, or 'burden' others (sacrificing mother).

> *I know.... Realistically, it's not selfish, but sometimes I feel like I'm selfish to even ask, like when I was doing the mindfulness course, I was kind of like; OK, it's two and a half hours... who am I gonna ask to collect (my children)? (...) I felt like, cause I had (been) gone two and a half hours to do mindfulness, and an hour to doing counselling, I felt like (I was asking too much). (Grace)*

Women felt that, in motherhood, their identity, time, financial interests and ability to make decisions for the benefit of their own physical and mental well-being often had to be sacrificed.

> *I feel like women and mothers are expected to just deal with it and just get on with things and don't prioritise yourself, and I feel like these are messages that we get all around us. So, how are women expected to prioritise themselves when that's the messaging that they receive from society in general? (Kayla)*

> *Women (are expected to) take everything and just keep doing it and hope that somehow you'll fit everything in, or manage everything and you know, you'll get to the other side and it'll just be better. It doesn't work. You know? Somewhere something's gonna break and that affects the family. (Hazel)*

Themes of expectations on mothers to make sacrifices are woven throughout women's narratives and appear in other areas of the analysis. Particularly highlighted are examples where mothers must negotiate with social mechanisms which assume sacrifice from mothers.

6.4.1.3 Sub-theme 3: The stigma and fear of the 'struggling' mother.

The internalised ideas of a superhuman, sacrificing and struggle-less motherhood were strongly associated with stigma in relation to maternal mental health. Stigma played a role in women creating an outward façade of coping out of fear of judgement, which was also a barrier to asking for help.

> *I think there was a factor of not wanting to show that I was struggling, you know, because what will that mean about me then? It will mean that... I'm, I'm not a good mother. (Catherine)*

> *It can be really hard to open up in that way, because you can feel judged and especially I was terrified that he'd be like; 'Oh well, if you're feeling this way, like you're not a good mother, or you shouldn't be feeling this way, like you should be happy you've had this beautiful baby'. (Gemma)*

In particular, women who had received a mental health diagnosis (pre, during or after pregnancy) felt that stigma and fear deeply;

> *I had more of a reluctance to ask for help because I went; Oh, you know, they already think I'm an unfit mother, if I say that I'm struggling, they are going to really think that I'm unfit and my children will be taken. And I was obsessed with that thought, you know? And that wasn't true. It wasn't a true thought at all. (Kayla)*

The stigma of struggling with MHPs in motherhood maintained a hold on women as their children got older; women spoke about how stigma and fear still had an effect long after the perinatal period, and dissuaded women from help-seeking.

> *I'd be more scared to say something (now) 'cause I have two kids, and I have a good partner and people would be like; 'well, you have no reason to be going through that, or you have no reason to be depressed'. (Gemma)*

Even when women actively sought help, fear was prohibitive to being fully open, as exemplified by Grace's experience of seeking mental health support with her general practitioner, without also receiving reassurance and clear information as to the pathways that may unfold if she revealed the depth of her struggle;

> *I don't even think I was honest on the questionnaire to be honest with you (...) because I actually was like... She's (GP) not telling me what's happening after I fill out this questionnaire like, she's not giving me any direction (...) I feared like...Could my kids have been taken off me? Em, Sorry.... (Crying) (...) It's quite scary going to your GP. (Grace)*

In order to resolve the barrier that these socially and culturally internalised narratives and stigma create, women must arrive at the realisation that these narratives are unrealistic, limiting and harmful. Women described this realisation as a slow, non-linear and sometimes painful process, though one that was necessary to instigate navigation towards their physical and mental health needs.

> *You are who makes this creature 'being a mom' so important. But if you don't take care of yourself... And it this will sound selfish because in Romanian culture it sounds selfish; (people will say) 'What do you mean you come first? No, no, no. The kids come first! Your house comes first!' No, no, no, no, no, I truly understand what it means. You come first, everything crumbles like a like a sandcastle if you're not OK. (Alina)*

> *I won't last and be around for long if I have to be resilient all the time and put myself last and just get on with whatever happens, no! There's a definite clear line where I know it's actually my mental health on the line. (Renelle)*

Releasing these expectations took time, and resolution was described as coming about by seeing through experience how meaningless these idealisations were to the actual health and well-being of their children and to their capabilities as a mother.

> *So once all these things slotted into place, and once I stopped trying to live up to the perfect mother kind of thing, and once I realised that me not being able to breastfeed wasn't the end of the world because my child was actually fine and really happy. It actually really helped. (Dawn)*

> *That was my watershed moment where I kind of said to myself. Look, if this is how (my) mom felt as well, I think maybe there's a bit of unpacking to do for me. (Eliza)*

Women spoke about the relieving benefits of reconciling the 'good mother' as a mother who can provide for herself for her own sake.

> *I have a sense that I am a good mother. You know? I'm not the be all and end all but I feel like I'm kind of owning it and doing it well and giving them what they need from me, but also giving me what I need to be a good mom. I kind of recognise it's important to step away so you can come back refreshed. (Clara)*

6.4.2 Theme 2: Barriers to navigation and foreclosed negotiation: Policy and practice as a reflection of societal expectations of mothers.[14]

Expectations of mothers became internalised because they were evident within facets of society and culture. Women felt that expectations of sacrificial endurance in motherhood were continually endorsed by society through distinct absence of, or difficult access to, guidance, resources or supports. In order for women to negotiate for and navigate to the resources and supports that they need, those resources and supports must be available to them. For these women, the willingness of government departments, healthcare systems and communities to facilitate navigation and negotiation (resilience), by providing resources and support to mothers, spoke to the expectations and value (or lack thereof) that society

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[14] Additional supporting data for Theme 2 (including sub-themes 1, 2 and 3) can be found in Appendix 6.2

places on women as mothers. Women gave examples using breastfeeding, healthcare, and financial well-being.

6.4.2.1 Sub-theme 1: Early Days: Absence and barriers to guidance, resources or supports

Breastfeeding was mentioned as one of the first difficulties women encountered that led them to the conclusion that there is/will be very little support available to them in the transition to motherhood. During pregnancy, breastfeeding is presented to women as the best choice for their child. However, following birth there are very few practical supports to help women to learn *how to* breastfeed and navigate common challenges that arise. These expectations, followed by absence of support, signified to women that although they will be faced with societal expectations in their role as a mother, society will not provide easy access to resources that may help them achieve those expectations. This negatively affected women's mental health and view of themselves.

> *There was one or two, lactation consultants in the hospital, and they're, of course, not contactable. So what I did was... just stop breastfeeding. So I suppose that can be tied with mental health because that would have been probably, the thing I struggled with the most (...) there wasn't that support there and that feeling of guilt when you have to give up breastfeeding. (Maeve)*

> *Lactation consultants are so expensive, and the breastfeeding support groups might only be like.. once a month. But in those first few weeks it's so important to get everything settled and stuff, and if you don't have anything there... and no support system in place and you can't afford to get a lactation consultant, it's.... You don't really have a choice then, if it doesn't work out, it doesn't work out. And that was really bad for me because it was something that I really, really wanted to do. So when that didn't work out, it really brought my mental health down because I felt like; 'well, I'm not able to do this one thing that I was meant to be able to do, like I can't feed my baby', you know? (Gemma)*

Women saw costly and difficult to access healthcare as another example of expectations on mothers to endure in the absence of support (explored further in themes 5 and 6). Women were particularly shocked to find that this extended to their children who may have additional health or educational needs.

> *Public help is non-existent, like in terms of speech therapy. He actually hasn't even been seen by a speech therapist. We had an online session. It was at a year and a half ago. You can't get support through like financial support. Those like tax credits, something called domiciliary carers allowance.*

> *But in terms of accessing public occupational therapy or speech therapy, there's no point even trying. (Maeve)*

> *My son, I bring to OT because the government - no support. He was diagnosed, (and then) nothing. And the thing is… there's children far worse than he is. It's a disgrace. Early intervention with these children is critical. (Orla)*

> *I had to navigate HSE. Making sense of what him being different, neuro-typically different means… getting him help for the school and getting him- So all of that… Filling in a domiciliary care allowance application. Have you've ever seen one? It was heartbreak even just to write. I don't know if you've ever heard of that, but parents that need to fill that, the detail that you have to go into. It almost triggers post-traumatic stress, because you have to recount the worst moments of your child. And you have to write like 32 pages of very detailed questions. It was traumatising. (Alina)*

6.4.2.2 Sub-theme 2: Maternity leave and the 'motherhood tax'

Women named several areas where lack of supports or realistic policies exemplified that the labour associated with the mother role is expected but not valued. For example, women spoke about maternity leave policies in Ireland, there were sentiments that the 6-month limit, reduced pay and impact on pensions functioned as a sort of levy on women for becoming mothers, and implied an expectation that women should remain in the workforce. Yet the excessive costs of childcare conveyed the message that mothers should remain in the home, caring for their children. At the same time, women's vital and unseen labour within the home is unpaid.

> *It's eight years of my pension payments for instance, being really diminished, and also two unpaid (parental) leaves for a few months every time. So again, it's another financial burden that not everybody had the luxury to take. But also the price of childcare, if we want a quality… care for our children…. We need to support the mother at some point, like I mean you can't ask everything and have everything without a little bit of an investment. […] As a society it makes sense to invest in the mother, to have healthy mothers for a peaceful and positive outcome for the whole (of) society. I think maybe the way it's perceived (is) like; the person who received the benefit is the only one who benefits from it? But it's not. It's really not. As a society we need a certain renewal rate as well if you want to sustain our society, and so I think there has to be a shift of mentality and maybe in policies.* (*Renelle)*

6.4.2.3 Sub-theme 3: Feeling disillusioned but striving for change

The cumulation of these expectations, and subsequent lack of professional and community supports and government policies to assist women in their important work as a mother, leave women feeling disillusioned, and believing that mothers are seen as 'less' within society.

> *The role of motherhood isn't cherished as an importance for people; it's somehow challenged because there's this historical suppression of women. You know, it means that somehow... Being a mother is sort of tied to that old traditional view of women. Do you know what I mean? To stay at home and look after children, (...) (For society to define) somebody important, that means having a job, and being successful at that job, or earning money, or you know doing that sort of external support of the family, and the role of mother is less, somehow. (Hazel)*

> *Very cynically, I would say the government doesn't care about women and kids generally from a health perspective, there's so many things that they could be doing. There could be policies. There could be lots of regulations that could be enforced, (...) But open dialogue around this, this area of mothers, and the challenges they face from a mental health perspective would be hugely beneficial, to start the conversation. I don't believe the conversation's happening from the government perspective yet. (Clara)*

> *I think it's obvious that women are not a priority, women's mental health is not a priority, women's safety is not a priority. Even to the point of this drug that I had to take when I had hyperemesis, Cariban? I think there's a move at the moment to get it subsidised. But it hasn't been subsidised because, you know... Viagra is! [...] And at the end of the day it comes down to, if your gender is a certain gender, your health, is worth less. (Dawn)*

Women recognise that change is needed for future mothers to thrive in motherhood, but feel voiceless in negotiating change. This issue was, for many women, their motivation for participating in the research. Women hoped that by engaging in research they may make some contribution to creating social change and improve experiences for future mothers.

> *It's one of the reasons I wanted to take part in this, because... I don't believe the Irish health system is very good at supporting women's mental health in their journey at all. (...) I don't want another mom to feel alone, to feel ill equipped, to feel like they can't talk to their mum, their husband, their doctor, public health nurse. (Clara)*

> *I just thought that it's good to collect information. And then this information will help others, to help, let's say the policymakers or it will improve in the... the mental health sector. That (it) can help other mothers as well, future mothers, or current mothers. Just to give them the information on how they can be mentally well or if they're meeting other challenges like experiences that can be shared and the information that can be collected here. It can help others as well. (Tami)*

6.4.3 Theme 3: Negotiating and navigating an equal partnership with the parent partner

Relationship dynamics in any context are heterogenic. Women reported varying contentedness with their relationship and partner support, while others described leaving tumultuous and unhealthy relationships. Women explained that what they needed from their relationship in motherhood were supportive, active and equal partners. Supportive partners were those who were actively engaged in parenting and childcare, and who regarded the mother's time, needs and goals as equally important as their own. Women valued relationships where there was a mutual understanding that both parents shared responsibility for the home, family and childcare.

Some women entered motherhood with an equal partnership dynamic already established within their relationship.

> *We always said, from day one, this is an equal partnership and you are not the babysitter. You are his parent. (...) If I need to go away for work then I go away and I can rely on him to do just as good as job as I would, or as society expects me to do. (Noeleen)*

> *Something I feel grateful for- I mean, I don't know how single mothers do it. I do feel like if I hadn't had my husband... that's his child, and he's completely fine (with childcare), and we always made the joke like, how do people think you're babysitting? Or doing something special when you're just the father of your child? (Renelle)*

> *We both see that that's important, we both allow each other to have that time to go out and see our friends, not that we do it that much, but it's something that we do make time for, even if it means the other person has a lot more in their plate. (Maeve)*

Some other women entered a process of negotiation in the attempt to encourage their partner to engage in the parenting role and to establish a more equal partnership. In some cases women described a partner's unwillingness to engage and gender-biased attitudes as an obstacle in negotiation:

> *That’s seen as my role, that's seen as my main job like and I do feel like that at times. I said to (male partner) last week, (...) ‘my job is equally important as yours’ and he said, ‘well, it's not really because you get less money’. (...) I said to him, ‘so if I lose my job and I have to get another job that will cost us more because we'll have to find somebody to do all those weeks with the kids’. And he was kind of like, ‘what's the point like?’ and I was like, ‘the point is I'm just taken advantage of in those situations, where like your job is of less importance, your free time is of less importance’. (Grace)*

In other cases, the barrier to communication was not a matter of unwillingness, but an issue of a partner experiencing difficulty in adjusting to parenthood, which manifested as mental distress.

> *I think, in a weird way, my husband was going through a weird pregnancy depression as well, because he turned into someone I had never met before in my life. (Dawn)*

> *I think he had postpartum depression to be honest. Yeah, I think it affected him. It literally affected him. I was delighted, but for him it was a setback. (...) So obviously support wasn't there really, in my terms, it was support in his terms. (...) I thought there's no support (for me) what the hell am I doing here? Who's this man-child, who used not to be a man-child? But from his perspective... I think. He was just overrun by everything, you know? (Alina)*

In many cases, the goal of women’s negotiation with their partner was not only for their benefit, but for the good of their family and preservation of the relationship. The process of negotiating equal responsibilities was not limited to the perinatal period. Several women disclosed that experiences during the Covid-19 pandemic brought labour disparities to the fore in their relationship, and others detailed how the arrival of more children also required a redistribution of responsibilities. Dynamics between couples can shift according to circumstances and re-negotiation was not uncommon.

Techniques for successful negotiation that women used were frank discussion and conversations;

> *We really split that that burden. It wasn't good for the marriage (laughs) at the time. Now, it is, because we've seen everything. Like, we put every penny of energy that we have (into the relationship and family). Like, what do you have in your pocket? Here is what I have, and we made things happen. (Camila)*

Honesty about the direction of the relationship without meaningful change;

> *We troubleshoot. So we sat down, we had a few very real fights, very real conversations after that. We fought until there was nothing to fight about and it was a matter of either break up, you either go, because this is how things are gonna be from now on. Or we come back to the table and we reassess this whole situation, you know? Umm... that was very tough. That was tough. So having a child was not tough, dealing with my partner after I had a child* ***that*** *was tough. Uhm, but then we came out the other side of it (Alina)*

Or couples counselling;

> *We've had a couple of relationship issues because of the change and the dynamic. (...) All that kind of stuff and we have actually gone to see a counsellor (...) had a couple of zoom sessions just on how we manage our lives as a couple (...) and it was really useful to get that outside, external perspective to contextualise what we were going through a bit more. So that it wasn't just feeling like we were fighting each other, but actually we were in a unique situation which was causing challenges on our relationship. (Clara)*

In some instances, women surmised that a supportive and equal partnership was something that their partner could, or would, not provide. Dissolution of the relationship (cessation of negotiation) with the parent of their child/ren became necessary to navigate towards better mental well-being.

> *Now I get to raise my children in the way I wanted them raised, which was kind of in the countryside with a lot of nature, with a lot of safety, with a lot of, a lot of kind of... perfection, really. A little dog, and a big garden and all the beautiful, beautiful things. Yes, art, therapy and living conditions that are perfectly suited to exactly what I want them to be and (...) no more abusive partner. (Olivia)*

> *I forgave him and that gave me a big relief. And... So no, I don't think about [the] past and I don't... I'm not even sorry that all these things happen for myself. You know, it just happens. All these things happen for a reason. (Audrey)*

6.4.4 Theme 4: Life as a working mother: Navigating and negotiating dual roles and responsibilities.

Attending to work commitments and to responsibilities of family life was a reoccurring challenge. Most women were tasked with balancing their occupational workload with the labour of childcare, running a home and, for some, on-going education or care of elderly relatives. Returning to paid employment was, for most women, a financial necessity for their growing family, while also being important to their sense of identity, personal life goals and independence.

> *The job I’m doing, I love. We’re more financially stable now because I’m working and because I’m working I have that sense of having... it’s not just my money, it’s our money. But I have that sense of pride in that I can contribute. (Dawn)*

> *I went back to work when he was about five months old and that definitely helped in my recovery. Just getting back to some bit of normalcy, and socialising and seeing other people and being responsible for something outside of being a mom. (Noeleen)*

> *I resented not being able to dedicate myself to work and studies anymore, because I was very work-oriented, and career, and go off and shine. And I was forced to pull the brakes on all that, because I just couldn't.... I didn't have the energy or the time. (Camila)*

Despite being a financial necessity, the high costs of childcare in Ireland resulted in returning to work becoming the unaffordable option for some women.

> *(My qualification), I can't do anything with it. I have the achievement behind me, but I can't go back to work and I can't move into that work (area) yet because I can't afford childcare. So it's kind of like a vicious circle. Like you can do all this (up skilling) but if you can't afford childcare... (...) it reflects on my self-image and how I see myself, which is not as a person but just as a mother (...) There's no personal anything anymore. It's just your life revolves around being a mother and being in the home. So that really plays on your mental health. (Gemma)*

> *When we initially looked at me returning to work... we have one crèche locally and they quoted us €2200 for a month for the two kids and.... Like that was almost my whole wage gone and I was like; what is the point in paying that? (Kayla)*

> *I'm lucky that I still have money leftover then it's worth my while to do it, and I'm in a privileged position, but like, I think it's shocking that we (mothers) have to...make decisions on our employment which will affect our mental health because we can't afford childcare. (Clara)*

Employer expectations and workload demands could often overspill into women’s personal life, leaving them with little time or energy to fulfil family demands, least of all personal needs. The overflow of workload and its negative effect for women’s family life could trigger an examination of priorities and instigate attempts at negotiation to bring about a balance between work and family load. Negotiations in this domain involved significant trade-offs. Although reducing work hours or projects could positively benefit mothers' physical and mental health, the decision to do so was primarily with the well-being of children and the family unit in mind. Reduced employment meant less income, less pension contributions, reduced opportunity for career advancement, and was occasionally (not always) met with negative attitudes from colleagues or employers.

> *(Choosing to reduce hours) the knock on effect of that would be more time with my child. But also more time to get my house in order, and I mean my actual house like laundry, grocery shopping, everything! To have the extra time to kind of get that in order, so that when the weekends come, it wasn't just a car crash (of) 'there's no food, everything is dirty!' It was, 'oh, we can now have fun, family time'. (Clara)*

> *(Choosing to reduce hours) also means a big cut in salary (...) I'm at 60% of my salary, 60% of my pension.(...) I definitely think it's the right decision (...) I think one thing would have given up, either the kids or the couple, like our relationship or my health like something would have. And so definitely reducing the hours of work was a big decision. But I'm definitely happy I made it. But saying this, I can see how I paid a price for it, not just monetary price. Just before I went on to my second maternity leave, I was asked to hire someone (...) I was like; well, I would have liked to interview for this role. (...) And she (manager) said to me; 'well, it would have been you, if you hadn't gone on maternity leave'. (Renelle)*

All of these challenges might be considered 'normative' for post-industrial societies, however women's narratives also included considerations of navigating and negotiating life as a working mother during a global pandemic. Some women lost employment during the pandemic and faced worrying financial situations. Others began working from home; some were able to find balance, in that their partner took on the majority of childcare during this time;

> *It was nice to have him minding the kids, (...) and also, it was nice for him to see what maternity leave was really like, the cooking, the cleaning and the logistics of the two kids and all the rest. And I think he got a bit of an insight into what my world was like. (Clara)*

Several were in full-time employment while also being responsible for home-schooling and caring for their child/ren. Boundaries between multiple roles and responsibilities were blurred and at times overwhelming.

> *2020 was one of the toughest years that I've ever had to deal with and I was about to crack actually, because nothing was good enough. Do you know? I wasn't good enough employee. I wasn't good enough mum. I wasn't good enough school teacher. I wasn't good enough wife, I wasn't good enough cook, cleaner, name it. It wasn't good enough. (Alina)*

> *When you're working (from home), there's just sort of a constant stream, especially at the moment being online, and sort of... people expecting availability. (Madison)*

Women had limited tools to negotiate or navigate their way to better work/life balances during the pandemic, as financial situations were more precarious and almost all social and family supports were no longer available to them. Pressures were intense, to the extent that some women considered or threatened to leave employment.

> *I would work late into the evening, a lot of evenings and it kind of got to a point, to be honest, after a few months I was just saying to my manager like I'm just not doing this anymore. Like I don't really care what happens. (Madison)*

> *They refused my resignation. They gave two weeks off and they said, Think about it, have this time off, get some R and R to think about if you really want to quit the job or you just need some time off with your family and so they were really good from that perspective. I hope to God people got that kind of attitude from their employers... because that was a make or break for me. (Alina)*

Women with greater financial stability (part of a couple, a partner with full-time employment) were better placed to negotiate for employment changes. For others, financial circumstances precluded their options.

> *Work was just crazy so I was stuck in the house the whole time and all these people making banana bread and the likes. I was like; please somebody put me on their COVID payment so I'm not working and I can cope, because I was trying to. (Orla)*

> *I took parental leave to take the pressure off my partner so that I could do some of the home schooling during the week as well. But I had to make that up at work as well. And then, you know, we obviously took the hit financially as well then. So I felt a lot of the pressure. (Catherine)*

Making decisions about their work life and career, and the potential implications that those decisions have on their family and children, was a challenge for women. Women were not only negotiating with employer or work demands, but with the needs of their partners and children, and their own expectations of themselves as mothers. Women worry about the consequences that working full-time hours may have on their children. Women worry about having their children at child-minders or crèches, as they wish to have more time to bond as a family unit, raise their family with their values, and enjoy the special moments of childhood.

> *The transitioning of going back to work, that was another thing that really affected (me), like come back home, you're tired and then you have to make up time for the children at least, they're missing hours.... So it was just another challenge, (...) that transition, it wasn't easy. I'll say it wasn't easy. I started and then I was like; am I making a right decision? (Tami)*

> *Those little moments that I would (have) if I was out with (child's name) and something happened and I would recall that later for (female partner's name). All those things you miss during the day. If you're working, you know, and you don't... Your childcare provider doesn't tell you what's happened, and they don't fill you in on those little really unique parts of (child's name) growing, that you don't get back, you know, and you don't get... Nobody will share that with you unless you see it for yourself or it happens within your family group (...) The most important thing for us is to make sure that how we live for (child's name) is as beneficial to her as it can be, having the right people around, having our influence when it's important. (Hazel)*

At the same time, women see crèches as a place where their children can develop important social skills and establish friendships.

> *I knew that the kids had to go, and that they needed to be socialized and that it's really good for them. So that was kind of how I got through it in my head. Was you know, such a high priority for them and their socialization. (Kayla)*

Women wrestle with the benefits and drawbacks of any decision. Women frequently return to the sacrificing mother ideal, they place what they believe is best for their children and family as the central priority. Some women find comfort in living as role model for their children. This was a positive example of negotiating life's demands, as personal goals became integrated with mothering goals.

> *I've been studying as well part-time pretty much solid since 2016. (...) I've viewed that very much as not just for me, which it is, but it's also for him, to show him what one can do and what women can do, while also being their mom, being a present parent and also working as well. So I want him to see*

> *that I'm successful, I want to see him to see that I enjoy my work, and I want him to know that I'm also doing it very much for him as well. And to make sure that he has a good life. (Noeleen)*

6.4.4 Theme 5: Navigating to social and peer supports

Motherhood marked the beginning of a physically, socially and emotionally isolating period for many women. The dissolution of the day-to-day routine that they had known prior to motherhood meant that the structures (work, hobbies, volunteering, time with friends etc.) which ensured social interaction and emotional outlets were absent (loss of the village). Women had to navigate their way to new social and peer supports to establish meaningful connections where they could learn, share and be supported (building a new village).

6.4.5.1 Sub-theme1: Loss of the village

Following birth, women described a sudden sense of becoming removed from society. In the early postpartum period women transition from socially active lives to spending a large portion of their time at home alone with an infant, this feels profoundly isolating for most women and can negatively impact on their mental well-being.

> *It's as if you've kind of disappeared from society (…) it's as if you've gone to… not even retirement. But it's like* ***a little island*** *somewhere… of motherhood, and you're not part of society. (Renelle)*

> *The very core of it was that I was left alone, or that I felt left alone. (Olivia)*

For women who gave birth to another child during the pandemic, feelings of isolation and of being removed from society in the postpartum were compounded by the impact of health measures in place during that time.

> *I had my second baby (during) COVID, when no one else can come out like. So it's really something that (I missed), like when they come up, when they visit you, they leave up something for you. So they cheer you up, and you feel so comfortable in that. (Instead, my experience was) just staying on your own, where you don't have any support, and you don't have anyone else. It's just* ***like you're on an island****. So that thing… it gives you thoughts and the changes in your body. Like this hormonal things. So I'll say all these things, they come up together and they can really affect the mental health. (Tami)*

Although all women spoke about some level of isolation and loneliness during the postpartum period, it was especially difficult for women who did not have family or their usual social support networks (i.e. their friends and people they grew up around) nearby. In this regard, there was a point of commonality in the experiences of mothers who are migrants to Ireland and Irish mothers who moved home within Ireland during the perinatal period. Both were faced with entering motherhood without the family support they expected and needed. These situations added to women's sense of isolation, and avenues for navigating towards the emotional and practical supports that are needed from close family and friends during this time, were limited.

> *I did have some scary thoughts back in those weeks. I didn't try anything, but it was like... I just wish this would end. But I- but I can't. It was my sense of responsibility for the baby that would cut that – would shut down that type of thought. And then... my husband didn't know any of that. I didn't tell anyone. And I am an immigrant in this country, so all my communication with my family and close friends are done through the Internet, which I didn't have, so it was very isolated. (Camila)*

> *I struggled. I think a big part of it was loneliness. I was kind of quite far from my family. I didn't really know many people in the area that we were living in. (Noeleen)*

> *I had my mother and my mother-in-law the first two months with me. (...) And then yeah, after the two months then my mom left and I thought my world was crumbling down. (Valentina)*

In addition, some migrant mothers spoke of having to adapt to Irish culture which they perceived as providing less familial and social support than they expected in motherhood;

> *I just adapted the situation. I said, OK, I'm here, and here is the culture. Though we have few relatives around, but... they will not be hands on (laughs). So it's just something that I took it that... this is all what I have to do. (...) I said this is the culture here. No one is coming to me to stay for a day or two or a week! (laughs) So I just check it and then I say; 'I have to move on and this is how things will be'. So I'd say I adapted it. (Tami)*

Women struggled to navigate to solutions in the absence of familial and social support, however some suggested that integrated healthcare systems which check for risks of isolation and low support for mothers could be helpful.

> *I think our healthcare system has become so disconnected that there isn't anybody who puts things together, that says; well, this is a first-time mother who is living out in the country, who is going back to work, who's had a loss. There's nobody that correlates those or... even asks. (Catherine)*

6.4.5.1 Sub-theme 2: Building a new village

Women were commonly advised by HCPs, friends or relatives to join various postpartum groups to counteract isolation. Some women enthusiastically navigated their way to mother and baby groups, successfully grew a social support network through the peers that they met, and found them to be very positive experiences;

> *(The breastfeeding group) was the only place or the only safe place to discuss anything motherhood related, pregnancy related, breastfeeding related. I learned a lot. I also learned where to find information. (Renelle)*

> *(When I first) went to one of them (breastfeeding groups) I felt like... I'm wasting my time because I could be sleeping now! (But after some time) seeing that it seemed like everybody else had the same problem. It was really- It was nice, and it helped you and it gave you support and even if I wasn't sleeping when I was going to the meetings, then it didn't feel like I was losing my time. (Valentina)*

However, building a social support network is not easy for every woman and the task can be daunting and stressful, particularly for women experiencing mental health issues, such as anxiety.

> *I didn't feel comfortable, I was stressed with having a child who was crying, or pooing up her back, or breastfeeding challenges... in front of people. And not having my act together. So, I did it because I knew it was important for me to do, and I'm sure there was a level of benefit to me somewhere in terms of just being encouraged to go outside and to chat to women. But I do also acknowledge I found the environment stressful for me personally. (Clara)*

Although most women actively sought out mother-peers within their community, some women faced barriers. Living rurally and having limited local resources, or having moved during or post-pregnancy and not knowing how to navigate local resources were reoccurring issues.

> *It was a very different experience I think, compared to people who maybe have their family around them or have moved away. That's not even to say people who are Irish within Ireland because there's*

> *many people who moved to different towns and everybody thinks that somebody else is doing that check in. (Catherine)*

> *I breastfed but I didn't feel like that was the right group for me because... I was pumping and I had heard that they were very... like strict on what they view as breastfeeding. And I didn't feel like I could go down and join in with these women, so I can only just imagine how women who don't breastfeed would feel like not even having the option of La Leche League to go to. (Kayla)*

Several women mentioned that frequently scheduled, flexible, and generalised postpartum support groups would be beneficial ways of establishing in-person peer supports. Women's suggestions were focused on establishing local, often informal, community based supports.

> *I suppose community led classes, there's midwives that are in the community... That kind of thing. (...) They don't even have to be in the hospital setting. (...) I think that if you were to make things geographically accessible (...) if you could just literally walk for like 5 or 10 minutes, do your class, get to know people, swap numbers if you want. You automatically then have this network, before your baby is even born, which I think... Would probably be really nice. (Madison)*

Some women made comparisons to resources establishing in other countries for mothers.

> *(In England, there was a) mothers and babies group. So they have that like every morning. They can even have that in a church nearby, in the community where they live. Yeah, you used to pay about £2 for about an hour's worth. Yeah, it's good to meet other mums. (Sanam)*

> *In England especially they have like apps that are like Tinder for mothers (laughs), so you can kind of meet other mothers in your area and stuff. (Gemma)*

> *In France... there is a couple of voluntary organisations where you can volunteer and be partnered up with the mom and you just make homemade meals and you bring it to bring it to her, which is brilliant. I think it's needed. (Renelle)*

Women also spoke about the gap between the infancy years and their child starting school or crèche as another period of peer isolation. Opportunities that broaden their child's social group can be positive for the mother.

> *I didn't meet any mothers in the area until the kids started going to crèche. And then I got to know some lovely mams in the area whose kids were going to crèche.(...) But on maternity leave, I didn't know anybody in my area who'd had a baby because it was like, well, how do I? (Madison)*

> *I'm finally getting to know people who have kids the same age as mine, and it's lovely to kind of feel that sense of support, and to ask people questions and like it's just.... It's great. (Kayla)*

Some women expressed disappointment that the effects of the pandemic hindered peer relationships from developing at the school gate;

> *I think it's very hard to meet other mothers. Even talking to people outside the school or whatever and especially now with COVID, because people don't stand around and talk during school collections or anything. (...) with COVID it's really hard to meet other mothers to make a new social system around yourself. (Gemma)*

> *(Because of COVID) There's not that opportunity for interaction in the same way. A lot of parents that you might have met before, when you went to collect (at school). I actually don't know how any of them are anymore (Catherine)*

As the effects of the pandemic reduced and mothers perceived a nearing resolution, women looked forward to the organic growth of their social supports that they expected to gain following their child's start in school.

> *September onwards, I'm going to be on a mission to find those mums and to be friends with the community and to get know them 'cause it's important for her, obviously, but actually very important for me. (Clara)*

6.4.6 Theme 6: Negotiation with and navigating healthcare systems and healthcare professionals

Women often described the healthcare system in Ireland as disjointed, difficult to navigate and unprepared to handle women's mental health needs. Healthcare systems, as women experienced them, consisted of i) the services that are offered and financially or locally accessible to them, ii) the extent to which services are integrated, or not, with each other, and iii) the knowledge, expertise and attitudes of the HCPs whom women encounter.

6.4.6.1 Sub-theme i): Narrow gateways and narrow paths

For many women, HCPs are gatekeepers to accessing mental health services. In some instances women were met with understanding, facilitative and compassionate HCPs, whose dedication and professionalism very likely saved some women's lives.

> *In my case, the healthcare system was perfection. I have zero comments on how it could be improved because for me specifically, it was, it was perfect. It worked exactly how it was designed to work. (...) the nurse took me aside, and she said, you're crying a lot, aren't you? I can see it in your eyes and I was like; 'yeah, but you know'. She was like; 'no, no, no, no, we're having a conversation' and we talked and then she sent me to the doctor, the doctor sent me to a therapist. (Olivia)*

> *The mental health nurse that I ended up working with. She's brilliant. She's interested in my story. She's listening to me, she is clued in. She's not afraid to go talk to the doctor. (Noeleen)*

> *She (psychiatrist) was really listening to what I was saying (...) and she researched so thoroughly. (...) I loved that she took that time, that it wasn't just a box ticking exercise. That she made me feel like my concerns were valid. (Kayla)*

For others, however, they felt that they were met with HCPs who lacked knowledge of, or initiative in, guiding women towards mental healthcare services and pathways:

> *(I asked the mental health nurse) about counselling and I think their response was; 'yeah, you could look into that'. So it wasn't said; 'I can help you with that', and I remember bringing that up because (I thought) maybe she can actually help me here, maybe there is somebody here that I don't know about, or they haven't brought me to yet that I can access. Or at the very least, she could maybe make some recommendations (...) But it was very much put back into my hands. (Noeleen)*

In and beyond the perinatal period, women's point of contact for accessing health services is most often through their general practitioner. Women were concerned by this structure of the healthcare system.

Some women experienced HCPs who were dismissive of their request for mental health support;

> *I remember going to my GP, and saying, I'm not really doing too good. Emm... and the GP was kind of dismissive about it. Now, I know that GP, and I know that he is very traditional in the way that he*

> *thinks, so I didn't take his being dismissive as me not having it (depression). I was kinda just like, 'yeah, I'm hyper aware of my mental health, so I know this isn't right'. (Dawn)*

> *I was saying to the GP like; 'I'm crying, I'm washing the buggy, I don't let anyone hold my child'. And she was like; 'oh, that's perfectly normal', and I was like; 'No, it's not perfectly normal!' (Grace)*

> *My GP was very dismissive, he was like 'Oh, have you tried an app on your phone? Or this and this' and, 'Oh, sometimes the weather can change women's moods'. (Gemma)*

> *I feel like when women go to a doctor, it can just be like, 'yeah, that's kind of all in your head', or 'you're being dramatic', or like I just feel like those things would never be said to a man... ever. (Kayla)*

Or felt that their GP lacked the knowledge or motivation to help them navigate mental healthcare services. In these cases, women were left wondering where else they could turn, and found themselves having to navigate their way to mental healthcare alone.

> *If your GP can't see it, then it's kind of like... where do you go? (Grace)*

> *I ended up referring myself for therapy after my brother passed away and but yeah, it was never brought up and it felt a little bit like... from the mental health nurse was... that it was supposed to be that (way)? (Noeleen)*

Some women were concerned that it appeared to them that the first port of call for GPs was to recommend medication. Women felt that a medication first, or medication only approach was a narrow treatment pathway that did not afford them opportunities to negotiate their care. Women want options and to have choice when considering treatment pathways.

> *I felt it was a very much... we're going to pump you full of as many drugs as we can. I felt like every time I went back to see them (GP) which I had to do, I think every month. They would just up my dose without really talking to me. (...) I thought I probably could have done with being referred for counselling. But that didn't happen. (Noeleen)*

> *I just felt like SSRIs, were kinda the only route he (GP) knew, the only route he was willing to go down. (...) I didn't want to go on medication. And like... I thought there would be different options offered to me, there wasn't, I didn't really understand. (Grace)*

When narrow gateways led to narrow pathways for care and limited scope for negotiation, women had to find different avenues to navigate their way to mental healthcare.

6.4.6.2 Sub-theme ii): Navigating the Gaps

Although there were examples of positive care experiences, these were not uniform and women described traversing multiple gaps and barriers in their journey to accessing mental healthcare needs. The gaps identified were in relation to referral processes, timely service access and equitable service access.

Gaps in referral processes appeared as a symptom of narrow gateways. The limited means through which care can be accessed, and the limited knowledge of potential gatekeepers risks women not being able to access resources that might otherwise be available to them. Such gaps in referrals processes place the burden of negotiating and navigating care access on the woman, at a time when she may be especially vulnerable. As exemplified by Kayla's experience;

> *At six months and one day postpartum, I went to my GP and I said; 'I am suicidal. I'm really concerned that I'm going to do something' and the GP said to me; 'because you've already been linked in with a psychiatric service, and because of your diagnosis, it's not something that we would treat in the surgery here. You need to be seen by a psychiatric team. And because you're linked in with the team in the hospital, I'd like you to ring them'. And I rang them and they told me that it was only their remit to deal with women that were at six months postpartum and I was one day over that, and they wouldn't see me and I was devastated. It was so, so hard to hear that. (...) So I, I was devastated when they said this to me and it really... like I was having all these thoughts that I didn't deserve help, you know? These typical depressive thoughts, and when they said that to me, it quite like... it reinforced it almost. But I don't know how I somehow rang my GP back, because I really didn't want to do it, and I didn't feel like I was worth this. (Kayla)*

Attempts to access mental healthcare publically or privately revealed gaps in equitable mental healthcare access. The Irish healthcare model includes private and public streams. Women who sought to be referred to counselling or talk therapies for their mental health via the public system faced long waiting lists.

> *(I was told) If I asked to be put on a list for counselling, for free counselling through the health services for example, that it could be months or years before I got that service. (Noeleen)*

> *She said (the waiting list) it's 6 to 8 months. So she said to me; how long are you on your list for counselling? And I was like, nearly four months and she goes; well, you might get it before Christmas. (Grace)*

Not being able to receive treatment at the time that they need it was a risk to women's well-being.

> *I just don't think that's a good enough service for people that are... suffering mentally, because luckily I haven't been suicidal or whatever, but if I was.... That is a long time, I feel, to be able to access the service. (Grace)*

> *(By) the time I did that CBT. I think (my baby) was about a year and a half. It would have been way better to have had that much earlier. I think I was six or seven months waiting on that. It would have been way better to have that... months earlier, when I really needed it. (Grainne)*

Women highlighted that there is a significant gap in equitable access to services, having an income above the threshold to access public services meant that women rarely had the resources to purchase care.

> *We couldn't qualify for a medical card or anything like that to avail of the free counselling sessions and stuff that would be available for people on the lower end. But we also don't make enough money to be able to afford to go for it (privately). So I think there's a big gap there for someone to be able to find the services they need when they don't qualify for anything. But they also can't afford it, which I think is something that really needs to be looked at. (Gemma)*

> *The lack of access to mental health supports. Like if you needed something, if you needed to speak to a counsellor and you didn't have the money to pay privately.... And you're put on a waiting list, I just think that is, I would say, massively off putting. (Madison)*

> *If you don't, where do you go? Counsellors, psychotherapists? (...) psychotherapists they cost a lot, it's expensive. (Emi)*

Women also spoke about a gap between not meeting the diagnostic criteria for a mental health problem but still needing access to care. Women felt that they would have benefitted from a space in which their mental well-being could be prioritised without a diagnostic focus.

> *She (psychotherapist) was looking for a diagnosis, a pathology to work with and then she didn't see anything, nothing tangible to work with... (...) What I'm looking for is a space that I can express*

> *myself, somebody to listen to you without judgement. (...) It's a tricky one, you see, so, I wish there was a space I could just go and talk to somebody. (Emi)*

> *It sounds so basic, but talking to somebody and feeling I was in a safe environment and could do that was number one. (...) I think having somebody and having the space and having the time (would have helped) and I didn't have the somebody, the space or the time and I think that's why I wasn't able to process that and communicate it. (Clara)*

In regards to the multiple gaps in mental healthcare access and provision, women suggested community health and resource centres with integrated community mental health supports. Such centres may also provide an alternative route beyond the current narrow model for accessing mental healthcare supports. Some women made comparison to local health clinics and family resource centres, which sign-posted women to other services, as a potential model;

> *There should be more options in the community for women. (...) I do think mental health resources in the community for mothers needs to be a priority. I also feel like, it needs to be accessible for mothers, whether they have one child or six children. (Grace)*

> *That family resource centre, if I had known about that earlier that would have been brilliant to go to. (...) You could (ask) them about anything. I'd say they would be very helpful; they were (there) to guide you. (Grainne)*

> *We have primary healthcare centres in so many towns and so many villages like, there's like, there's the public health nurse comes out to you. (...) it would be lovely for women to get more support from people who actually understand what they're going through. (Kayla)*

Women felt that community-based mental health resources that are support, rather than pathology, focused were more accessible and could help address a sense of distrust in formal systems that might be prohibitive for some women.

> *I've seen the dark side of the system and how you can be labelled as 'crazy' or you know whatever, and so I'd be very slow to go near any sort of structured services unless it was absolutely needed. And so I think then the informal thing would be really helpful, but I don't really see that in existence. (Madison)*

Overall, the failings of the healthcare system reinforced the archetypes of a superhuman and sacrificing motherhood. They suggest that healthcare systems and HCPs expect women to endure motherhood.

> *I do think that the system is definitely skewed against women. I really do, and I think there's a sense that women are maybe going back to (that idea that) they should put up with more. They're just expected to deal with things as they happen. (Madison)*

6.4.7 Theme 7: Filling the Gaps: Self-care and alternative strategies for mental health

When women cannot negotiate or navigate the narrow gateways, paths and gaps of the healthcare system, they are left to find alternative solutions to dealing with mental health issues. All women described at least one type of self-care that they engaged in. Self-care was often viewed through a salutogenic lens in that self-care supports women to preserve time and space for themselves, and has positive implications for women's sense of self-worth and identity. In this view, self-care was regarded as part of a healthy and balanced life. However, for some women self-care and alternative strategies were intended to bridge the gap between their mental health needs and act as substitutes for the formal supports that were unavailable to them.

Self-care and alternative strategies were supported at the individual level and frequently involved navigating and negotiating with internalised narratives, partners, or family and friends in order for them to be accessed or implemented. The activities that women describe as self-care were broad and included meeting basic needs, such as sleep, eating well, and getting exercise, and social/relationship needs such as spending time with friends, participating in social hobbies, or date nights. Women mentioned intellectual needs, and spoke about the benefits of making time for learning, further education and spending time with other adults, and finally emotional needs, such as maintaining meaningful connections with close friends and intimate partners, engaging in mindfulness practices, meditation and gratitude journaling.

Interestingly, some women who had received a mental health diagnosis mental prior to pregnancy were more readily able to identify skills and techniques available to them to address threats to their mental well-being than women who experienced mental health issues for the first time in motherhood. The greater range of skills included; utilising a mood journal to chronicle mood shifts, knowing their triggers and identifying early warning signs for mental distress, and sharing them with trusted social supports, having an action plan in place and giving their trusted social supports permission to take action when they felt action may be needed. In these cases, women had a larger repertoire of management tools, which most people (without access to mental health education) may never be taught;

> *Nobody has ever taught you how to cope. Nobody has ever given you coping mechanisms, but you're expected to know how to do it. And then they give you a baby, and you're expected to manage them as well. (Eliza)*

Where women did not have access to the social and formal supports that they needed, they searched for alternative strategies of self-help, these included; i) seeking out women with shared experiences, and ii) actively seeking mental health education. Women sought the support and guidance of people who had similar lived experiences to try to learn what worked for them and apply to their own life, and to take comfort in shared experience. Some women preferred online support that could provide connection yet anonymity;

> *(I didn't attend a doctor) because I have to pay 60 euros which I think is quite steep to tell somebody how I feel when I could be doing it- researching it myself online. I like being anonymous and no one can see your face and you can't see the other person. (I can) put this on Facebook and basically everyone is just saying what you just said.* (...) *You can always just put like how you feel, your emotions down, so somebody else can read it. (Sanam)*

> *(Online supports) It's connecting the shared experience, it's connecting those dots. It's allowing women to mentor other women, and it's allowing women to connect, who are having similar experiences. (Clara)*

Whereas others sought out people in their lives;

> *We just didn't have the finances (for therapies) (...) So what I did, basically, was worked through it on my own. But also, just talked to other people, who I knew, who had had it (PPD). (Dawn)*

Mental health education was predominately found online, in the form of Apps, online forums, YouTube channels and online mental health courses.

> *I'm watching YouTube videos about mental health, not even pregnancy related (...) it's comforting and then also mindfulness, I'm using the app called, HeadSpace. (Emi)*

Women found mental health educational material comforting and empowering, though acknowledged some risk:

> *I had to Google and do things on my own which was a bit risky, but I was at a point where I said; I will not continue like this. I wasn't thinking of suicide, nothing like that. But it's like, I just refused… enough. (…) I started reading about trauma to understand all this and it was part of the whole transformation as well. So, I started talking and learning about meditation, cause that helps a lot with the focus as well (…) (and watching) philosophy oriented lectures and I just fell in love. (Camila)*

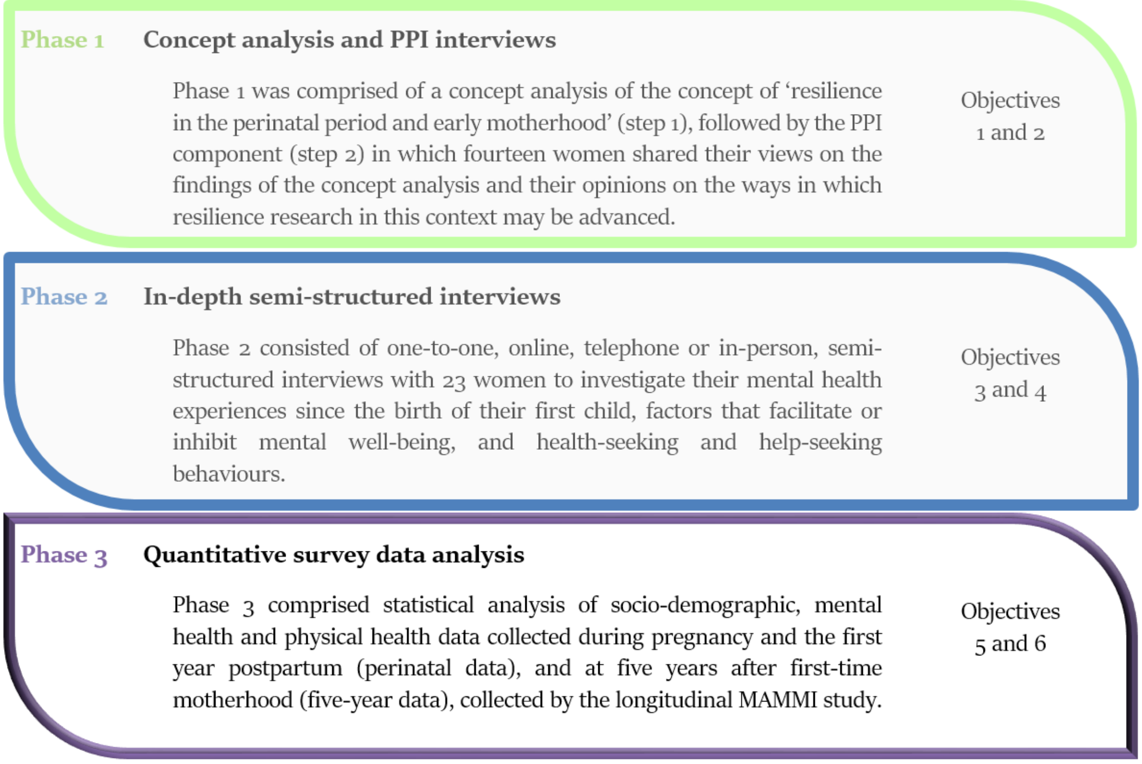
6.5 Conclusion

Chapter 6 delineated the approach taken to analysis of the in-depth qualitative interviews with respect to i) mothers' preferences for resilience and mental health to be considered from psycho-social and ecological perspective, and ii) the conceptualisation of resilience in this context as processes of navigation to and negotiation for well-being needs in motherhood. Processes of navigation and negotiation were identified at intrapersonal, interpersonal, social, community, organisational and healthcare systems levels.

Chapter 7: Quantitative Survey Findings [15]

7.1 Introduction

This chapter contains the findings from phase 3 of the study. First presented are the recruitment and retention statistics and socio-demographic characteristics of the sample. This is followed by the perinatal mental health data collected by the MAMMI study, which includes two sections; i) prevalence, pathways of, and socio-demographic factors associated with, depression, anxiety and stress from pregnancy through the first postpartum year, ii) and physical health burdens and mental health in the first postpartum year. Finally, the mental health symptomatology (depression, anxiety and stress) and well-being (MHC-SF) data collected at five years after first-time motherhood and associated socio-demographic factors are presented.



Phase 1 **Concept analysis and PPI interviews**

Phase 1 was comprised of a concept analysis of the concept of 'resilience in the perinatal period and early motherhood' (step 1), followed by the PPI component (step 2) in which fourteen women shared their views on the findings of the concept analysis and their opinions on the ways in which resilience research in this context may be advanced.

Objectives 1 and 2

Phase 2 **In-depth semi-structured interviews**

Phase 2 consisted of one-to-one, online, telephone or in-person, semi-structured interviews with 23 women to investigate their mental health experiences since the birth of their first child, factors that facilitate or inhibit mental well-being, and health-seeking and help-seeking behaviours.

Objectives 3 and 4

Phase 3 **Quantitative survey data analysis**

Phase 3 comprised statistical analysis of socio-demographic, mental health and physical health data collected during pregnancy and the first year postpartum (perinatal data), and at five years after first-time motherhood (five-year data), collected by the longitudinal MAMMI study.

Objectives 5 and 6

Figure 7.1: Three phases of the study design

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[15] Findings from this chapter contributed to the following peer reviewed publications:

- Hannon S, Gartland D, Higgins A, Brown SJ, Carroll M, Begley C, Daly D (2022) Maternal mental health in the first year postpartum in a large Irish population cohort: the MAMMI study. *Archive of Women's Mental Health* **2**(3), 641-653.
- Hannon S, Gartland D, Higgins A, Brown SJ, Carroll M, Begley C, Daly D (2023) Physical health and comorbid anxiety and depression across the first year postpartum in Ireland (MAMMI study): A longitudinal population-based study. *Journal of Affective Disorders* **19** (328) 228-237.

7.2 Sample and study participants

This section is presented across two sub-sections: the first outlines recruitment and retention rates for the perinatal and five-year follow-up strands, and the second describes the socio-demographic characteristics of the perinatal and five-year follow up cohorts. Comparisons with national data are included where possible to assess the generalisability of the findings.

7.2.1 Recruitment and retention rates

Recruitment of mothers to the MAMMI study began on January 31st 2012 and concluded on March 31st 2017. Approximately 8243 women received the study information packs during their booking-in visit across the three recruiting hospitals (RH, GUH, CWIUH). A total of 3131 participants gave consent and completed the enrolment questionnaire during pregnancy (Survey 1), corresponding to a response rate of 38%. Of the 3131 participants, 122 were excluded from follow up due to experiencing miscarriage, stillbirth or having a seriously ill baby in the NICU. Eligible participants then received surveys at 3, 6, 9, and 12 months postpartum (perinatal strand), and a survey when their first child turned five years old (five-year follow-up strand). Data collection for the five-year follow-up survey began in 2017 and continued until mid-2023. Retention rates are presented in Figure 7.2.

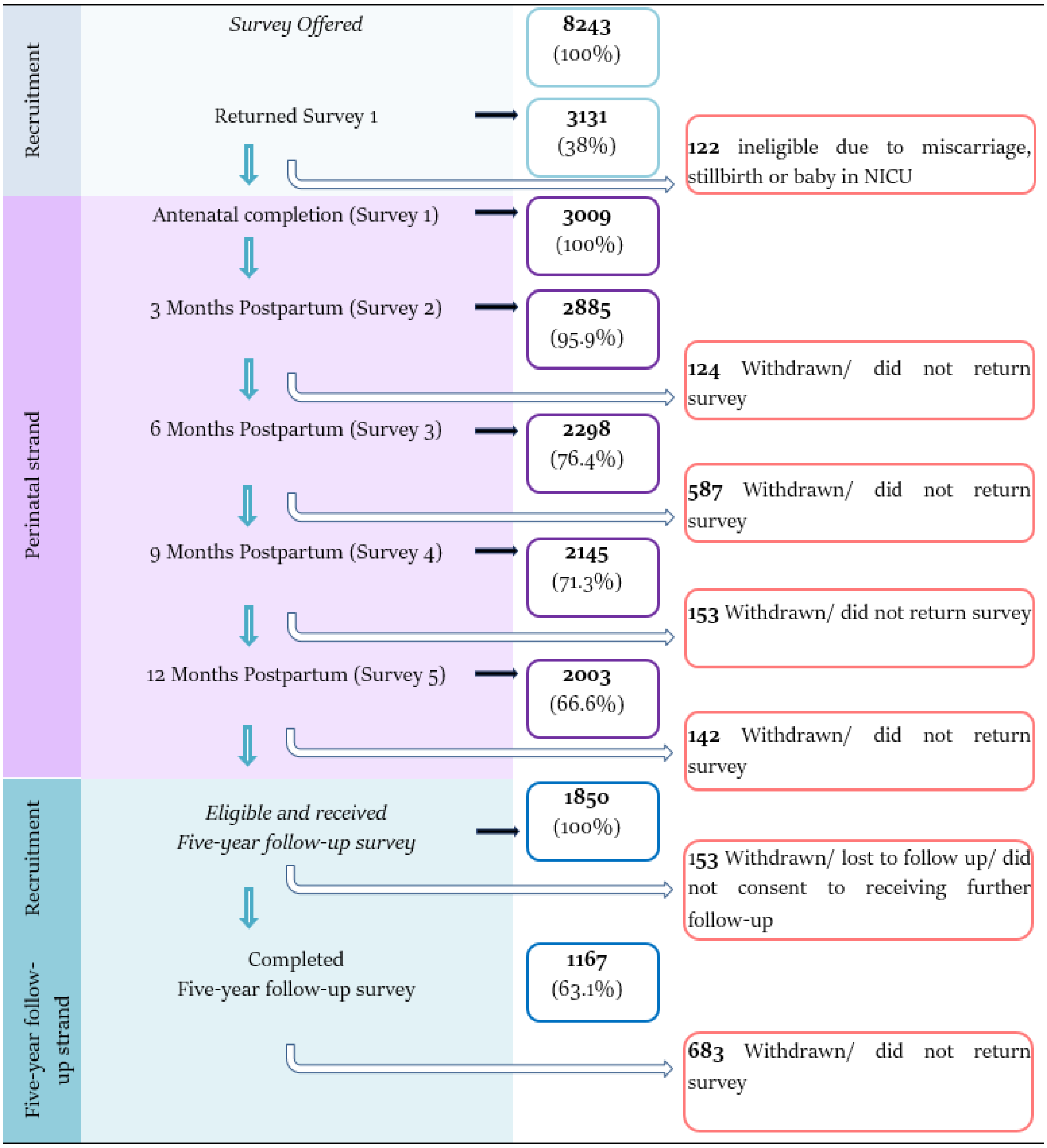

Figure 7.2: Flow diagram of recruitment and retention

7.2.2 Defining the samples for analysis

For the purposes of statistical analysis, the perinatal data was analysed by two samples sizes which were defined by survey completion. First was Perinatal Sample One (PS1), this sample is comprised of 2380 participants who represented the number of women who completed the antenatal survey and at least two postpartum surveys. The second sample, Perinatal Sample Two (PS2), comprised the 1804 women who completed the antenatal survey and all four of the first-year postpartum surveys (Figure 7.3).

Survey 1 Antenatal	Survey 2: 3 months	Survey 3: 6 months	Survey 4: 9 months	Survey 5: 12 months	**Sample Size**	**Perinatal Sample**
✓	✓	✓ *			2380	PS1
✓	✓	✓	✓	✓	1804	PS2

* PS1= antenatal survey and at least two postpartum surveys

Figure 7.3: Sample size and survey completion: Perinatal data

The characteristics of the 2380 participants (PS1) are described in the following sections. As it is the larger sample, PS1 was used to assess generalisability through comparison to national data; national data for the year 2016 was chosen to give an approximate representation of characteristics of women giving birth in Ireland in and around the time of recruitment. For the purposes of statistical analysis, PS1 was chosen to better capture socio-demographic associations with mental health symptomatology within the perinatal data. Whereas the sample with data at each time point (PS2) was chosen to provide an accurate depiction of prevalence of symptoms (mental and physical) at each time point in the perinatal data.

A total of 1167 women completed the five-year follow-up strand. As of January 2023, data entry was completed for 1155 surveys. A decision was made to close the dataset to enable time for data cleaning and data analysis. Data from the 1155 surveys serves as the sample for analysis of the five-year follow-up strand and the characteristics of this sample are described in the following sections. Comparisons to national perinatal statistics are not appropriate for the five-year follow-up cohort as this sample is comprised mostly of mothers who did not give birth within the year prior to survey completion. Although the following includes comparisons to some national data, evaluation of similarity are limited by data availability and reporting differences.

A total of 277 of the 1155 participants who took part in the five-year follow-up received surveys which included the addition of the Mental Health Continuum-Short Form (MHC-SF). This sub-sample was used to assess mental well-being at five years after first-time motherhood.

Table 7.1 Sample sizes: Five-year follow-up cohorts

	Five-year follow-up cohorts	
	Whole sample	**‘Well-being’ sub-sample**
Sample size	1155	277

7.2.3 Description of sample- Perinatal cohort

The following sections describe women's characteristics and compare, where possible, with national data.

7.2.3.1 Maternal age, region of birth, and education attainment

The perinatal (PS1) cohort (n=2380) had, proportionately fewer participants aged <24 years (n=138, 5.8%) and aged >35 years (n=673, 28.4%), and considerably more in the 30-34 years old age range (n=1081, 45.6%) in comparison to national figures for first-time mothers giving birth in Ireland in 2016 (Central Statistics Office 2016). The perinatal (PS1) cohort was broadly representative of the population giving birth in Ireland with regards to maternal region of birth. Approximately two-thirds of women were born in Ireland (n=1735, 73.8%). Although one-fifth were born in other European countries (n=470, 20%), which was higher than population data, percentages for women born in non-European countries (n=146, 6.2%) were similar at 6.2% and 7.1% respectively. Two-thirds of women (n=1695, 71.7%) reported (antenatal data collection) having attained a third-level education or equivalent while just under 30% had not (n=669, 28.3%). There are no directly comparable national data available for comparison, however CSO information from 2016 report that 53% of 25 to 34 year olds and 52% of 35 to 44 year olds had attained a third-level qualification (Central Statistics Office 2017). This would indicate that the perinatal cohort is over represented for postgraduate educational attainment in comparison to the general population of Ireland (Table 7.2).

Table 7.2 Comparison of perinatal cohort characteristics with national data from 2016

	Perinatal (PS1) cohort N (%)	**CSO 2016 (%)**
Age		
18-24 years	138 (5.8%)	9.9%
25-29 years	481 (20.3%)	17.8%
30-34 years	1081 (45.6%)	36.0%
35+ years	673 (28.4%)	36.3%
Region of birth		
Ireland	1735(73.8%)	77.0%
EU country	470 (20%)	13.5%
Non-EU country	146 (6.2%)	7.1%
Postgraduate education		
Yes	1695 (71.7)	*n/a*
No	669 (28.3)	*n/a*

7.2.3.2 Employment status

The majority of the women were in paid employment during pregnancy (n=1695, 71.7%), whereas 28.3% (n=669) were unemployed, voluntary workers or students. The Perinatal Statistics Report indicates that this is proportionately similar to nulliparous and multiparous women who gave birth in Ireland in 2016; 73 % were in paid employment and 23.5 were not (Healthcare Pricing Office 2017) (Table 7.3).

Table 7.3 Employment status of perinatal cohort

Perinatal (PS1) cohort		**Perinatal Statistics Report 2016**	
Employment status	***N (%)***	***Employment status***	***N (%)***
Yes	1695 (71.7%)	*Employed*	*46857 (73%)*
No	669 (28.3%)	*Unemployed*	*2872 (4.5%)*
		Home duties	*12173 (19%)*
		Total	*(23.5%)*
		Missing	*2195 (3.5%)*

7.2.3.3 Relationship status

More women of the perinatal cohort indicated that they were married or living with a partner during pregnancy (n=2308, 97.3%) than is represented by national data from 2016 (Table 7.4).

Table 7.4 Relationship status of perinatal cohort

Perinatal (PS1) cohort		**CSO 2016**	
Relationship status	***N (%)***	***Partnership***	***N (%)***
Married/ living with a partner	*2308 (97.3%)*	*Births within marriage/civil partnership*	*63.4%*
Single/ not living with a partner	64 (2.7%)	*Births outside of marriage/civil partnership*	*36.6%*

7.2.3.4 Pre-pregnancy body mass index (BMI)

One-quarter of women were overweight or obese (n=272, 25.7%), almost 70% were in the normal range for BMI and 5.2% were underweight. Pre-pregnancy BMI rates are not reported by national data for comparison.

Table 7.5 Pre-pregnancy body mass index (BMI) of perinatal cohort

BMI prior pregnancy	**Perinatal (PS1) cohort** **N (%)**
Underweight (<18.5)	55 (5.2%)
Normal weight (18.5-24.9)	732 (69.1%)
Overweight/obese (≥25)	272 (25.7%)

7.2.3.4 Mode of birth

Spontaneous, vaginal and operative birth each accounted for approximately one-third of births among the perinatal cohort. The Perinatal Statistics Report from 2016 indicated that 53% of women (singleton live birth) had a spontaneous vaginal delivery, 31.4% had a caesarean section, and 15% had operative vaginal births (forceps= 4%; vacuum extraction= 11%) (Healthcare Pricing Office 2017) (Table 7.6).

Table 7.6 Mode of birth for perinatal cohort

Perinatal (PS1) cohort		**Perinatal Statistics Report 2016**	
Mode of birth	**N (%)**	**Mode of birth**	**(%)**
Spontaneous vaginal	787 (34.3%)	Spontaneous vaginal	53%
Operative vaginal	762 (33.2%)	Operative vaginal	15%
Caesarean section	748 (32.6%)	Caesarean section	31.4%

7.2.3.5 Gestation at birth

Gestation of between 37 to 42 weeks at birth represented the majority of the perinatal cohort (n=2191, 92%). Data collection and reporting differences in CSO data preclude direct comparison for this birth factor (Table 7.7).

Table 7.7 Weeks gestation at birth

Perinatal (PS1) cohort		**CSO 2016**	
Week's gestation at birth	**N (%)**	**Week's gestation at birth**	**(%)**
Preterm (<36.9 wks)	138 (5.8%)	*< 35 wks*	4.9%
Term (37-41.9 wks)	2191 (92.3%)	*36-39 wks*	56.6%
Post-term (>42 wks)	44 (1.9%)	*40 + wks*	57.3%

7.2.3.6 Birth weight

Birth weight for the perinatal cohort showed similar patterns in comparison to the general population giving birth in 2016 (Table 7.8).

Table 7.8 Birth weight

Perinatal (PS1) cohort		**CSO 2016**	
Birth weigh	**N (%)**	**Birth weight**	**(%)**
< 2500 g	99 (4.4%)	*< 2500 g*	5.6%
2500-3999 g	1864 (82.5%)	*2500-3999 g*	79.3%
4000 g+	296 (13.1%)	*4000 g+*	15%

7.2.4 Description of sample- Five-year follow-up cohort

The following sections describe the characteristics of 1155 participants in the five-year follow-up cohort.

7.2.4.1 Maternal age, region of birth, and education attainment

Age, region of birth and education attainment were collected at enrolment to the perinatal strand in survey 1. The ages of participants retained at five-year follow-up ranged from 24 years of age to 54 years of age (M= 38 years), with the majority of participants in the 36-40 years of age range. Attrition did not largely change the percentages for region of birth in comparison to the perinatal cohort. The five-year follow-up survey did not collect data on educational qualifications; figures presented are based on qualifications reported at antenatal data collection (Table 7.9). Analogous Irish data for these factors is not available for direct comparison.

Table 7.9 *Maternal age, region of birth, and education attainment of five-year follow-up cohort*

	Five-year follow-up cohort
Age	**N (%)**
<30 years	44 (4%)
31-35 years	209 (18.8%)
36-40 years	525 (45.5%)
41 + years	284 (24.6%)
Missing data	*46*
Region of birth	
Ireland	848 (73.4%)
EU country	230 (19.9 %)
Non-EU country	51 (4.4%)
Postgraduate education	
Yes	967 (84.2%)
No	181 (15.8%)

7.2.4.2 Employment status

At five-year follow-up employment data were collected differently than the perinatal data collection. Approximately 80% (n=925) of women were in full or part-time paid work, or on paid maternity leave, while 213 (18.5%) were unemployed, in full-time education or on unpaid maternity leave (Table 7.10).

Table 7.10 Employment status at five-year follow-up

		Five-year follow-up cohort	
	Employment status	N (%)	
Income	*Paid work*	794 (68.7%)	
	Working and studying (part time)	55 (4.8%)	
	Paid maternity leave	76 (6.6%)	
	Total		***925 (80.1%)***
No income	*Unpaid maternity leave*	48 (4.2%)	
	Studying (full time)	11 (1%)	
	Unemployed	154 (13.3%)	
	Total		***213 (18.5%)***
	Missing	*17 (1.4%)*	

7.2.4.3 Relationship status at five-year follow-up

Slightly fewer women reported being married or living with a partner at five-year follow-up in comparison to the perinatal cohort, however this group was still the majority five years after first-time motherhood (n=1071, 93.4%) (Table 7.11).

Table 7.11 Relationship status at five-year follow-up

	Five-year follow-up cohort
Relationship status	**N (%)**
Married or living with a partner	1071 (93.4%)
Single or not living with a partner	76 (6.6%)

7.2.4.4 Number of children at five-year follow-up

Among the participants who completed the five-year follow-up survey 333 (28.9%) had one child, 647 (56%) had two children, 165 (14.3%) had three children and 9 (0.8%) had four children. Twenty-two (2.3%) reported being pregnant with their second child at the time of survey completion, while 13 (1.1%) of women reported being pregnant with their third child. Although not directly comparable, central statistics information indicate that 35% per cent of women giving birth in the year 2020 were second-time mothers and 17% were third-time mothers, 8.8% of women giving birth in 2020 had three or more children (Central Statistics Office 2020).

Table 7.12 Number of children at five-year follow-up

Number of Children	**Five-year follow-up cohort N (%)**
1 Child	333 (28.9%)
2 Children	647 (56%)
3 Children	165 (14.3%)
4 Children	9 (0.8%)
Missing Data	*1 (0.1%)*

7.2.4.5 Time of completing the five-year follow-up: Pre and Post COVID-19 restrictions in Ireland

On March 13th 2020 the Irish government announced that health restrictions in response to the Covid-19 pandemic would take effect from March 14th 2020. Data collection for the five-year follow-up survey began in 2017 and a total of 784 (67.9%) of the 1155 participants who comprise the sample for analysis completed data collection before the implementation of the measures, while 341 (29.5%) completed during and after the implementation (Table 7.13).

Table 7.13 Time of completing the five-year follow-up survey

Time of completing	**Five-year follow-up cohort N (%)**
Pre-restrictions *(Pre March 14th 2020)*	784 (67.9%)
Post-restrictions *(Post March 14th 2020)*	341 (29.5%)
Missing Data	*30 (2.3%)*

7.3 Perinatal mental health (PNMH) findings

The following sections detail the prevalence of depression, anxiety and stress antenatally and at 3, 6, 9 and 12 months after birth. Each sub-scale of the DASS-21 was dichotomised by ‘none or low’ symptoms versus ‘moderate to extremely severe’ symptoms using the cut-off scores recommended by (Lovibond & Lovibond 1995, Lovibond 1995) (e.g. Depression: ≥7. Anxiety: ≥6. Stress: ≥10). Scores above these values are indicative of clinically significant levels of psychological distress. This approach enabled a series of binomial logistic regressions, which were used to model the associations between i) maternal socio-demographic characteristics, ii) birth outcomes, iii) preceding maternal (social, physical, mental) factors and reports of clinically significant (moderate/severe) symptoms of depression, anxiety and stress in the first year postpartum.

7.3.1 Prevalence of depression, anxiety and stress during pregnancy and the first postpartum year

Weeks' gestation at the time of completing the antenatal survey varied from 4 to 39 weeks gestation (M= 17.5). Three-quarters completed the pregnancy data collection in the second trimester (75.5%). A linear regression did not identify a statistical significant difference in DASS-21 scores by weeks' gestation which may have provided a rationale for stratifying pregnancy data by weeks' gestation (F (1.2374) = −0.003, 95% CI−0.030, 0.025, p=0.854). Therefore, the antenatal period DASS-21 data are presented as a singular time point.

PS2 was used to calculate the prevalence of depression, anxiety and stress symptoms in pregnancy and the postpartum period, prevalence was calculated at each time point as the proportion of women reporting clinically significant symptoms divided by the number of women who completed the scale.

During pregnancy 3.9% of women reported moderate/severe depression, 4.5% reported moderate/severe anxiety and 4.8% reported moderate/severe stress. Prevalence patterns for depression, anxiety and stress differed over time. Proportions of depression and stress were lowest in pregnancy compared to the postpartum period, while anxiety was highest in pregnancy when compared to the postpartum year. Though not statistically significant in each case, proportions for depression, anxiety and stress showed a similar pattern in that all increased at six months, decreased at nine months and increased again at twelve months.

For depression, the increase of reported symptoms at six months (6.3%) and twelve months (6 %) was statistically significantly higher than antenatal levels. For anxiety, although an increasing then decreasing pattern was observed from six to twelve months, these differences were not statistically different from antenatal reports or between time intervals. Therefore, moderate/severe anxiety levels can be considered constant from pregnancy (4.5%) through the first postpartum year (≈4.0), as the 95% confidence intervals overlapped. However, moderate/severe levels of stress were statistically significantly higher at each time point in the postpartum period compared to levels in pregnancy (Figure 7.4).

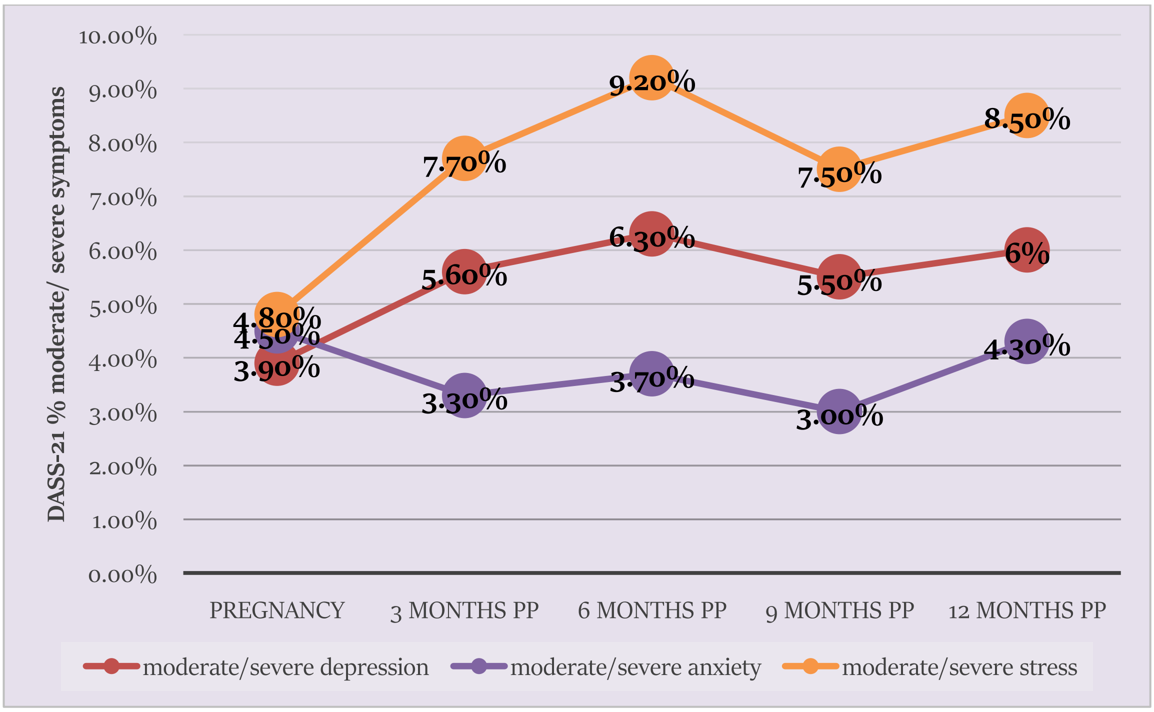

Figure 7.4: Proportions reporting moderate/severe DASS symptoms in pregnancy and the first postpartum year (n=1804)

The overall prevalence of depression, anxiety or stress in the first postpartum year was calculated as moderate/severe symptoms reported at one or more points in the postpartum period. Overall, prevalence for postpartum depression in the first year was 14.2%, prevalence for postpartum anxiety in the first year was 9.5%, and prevalence for postpartum stress in the first year was 19.2% (Figure 7.5).

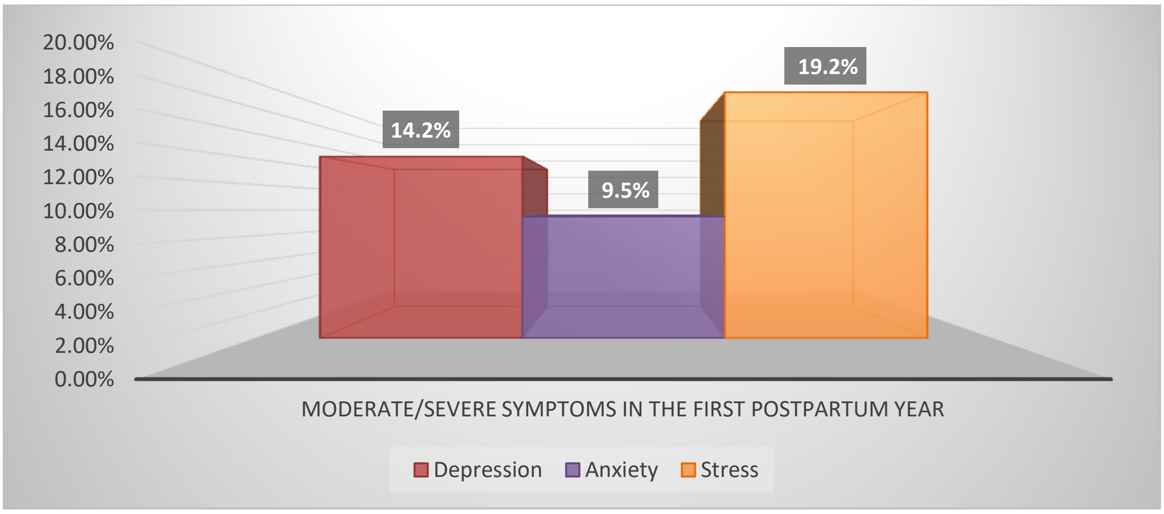

Figure 7.5: Prevalence of depression, anxiety and stress in the first postpartum year

7.3.2 Factors associated with mental health symptoms in the first year postpartum- Binomial regressions

The 12-month period prevalence variable (Dep: 14.2%, Anx: 9.5%, Stress: 19.2%) for each sub-scale was used to identify associations between i) socio-demographic characteristics, ii) birth outcomes, iii) preceding maternal (social, physical, mental) factors and clinically significant symptoms of depression, anxiety and stress in the first postpartum year. Associations were analysed using binomial logistic regression.

7.3.2.1 Demographic factors associated with mental health symptoms in the first year postpartum

Socio-demographic (age, region of birth, relationship status,) and socio-economic (education qualifications, employment) were collected at antenatal data collection.

- *Maternal age*

Becoming a first-time mother at a younger age was associated with higher odds of reporting symptoms of depression, anxiety and stress in the postpartum year. In comparison to the reference group (30-34 years), the two younger age groups both had higher odds of reporting depressive, (*18–24 years:* OR=2.8, 95% CI 1.8–4.2; *25-29 years:* OR=1.4, 95% CI 1.0–1.9), anxiety (*18–24 years:* OR=3.5, 95% CI, 2.2–5.4; *25-29 years:* OR= 1.7, 95% CI 1.2–2.4), and stress (*18–24 years:* OR=2.4, 95% CI 1.7–3.6; *25-29 years:* OR= 1.4, 95% CI 1.1–1.9) symptoms. Reports of symptoms among the 18-24 years age group were statistical significantly at the 0.001 level for all three sub-scales.

Table 7.14 Maternal age and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Maternal age	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
18-24 years	138 (5.8)	39 (28.5)	2.8*** [1.8 -4.2]	32 (23.5)	3.5*** [2.2 -5.4]	45 (32.6)	2.4*** [1.7 -3.6]
25-29 years	481 (20.3)	80 (16.7)	1.4* [1.0 -1.9]	63 (13.2)	1.7** [1.2 -2.4]	106 (22)	1.4** [1.1 -1.9]
30-34 years	1081 (45.6)	136 (12.6)	1.0 [ref]	88 (8.2)	1.0 [ref]	179 (16.6)	1.0 [ref]
35+ years	673 (28.4)	78 (11.6)	0.9 [0.7 -1.2]	41 (6.1)	0.7 [0.5 -1.1]	122 (18.1)	1.1 [0.9 -1.4]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Region of birth*

Country of birth was re-categorised as region of birth, to form three categories; Ireland, another European (EU) country, and a non-EU country. Differences in depression, anxiety or stress between women born in Ireland and women born in another EU country were not statistically significant. Being born in a non-EU country, was associated with a 2-times higher odds of reporting anxiety symptoms (OR= 2.3, 95%CI 1.5-3.7), but not depressive (OR= 1.5, 95%CI 0.9-2.1), or stress symptoms (OR= 1.0, 95%CI 0.6-1.5). Although, there was no statistical difference in stress symptoms between the groups, they were comparably high, with approximately one in five women reporting clinically significant stress symptoms in the first postpartum year irrespective of region of birth.

Table 7.15 Maternal region of birth and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Region of birth	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Ireland	1735 (73.8)	235 (13.6)	1.0 [ref]	152 (8.8)	1.0 [ref]	344 (19.8)	1.0 [ref]
Other EU country	470 (20)	71 (15.2)	1.1 [0.9–1.5]	45 (9.6)	1.1 [0.8–1.6]	80 (17)	0.8 [0.6–1.1]
Non-EU country	146 (6.2)	26 (17.8)	1.5 [0.9–2.1]	27 (18.5)	2.3***[1.5–3.7]	28 (19.2)	1.0 [0.6–1.5]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Partner status*

The majority of women within the sample were married or living with a partner (97.3%). Partner status was re-coded as living or not living with a partner. Analysis found that not living with a partner represented 2-times higher odds of reporting depression and anxiety, and almost 2-times higher odds of stress symptoms in the postpartum period.

Table 7.16 Partner status and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Living with a partner	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Yes	2308 (97.3)	317 (13.8)	1.0 [ref]	211 (9.2)	1.0 [ref]	435 (18.8)	1.0 [ref]
No	64 (2.7)	18 (28.1)	2.4**[1.4–4.3]	12 (19)	2.3* [1.2–4.4]	19 (29.7)	1.8* [1.1–3.1]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Maternal educational attainment*

Not having attained a postgraduate education was associated with almost 2-times higher odds of reporting clinically significant symptoms across each of the DASS-21 sub-scales in the postpartum year (Table 7.17).

Table 7.17 Maternal educational attainment and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Postgraduate education	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Yes	1695 (71.7)	209 (12.4)	1.0 [ref]	131 (7.8)	1.0 [ref]	304 (17.9)	1.0 [ref]
No	669 (28.3)	123 (18.5)	1.6***[1.3-2.0]	88 (13.3)	1.8***[1.4-2.4]	149 (22.3)	1.3* [1.1-1.6]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Maternal employment during pregnancy*

Not being in paid employment during pregnancy was associated with approximately 2-times higher odds of reporting depression and stress symptoms and almost 3-times higher odds of reporting anxiety symptoms (Table 7.18).

Table 7.18 Maternal employment during pregnancy and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Paid employment	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Yes	2165 (91.2)	282 (13.1)	1.0 [ref]	181 (8.4)	1.0 [ref]	396 (18.3)	1.0 [ref]
No	210 (8.8)	53 (25.4)	2.3***[1.6-3.2]	43 (20.6)	2.8***[2.0-4.1]	59 (28.1)	1.7***[1.3-2.4]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Maternal BMI prior to pregnancy*

Maternal BMI prior to pregnancy was collected through retrospective report in the antenatal data collection survey. There were no statistically significant differences between pre-pregnancy BMI groups and reports of mental health symptoms in the postpartum year (Table 7.19).

Table 7.19 Maternal BMI prior to pregnancy and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

BMI	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Underweight (<18.5)	55 (5.2)	8 (14.5)	1.1 [0.5–2.4]	6 (10.9)	1.3 [0.5–3.1]	10 (18.2)	1.0 [0.5–2.1]
Average weight (18.5–24.9)	732 (69.1)	97 (13.3)	1.0 [ref]	64 (8.8)	1.0 [ref]	131 (17.9)	1.0 [ref]
Overweight/obese (≥25)	272 (25.7)	46 (17)	1.4 [0.9–2.0]	25 (9.3)	1.1 [0.7–1.7]	59 (21.7)	1.3 [0.9–1.8]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

7.3.2.2 Birth factors associated with mental health symptoms in the first year postpartum

Weeks' gestation at birth and mode of birth (spontaneous vaginal, operative vaginal and caesarean section) were recorded at the first postpartum data collection point. Birth weight was assessed using hospital data from consenting women (recorded by hospital staff) (Table 7.20).

- *Weeks' gestation at birth*

Pre-term birth was associated with higher odds of postpartum depressive symptoms, (OR-1.6, 95% CI 1.0–2.40), but not anxiety or stress symptoms. Reports of depression, anxiety or stress among women giving birth post-term were not statistically different from women giving birth at full-term (Table 7.20).

- *Mode of birth*

Mode of birth was categorised as spontaneous vaginal, operative vaginal (with use of vacuum or forceps, or both, sometimes referred to as assisted vaginal births (AVBs)), or caesarean section. There were no statistically significant differences in mental health symptom reports between the reference category (spontaneous vaginal birth) and operative vaginal birth. However, caesarean birth was associated with higher odds of reporting depressive symptoms (OR=1.4, 95%CI 1.1-1.8) and stress symptoms (OR=1.3, 95% CI 1.0-1.7) in the postpartum year (Table 7.20).

- *Baby's birth weight*

Babies' birth weights were not associated with postpartum mental health symptom reports (Table 7.20).

Table 7.20 Birth factors and report of moderate/severe DASS symptoms in the postpartum year (n=2380)

Birth Factors	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Weeks' gestation							
Preterm (<36.9 weeks)	138 (5.8)	27 (19.7)	1.6* [1.0–2.4]	19 (14.1)	1.6 [1.0–2.7]	35 (25.4)	1.5 [1.0–2.2]
Term (37–41.9 weeks)	2191 (92.3)	298 (13.7)	1.0 [ref]	199 (9.1)	1.0 [ref]	410 (18.7)	1.0 [ref]
Post-term (≥42 weeks)	44 (1.9)	10 (23.3)	1.9 [0.9–3.9]	5 (11.6)	1.3 [0.5–3.4]	10 (22.7)	1.3 [0.6–2.6]
Mode of birth							
Spontaneous vaginal	787 (34.3)	95 (12.1)	1.0 [ref	75 (9.6)	1.0 [ref]	134 (17.0)	1.0 [ref]
Operative vaginal	762 (33.2)	109 (14.4)	1.2 [0.9–1.6]	54 (7.1)	0.7 [0.5–1.1]	139 (18.2)	1.1 [0.8–1.4]
Caesarean section	748 (32.6)	117 (15.7)	1.4* [1.0–1.8]	84 (11.3)	1.2 [0.9–1.7]	161 (21.5)	1.3* [1.0–1.7]
Birth weight							
≤ 2500 g	99 (4.4)	19 (19.4)	1.4 [0.9–2.4]	13 (13.4)	1.5 [0.8–2.7]	21 (21.2)	1.1 [0.7–1.8]
2500–3999 g	1864 (82.5)	266 (14.3)	1.0 [ref]	174 (9.4)	1.0 [ref]	370 (19.8)	1.0 [ref]
4000 g ≥	296 (13.1)	36 (12.2)	0.8 [0.6–1.2]	26 (8.8)	0.9 [0.6–1.4]	50 (16.9)	0.8 [0.6–1.1]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome

*$p<0.05$, **$p<0.01$, ***$p<0.001$

7.3.2.3 Preceding health and social factors associated with mental health symptoms in the first year postpartum

Retrospective reports

Women gave a retrospective report on mental (experience of anxiety or depression) and physical (global health and fertility treatment) health, and social (relationship problems) factors which were collected in the antenatal survey. After adjusting for the socio-demographic and socio-economic factors found to be associated with postpartum mental health (maternal age, education and relationship status), the associations between these retrospectively reported health and social factors with postpartum mental health outcomes were assessed using binomial regression. In this case, retrospective reports pertained to the experience of these health and social factors *within the year prior to pregnancy*.

- *Mental health factors in the year prior to the pregnancy (retrospective report)*

Participants were asked two single-item questions; the first was if they had, in the *year prior to pregnancy*, experienced depression or low mood for a period of two weeks or longer. The second was if they had, in the *year prior to pregnancy*, experienced periods of intense anxiety such as panic attacks. Responses to both questions were measured as 'occasionally', 'often', 'never' or 'rarely'. For analysis, responses were dichotomised as 'occasionally/often' and 'never/rarely'.

Self-reports of anxiety or depression measured by the single-item questions were strongly associated with clinically significant levels of depression, anxiety and stress in the postpartum year. Endorsement of retrospective depression was associated with a nearly sevenfold increase in the odds of reporting depression (Adj. OR=6.7, 95%CI 5.1–8.9) in the postpartum. Similarly, it was associated with 4-times higher odds of reporting anxiety (Adj. OR=4.3, 95%CI 3.1–6.0), and 5-times higher odds of reporting stress (Adj. OR=5.2, 95%CI 4.0–6.8) in the postpartum year. Endorsement of retrospective anxiety was associated with nearly 4-times higher odds of reporting depression (Adj. OR=3.8, 95%CI 2.7–5.2), and nearly 5-times higher odds of reporting anxiety (Adj. OR=4.7, 95%CI 3.3–6.7) and stress (Adj. OR= 4.9, 95% CI 3.6–6.5) in the postpartum year (Table 7.21).

- *Physical health factors in the year prior to the pregnancy (retrospective report)*

Participants were asked to rate the quality of their overall physical health (Self-rated global health (SF36)) in the *year prior to pregnancy*, responses were measured as 'excellent', 'good', 'poor', or 'very poor'. For the purposes of analysis, responses were dichotomised by 'Excellent/good' and 'poor/v.poor'. Reports of 'poor/v.poor' physical health in the *year prior to pregnancy* were associated with nearly twofold increased odds of reporting moderate/severe symptoms for each of the DASS-21 sub-scales in the postpartum year (*Dep:* Adj. OR=1.8, 95%CI 1.4–2.3; *Anx:* Adj. OR=1.9, 95% CI 1.4–2.6; *Stress:* 1.8, 95% CI 1.4–2.3) (Table 7.21).

Participants were asked if they had used fertility treatments in the *year prior to pregnancy*. Responses could be given as 'drugs' (undefined), 'IVF', 'ICSI',[16] or 'none'. Reponses were dichotomised as 'treatment' or 'no treatment' for analysis. Receiving fertility treatments prior to pregnancy was not statistically associated with mental health symptoms in the postpartum period (Table 7.21).

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[16] IVF: In vitro fertilization. ICSI: Intracytoplasmic sperm injection

- *Social factors in the year prior to the pregnancy (retrospective report)*

Participants were asked if they had experienced relationship problems in the *year prior to pregnancy*. Reponses were recorded by frequency; ‘Often’, ‘Occasionally’, ‘Rarely’, or ‘Never’, and dichotomised by ‘occasionally/often’ and ‘never/rarely’ for analysis. Experiencing relationship problems in the year prior to pregnancy was associated with more than 2-times increase in odds of reporting depressive, anxiety or stress symptoms in the postpartum period (Table 7.21).

Table 7.21 Retrospective mental, physical and social factors preceding reports of moderate/severe DASS symptoms in the postpartum year (n=2380)

DASS-21 in the first year postpartum (3, 6, 9 and /or 12 months)

Retrospective report *(year prior to pregnancy)*		**Depression (DASS scale ≥7)**		**Anxiety (DASS scale ≥6)**		**Stress (DASS scale ≥10)**	
		n (%)	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Mental	Depression *(occasionally/often vs. never/rarely* [2]*)*	133 (43.3)	6.7*** [5.1–8.9]	79 (25.9)	4.3*** [3.1–6.0]	151 (48.6)	5.2*** [4.0–6.8]
	Anxiety *(occasionally/often vs. never/rarely*[2]*)*	79 (37.3)	3.8*** [2.7–5.2]	65 (30.7)	4.7*** [3.3–6.7]	110 (50.9)	4.9*** [3.6–6.5]
Physical	SF36 item global health *(poor/v poor vs. excellent/v good*[2]*)*	122 (21.4)	1.8*** [1.4–2.3]	87 (15.3)	1.9*** [1.4–2.6]	158 (27.5)	1.8*** [1.4–2.3]
	Fertility treatment *(treatment vs. no treatment* [2]*)*	33 (13.9)	1.2 [0.8–1.8]	19 (8.1)	1.2 [0.7–1.9]	44 (18.4)	1.1 [0.7–1.5]
Social	Relationship problems *(occasionally /often vs. never/rarely*[2]*)*	47 (28.7)	2.5*** [1.7–3.7]	30 (18.5)	2.2*** [1.4–3.5]	54 (32.7)	2.2*** [1.5–3.1]

[1] Adjusted for maternal age, education, and relationship status. [2] *Reference categories.*
*p<0.05, **p<0.01, ***p<0.001

Antenatal reports

Women also reported on social (relationship problems, fear of current partner) and mental health (experience of anxiety or depression, DASS-21 scores) factors experienced *during pregnancy*. Again, after adjusting for age, education and relationship status, binomial regression was used to find associations between mental health and social factors experienced *during pregnancy* with *postpartum* mental health outcomes.

- *Mental health factors in pregnancy (antenatal report)*

Participants were asked the two single-item questions about experiences of depression or anxiety *during their pregnancy*. Endorsement of experiences of depression *during pregnancy* was associated with around 3-times higher odds of depression, anxiety or stress in the postpartum period. Endorsement of experiences of anxiety *during pregnancy* was associated with four to five-times higher odds of experiencing depression or stress in the postpartum period, and nine-times higher odds of experiencing anxiety in the postpartum period (Table 7.22).

The DASS-21 was also administered at the antenatal data collection; reports of moderate/severe depression, anxiety and stress *during pregnancy* were strongly associated with reports of moderate/severe depression, anxiety and stress in the postpartum year. The highest odds were observed for the same construct from antenatal collection to postpartum. In other words, reporting moderate/severe depression *during pregnancy* represented a 12-fold increased odds of also reporting moderate/severe depression postpartum. Reporting moderate/severe anxiety *during pregnancy* represented sevenfold increased odds of also reporting moderate/severe anxiety postpartum. Reporting moderate/severe stress *during pregnancy* represented a nine-fold increased odds of reporting moderate/severe stress postpartum (Table 7.22).

- *Social factors in pregnancy (antenatal report)*

Women who had a partner but did not live with them were almost twice as likely to report depression, anxiety or stress postpartum. Reponses to the relationship problems questions were recorded and dichotomised in the same way as the retrospective report. Experiencing relationship problems during pregnancy was associated with even higher odds of postpartum symptomatology than retrospective reports, with approximately four to six times increased odds of reporting depressive, anxiety or stress symptoms in the postpartum year. Participants were asked if they feared their current partner, answers were recorded simply as ‘yes’, or ‘no’. Confirmatory responses indicated between 4.4 (depression) and 5.3 (stress) times increased odds of poor mental health outcomes in the postpartum (Table 7.22).

Table 7.22 Antenatal report of mental and social factors preceding reports of moderate/severe DASS symptoms in the postpartum year (n=2380)

		DASS-21 in the first year postpartum (3, 6, 9 and /or 12 months)					
	Antenatal report *(experience during pregnancy)*	**Depression (DASS scale ≥7)**		**Anxiety (DASS scale ≥6)**		**Stress (DASS scale ≥10)**	
		n (%)	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Mental	Depression *(occasionally/often vs. never/rarely* [2]*)*	79 (44.1)	2.9*** [1.8–4.8]	24 (28.6)	3.5*** [2.0–6.1]	37 (44)	3.3*** [2.0–5.2]
	Anxiety *(occasionally/often vs. never/rarely*[2]*)*	39 (42.4)	4.2** [1.7–10.2]	10 (45.5)	9.0*** [3.7–21.9]	12 (54.5)	5.2*** [2.2–12.3]
	DASS-21: Depression *(Mod/severe vs. Normal/mild* [2]*)*	71 (65.7)	12.8*** [8.3–19.8]	42 (38.9)	6.0*** [3.9–9.4]	69 (62.7)	7.6*** [5.0–11.5]
	DASS-21: Anxiety *(Mod/severe vs. Normal/mild* [2]*)*	61 (45.9)	5.1*** [3.5–7.5]	55 (41.4)	6.9*** [4.6–10.3]	71 (53)	5.0*** [3.4–7.2]
	DASS-21: Stress *(Mod/severe vs. Normal/mild* [2]*)*	72 (56.3)	8.4*** [5.7–12.3]	49 (38.3)	6.0*** [4.0–9.0]	86 (65.2)	8.7*** [5.9–12.8]
Social	Relationship problems *(occasionally /often vs. never/rarely*[2]*)*	30 (35.7)	5.6*** [4.0–7.8]	50 (28.1)	4.3*** [2.9–6.3]	81 (45)	3.9*** [2.8–5.4]
	Fear of partner *(Yes vs. No* [2]*)*	9 (40.9)	4.4*** [2.8–6.9]	29 (31.9)	4.5*** [2.8–7.4]	51 (54.8)	5.3*** [3.4–8.1]
	Living with a partner *(No partner vs. partner* [2] *)*	18 (28.1)	2.0* [1.1–3.7]	12.0 (19.0)	1.8 [0.9–3.6]	19 (29.7)	1.6 [0.9–2.8]

[1]Adjusted for maternal age, education, and relationship status. [2] *Reference categories*
*p<0.05, **p<0.01, ***p<0.001

7.3.1 Physical health issues and mental health issues in the first year postpartum

The associations between physical health issues and mental health issues were assessed using the sub-sample of participants who completed the antenatal survey and all postpartum surveys (PS2). This sub-sample consists of 1804 participants. Those whom completed all data collection time points were more likely to be older and to give birth to a baby of average birth weight than women who did not complete all data collection points. Women in the PS2 sample were also less likely to be single or unemployed during their pregnancy, and had lower odds of being born in a non-EU country or not having a postgraduate education. Additionally, women who completed all time points had lower odds of reporting depression, anxiety or comorbid depression and anxiety (CAD) than women who did not complete all time points (Appendix 7.1).

7.3.1.1 Mental health and physical health symptom coding

- *Mental health symptoms*

The depression and anxiety sub-scales of the DASS-21 were used to evaluate the associations between physical health issues and mental health issues in the first postpartum year. Both depression and anxiety were dichotomised by none/low or moderate/severe symptom severity using the recommended cut-off scores used previously. Then participants were categorised as experiencing i) neither depression nor anxiety, ii) depression alone, iii) anxiety alone or iv) experiencing CAD at each time point. These mental health symptom reports (antenatal, 3, 6, 9 and 12 months) were combined to create two composite summary variables, i) postpartum mental health and ii) mental health from pregnancy to 12 months. Women were classified as experiencing anxiety alone (if they reported moderate/severe anxiety but not moderate/severe depression at any time point), depression alone (if they reported moderate/severe depression but not anxiety at any time point) or as CAD (if moderate/severe anxiety and moderate/severe depression were reported at any time point).

- *Physical health symptoms*

Physical health was assessed using a list of common health issues experienced in the perinatal period. The antenatal survey contained eight physical health questions; the postpartum surveys contained seven of those eight antenatal questions, with the addition of six more physical health questions specific to postpartum health experiences. Women could indicate if they had experienced each issue within the preceding three months, responses were captured as “Never”, “Rarely”, “Occasionally” or “Often”. Items were numerically scored 0 (Never) to 3 (Often). Two approaches were taken to examine physical health issues over time, first items were dichotomised as Never/Rarely (0) and Occasionally/Often (1). A count of the health issues experienced by each respondent was calculated for each time point, ranging from 0 to 8 in pregnancy (8 items in antenatal data collection), and 0–13 at 3, 6, 9 or 12 months postpartum (13 items at each postpartum time point). Second, a 'total health issues score’ was created by summing the items (scored 0–3) at each time point. In this way, higher scores were indicating a greater number of health issues experienced and/or experience of health issues more frequently. Health scores could range from 0 to 24 in pregnancy and 0 to 36 at 3, 6, 9 or 12 months postpartum.

7.3.1.2 Depression, anxiety and CAD in the first postpartum year

The proportion of women reporting depression alone, anxiety alone or CAD in pregnancy and across the first-year postpartum in the sample of 1804 (PS2) was relatively low. Depression alone was lowest in pregnancy at 2.8% and increased to around 4% through the postpartum data collection points. Anxiety alone was highest in pregnancy (3%), decreasing to under 2% across the postpartum period. CAD prevalence was lowest at pregnancy (1.5%) and at three months postpartum collection (1.6%), and varied around 2% at the 6, 9 and 12 months postpartum time points (Figure 7.6)

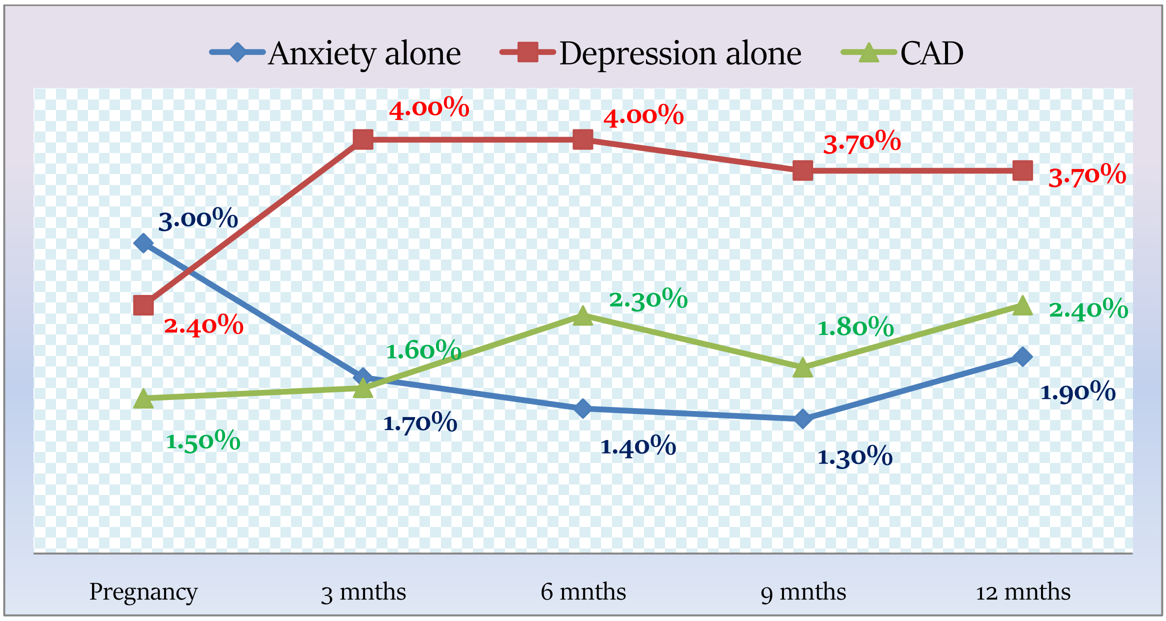


Figure 7.6: Proportions reporting Depression alone, Anxiety alone or CAD in pregnancy and across the first-year postpartum (n=1804)

Chi-square analysis was used to investigate the socio-demographic characteristic differences between women not reporting any mental health symptoms and i) women reporting depression alone, ii) anxiety alone and iii) women reporting CAD. Analysis revealed that, compared to women reporting no symptoms, women reporting CAD postpartum were younger, not partnered, not in paid employment in pregnancy, had fewer years of education, and had a caesarean birth. Women who reported either depression alone, or anxiety alone presented with a similar, although weaker, pattern of demographic factors compared to women not reporting postpartum mental health issues (Table 7.23).

Table 7.23 Participants' socio-demographic characteristics, by report of mental health on the DASS in the first year postpartum (n=1804).

Socio-demographics	Mental health in the first year postpartum[1]						
	Sample	**None**	**Depression alone**	**Anxiety alone**	**CAD**		
	n (%)	n (%)	n (%)	n (%)	n (%)	**Chi**	**p-value**
Antenatal data collection							
Mothers' age							
18-24 years	88 (4.9)	61 (4.1)	8 (5.3)	5 (7.8)	14 (14.3)	36.44	**<0.001**
25-29 years	329 (18.3)	254 (17.1)	32 (21.2)	16 (25)	27 (27.6)		
30-34 years	835 (46.4)	700 (47.1)	69 (45.7)	27 (42.2)	39 (39.8)		
35+ years	546 (30.4)	470 (31.6)	42 (27.8)	16 (25)	18 (18.4)		
Country of birth							
Ireland	1327 (74.5)	1104 (75.1)	107 (71.8)	47 (74.6)	69 (69.7)	9.57	0.144
Country in European Union	356 (20.0)	295 (20.1)	30 (20.1)	9 (14.3)	22 (22.2)		
Non-European Union	98 (5.5)	71 (4.8)	12 (8.1)	7 (11.1)	8 (8.1)		
Relationship status							
Partner	1750 (97.3)	1454 (98)	144 (94.1)	58 (92.1)	94 (94.9)	17.87	**<0.001**
No partner	48 (2.7)	29 (2.0)	9 (5.9)	5 (7.9)	5 (5.1)		
Postgraduate Education							
Yes	1331 (74.2)	1116 (75.4)	110 (71.9)	47 (74.6)	58 (59.8)	11.97	**0.007**
No	463 (25.8)	365 (24.6)	43 (28.1)	16 (25.4)	39 (40.2)		
Paid employment							
Yes	1662 (92.3)	1395 (93.9)	134 (87.6)	54 (84.4)	79 (79.8)	37.75	**<0.001**
No	139 (7.7)	90 (6.1)	19 (12.4)	10 (15.6)	20 (20.2)		
Body Mass Index *(retrospective self-report)*							
Underweight (<18.5)	38 (4.8)	31 (4.7)	3 (4.3)	1 (4)	3 (7.1)	2.77	0.837
Normal weight (18.5-24.9)	575 (72)	483 (72.9)	49 (71)	16 (64)	27 (64.3)		
Overweight/Obese (≥25)	186 (23.3)	149 (22.5)	17 (24.6)	8 (32)	12 (28.6)		
Three Months Postpartum Data Collection							
Gestation at birth							
Preterm (<36.9 wks)	101 (5.6)	75 (5.1)	10 (6.5)	7 (10.9)	9 (9.1)	10.01	0.124
Term (37-41.9 wks)	1667 (92.6)	1383 (93.1)	138 (90.2)	57 (89.1)	89 (89.9)		
Post term (42+ wks)	33 (1.8)	27 (1.8)	5 (3.3)	0 (0)	1 (1)		
Birth weight *(hospital data)*							
< 2500g	65 (3.8)	51 (3.6)	5 (3.4)	4 (6.5)	5 (5.2)	2.94	0.817
2500-3999g	1435 (83.4)	1180 (83.3)	125 (86.2)	51 (82.3)	79 (82.3)		
4000g or >	220 (12.8)	186 (13.1)	15 (10.3)	7 (11.3)	12 (12.5)		
Mode of birth							
Spontaneous vaginal	627 (35.1)	529 (35.9)	44 (28.9)	24 (37.5)	30 (30.6)	15.98	**0.014**
Operative vaginal	580 (32.5)	478 (32.5)	63 (41.4)	14 (21.9)	25 (25.5)		
Caesarean Section	580 (32.5)	466 (31.6)	45 (29.6)	26 (40.6)	43 (43.9)		
Total	1804 (100)	1488 (100)	153 (100)	64 (100)	99 (100)		

[1] Report of anxiety and/or depression at 3, 6, 9 and/or 12 months postpartum

7.3.1.3 Common physical health issues in the first postpartum year

Prevalence of common physical health issues was calculated as the number of women reporting the health outcome divided by the number of respondents at each time point. The number and proportion of women reporting each physical health issue (Occasionally/Often) at each time point are displayed in Table 7.24. Extreme tiredness/exhaustion was the most common physical health complaint for women from pregnancy throughout the first-year postpartum. Back pain was reported by 39.2% women in pregnancy and by approximately half of all women at each time point thereafter. Severe headaches/migraine were reported by 28.3% of women in pregnancy, dropped to 11.5% at three months, but increased to almost 20% at 6 postpartum and stayed as high at 9 and 12 months postpartum. Bowel issues were highest in pregnancy, and were found to be gradually decreasing across the postpartum year. However, at 12 months postpartum almost one in five women were still reporting haemorrhoids (17.8%), while 14.8% were reporting constipation and 12.2% were reporting experiencing pain/bleeding with a bowel movement. Overall, health issues were highest at three months postpartum, with a third to a half of all women reporting extreme tiredness/exhaustion, back pain, constipation, haemorrhoids, bowel issues, breastfeeding issues and perineal pain/infection. Health issues typically demonstrated a pattern of highest report at 3 months postpartum, with decreasing report thereafter, however, this was not true for reports of coughs/colds, and headaches/migraines.

Table 7.24 Number and proportion of women reporting physical health issues “occasionally/often” in pregnancy and in the first-year postpartum (n = 1804).

Physical health issue	Survey 1 (Antenatal)	Survey 2 (3 months postpartum)	Survey 3 (6 months postpartum)	Survey 4 (9 months postpartum)	Survey 5 (12 months postpartum)
Extreme tiredness/exhaustion	1501 (83.2%)	1225 (68.2%)	1018 (56.1%)	1008 (56.1%)	1037 (57.9%)
Back pain	707 (39.2%)	1038 (57.8%)	969 (53.7%)	858 (47.6%)	816 (45.4%)
Frequent coughs/colds or other minor illnesses	261 (14.5%)	177 (9.9%)	414 (23.0%)	476 (26.4%)	59. (32.8%)
Severe headaches/migraines	510 (28.3%)	206 (11.5%)	298 (16.6%)	312 (17.3%)	355 (19.8%)
Constipation	720 (39.9%)	614 (34.1%)	338 (18.8%)	244 (13.5%)	266 (14.8%)
Haemorrhoids	140 (7.8%)	636 (35.5%)	432 (34.1%)	340 (18.9%)	320 (17.8%)
Heavy periods or bleeding that worried you	97 (5.4%)	133 (7.4%)	61 (3.4%)	53 (2.9%	53 (3.0%)
Weight issues (losing or gaining weight)	162 (9.0%)	-	-	-	-
Bowel issues (pain/bleeding with bowel motion)	-	683 (38.1%)	363 (20.1%)	229 (12.7%)	219 (12.2%)
Breastfeeding issue (mastitis/sore nipples)	-	750 (41.8%)	178 (9.9%)	114 (6.3%)	88 (4.9%)
Infection/pain – perineum	-	542 (30.2%)	164 (9.1%)	84 (4.7%)	54 (3.0%)
Infection/pain–caesarean wound	-	313 (17.5%)	103 (5.9%)	60 (3.4%)	40 (2.2%)
Pelvic pain	-	249 (13.9%)	142 (7.9%)	115 (6.4%)	115 (6.4%)
Urinary tract infections/pain on urinating	-	140 (7.8%)	39 (2.2%)	25 (1.4%)	32 (1.8%)

7.3.1.4 Physical health issues and mode of birth

Women who had an operative vaginal birth had a significantly higher mean health issues score at three months postpartum (mean=11.8, 95%CI 11.4–12.2) compared to women who had spontaneous vaginal birth (mean= 10.5, 95%CI 10.0–10.9), and to women who had a caesarean section (mean= 10.6, 95%CI 10.2–11.0). At nine months postpartum, women who had an operative vaginal birth also reported a significantly higher mean health issues score (mean= 7.2, 95%CI 6.9-7.6) than women who had a spontaneous vaginal birth (mean= 6.4, 95%CI 6.1–6.8). The health issues scores between the modes of birth groups were not different at any other time points (Table 7.25).

Table 7.25 Perinatal mean health issues scores and mode of birth

Mode of birth		**Antenatal**	**3 months postpartum**	**6 months postpartum**	**9 months postpartum**	**12 months postpartum**
Operative vaginal birth	*Mean*	6.8	11.8	8.0	7.2	7.0
	95% CI	6.6-7.1	11.4-12.2	7.7-8.4	6.9-7.6	6.6-7.3
Spontaneous vaginal birth	*Mean*	6.7	10.5	7.5	6.4	6.7
	95% CI	6.5-7.0	10.0-10.9	7.2-7.8	6.1-6.8	6.4-7.0
Caesarean section	*Mean*	7.0	10.6	7.9	7.0	7.0
	95% CI	6.8-7.3	10.2-11.0	7.5-8.2	6.6-7.3	6.7-7.3

7.3.1.5 Mental health and physical health issues

The physical health issues score was calculated by summing the physical health issue responses (0= Never to 3= Often), to gain understanding of the severity of physical health issues experienced. A higher score indicated a higher number, and/or a greater frequency, of physical health issues. For example, a woman reporting severe headaches/migraines as ‘Often’ (score=3) would score the same as a woman reporting three different health issues as ‘Rarely’ (score = 3). There were no differences in the average physical health issue scores for women reporting Depression alone or Anxiety alone (Appendix 7.2); therefore, these two categories were combined in further analyses.

Women who did not report mental health symptoms in pregnancy or the postpartum period also reported a significantly lower mean physical health issues score than women who reported depression or anxiety alone, or CAD. This was true for each time point. For women who did report mental health symptoms, the mean physical health issues score did not differ between the depression/anxiety alone and CAD groups at the pregnancy, 3 or 6 months postpartum time points. However, at 9 and 12 months postpartum, women who reported CAD symptoms had a higher mean physical health issues score in comparison to women who were reporting depressive/anxiety symptoms alone. As indicated previously (Table 7.24), the greatest health burden (number and frequency) for all perinatal women was observed at three months postpartum. The mean physical health issues score for women reporting no mental health symptoms or depressive/anxiety symptoms alone then dropped and remained significantly lower than the peak severity at 3 months postpartum. However, this was not true for women reporting CAD, their mean health issues score fluctuated from 9.1 in pregnancy to 12.1 at 12 months postpartum, with overlapping confidence intervals across all time points (visually presented in Figure 7.7) indicating no statistically significant difference in the severity of health issues reported from 3 to 12 months postpartum. In other words, though the mean health issue score demonstrated a statistically significant reduction for women reporting depressive/anxiety symptoms alone over time, this was not true for women reporting CAD symptoms.

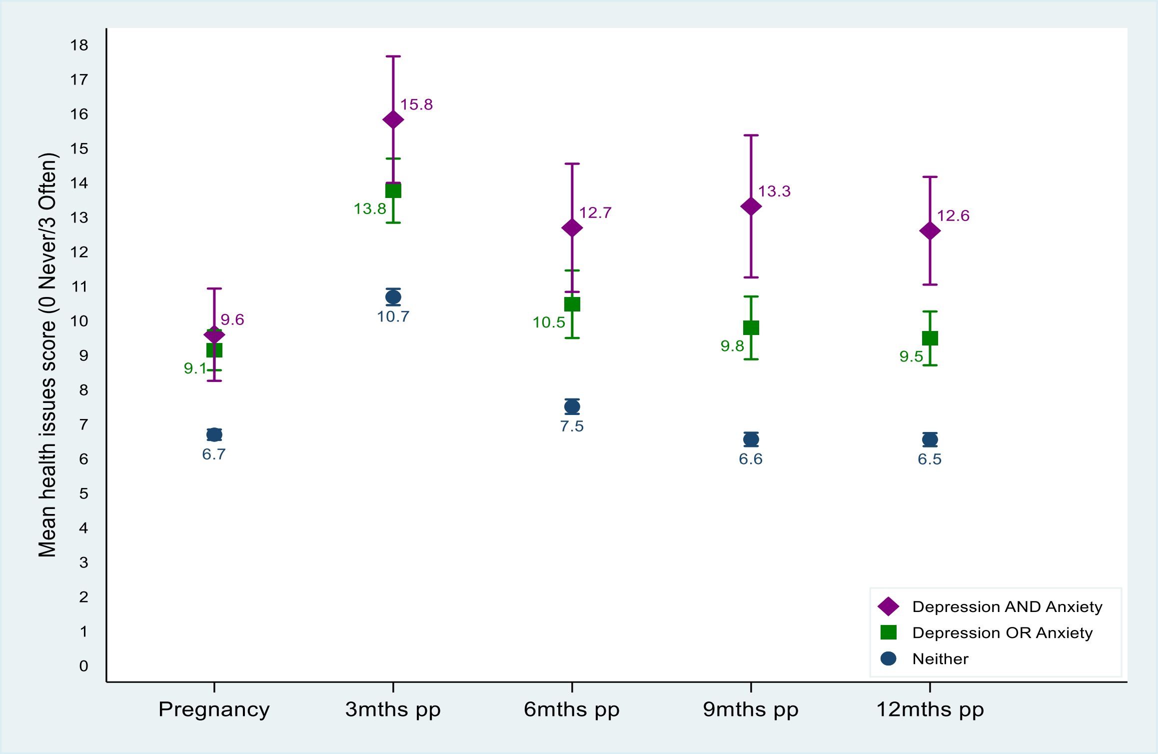


Figure 7.7: Mean number of physical health issues in pregnancy (8 items) and postpartum (13 items) by report of depressive and/or anxiety symptoms (DASS) (n=1804)

7.4 Mental health symptoms five years after first-time motherhood

The following sections detail the prevalence of depression, anxiety and stress at five years after first-time motherhood. Again the sub-scales of the DASS-21 were dichotomised by ‘none or low’ symptoms versus ‘moderate to extremely severe’ symptoms using the cut-off scores recommended by (Lovibond and Lovibond 1995) (e.g. Depression: ≥7. Anxiety: ≥6. Stress: ≥10). A series of binomial logistic regressions were used to model the associations between mental health symptoms and maternal socio-demographic and socio-economic characteristics.

7.4.1 Prevalence of depression, anxiety and stress five years after first-time motherhood

The prevalence of moderate/severe symptoms for depression at five years after first-time motherhood was 11.2%, prevalence for anxiety was 12.6% and prevalence for stress was 14.2%.

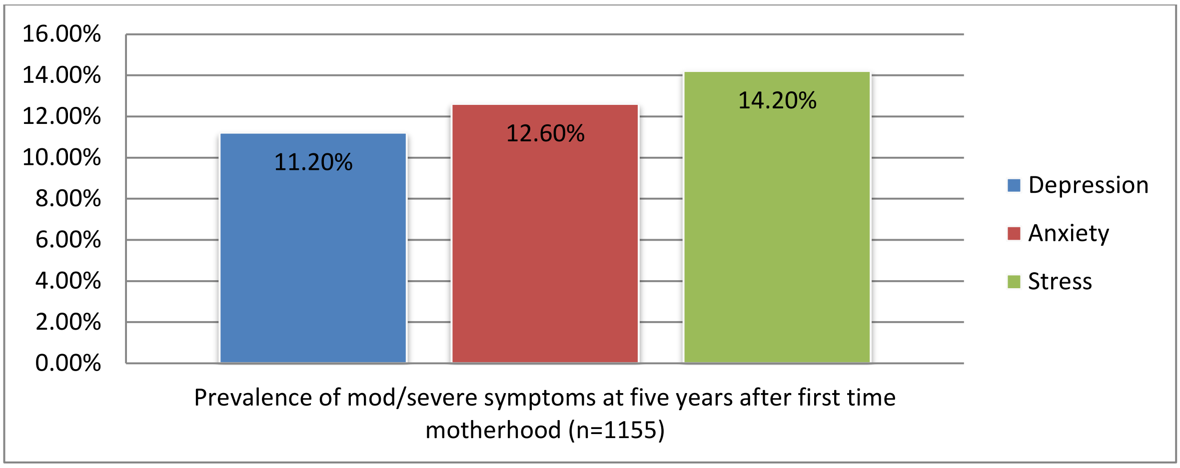


Figure 7.8: Prevalence of mod/severe symptoms at five years after first time motherhood (n=1155)

7.4.2 Factors associated with mental health symptoms five years after first-time motherhood- Binomial regressions

The following three sections present the demographic, social support, and emotional and relational factors associated with mental health outcomes at five years after first-time motherhood.

7.4.2.1 Demographic factors associated with mental health symptoms five years after first-time motherhood

- *Maternal age at five years after first-time motherhood*

Younger age was associated with a nearly fourfold increase in odds of reporting depression, anxiety and stress five years after first-time motherhood (Depression: OR= 3.9, 95% CI 1.9-8.0; Anxiety: OR= 3.9, 95% CI 1.9-7.8; Stress: OR= 3.7, 95% CI 1.8-7.3). A significant difference in reported symptoms was not observed for the four older age categories (Table 7.26).

- *Region of birth*

Region of birth was reported in the antenatal data collection. Women born in other European countries were less likely to report moderate/severe symptoms of depression and stress than women born in Ireland, but the difference was not statistically significant. Women born in non-European countries were less likely to report moderate/severe depression symptoms, but more likely to report moderate/ severe anxiety and stress, again, however, the differences were not statistically significant (Table 7.26).

- *Maternal educational attainment (antenatal data collection)*

Information regarding maternal education attainment was not collected at the five-year follow-up, 84.2% of the sample retained at five-year follow-up reported having attained a postgraduate education at the time of antenatal data collection. Not having a postgraduate education or professional equivalent during pregnancy was associated with approximately 2-times higher odds of reporting clinically significant symptoms of depression, anxiety and stress at five-year follow-up (Table 7.26).

Table 7.26 Demographic factors and report of moderate/severe DASS symptoms (n=1155)

Demographic factors	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Maternal age							
< 30 years	43 (3.9%)	12 (30.2%)	3.9*** [1.9-8.0]	14 (32%)	3.9 *** [1.9-7.8]	14 (31.8%)	3.7 *** [1.8-7.3]
31-35 years	205 (18.7%)	26 (12.7%)	1.5 [0.9- 2.4]	28 (13.7%)	1.3 [0.8-2.2]	36 (17.7%)	1.7 [1.1-2.6]
36-40 years	517 (47.3%)	47 (9.1%)	1.0 ref	55 (10.7%)	1.0 ref	58 (11.3%)	1.0 ref
41-45 years	282 (25.8%)	34 (12.1%)	1.4 [0.9- 2.2]	38 (13.4%)	1.3 [0.8-2.0]	43 (15.3%)	1.4 [0.9-2.2]
46 > years	47 (4.3%)	5 (10.6%)	1.2 [0.5-3.1]	5 (10.6%)	1.0 [0.4-2.6]	8 (17.4%)	1.7 [0.7-3.7]
Region of birth							
Ireland	838 (75.2%)	98 (11.7%)	1.0 ref	100 (11.9%)	1.0 ref	123 (14.7%)	1.0 ref
Other EU country	225 (20.2 %)	22 (9.8%)	0.8 [0.5-1.4]	33 (14.8%)	1.3 [0.8-1.9]	27 (12.1%)	0.8 [0.5-1.2]
Non-EU country	51 (4.6%)	4 (7.8%)	1.2 [0.5-2.8]	9 (17.7%)	1.6 [0.7-3.4]	9 (17.7%)	1.2 [0.6-2.6]
Postgraduate Education							
Yes	953 (84.2%)	93 (9.8%)	1.0 ref	107 (11.2%)	1.0 ref	125 (13.2%)	1.0 ref
No	179 (15.8%)	34 (19%)	2.2 *** [1.4-3.3]	35 (19.4%)	1.9** [1.6-2.9]	36 (20%)	1.7* [1.1-2.5]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Partner status five years after first-time motherhood*

Most women (93.5%) were married or living with their partner. Similar to analysis of perinatal data, not living with a partner represented 3-times higher odds of reporting depression and anxiety (Depression: OR=3.4, 95% CI 1.9-5.8; Anxiety: OR=3.2, 95% CI 1.9-5.5), and 2-times higher odds of moderate/severe stress symptoms (Stress: OR=2.5, 95%CI 1.5-4.3) at the time of five-year follow-up data collection (Table 7.27).

Table 7.27 Partner status and report of moderate/severe DASS stress symptoms at five-year follow-up (n=1155)

Living with a partner	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Yes	1058 (93.5%)	105 (9.9%)	1.0 ref	119 (11.3%)	1.0 ref	138 (13.1%)	1.0 ref
No	74 (6.5%)	20 (27%)	3.4*** [1.9-5.8]	22 (29%)	3.2*** [1.9-5.5]	21 (27.6%)	2.5*** [1.5-4.3]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Maternal income five years after first-time motherhood*

Employment status data collected at five-year follow-up was dichotomised to indicate if women were receiving a personal income (working full- or part-time, or were in receipt of a paid maternity leave), or not (unemployed, in full-time education or on unpaid maternity leave). Women who did not have a personal income at five-year follow-up reported more mental health symptoms than women who did have a personal income but analysis did not reveal statistically significant differences in mental health symptomatology between the ‘income’ and ‘no income’ groups.

Table 7.28 Maternal income and report of moderate/severe depression, anxiety and stress symptoms at five-year follow-up (n=1155)

Personal income	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Income	925 (81.3%)	94 (10.16%)	1.0 ref	107 (11.7%)	1.0 ref	125 (13.7%)	1.0 ref
No income	213 (18.7%)	30 (14.08%)	1.5 [0.9-2.3]	32 (15.2%)	1.4 [0.9-2.1]	33 (15.8%)	1.2 [0.8-1.8]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

- *Number of children at five-year follow-up*

More than half of the cohort had two children at the time of the five-year follow-up data collection. Women with one child were statistically significantly more likely to report depressive symptoms than women with two children at five years (Depression: OR= 1.6, 95% CI 1.1-2.4). Women with one child were also more likely to report anxiety than women with two children, this difference was almost statistically significant (Anxiety: P-value= 0.057, OR= 1.4, 95% CI 1.0-2.1). Women with three or more children were less likely to report depressive, anxiety and stress symptoms than the reference group (two children); however, these differences did not reach statistical significance.

Table 7.29 Number of children and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Number of children	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
1 Child	333 (28.9%)	51 (15.7%)	1.6 * [1.1-2.4]	54 (16.5%)	1.4 [1.0-2.1]	52 (16%)	1.2 [0.8-1.7]
2 Children	647 (56%)	66 (10.3%)	1.0 ref	77 (12%)	1.0 ref	87 (13.6%)	1.0 ref
3 + Children	174 (15.1%)	10 (5.8%)	0.5 [0.3-1.1]	12 (7.1%)	0.6 [0.3-1.0]	22 (12.9%)	0.9 [0.6-1.5]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*$p<0.05$, **$p<0.01$, ***$p<0.001$

- *Number of children and socio-economic indices*

Women with one child were statistically less likely to have reported having attained a postgraduate education by their index pregnancy in comparison to women with two children at five-year follow-up. Additionally, they were statistically more likely to belong to the income group (OR= 1.4, 95%CI 1.0-2.0), and were seven-times more likely to be single or not living with a partner (OR=7.6, 95%CI 4.4-13.4) in comparison to women who had two children at the time of the five-year follow-up. Women with three or more children were statistically less likely to belong to the income group than women with two children, and were less likely to be single or not living with a partner, but this difference was not statistically significant (Table 7.30).

Table 7.30 Number of children and odds of having a postgraduate education, income and relationship status at five-year follow-up (n=1155)

Number of children	Cohort	**Postgraduate education** *(antenatal report)*		**Income at five-year follow-up**		**Single/ not living with a partner at five-year follow-up**	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]* [1]
1 Child	333 (28.9%)	247 (74.9%)	0.4*** [0.3-0.6]	283 (86.3%)	1.4* [1.0-2.0]	57 (17.2%)	7.6 *** [4.4-13.4]
2 Children	647 (56%)	561 (87.3%)	1.0 ref	518 (81.3%)	1.0 ref	17 (2.6%)	1.0 ref
3 + Children	174 (15.1%)	158 (91%)	1.4 [0.8-2.5]	123 (71.5%)	0.6** [0.4-0.8]	2 (1.2%)	0.4 [0.1-1.9]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*$p<0.05$, **$p<0.01$, ***$p<0.001$

- *Pre vs. Post-Covid-19 completion*

Most women completed the five-year follow-up data collection survey before Covid-19 health restrictions were implemented in Ireland (March 13th 2020) (n=774, 69.7%). Binomial regression indicated approximately 1.5-times increased odds of reports of moderate/severe symptoms of depression, anxiety and stress among participants who completed data collection during and after the implementation of restrictions compared to participants who completed before (Table 7.31).

Table 7.31 Pre vs Post-Covid-19 completion and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Pre or Post-Covid-19 completion	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*OR [95%CI]* [1]	*n (%)*	*OR [95%CI]*	*n (%)*	*OR [95%CI]*
Pre-Covid-19 Comp	774 (69.7%)	76 (9.8%)	1.0 ref	87 (11.3%)	1.0 ref	95 (12.3%)	1.0 ref
During/Post Covid-19 Comp	336 (30.3%)	50 (14.9%)	1.6 * [1.1-2.4]	54 (16%)	1.5 * [1.0-2.2]	65 (19.4%)	1.7** [1.2-2.4]

[1] Odds ratio (95% confidence intervals) representing odds of reporting mental health outcome
*p<0.05, **p<0.01, ***p<0.001

7.4.2.2 Social support factors associated with mental health symptoms five years after first-time motherhood

After adjusting for the socio-demographic and socio-economic factors found to be associated with mental health at five-year follow-up (age, education attainment, relationship status and completion date), the associations between social and relational factors with mental health outcomes were assessed using binomial regression.

Practical support- Extent and sources

Women were asked to indicate how many people, and from whom, they had received practical help/ support from in the month prior to the five-year data collection. Women could indicate receiving help from a partner, mother, sister, other relative, friends or neighbours, childcare or day-care facilities, a housekeeper, a nanny or another source of practical support (Figure 7.9).

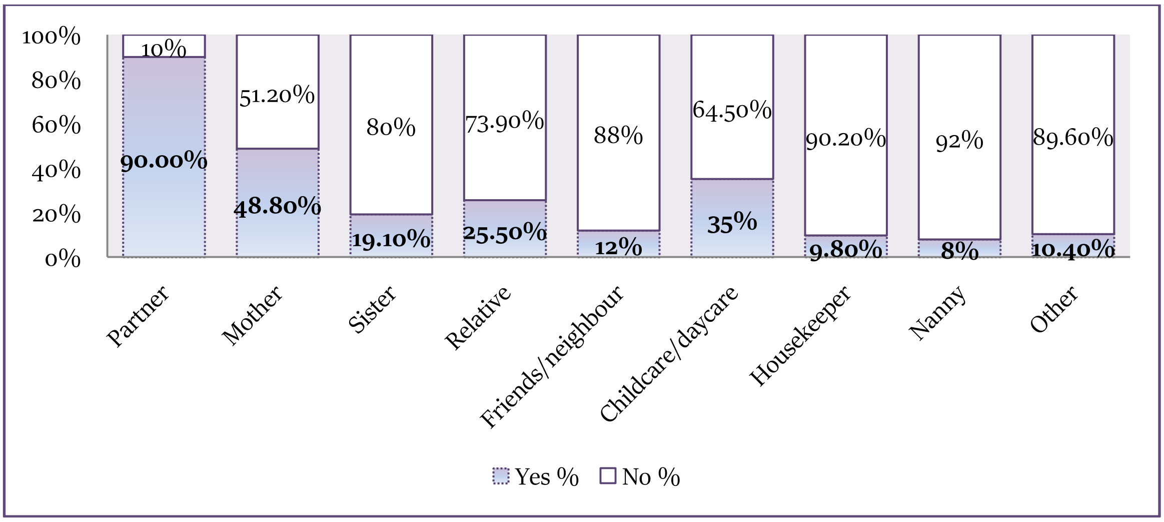


Figure 7.9: Sources of women's practical support at five years after first-time motherhood (n=1155)

For the purposes of analysis, responses were approached in two ways, first responses were analysed by the extent of support received and participants were grouped as receiving support from i) none or one source, ii) two to three sources, or iii) four or more sources. Binomial regression demonstrated that women who indicated that they received support from 'none or one source' had more than five-times increased odds of reporting depressive symptoms and nearly three times increased odds of reporting anxiety and stress symptoms in comparison to women who indicated that they received support from '4 or more sources' (reference group). Women who indicated support from 'two to three sources' had nearly 3 times increased odds of reporting depressive symptoms and approximately 1.5 times higher odds for symptoms of anxiety and stress (Table 7.32).

Table 7.32 Number of practical support sources and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Number of practical support sources	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
None or one source	208 (18.2%)	38 (18.5%)	5.3*** [2.5-11.3]	39 (18.8%)	2.6 ** [1.4-4.7]	43 (21.1%)	2.8 *** [1.6- 5.0]
2-3 sources	713 (62.4%)	77 (10.9%)	2.9 ** [1.4-5.9]	84 (12%)	1.5 [0.9-2.6]	99 (14.1%)	1.7 * [1.0-2.9]
4 or more sources	222 (19.4%)	9 (4.1%)	1.0 ref	18 (8.1%)	1.0 ref	19 (8.7%)	1.0 ref

[1] Adjusted for age, education, relationship status and completion date. *p<0.05, **p<0.01, ***p<0.001

The second approach examined associations between who women were receiving practical support *from* and mental health symptomatology outcomes. Sources of support were grouped by partner, extended family, day-care and paid support. Binomial logistic regressions found that women who did not receive practical support from a partner had between 2.5 and 3.4 times increased odds of reporting depressive, anxiety and stress symptoms than women who did receive support from a partner. Women who did not receive practical support from the extended family, in this case a mother, sister or other relative, had approximately 1.5 times increased odds of reporting depressive and stress symptoms but there was no statistically significant difference for anxiety symptoms. No statistical difference was found between women who utilised childcare facilities and women who did not for mental health symptomatology. Differences in depressive and stress symptoms between women who did and did not have paid practical support in the form of a housekeeper or nanny were approaching statistical significance, but did not reach the 0.05 level (*No paid support:* Depression: P-value 0.09, Adj. OR=1.6, 95CI 0.9-2.9, Stress: P-Value: 0.08, Adj. OR=1.6, 95CI0.9-2.6) (Table 7.33).

Table 7.33 Sources of practical support and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Sources of practical support	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Partner							
Yes	1031 (90%)	95 (9.3%)	1.0 ref	111 (10.9%)	1.0 ref	131 (12.9%)	1.0 ref
No	114 (10%)	29 (26.1%)	3.4 *** [2.1-5.5]	30 (26.6%)	2.9 *** [1.6-4.7]	30 (26.8%)	2.5 *** [1.6-3.9]
Extended family support *(mother, sister or relative)*							
Yes	734 (64.1%)	67 (9.24%)	1.0 ref	82 (11.3%)	1.0 ref	87 (12%)	1.0 ref
No	411 (35.9%)	57 (14.1%)	1.6* [1.1-2.4]	59 (14.6%)	1.3 [0.9-1.9]	87 (18.4%)	1.7** [1.2-2.3]
Day care/ childcare							
Yes	407 (35.2%)	45 (11.1%)	1.0 [0.7-1.5]	50 (12.4%)	0.9 [0.7-1.4]	63 (15.7%)	1.2 [0.8-1.7]
No	738 (63.9%)	79 (10.9%)	1.0 ref	91 (12.5%)	1.0 ref	98 (13.6%)	1.0 ref
Paid support *(housekeeper/ nanny)*							
Yes	188 (16.4%)	14 (7.5%)	1.0 ref	17 (9.1%)	1.0 ref	19 (10.2%)	1.0 ref
No	957 (83.6%)	110 (13.1%)	1.6 [0.9-2.9]	124 (13.2%)	1.5 [0.9-2.6]	142 (15.1%)	1.6 [0.9-2.6]

[1] Adjusted for age, education, relationship status and completion date. *p<0.05, **p<0.01, ***p<0.001

- *Practical support- Personal time*

Women were asked if they had time for themselves while someone else was taking care of their child, and they were asked to indicate the frequency with which they had personal time to do things not related to work, childcare or household tasks. Women who did not have personal time were between 3.5 and 4.5-times more likely to report depression, anxiety and stress symptoms. Binomial regression of responses indicated that, generally, the more time women had to themselves, the less likely they were to report moderate/severe symptoms of depression, anxiety and stress (Table 7.34).

Table 7.34 Personal time, frequency, and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Time availability	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Personal time							
Yes	951 (82.7%)	73 (7.8%)	1.0 ref	88 (9.4%)	1.0 ref	102 (10.9%)	1.0 ref
No	199 (17.3%)	53 (27.3%)	4.5 *** [3.0-6.6]	54 (28%)	3.7 *** [2.5-5.4]	58 (30%)	3.5 *** [2.4-5.1]
Personal time: Frequency							
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Hardly ever	222 (19.3%)	44 (20%)	1.0 ref	51 (23.1%)	1.0 ref	56 (25.9%)	1.0 ref
Less than once a fortnight	141 (12.3%)	18 (12.9%)	0.6 [0.3-1.1]	26 (18.6%)	0.8 [0.4-1.3]	19 (13.6%)	0.5 * [0.3-0.8]
About once a fortnight	202 (17.6%)	20 (10.5%)	0.5** [0.3-0.8]	24 (12.2%)	0.5** [0.3-0.8]	27 (13.5%)	0.4** [0.3-0.7]
About once a week	361 (31.4%)	28 (7.9%)	0.3*** [0.2-0.6]	27 (7.5%)	0.3*** [0.2-0.5]	38 (10.6%)	0.3 *** [0.2-0.5]
Usually two to three times a week	196 (17%)	15 (7.8%)	0.3*** [0.2-0.6]	14 (7.3%)	0.3*** [0.1-0.5]	19 (10%)	0.3*** [0.2-0.6]
Usually four or more times a week	28 (2.4%)	2 (7.7%)	0.3 [0.1-1.5]	1 (3.7%)	0.1 [0.01- 1.0]	2 (7.4%)	0.2 [0.1-1.0]

[1] Adjusted for age, education, relationship status and completion date. *p<0.05, **p<0.01, ***p<0.001

- *Practical support- satisfaction*

Women were asked if they would have liked to have received more practical support in the month prior to five-year data collection. Responses were captured as ‘Yes, definitely’, ‘Yes, possibly’, and ‘No, I had enough help’. For analysis responses were dichotomised as ‘Yes’ and ‘No’. Most women indicated that they would have liked to have had more practical support in the month prior (n=793, 68.9%), women who indicated that they needed more support had between 2 and 3 times increased odds of reporting moderate/severe depression, anxiety and stress symptoms than women who indicated that they had enough practical support (Table 7.35).

Table 7.35 Satisfaction with practical support and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Would have liked more practical support	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
No	358 (31.1%)	18 (5.1%)	1.0 ref	24 (6.9%)	1.0 ref	29 (8.3%)	1.0 ref
Yes	793 (68.9%)	109 (13.9%)	3.0 *** [1.8-5.0]	119 (15.1%)	2.4 *** [1.5-3.8]	132 (16.8%)	2.2*** [1.5-3.4]

[1] Adjusted for age, education, relationship status and completion date. *p<0.05, **p<0.01, ***p<0.001

- *Practical support- Partner contribution*

Women were asked three single-item questions regarding their satisfaction with their partner's contribution to household tasks and childcare responsibilities, and their perception of their partner's involvement in being a parent. The first question asked women if they were happy with their partner's contribution to household tasks, responses were collected as 'Yes, definitely', 'Yes, in the circumstances', 'No, and, 'Not applicable'. The 'yes' category responses were not merged as there were statistically significant differences between these groups. Women who responded 'Yes, in the circumstances' had 2-times higher odds of reporting depressive symptoms and 1.6 times higher odds of reporting stress symptoms that women who responded with 'yes, definitely'. There was no statistically significant difference between these two groups for anxiety symptoms. Women who reported that they were not happy with their partner's contribution to household tasks had between 2.5 and 4.4 increased odds of reporting moderate to severe depression (Adj. OR=4.4, 95%CI 2.5-7.8), anxiety (Adj. OR=2.5, 95% CI 1.5-4.2) and stress (Adj. OR=2.6, 95% CI 1.6-4.3).

Women were asked if they were happy with their partner's contribution to childcare, again there were differences between the 'Yes, definitely' and 'Yes, in the circumstances' groups. Women who replied 'yes, in the circumstances' had between 1.5 and 2-times increases odds or reporting depressive, anxiety and stress symptoms compared to women who responded 'yes, definitely'. Women who indicated that they were not happy with their partner's contribution had a six-fold increase in reporting depressive symptoms (OR= 6.0, 95%CI 3.5-10.4) compared to women who were 'definitely' happy with their partner's contribution. Additionally, they were more than three-times more likely to report anxiety and stress symptoms (Anxiety: Adj. OR= 3.3, 95%CI 1.9-5.7; Stress: Adj. OR=3.5, 95%CI 2.1-5.9).

Women were asked to evaluate their partner's involvement in being a parent, the largest percentage responded that their partner was 'really involved' in being a parent (N= 921, 81.9%). Women who reported that their partner was 'somewhat involved' in being a parent had up to 2-times increased odds of reporting depression, anxiety or stress symptoms. Women who reported that their partner was 'Not really involved' had 7-times increase odds of reporting depression, and 3-times increased odds of reporting anxiety, the increase in stress however, was not statistically significant (Table 7.36).

Table 7.36 Partner contribution and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

Partner contribution	Cohort	Depression (DASS scale ≥ 7)		Anxiety (DASS scale ≥ 6)		Stress (DASS scale ≥ 10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Happy with partner's contribution to household tasks							
Yes, definitely	437 (37.8)	24 (5.5%)	1.0 ref	38 (.8%)	1.0 ref	40 (9.4%)	1.0 ref
Yes, in the circumstances	503 (43.5%)	55 (10.9%)	2.1 ** [1.3-3.5]	60 (12.2%)	1.4 [0.9-2.2]	72 (14.5%)	1.6 * [1.1-2.5]
No	156 (13.5%)	32 (20.7%)	4.4*** [2.5-7.8]	30 (19.4%)	2.5*** [1.5-4.2]	33 (21.3%)	2.6*** [1.6-4.3]
N/A	59 (5.1%)	16 (28.57%)	6.8*** [3.3-13.9]	15 (25.9%)	3.6*** [1.8-7.1]	16 (27.6%)	3.7*** [1.9-7.1]
Happy with partner's contribution to childcare							
Yes, definitely	623 (55.4%)	41 (6.7%)	1.0 ref	55 (8.9%)	1.0 ref	64 (10.5%)	1.0 ref
Yes, in the circumstances	412 (36.6%)	50 (12.3%)	2.0* [1.3-3.0]	57 (14%)	1.7* [1.1-2.5]	62 (15.2%)	1.5* [1.1-2.2]
No	90 (8%)	27 30%)	6.0 *** [3.5-10.4]	22 (24.4%)	3.3*** [1.9-5.7]	26 (28.9%)	3.5*** [2.1-5.9]
How involved is your partner in being a parent?							
Really involved	921 (81.9%)	81 (8.8%)	1.0 ref	98 (10.8%)	1.0 ref	114 (12.6%)	1.0 ref
Somewhat involved	184 (16.4%)	30 (16.3%)	2.0** [1.3-3.1]	30 (16.3%)	1.6* [1.0-2.5]	33 (17.9%)	1.5 * [1.0-2.3]
Not really involved	19 (1.7%)	8 (42.11%)	7.4 *** [3.0-19.00]	6 (31.6%)	3.8** [1.4-10.2}	5 (26.3%)	2.5 [0.9-7.0]

[1] Adjusted for age, education, relationship status and completion date. *$p<0.05$, **$p<0.01$, ***$p<0.001$

7.4.2.3 Emotional and relational factors associated with mental health outcomes five years after first-time motherhood

- *Emotional support*

Women were asked if they would have liked to have had more emotional support within the three months prior to the five-year data collection. More than half of women responded that they did not feel they needed more emotional support (N=633, 55.6%). Women who responded that they 'possibly' or 'definitely' would have liked more emotional support were more than 4-times and almost 8-times more likely to report depressive symptoms respectively (*Yes, possibly*: Depression: Adj. OR=4.3, 95% CI 2.6-7.1; *Yes, definitely*: Depression: Adj. OR=7.9, 95%CI 4.8-13.1). Similar patterns were observed for anxiety and stress symptoms (Yes, *possibly*: Anxiety: Adj. OR=2.2, 95% CI 1.4-3.5; *Yes, definitely*: Anxiety: Adj.

OR=4.2 95%CI 2.8-6.5; Yes*, possibly*: Stress: Adj. OR=24.0, 95% CI 2.6-6.1; *Yes, definitely*: Stress: Adj. OR=5.3 95%CI 3.4-8.1) (Table 7.37).

- *Emotionally satisfying relationship*

Women were asked to evaluate how emotionally satisfying their relationship was for them. Reponses were captured as ‘Not sure’, ‘Not at all’, ‘Slightly’, ‘Moderately’, ‘Very’ or ‘Extremely’. Responses were dichotomised for analysis as, ‘Not sure/Moderately’ and ‘Very/Extremely’. Women who expressed lower emotional satisfaction with their relationship were between 3 and 5 times more likely to report symptoms of depression, anxiety and stress than women with higher emotional satisfaction with their relationship (Table 7.37).

- *Relationship problems*

Frequency of relationship problem were captured as ‘never’, ‘rarely’, ‘occasionally’ or ‘often’. For analysis responses were grouped by ‘never/rarely’ and ‘occasionally/ often’. Greater frequency of relationship problems was associated with increased odds for reporting depression, anxiety and stress. Women experiencing relationship problems ‘occasionally/often’ had 1.8-times increased odds of reporting anxiety (Adj. OR=1.8, 95%CI 1.2-2.7), 2.5-times increased odds of reporting stress (Adj. OR=2.5, 95%CI 1.8-3.6), and nearly 3-times increased odds of reporting depression (Adj. OR=2.9, 95%CI 2.0-4.3) (Table 7.37).

- *Fear of current partner*

Very few women indicated that they feared their current partner (n=7, 0.7%). Women who were afraid of their partner were 7-times more likely to report depression, 10-times more likely to report anxiety and nearly 5-times more likely to report stress than women who did not fear their partner (Table 7.37).

Table 7.37 Emotional and relational factors and report of moderate/severe DASS symptoms at five-year follow-up (n=1155)

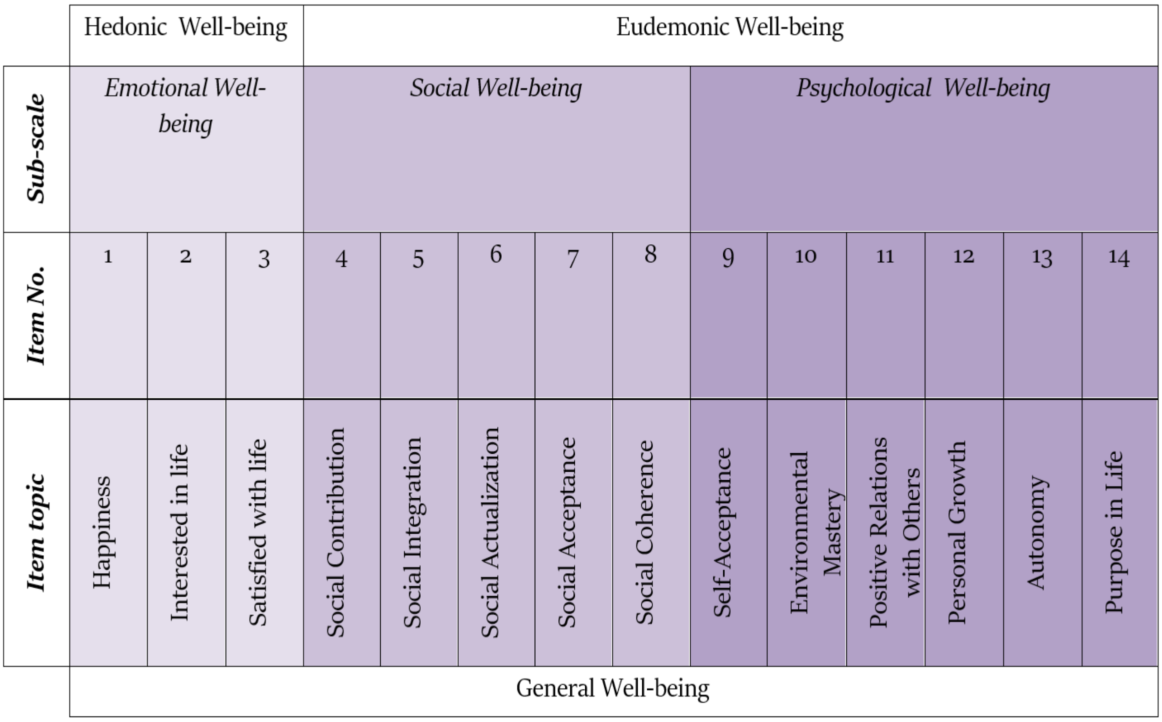
Emotional and relational factors	Cohort	Depression (DASS scale ≥7)		Anxiety (DASS scale ≥6)		Stress (DASS scale ≥10)	
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]	*n (%)*	*Adj. OR [95%CI]*	*n (%)*	*Adj. OR [95%CI]*
Would have liked more emotional support							
Yes, definitely	218 (19.1%)	56 (25.7%)	7.9*** [4.8-13.1]	54 (25.1%)	4.2*** [2.8-6.5]	58 (26.9%)	5.3 *** [3.4-8.1]
Yes, possibly	288 (25.3%)	45 (15.7%)	4.3*** [2.6-7.1]	43 (15%)	2.2*** [1.4-3.5]	62 (21.8%)	4.0*** [2.6-6.1]
No, not really	633 (55.6%)	26 (4.2%)	1.0 ref	46 (7.3%)	1.0 ref	41 (6.5%)	1.0 ref
How emotionally satisfying is your relationship							
Not sure/Moderately	147 (15.3%)	42 (28.6%)	4.9*** [3.2-7.5]	37 (25.5%)	3.2 *** [2.1-4.9]	48 (33.1%)	4.3 *** [2.9-6.4]
Very/Extremely	958 (86.7%)	72 (7.5%)	1.0 ref	92 (9.7%)	1.0 ref	100 (10.6%)	1.0 ref
Frequency of relationship problems							
Never/rarely	848 (75.6%)	64 (7.7%)	1.0 ref	84 (10.1%)	1.0 ref	88 (10.5%)	1.0 ref
Occasionally/often	274 (24.4%)	53 (19.6%)	2.9*** [2.0-4.3]	46 (16.9%)	1.8 ** [1.2-2.7]	61 (23.5%)	2.5*** [1.8-3.6]
Fear of current partner							
Yes	7 (0.7%)	3 (42.3)	7.0* [1.5-30.4]	4 (57.1%)	10.0 ** [2.2-45.0]	3 (42.9%	4.7* [1.1-21.4]
No	1055 (99.3%)	105 (10%)	1.0 ref	123 (11.8%)	1.0 ref	142 (13.7%)	1.0 ref

[1] Adjusted for age, education, relationship status and completion date. *p<0.05, **p<0.01, ***p<0.001

7.4.3 Mental well-being five years after first-time motherhood

Mental Health Continuum-Short Form (MHC-SF) was added to the five-year follow-up data collection survey following the PPI interviews of Phase 1. A total of 277 participants completed the MHC-SF. All competed data collection during or after the implementation of Covid-19 health measures in Ireland. This sub-sample was used to assess mental well-being at five years after first-time motherhood.

Mental Health Continuum-Short Form (MHC-SF) is a 14-item scale designed to measure emotional well-being (hedonic or subjective well-being) and social and psychological well-being (eudemonic or positive intra- and interpersonal well-being). The emotional well-being sub-scale consists of three items, the social well-being sub-scale consists of five items and the psychological well-being sub-scale consists of six items (Figure 7.10).



	Hedonic Well-being			Eudemonic Well-being										
Sub-scale	*Emotional Well-being*			*Social Well-being*					*Psychological Well-being*					
Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Item topic	Happiness	Interested in life	Satisfied with life	Social Contribution	Social Integration	Social Actualization	Social Acceptance	Social Coherence	Self-Acceptance	Environmental Mastery	Positive Relations with Others	Personal Growth	Autonomy	Purpose in Life
	General Well-being													

Figure 7.10: Structure of the MHC-SF

Responses to the MHC-SF are recorded by the frequency of experiencing positive symptoms of mental health within a four week period. The six response options are 'Never', 'Once or twice', 'About once a week', 'About 2 or 3 times a week', 'Almost Everyday' or 'Everyday', which correspond to a numeric coding of 0 to 5. Coding may be approached with the aim of obtaining a continuous or categorical dependant variable.

- *Continuous variable calculation*

Items may be summed to obtain a continuous variable of General Well-being ranging from 0 to 70. Results from the current cohort revealed that scores for General Well-being ranged from 15 to 70 (Mean=51.13, Median=53.00, Std. Deviation=12.2), descriptive statistics for the MHC-SF sub-scales are presented in Table 7.38.

Table 7.38 Descriptive statistics for the MHC-SF sub-scales and General Well-being score (n=277).

	Emotional Well-being	Social Well-being	Psychological Well-being	General Well-being
Range	4-15	2-25	6-30	15-70
Mean	12.07	16.41	22.69	51.13
Median	12.00	17.00	24.00	53.00
Std. Deviation	2.5	5.2	5.5	12.2

- *Categorical variable calculation*

Most commonly, the MHC-SF is used to categorise participants as having 'Flourishing', 'Moderate Mental Health' or 'Languishing' mental health. This method reflects Keyes's two-continua model of mental health and well-being. To categorise Flourishing, an individual must experience seven positive symptoms 'almost every day' or 'everyday', and at least one of these symptoms must come from the hedonic cluster. To categorise Languishing, individuals must experience seven of the symptoms 'never' or 'once or twice'; again at least one of the symptoms must come from the hedonic cluster. Individuals who do not fit the 'Flourishing' or 'Languishing' categories are then categorised as having 'Moderate Mental Health'. When calculated for the current cohort, approximately 60% of participants reported experiencing Flourishing mental health (N=163, 60.4%), and 40% as having Moderate Mental Health (N=105, 38.9%), very few participants reported their mental health as Languishing (N=2, 0.7%). Missing (N=7).

7.4.3.1 Mental health symptomatology severity associated with Flourishing mental well-being

As there were too few reports of Languishing mental health to perform meaningful analysis, the Moderate Mental Health and Languishing categories were merged so that two mental well-being groups were created for the MHC-SF analysis, 1) Flourishing, and 2) Moderate/Languishing. These two categories were used to examine associations between mental health symptoms measures by the DASS-21 and odds of membership to Flourishing mental well-being.

Women who reported normal/mild symptoms of depression had 12-times higher odds of also reporting Flourishing mental well-being compared to women with moderate/severe symptoms of depression (OR=12.1, 95%CI 4.9-30.1), few participants with moderate/severe symptoms of depression reported having Flourishing mental well-being (N=6, 15%). Similar patterns were observed for anxiety (OR=7.4, 95%CI3.3-16.2) and stress (OR=5.3, 95%CI 2.7-10.4) (Table 7.39).

Table 7.39 Mental health symptomatology severity associated with Flourishing mental well-being (n=277)

DASS-21 subscale	*Symptomatology severity*	Cohort	Flourishing Mental Well-being	
		n (%)	*n (%)*	*OR [95%CI]* [1]
Depression	Normal to mild	229 (84.1%)	156 (68.1%)	12.1*** [4.9-30.1]
	Moderate to severe	40 (14.9%)	6 (15%)	1.0 (ref)
Anxiety	Normal to mild	227 (84.7%)	153 (67.4%)	7.4 *** [3.3-16.2]
	Moderate to severe	41 (15.3%)	9 (21.9%)	1.0 (ref)
Stress	Normal to mild	215 (77.6%)	147 (68.4%)	5.3 *** [2.7-10.4]
	Moderate to severe	52 (18.8%)	15 (28.9%)	1.0 (ref)

[1] Odds ratio (95% confidence intervals) representing odds of reporting flourishing mental well-being
*p<0.05, **p<0.01, ***p<0.001

7.4.3.2 Demographic factors associated with Flourishing mental well-being

Reports of Flourishing mental well-being did not differ by age range, region of birth, partner status, or by maternal income (Table 7.40). However, women who (antenatal) reported having a postgraduate education had nearly three-times increased odds of reporting Flourishing mental well-being at five years after first-time motherhood than women who did not (OR=2.6, 95%CI 1.2-5.3). Therefore, subsequent binomial regressions examining associations between social and personal factors with odds of reporting Flourishing mental well-being were adjusted for the effect of maternal educational attainment.

Table 7.40 Demographics associated with Flourishing mental well-being (n=277)

Demographics		**Cohort** n (%)	**Flourishing Mental Well-being** n (%)	 OR [95%CI] [1]
Maternal age	< 30 years	7 (2.7%)	2 (28.6%)	0.2 [0.04-1.1]
	31-35 years	38 (14.6%)	26 (68.4%)	1.4 [0.5-2.5]
	36-40 years	127 (48.9%)	83 (65.4%)	1.0 ref
	41-45 years	80 (30.8%)	41 (51.3%)	0.6 [0.3-1.0]
	46 > years	8 (3.1%)	5 (62.5%)	0.9 [0.2-3.9]
Region of Birth	Ireland	208 (80.1%)	129 (62%)	1.0 ref
	Other EU country	39 (15.12%)	19 (48.7%)	0.6 [0.3-1.2]
	Non-EU country	11 (4.3%)	7 (63.6%)	1.1 [0.3-3.8]
Living with partner	Married or living with partner	253 (94%)	155 (61.3%)	2.0 [0.7-5.6]
	Single or not living with partner	16 (6%)	7 (43.8%)	1.0 ref
Education attainment *(antenatal report)*	Postgraduate education	233 (87%)	147 (63%)	2.6* [1.2-5.3]
	No postgraduate education	35 (13%)	14 (40%)	1.0 ref
Maternal income	Income	225 (84%)	137 (60.1%)	1.2 [0.6-2.4]
	No income	43 (16%)	24 (55.8%)	1.0 ref

[1] Odds ratio (95% confidence intervals) representing odds of reporting flourishing mental well-being
*p<0.05, **p<0.01, ***p<0.001

7.4.3.3 Practical support factors (extent and source) associated with Flourishing mental well-being

The numbers of practical supports that women availed of, and who the practical supports were, made only minimal difference to women's odds of having Flourishing mental well-being and none were found to be statistically significant (Table 7.41).

Table 7.41 Practical support factors (extent and source) associated with Flourishing mental well-being

		Cohort	**Flourishing Mental Well-being**	
Practical support		n (%)	n (%)	Adj. OR [95%CI] [1]
Practical support- Extent				
Number of practical support sources	None or one source	50 (18.7%)	29 (58%)	1.0 ref
	2-3 sources	171 (64%)	103 (60%)	1.1 [0.6-2.1]
	4 or more sources	46 (17.2%)	30 (65%)	1.4 [0.6-3.1]
Sources of practical support: received support from....				
Partner	Yes	240 (90%)	149 (62%)	1.8 [0.8-3.9]
	No	27 (10%)	13 (14.2%)	1.0 ref
Extended family support *(mother, sister or relative)*	Yes	167 (62.6%)	106 (63.5%)	1.4 [0.8-2.3]
	No	100 (37.5%)	56 (56%o	1.0 ref
Day care/ childcare	Yes	105 (39.3%)	64 (61%)	1.0 [0.6-1.7]
	No	162 (60.7%)	98 (60.5%)	1.0 ref
Paid support *(housekeeper/ nanny)*	Yes	45 (16.9%)	26 (57.8%)	0.9 [0.4-1.7]
	No	222 (83.2%)	136 (61.3%)	1.0 ref

[1] Adjusted for maternal education attainment. *p<0.05, **p<0.01, ***p<0.001

7.4.3.4 Personal time associations with Flourishing mental well-being

Time availability, and the frequency with which women were able to take time for themselves, was associated with Flourishing mental well-being. Women who did not have personal time were approximately three-times less likely to report having Flourishing mental well-being than women who did (Adj. OR=0.4, 95% CI 0.2-0.70.). Additionally, increased frequency of personal time was associated with increased odds of reporting Flourishing mental well-being, there was no statistical difference between women who reported having time for themselves 'hardly ever', 'less than once a fortnight' or 'about once a fortnight' and Flourishing mental well-being. However women who reported having time for themselves 'about once a week' or 'two to three times a week' had approximately 2.5-times higher odds of reporting Flourishing mental well-being (Table 7.42).

Table 7.42 Time availability associated with Flourishing mental well-being

Personal time		Cohort *n (%)*	Flourishing Mental Well-being *n (%)*	 *Adj. OR [95%CI]* [1]
Personal time	Yes	212 (79%)	140 (66%)	1.0 ref
	No	56 (20.9%)	23 (41.1%)	0.4*** [0.2-0.7]
Personal time; Frequency	Hardly ever	55 (20.4%)	25 (45.5%)	1.0 ref
	Less than once a fortnight	23 (8.5%)	12 (52.2%)	1.3 [0.5-3.5]
	About once a fortnight	49 (18.2%o	30 (61.3%)	1.9 [0.9-4.1]
	About once a week	81 (30%)	54 (66.7%)	2.4* [1.2-4.9]
	Usually two to three times a week	54 (30%)	37 (68.5%)	2.6* [1.2-5.7]
	Usually four or more times a week	8 (3%)	5 (62.5%)	2.0 [0.4- 9.2]

[1] Adjusted for maternal education attainment. *p<0.05, **p<0.01, ***p<0.001

7.4.3.5 Satisfaction with practical support and association to Flourishing mental well-being

Most of the 277 participants indicated that they would have liked to have had more practical support in the month prior to data collection (n=196, 72.9%), although these women were less likely to report having Flourishing mental well-being than women who were satisfied with their practical support, this difference was not statistically significant (Table 7.43).

Table 7.43 Satisfaction with practical support and association to Flourishing mental well-being (n=277)

Would have liked more practical support	Cohort n (%)	Flourishing Mental Well-being n (%)	 *Adj. OR [95%CI]*
Yes	196 (72.9%)	112 (57.1%)	0.6 [0.3-1.1]
No	73 (27.1%)	50 (68.5%)	1.0 (ref)

[1] Adjusted for maternal education attainment. *p<0.05, **p<0.01, ***p<0.001

7.4.3.6 Partner contribution and association to Flourishing mental well-being

Women who reported that they were not happy with their partner's contribution to household tasks or to childcare both showed the same decreased odds (Adj. OR=0.3. 95%CI 0.1-0.6) of reporting Flourishing mental well-being than women who were happy with their partners contribution. Women who reported that their partner was 'somewhat involved' in being a parent had decreased odds of reporting Flourishing mental well-being (Adj. OR=0.5, 95% CI 0.3-1.0) (Table 7.44).

Table 7.44 Partner contribution and association to Flourishing mental well-being (n277)

Partner contribution	Cohort	**Flourishing Mental Well-being**	
	n (%)	n (%)	*Adj. OR [95%CI]*
Happy with partner's contribution to household tasks			
Yes, definitely	105 (38.9%)	73 (70%)	1.0 ref
Yes, in the circumstances	114 (42.2%)	69 (60.5%)	0.6 [0.4-1.2]
No	38 (14.1%)	15 (39.5%)	0.3 *** [0.1-0.6]
N/A	13 (4.8%)	6 (46.2%)	0.4 [0.1-1.2]
Happy with partner's contribution to childcare			
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]
Yes, definitely	139 (52.3%)	92 (66.2%)	1.0 ref
Yes, in the circumstances	98 (36.8%)	60 (61.2%)	0.8 [0.5-1.4]
No	29 (10.9%)	34.5%)	0.3 ** [0.1-0.6]
How involved is your partner in being a parent?			
	n (%)	*n (%)*	*Adj. OR [95%CI]* [1]
Really involved	210 (79.2%)	135 (64.3%)	1.0 ref
Somewhat involved	48 (18.1%)	23 (47.9%)	0.5 ** [0.3-1.0]
Not really involved	7 (2.6%)	4 (57.1%)	0.7 [0.2-3.4]

[1] Adjusted for maternal education attainment. *p<0.05, **p<0.01, ***p<0.001

7.4.3.7 Emotional and relational factors associated with Flourishing mental well-being

Women who reported that they were satisfied with their emotional support (reported as 'No, would not have liked more emotional support') had nearly 5-times higher odds of also reporting Flourishing mental health that women who reported that they 'definitely' needed more emotional support (Adj. OR=4.8, 95%CI 2.5-9.3). Similarly, women who reported their relationship as being very to extremely emotionally satisfying also had almost 5-times higher odds of reporting Flourishing mental well-being than women who reported that they were unsure or moderately satisfied (Adj. OR=4.7, 95%CI 2.3-9.4). Women who reported rarely/never having relationship problems had 3-times higher odds of reporting Flourishing mental well-being than women who reported having relationship problems occasionally/often (Adj. OR=3.1, 95% CI 1.8-5.3). None of the women in the sub-sample of 277 reported being afraid of their current partner (missing data = 23) (Table 7.45).

Table 7.45 Emotional and relational factors associated with Flourishing mental well-being (n=277)

Emotional and relational factors	Cohort	**Flourishing Mental Well-being**	
	n (%)	n (%)	*Adj. OR [95%CI]*
Would have liked more emotional support			
Yes, definitely	56 (20.8%)	22 (39.3%)	1.0 ref
Yes, possibly	69 (25.6%)	31 (44.9%)	1.3 [0.6-2.6]
No	144 (53.5%)	109 (75.7%)	4.8*** [2.5-9.3]
How emotionally satisfying is your relationship			
Not sure/Moderately	45 (17.3%)	14 (31.1%)	1.0 ref
Very/Extremely	215 (82.7%)	146 (67.9%)	4.7 *** [2.3-9.4]
Frequency of relationship problems			
Never/rarely	189 (71.9%)	130 (68.8%)	3.1 *** [1.8-5.3]
Occasionally/often	74 (28.1%)	31 (41.9%)	1.0 ref
Fear of current partner			
Yes	0 (0%)	n/a	n/a
No	284 (100%)	n/a	n/a

[1] Adjusted for maternal education attainment. *p<0.05, **p<0.01, ***p<0.001

7.5 Conclusion

Statistical analysis indicates high prevalence of depressive, anxiety and stress symptoms throughout the first year postpartum and at five-year follow-up, as well as significant physical health burdens in the perinatal period, but also a high proportion of Flourishing mental health reports at five years after first-time motherhood. The analysis also demonstrates several socio-demographic/economic factors, and social, emotional and relational factors associated with increased odds of reporting moderate/severe mental health symptoms within both the perinatal and five-year follow-up data, in addition to social factors associated with increased odds of reporting Flourishing mental well-being.

Chapter 8 Discussion

8.1 Introduction

This chapter commences with an integrated presentation of the meta-inferences that are supported by findings from the research in order to provide context to the discussion that follows. Separate discussions of the findings of the concept analysis and the PPI interviews were provided in chapter 5 to maintain clarity as to the implications of the research steps taken in phase 1 for the subsequent phases. Therefore, this chapter contains a discussion of the participatory research process that comprised phase 1. This is followed by a discussion of the key findings from the in-depth qualitative interviews (phase 2), and the key findings from the perinatal and five-year follow-up quantitative data (phase 3). Finally, the chapter concludes with consideration of the strengths and limitations of the overall project.

8.2 Integrated discussion of converging quantitative and qualitative findings

The following sections provide a discursive examination of the meta-inferences from the research with supportive evidence from the qualitative and quantitative phases, and a final reflection of the resilience concept and the positioning of women as mothers in mental health research.

- *Social and economic environment is pivotal to maternal mental health and well-being outcomes*

Women as mothers are not passive in their own lives; they actively negotiate and take action to navigate towards well-being. Although women exercise choice and show remarkable resourcefulness when navigating the challenges of motherhood, changing family life and responsibilities, and mental distress, overall, mothers' negotiations are constrained by the power they hold in any given situation. The qualitative findings demonstrated that women's individual choices had less leverage in determining well-being outcomes than did the social, cultural and political factors that they were attempting to negotiate. Women's standing in navigation and negotiation, and thus 'their' potential for resilience in the face of the challenges that motherhood entails, is subject to the power of the interpersonal, political and societal structures that their lives are embedded within. Individual choice could be heavily influenced by internalised and reinforced social and cultural expectations, and interpersonal constraints that steer mothers towards decisions that prioritise child and family and as a consequence place themselves as secondary. Importantly, resource access was determined by social-political willingness to provide resources that would benefit women and thus their children. In other words, the processes of negotiation and navigation, and therefore resilience, were evident in each mother's qualitative data in different spheres of life, and whether these individual processes materialised into positive outcomes for each mother was strongly influenced by her social, economic, political and cultural environment. The quantitative findings concurred with this, as analysis of the perinatal and five-year follow-up data also demonstrated that socio-demographic factors, such as region of birth, educational attainment, employment and partner status, had strong influence on mental health symptomatology, and social and relational factors had strong influence on flourishing well-being. The importance of socio-economic status was further illustrated in the five-year follow-up data in that women who appeared socio-economically stable tended to have more children, yet also reported fewer symptoms of mental distress.

- *Women experience significant mental health symptoms beyond postpartum service provision*

Though revealed in different ways, the qualitative and quantitative data support the recommendation for postpartum care to be extended beyond the current provision. The quantitative data demonstrated that depressive, anxiety and stress symptoms fluctuate in the first year postpartum, and that substantial proportions of mothers were experiencing physical and mental health symptoms even at 12 months after birth. The qualitative findings revealed that service limitations functioned as a barrier to mental healthcare help-seeking in two ways. First, women stated that they did not realise that they needed and wanted professional mental health support until much later in the postpartum period and had to navigate narrow gateways of access. Second, by the time of realisation, services to women had ceased and the care/treatment had to be self-funded, which was an impediment to recovery for many women with fewer financial resources.

- *Many women experience significant depressive, anxiety and stress symptoms, and flourishing mental well-being at five years after first-time motherhood.*

Proportions of reports of moderate/severe symptoms of mental distress were higher five years after first-time motherhood when compared to the highest reports recorded in the perinatal period (*Perinatal data*: Depression: 6.3%- *6 months*, Anxiety: 4.5%- *antenatal*, Stress: 9.2%- *6 months*; *Five-year follow-up data*: Depression: 11.2%, anxiety: 12.6%, stress: 14.2%). In their individual interviews, many mothers discussed challenges to their mental health and their experiences of depression, anxiety and stress; however, mothers also spoke of experiencing aspects of well-being in motherhood. Quantitative analysis demonstrated high proportions of flourishing well-being. Additionally, although lesser symptom severity was more strongly associated with flourishing mental well-being, reports of moderate/severe symptoms did not exclude women from reporting flourishing mental well-being.

- *Partner relationship and support effects maternal mental health and well-being outcomes*

The quantitative data found that when women reported that their partner did not provide practical support in household tasks, and was not involved in childcare or parenting, then the odds of reporting symptoms of depression, anxiety and stress were increased. The same was true where women reported that their relationship was not emotionally satisfying, or that they experienced relationship problems occasionally/frequently. Conversely, having an emotionally satisfying relationship was associated with increased odds of reporting flourishing well-being. Similarly, in the qualitative data, women who described unsatisfactory relationships, and partners who were not engaged in the parenting role, also described feelings of stress, distress and frustration. Whereas women in relationships with a partner who engaged in their role within the parenting unit described a sense of confidence and reassurance that they could spend time away from their children, as their partner was capable of providing care.

- *Appraisal of partner support influences mental health and well-being outcomes, and negotiation*

The qualitative and quantitative findings also demonstrated the complementary strengths of mixed-methods research. The quantitative data revealed that, while receiving practical support from a partner was associated with decreased depression, anxiety and stress symptomatology, it was not associated with increased well-being. However, *satisfaction* with a partner's contribution was associated with *both* symptomatology and well-being. This demonstrated that women's *appraisal* of the support that a partner is available to give, or capable of giving, is relevant to maternal mental health outcomes. Similarly, the qualitative data indicated that some women's appraisal of the contribution that their partner was capable of providing or willing to provide to the relationship and parenting role led them to either negotiate or walk away from negotiations (dissolution of relationship). In this regard the quantitative and qualitative findings appear in agreement. However, the qualitative findings add complementary strength by providing insight beyond identifying low partner support as a risk factor for mental well-being, as it unfolded the process through which resilience is demonstrated; namely that women are active in their relationship and attempt to negotiate for positive change, not only for their well-being but for their partner's and children's well-being.

- *Many women experience a lack of emotional support in motherhood*

Isolation and loss of emotional and social supports was a core theme in women's narratives of the motherhood transition. Feelings of exclusion from society and challenges in establishing new and meaningful social connections were common. For many women isolation continued through the early years of motherhood. Within the quantitative data, although participants were not required to specify from whom they needed emotional support (i.e., partner, family or HCP), the high proportions of women responding that they ‘definitely’ and ‘possibly’ (44.4%) would have liked more emotional support (and associated increase of depressive, anxiety and stress symptoms) indicated that many mothers’ emotional needs were not being met at five years after first-time motherhood. Feeling that one has enough emotional support appeared to be a protective factor, as women who indicated that they did not need more emotional support were almost five-time more likely to report flourishing mental well-being.

- *Women benefit from social and community supports in motherhood*

The number and source of practical and emotional supports in motherhood had an impact on associated odds of depressive, anxiety and stress symptom reports. Fewer support sources were associated with increased symptom reports, while different sources of support had differing associations to depressive, anxiety and stress symptom reports. Additionally, women who had personal time while someone else was caring for their child were less likely to report symptoms of mental distress and more likely to report flourishing well-being. The qualitative themes in relation to the parent partner and the ‘loss of the village’ in motherhood, add depth to the effects that existence or absence of social and community support have on women’s lives. Having support was linked to feeling reassured that their children were well cared for, and women felt more at ease with taking time to engage in activities beneficial to their well-being.

8.2.1 Resilience and mothers in mental health research

Resilience has been positioned as a salutogenic concept which may be utilised to encourage positive adjustment and beneficial outcomes for populations enduring atypical stress or tumultuous life transitions (Ungar 2021a). Therefore, resilience would appear to be a logical and constructive concept to be applied in the context of the perinatal period and early motherhood. However, there are problematic aspects to the conceptualisation, orientation, and operationalisation of resilience historically and presently. Conceptualisations of resilience as a trait of the individual place onus of responsibility for existence or ‘lack’ within the person (Luthar *et al.* 2000). Evidence of resilience has predominately focused on a limited set of indicators reflecting symptom absence (Cabanyes Truffino 2010, Bonanno *et al.* 2015) or performance metrics (Mahdiani & Ungar 2021), and neglect to account substantially for the effects of the social environment and resource access, social injustice and social and cultural interpretations of resilience (Ungar 2021b). In fact, resilience is interpreted by some as stigmatising as it is associated with neo-liberal concepts of success, which focus on individual responsibility and ignore structural or institutional obstacles (Allen *et al.* 2014).

The limitations and relevant criticisms of resilience need also to be jointly considered with the knowledge that pervasive social and cultural narratives essentially demand resilience from mothers, in the expectation that they sublimate all their resources to child and family, and in the policing of mothers' emotional responses as good or bad (César *et al.* 2018). Indeed, the findings from the PPI interviews (phase 1) demonstrated that mothers were wary that resilience research *with* mothers may contribute to expectations and demands of resilience *from* mothers. Therefore, these findings support some practice principles for researchers. Researchers need to consider how the design of research and presentation of resilience findings in a maternal context are conveyed so they do not compound expectations of the sacrificial endurance that mothers have internalised from society.

Moreover, the social, political and economic realities in which mothers live are pivotal to their well-being, and to their ability to provide the care and life that they wish for their children. The ecologies in which mothers live are the same ecologies in which their children live (Winett *et al.* 2016). Researchers are increasingly vocal about, and supported by evidence for, the need to de-emphasise *the child* in child resilience research and turn attention to capacity of *the environment* (in which the child lives) to nurture and facilitate optimal development (Klebanov & Brooks-Gunn 2006). The current research situated resilience in a systemic perspective; child resilience is shaped by the social and ecological factors and resources available to them, and a strong relationship with an adult caregiver has been repeatedly found to be the most important factor in determining child resilience, such that caregiver well-being is a pivotal eco-systemic factor in child resilience (Luthar 2015, Matsopoulos & Luthar 2020). Mothers are, most often, the primary caregivers to children, and yet there is little research addressing how mothers might be supported to sustain their mental health and well-being (Phua *et al.* 2020). Improving mothers' resilience creates a salutary cascade for her personal adjustment and parenting behaviours and, subsequently, child outcomes (Luthar & Suchman 2000, Luthar *et al.* 2007, Luthar *et al.* 2019). Thus, reorienting attention from child resilience and development to exploring the means through which mothers may be supported in their overall well-being as they support the development of child and family may have broader reach than a child only focus. Research shows that children's access to greater human capital (such as maternal employment and maternal education level) was more predictive of child outcomes than mothers' mental health status (Klebanov & Brooks-Gunn 2006). The current research shows that maternal employment and education attainment by first pregnancy were associated with decreased depressive, anxiety and stress symptomatology in the perinatal period, and education attainment was associated with decreased symptoms of mental distress and increased well-being at five-year follow-up. Therefore, it may be hypothesised that improving the socio-economic status of mothers and removing the barriers that impede navigation towards resources not only improves outcomes for mothers but also improves the human capital that support child development.

The current research adopted Ungar's social-ecological conceptualisation of resilience as involving an interactive exchange between the individual and their socio-cultural environment in order to navigate towards, and negotiate for, the psychological, social, cultural, and physical resources that sustain well-being. The operationalisation of this conceptualisation was clearly delineated in the approach taken in the analysis of the qualitative in-depth interviews.

The quantitative data however, demonstrated some demographic, socio-economic, social, and relational risk and protective/promotive factors that were associated with mental health outcomes (symptomatology and well-being) in the context of the perinatal period and early motherhood. Though no/low symptoms of mental distress and high flourishing might be defined in some perspectives as resilience such operationalisations imply a categorisation of some individuals as belonging to a resilience possessing 'group' and others as not. This approach is in conflict with a process-based, social-ecological understanding of resilience; hence the approach to resilience within the quantitative data was not one of identifying individuals as resilient, but of identifying factors within social-ecological domains that have potential risk or protective/promotive effects on mental health outcomes. Operationalisation was, therefore, focused on the resilience capacity of the social-ecological environment, rather than on the resilience of individuals.

8.3 Phase 1

The following discussion is confined to the PPI process that comprised phase 1, with specific emphasis on the value that PPI inclusion brought to the project and the values that motivated the incorporation of PPI into the research.

8.3.1 Phase 1: A discussion of Value and Values of PPI inclusion

PPI entails a '*partnership spectrum*' (Goodman & Sanders Thompson 2017, p. 487) as designs prepare for, or enable, differing levels of involvement within research, for example, consultation roles, active collaborators, or user-led research (Dawson *et al.* 2020). There are contrary views as to where the threshold for 'genuine' PPI may be drawn. For example, PPI at the level of consultation is the most common form in research (Tritter 2009, Ocloo & Matthews 2016). In one view, there are arguments that the consultation approach towards PPI may be superficial, or tokenistic, paying lip service to requirements from research funders (Thompson *et al.* 2009). Others view consultation as a constructive approach with epistemic value as it taps '*into the unique insights and expertise*' of those with lived experience of the issue(s) of concern, and has pragmatic application as it informs research, practice and policy (McCoy *et al.* 2019, p. 711).

The form that PPI inclusion took in this doctoral research was consultation. The practical benefits (Value) of incorporating a consultation approach to PPI within this doctoral research were three-fold. First, this method offered a novel approach to investigating an intersected area of the literature which is simultaneously over-saturated (evaluations of the resilience concept), and under-explored (maternal context). Few research projects centre women's voices and active participation within mental health research in motherhood (Albanese *et al.* 2021), and this is a matter of concern as research also shows that there is disparity between health services offered to women and the supports that women identify as beneficial to their needs (King 2013, Guerra-Reyes *et al.* 2017). This gap in the literature illustrates the need for women to hold an active role in maternal mental health and resilience research in order to better inform research directions, develop mental health services that are woman/mother-centred, and improve mental health outcomes for mothers. The researcher could not find examples of this study's particular PPI technique used elsewhere in published literature; it may provide a time and cost-effective example of PPI inclusion for future research in cognate disciplines.

Second, this process produced findings that had applicability to and were necessary for subsequent phases of the current research, which promoted an opportunity for skills acquisition and refinement for the researcher. Namely, skills required for disseminating research findings in ways that are engaging and accessible to diverse audiences and formulating participant feedback into actionable research. Although this benefit may be considered to have personal impact only, its future implications are much broader. It is important for early-stage researchers to develop skills, experience, and appreciation of the value of PPI so that they, as future leaders in their respective fields, may cultivate an approach to PPI as the norm in research. Thus shifting PPI from a 'tick box' exercise to commonplace practice, therefore improving overall research integrity and quality by producing research that is relevant to service-users, appropriately designed, and well disseminated (Biggane *et al.* 2019). This pragmatic (Value) benefit also speaks to a moral (Values) consideration; respectful inclusion and acknowledgement of the knowledge contribution of marginalised or previously unheard groups (epistemic justice) requires the researcher to develop appropriate capabilities (Walker & Boni 2020).

Third, this PPI process produced findings that hold relevance for researchers in the areas of maternal mental health and well-being, which may not have been unveiled without the PPI component. One example is the contrast between mothers' views and the predominant trends in resilience research in motherhood (Hannon *et al.* 2022a). Mothers in the PPI study took a social-ecological view of resilience. It would appear that mothers' evaluations may be ahead of the research trend in this regard. Their views that resilience in motherhood is an on-going process of adjustment, which is strongly influenced by the changing resources and supports available to them as they enter and transition through motherhood, were anchored in their lived experience. While some literature in the area of transition to parenthood implies that research may be turning towards a multi-factorial exploration of resilience (Young *et al.* 2019), the findings of the concept analysis showed that there is still some way to go (Hannon *et al.* 2022a). Encouragingly, findings of the PPI interviews indicate that it is a direction that women support (Hannon *et al.* 2023b).

The Values that underpinned the inclusion of a PPI component were informed by the researcher's awareness of the historical exclusion of women from research (Liu & Mager 2016) and an understanding that 'knowing' is not exclusively the purview of academic researchers. Failure to integrate the perspectives and participation of the communities *being researched* has long been noted to result in findings that reflect the priorities, biases and worldviews of the researcher(s) rather than produce findings that best reflect the needs of those whom the research concerns (Strega 2005). The findings of phase 1 draw attention to the '*plurality of ways of knowing'* (Walker & Boni 2020, p. 4), as there are several areas of disparity between how resilience is researched by academics and how women wish to see it researched (conceptualisation, domains of operationalisation etc.). Moreover, the findings of the PPI interviews illustrated that mothers are keenly aware of the dismissal of their epistemic contributions to research and society, and valued having their insight incorporated into the research.

The PPI component of phase 1 had some limitations, for example, a single round of consultation was sought from contributors following the development of the interview guide for phase 2. Iterative involvement of the contributors was not feasible due to the schedule in which the objectives of the doctoral research needed to be achieved. Time, labour and cost constraints are known barriers to conducting participatory research (Domecq *et al.* 2014). However, the process was effective in developing new knowledge (women's views of resilience and resilience research), informing research directions (addition of the MHC-SF in Phase 3), and creating themes of enquiry for research (development of the interview guide in phase 2). Therefore, this study provides a tangible example of the conceptualisation of participatory research as the co-creation of knowledge to bring about a form of change or action (Abma *et al.* 2019, Groot & Abma 2021). The individual steps of phase 1 (discussed in chapter 5) also created new knowledge and contributed to the empirical literature (Hannon *et al.* 2022a, Hannon *et al.* 2023b). Combined, the findings of phase 1 illuminate a woman/mother-endorsed opportunity for future research to delve into holistic, multi-level enquires of resilience in a maternal context and explore a wider consideration of personal, familial, cultural and social domains with pivotal influence on the outcomes that have meaning *for* mothers *with* mothers as active contributors to the research process.

8.4 Phase 2

Phase 2 of the research used qualitative data collected from 23 mothers to explore the question '*How do women navigate to, and negotiate for, what they need for their mental health and well-being in motherhood?*' This question was underpinned by women's preferences for resilience to be explored qualitatively with a focus on understanding how society, culture and, importantly, resource access influence resilience, which aligned with a social-ecological framework of resilience. Additionally, the research aimed to provide what is, to the author's knowledge, the first qualitative exploration and description of resilience processes in the context of motherhood, through an understanding that navigation and negotiation compose the processes of resilience.

8.4.1 Phase 2: A discussion of resilience processes in motherhood

The analysis of the qualitative data identified seven themes with ten sub-themes that traversed the motherhood transition from the perinatal period through the early mothering years. The themes encompassed intrapersonal, interpersonal, societal, community and healthcare systems as well as women's participation in the workplace. Although organised as discrete themes, issues of navigation and negotiation (resilience) could blend into different areas of experience.

Previous research and discourse demonstrated how the intensive mothering ideology (Hays 1998) places undue pressure on mothers to devote all of their physical and mental energies towards child-rearing to the detriment of their career development (Choi *et al.* 2005), life satisfaction (Rizzo *et al.* 2013) and mental health (Henderson *et al.* 2016). This study's findings add to the literature by demonstrating how internalised narratives are linked to the intensive mothering ideology and create a barrier to help-seeking when mothers experience mental distress. Internalised narratives (superhuman, sacrificing, stigma and fear) function in a way that any question of '*what women need for their mental health and well-being in motherhood*' becomes subjugated to the intensive mothering ideology.

These narratives constituted the first sphere of negotiation and navigation for women and, while they are internalised, they are not exclusively internally situated, as interpersonal, social and cultural elements reinforce these narratives. Research indicates that unrealistic standards for mothers are reinforced through popular culture and, especially for young mothers, through social media (Chae 2015, Abetz & Moore 2018, Verniers *et al.* 2022). For women in the study, reinforcement, or perception of reinforcement, stemmed mainly from culture, family, friends and healthcare systems. Women spoke of expectations that implied, or demanded, that they should bear complete responsibility for child and family (superhuman mother), and forego their own needs for fear that actions taken to sustain one's well-being may ‘detract’ from their family’s needs (sacrificing mother). These narratives (and reinforced interactions) fed the stigma and fear associated with being perceived of as a ‘struggling’ mother. The ‘struggling mother’ is antithetical to the narratives of a superhuman, all-capable, sacrificing mother that women initially believed they should be, or should come ‘naturally’ to them. Similarly, previous research has also reflected on how mothering has a dichotomic framing as ‘good’ or ‘bad’ (Budds 2021). The incongruence between internalised narratives and the lived experience of struggle in motherhood stimulate self-critical thoughts and fuels stigma and fear, which, in effect, cumulates and acts as a barrier to women navigating towards physical and mental health needs, and formal and informal supports. The analysis identified that the process of resilience begins when women i) recognise the fallacy of these narratives and accept that the humanness of motherhood entails struggle, and ii) revaluate their beliefs that a ‘good mother’ is a ‘sacrificing mother’ and reframe meeting their needs as being beneficial to both themselves and their family (negotiation). Successful negotiation enables women to reject (to varying degrees) prohibitive internalisations, give themselves permission to have needs, and then act contrary to the narratives by seeking help or providing for their needs (navigation).

A note may be made about future research directions prompted by these findings. This research explicitly links internalised narratives of intensive mothering to mental health stigma; similar to how previous work has linked avoidance of being perceived as a ‘bad mother’ to self-silencing (Button *et al.* 2017). Taking a broader view, previous research has also linked intensive mothering to assumptions relating to gender (Hays 1998), and posited that, socially and culturally, womanhood is synonymous with motherhood (Goodwin & Huppatz 2010). It may be reasonable to hypothesise that women as mothers not only experience a challenge to their identity as a mother when they experience MHPs, but also to their identity as a woman. There is substantial research concerning men’s ideas and perceptions of masculinity in relation to stigma and mental health (Chatmon 2020), but little in the way of understanding mental health stigma in relation to femininity and female gender identity. A deeper understanding of mental health stigma in motherhood (and thus new or better informed ways to address stigma in this context) may be achieved through exploration of the stigmatic challenges that MHPs may pose to women’s gender identity in motherhood.

It is important to recognise that negotiating internalised narratives does not mean that they become permanently deconstructed. These narratives, the knowledge that others hold them and the experience of their reinforcement have a pervasive influence when mothers attempt to engage in negotiation at interpersonal levels and with other systems, and may need to be re-negotiated in different circumstances. Mothers’ perceptions of whether or not external systems were willing to engage in negotiation were also important. This was particularly exemplified in mothers’ attempts to navigate and negotiate systems and policies that they perceived to reinforce expectations of sacrificial endurance. Mothers experienced barriers in the form of absence of services, excessive costs, and difficulty in gaining access to resources. These barriers extended beyond perinatal and/or adult mental health service provision and access. For example, breastfeeding is presented as the optimal feeding choice for infant health, and Irish policy states that the Department of Health and Health Service Executive (HSE) are committed to WHO guidance which recommends exclusive breastfeeding for at least six months postpartum (World Health Organization & United Nations Children's Fund (UNICEF) 1989, Department of Health 2016, Health Service Executive 2016). Yet there have been gaps in Irish policy between legislative protection for lactation breaks upon return to employment and the length of statutory maternity leave (Desmond & Meaney 2016). Additionally, there remains a gap between the number of lactation consultants currently employed by the HSE and the number required per births per year in Ireland (Department of Health 2021a), so much so that policy does not match the advice (and thus message of expectation) that women receive in the perinatal period.

An expectation for mothers, and thus families, to manage in the absence of structural and resource support is evident in other areas. Similar to some women's experiences of the stress encountered in trying to access support, a recent report by the Irish charity 'As I Am' highlighted on-going issues with prolonged wait-lists for autism assessment, dissatisfaction with service provision, and an absence of educational, occupational therapy, and speech and language therapy support services for children with autism (As I Am Ireland's National Autism Charity 2021). Adding to this, even if women pay for healthcare and other services without government assistance, the financial consequences from becoming a mother (decreased income and pension contributions during maternity leave, costs of childcare when returning to work) further add financial stress. Indeed research documents significant costs resulting from the so called 'motherhood penalty' and pension gap that are imposed on women for having children (Jędrzychowska *et al.* 2020). Therefore, women's perceptions that there are policy gaps that impact on their ability to support their own and their children's well-being are substantiated by wider research. These findings add new data and further depth as to the implications for mothers' morale. Barriers to resource access and policy gaps appeared to mothers as systemic issues rather than individual to their experience. Mothers felt voiceless and without power to negotiate or change the circumstances, such that negotiation was foreclosed to them, which left women feeling that deficits in services and policy, which specifically effect mothers, are an indication of mothers' value to society. This finding demonstrates that deficits in policy and resource access may function as less overt or quantifiable forms of the social and economic inequality that women experience (Vigod & Rochon 2020).

Research shows strong associations between mental health symptoms and the quality of a mother's relationship with her partner (Dennis & Ross 2006). Having a supportive partner is linked to decreased depression and anxiety (Razurel et al., 2017) and a greater likelihood that a mother will engage in help-seeking if required (Almutairi *et al.* 2017). Women in the study needed to navigate to and negotiate for an equal partnership and shared responsibility for parenting and childcare within their relationship. The nature of women's relationships with partners was heterogenic, and thus navigation and negotiations took different routes. Women with established equal partnerships described the positive effects for their own well-being; such as a sense of confidence that their children were well provided for, having personal time to maintain social relationships and to advance their education and careers, or simply engage in activities they found emotionally restorative. For some, negotiation depended on the willingness of the partner to meet mothers at the negotiation table. Differing levels of willingness led to differing outcomes. Willing partners enabled a new dynamic that placed balancing the needs of the family unit at the centre. Reluctant partners required the introduction of external mediation, continuous negotiation, or a realistic ultimatum. Refusing partners led to stagnation and distress for mothers, or to dissolution of the relationship, which, for some women in this study, led to optimal outcomes. Interestingly, recent research has hypothesised that mothers' attempts to encourage partners to take part in parental responsibilities and decision-making are an example of challenging the intensive mothering ideology, as doing so surrenders the idea that mothers must be the sole experts in childrearing (Williamson *et al.* 2023).

There are structural and attitudinal issues to navigating equal co-parenting, which often involve competing demands of balancing parenting with being a mother working outside the home. Policy and structural issues act as a barrier to well-being at this intersection. For example, despite research demonstrating that paternity leave is associated with decreased maternal physical illness (Fontenay & Tojerow 2020), and encourages paternal involvement in parenting (Knoester *et al.* 2019), in Ireland paternity leave is limited to two weeks and parental leave to seven weeks. Gender differences in policy are likely to have a gendered impact, and such policies entrench the idea that mothers should be the primary caregiver with fathers playing a secondary role (Budds 2021).

Returning to work involves weighting costs to benefits. Economic realities necessitated a return to paid employment for some women, but the high costs of childcare often functioned as a 'motherhood tax' that implied that women should remain in the home. Childcare costs in Ireland are among the most expensive in Europe (Brennan & Mcconnell 2021), and while there has been a recent increase in subsidies available to families in recognition of this problem, costs remain high (Goverment of Ireland 2023). Once in work, mothers described encountering workload demands that affected their ability to meet family demands and, occasionally, negative attitudes from a partner, colleagues or employers when attempting to negotiate the two. Childcare costs and competing family and work demands meant that several women had to make decisions for the immediate well-being interests of the family, which meant sacrifice of their career aspirations, their personal fulfilment and their own long-term financial well-being. Employment, like health, is not static over the course of a lifetime and is shaped by the opportunities or constraints of the environment, as well as individual decisions (Elder Jr *et al.* 2003). Motherhood can impact women's careers, leading to fewer years of experience, reduced income, and less prestigious roles (Stone 2007, Eva *et al.* 2021). Enabling environments in which both parents may equally engage in parental roles and in which women's career development and financial well-being are considered may require substantial policy and attitudinal change. For example, policies allowing parental leave to be shared between parents (which mothers in the study endorsed) have low uptake among fathers. A prominent reason is related to pervasive gender expectations around employment and parenthood, but also due to concerns about repercussions to the fathers' own career, the low rates of pay, and lack of flexibility (Bilgrami *et al.* 2020). Reform of paternity leave in Ireland may benefit from the lessons learned from Nordic countries who are making strides in this area, by accounting for the socio-economic drivers behind uptake or non-uptake (Korsgren & van Lent 2020). Additionally, mothers' financial well-being may benefit from reforms related to pension schemes that compensate women for the unpaid labour that they contribute to society by raising and educating their children who become the next generation of tax-paying workers.

Several mothers used imagery of being marooned on an island to convey the sense that motherhood had removed them as members of society. The physical, social and emotional isolation that mothers described is remarked on in previous research showing that mothers experience social isolation and personal disconnection following birth (Paris & Dubus 2005). Physical isolation occurred in multiple ways, first was the impact of the transition to spending large amounts of time at home alone caring for an infant. Additionally, some mothers experience the effects of a geographical isolation. Migrant mothers with young children are at risk of social isolation and loneliness which has negative implications for their mental and emotional well-being (Lim *et al.* 2022). This research demonstrates this is true for migrant mothers in Ireland, but also for Irish women who had moved homes in the perinatal period and were without the family and social supports they had previously relied on. The introduction of an integrated system of perinatal care that includes signposting to social and community supports for women at risk of isolation could be useful to migrant and Irish mothers alike. However, to have pragmatic value to mothers, pathways towards organised peer and community supports (which mothers identify as providing emotional, affirmational, informational and practical support that sustains their well-being (McLeish & Redshaw 2017)) need to be in place. By these mothers' accounts, some peer support groups had been established on the initiative of PHNs in some localities, however these are not uniform across Ireland and facilitating such supports is not a formal requirement of the PHN role (Phelan 2014). PHNs are ideally placed to connect mothers in the months following birth. Therefore, providing PHNs with resources (dedicated time, funding to book meeting spaces and refreshments) to establish peer-led support groups may aid in the building of a new village in motherhood. Additionally, this may prove to be a parsimonious expansion of PHN workload as the PHN would take a facilitative, rather than expert, role.

Mothers also spoke about how isolation in motherhood is a prolonged experience. If peer support contacts do not develop into meaningful friendships, mothers may find themselves navigating the early years of motherhood without the shared learning experience that peer support provides. Some women offered examples of effective community-based programmes and resources that they felt could be implemented in Ireland, such as low-cost mother and toddler mornings, and online community building services. In the absence of such opportunities, their child starting school marked a milestone in which mothers may start to rebuild their village, by getting to know their peers around 'the school gate'. For several women, however, the effects of the pandemic interrupted building these connections. A scalable group-based intervention aimed to facilitate the development of 'authentic connections' for mothers with young children (Luthar *et al.* 2017) has been shown to improve depression, perceived stress and self-compassion for mothers (Chesak *et al.* 2020). This intervention is based in resilience theory and takes the position that child resilience is best supported by ensuring the well-being of primary caregivers, who are, most often, mothers. The model that underpins the intervention posits that facilitating meaningful bonds *between* mothers supports their emotional and psychological well-being, which enables positive function in other life spheres such as the workplace, parenting and physical health (Luthar *et al.* 2019). Though established by professionals, the intervention transitions to a peer-led structure, such that connections made between women are *facilitated* by professionals, but endure beyond the intervention. Additionally, this particular intervention is amenable to and remains effective when delivered virtually (Luthar *et al.* 2019). The importance of peer support throughout the perinatal period to school-going years highlights the need to fund voluntary and community organisations that offer mothers peer-building resources. The Prevention and Early Intervention Network (PEIN) in Ireland offer a Community Mothers Programme in which volunteers who are mothers offer home visits and facilitate peer-group meetings to mothers (nulliparous and multiparous) living in disadvantaged areas. The wrap-around structure of services enables the provision of emotional and social support and signposting to other services. Although evaluation of the service demonstrated that parents value and benefit from the positive relationships that develop from peer supports, and that stakeholders viewed the programme as providing practical and essential resources, insufficient funding remained an obstacle to resourcing existing services (Brocklesby 2019).

Mothers' experiences of navigating to mental healthcare were defined by narrow gateways and narrow paths. Issues regarding disjointed services, long waiting-lists, and inadequate and inequitable mental health service provision have been highlighted several times in evaluations of Irish mental health services (Houghton 2014, Cullinan *et al.* 2016, Health Service Executive 2022). Similarly, women in the study described navigating access to mental health services as confusing, fragmented and costly. Women were (or believed they were) dependant on the receptiveness and knowledge of a small number of HCPs for referrals to mental health care. They experienced precariously long wait-periods for mental health care at times of vulnerability, and their access to mental healthcare was often constrained to the services that were offered, locally available or financially accessible to them. While women have contact with several professionals who may provide referrals in the perinatal period most often mothers recognised that they needed and wanted care after postpartum services have concluded. Consequently, mental healthcare access was obtained almost exclusively through a GP. This limited 'gateway' through which mental healthcare is accessed was a matter of frustration. Some women described excellent care and thoughtful interactions, whereas others described dismissive attitudes and a lack of referral knowledge. In such instances, mothers were unsure of where else to turn to and, overall, even women who had positive experiences felt that there needs to be another option, or gateway, for accessing care. New gateways for accessing care could benefit mothers and GPs. The Irish College of General Practitioners (ICGP) described general practice in Ireland as experiencing a workforce and workload crisis; the population in Ireland is aging and growing, while the GP workforce is retiring and emigrating (ICGP 2022). HSE predictions, made before the pandemic and Russia's invasion of Ukraine, estimated a GP to population deficit of between 493 to 1,380 GPs by the year 2025 (Health Service Executive 2015). Additionally, GPs express a lack of confidence in opening conversations about mental health and apprehension that doing so may lead to longer consultations stretching already limited time availability (Noonan *et al.* 2018). Extending postpartum care to include contact with a wider range of care professionals such as midwives, nurses, PHNs, physiotherapists, psychologists, or social workers, in easily accessible community-based settings up to one year, or more, after birth may help to alleviate GP workload. Additionally, community-based healthcare access (as per mothers' suggestions) provided in the style of family-resource centres or community health centres, may offer alternative gateways for mothers to navigate towards what they need for their well-being.

Wider gateways of access to care may also address what mothers perceived as narrow pathways of treatment, namely a medication first approach. Women felt that a medication first approach shut down opportunities to negotiate care and treatment pathways. Additionally, they felt that the prohibitive expense of, and long waiting lists for, talk therapies blocked navigation of care and treatment pathways. Previous research has shown that mothers expect that medication will be the most likely, though least desired, treatment suggestion following disclosures of mental distress (Hannan 2016). Mothers worry about side effects (Boath *et al.* 2004), and feel that HCP preferences for prescribing medication reinforce feelings of inadequacy (Holopainen 2002). In terms of treatment pathways, mothers prefer opportunities for talk therapies potentially inclusive of partners, and peer support (Dennis & Chung-Lee 2006). Additionally, wider access gateways may enable navigation to more and diverse supports and services, including physical healthcare and social services.

In the absence of accessible care or preferred treatment, mothers had to construct strategies to recover or maintain their well-being. Well-being maintenance emerged in two forms; a salutogenic form in which self-care was regarded as part of a healthy and balanced life, or a ‘survival’ form in which self-care or alternatives pathways were used *in-lieu* of the resources, supports or treatment that were unavailable to them. Recent research with single mothers living in poverty mention emotional barriers to self-care, and list meeting basic needs, as well as creative pursuits such as music and journaling, as important to well-being (Long *et al.* 2020). The current findings add depth to understanding these emotional barriers. Engaging in well-being maintenance issued a return to negotiating the internalised narratives previously discussed, as mothers needed to justify the time and costs involved in caring for themselves *to* themselves, and occasionally to a partner and family. Mothers described a variety of self-care strategies, ranging from meeting basic physiological needs, to social, relational and intellectual needs. Interestingly, mothers who had opportunity to learn techniques for monitoring and maintaining emotional and mental well-being (usually as part of past mental health treatments) described a wider skill set. There is a wealth of research testing the efficacy of mental health management interventions for groups considered ‘at risk’, for example, for mothers with severe mental illness (Kaplan *et al.* 2014, O'Shea *et al.* 2019), and mothers with children with ADHD (Chronis *et al.* 2006) or autism (Timmons & Ekas 2018). However, interventions that provide women with practical guidance in how to care for their mental well-being, as a preventative or salutogenic approach, are less common (Rowe & Fisher 2010). The effectiveness of providing mothers with tools to monitor their mental well-being before entering motherhood may be an avenue for further research. Mothers reported that they did not recognise their mental health difficulties as a problem until much later in the postpartum period than services provided for; therefore, skills that empower women to self-identify problems may enable them to seek help early and before symptoms worsen.

The question as to whether women as mothers make choices for their own well-being and fulfilment or for the benefit of child and family was one that emerged from the PPI interviews[17]. However, denoting decisions made by mothers in the interests of child and family where there are elements of self-denial are best not considered resilient or not resilient, any more than decisions made by mothers that account for their own interests should be considered resilient or not resilient. What works, when, and at what point pathways resultant from certain decisions are no longer serving the purposes for which they were chosen, are more salient issues to consider. For example, deliberate social isolation in the early postpartum can be beneficial and function as a mechanism that is protective for establishing the parent-infant bond, however, if prolonged, isolation can lead to stress and social disconnection (Gavidia-Payne *et al.* 2015). Similarly, as mothers' individual narratives demonstrated, decisions were made based on perceived needs at a given time. When circumstances changed and decisions or particular pathways no longer served needs, or they began to have unwelcome effects, mothers re-entered the process of navigation and negotiation to find new solutions.

Throughout each of the narratives presented in the interviews it was evident that mothers ardently and actively strove to navigate and negotiate for well-being needs. Seeking help or support for their own needs was often underpinned by a drive to provide for their children and family, in recognition that for their family to be well, they needed to be well, thus revealing an altruistic motivation even in self-provision. The many expectations on mothers and the subsequent barriers faced in attempting to meet these expectations left mothers feeling disillusioned about their place within society. Despite feeling that there was little scope for their voices to be heard, women remained steadfast in seeking out ways to bring about well-being, even if not for the benefit of themselves personally. In this way, participation in the interviews could be interpreted as an example of a resilience process, as it illustrates mothers' attempts to negotiate for societal change for future mothers.

8.5 Phase 3

Phase 3 involved statistical analysis of quantitative data collected during pregnancy and the first year postpartum from nulliparous women (perinatal data), and five years after first-time motherhood (five-year data). Phase 3 aimed to establish the prevalence, and change, of common mental health issues, and associated risk or protective factors in the perinatal and five-year data, and prevalence and factors associated with mental well-being at five years after first-time motherhood.

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[17] This question emerged as a suggested area of investigation for further mental health and resilience research.

8.5.1 Phase 3: Discussion- Perinatal data

In the first postpartum year, approximately one in seven women reported experiencing moderate/severe symptoms of depression, and one in ten reported moderate/severe symptoms of anxiety. These findings are similar to prevalence of perinatal depression and anxiety reported by the Australian Maternal Health Study, on which the MAMMI study was modeled (Underwood *et al.* 2016, Dennis *et al.* 2017). Additionally, in the first postpartum year, one in five women reported moderate/severe symptoms of stress. This finding is consistent with research conducted in the US, where 21% of multiparous women reported moderate/severe stress around 5 months postpartum (Clout & Brown 2015). The current research fills a gap in Irish literature as it documents mental health symptomatology during pregnancy and at multiple time points after birth. Prior to publication of the current findings there was no available literature reporting the prevalence of comorbid anxiety and depression (CAD) or postpartum anxiety among women giving birth in Ireland, and only one published study concerning perinatal stress. In comparison to international self-reported data, CAD among the women in the current study reveals lower prevalence. For example, international estimates report prevalence of 8.2% both during pregnancy and postpartum (Falah-Hassani *et al.* 2017), whereas the current analysis found 1.5% during pregnancy and 2% postpartum. The reason for these differences in CAD prevalence is, at this time, unclear.

Depression, anxiety and stress were highest amongst younger first-time mothers (<30 years), which also corresponds to both international (Silverman *et al.* 2017, Agnafors *et al.* 2019) and Irish (Cruise *et al.* 2018) findings that younger age at first-time motherhood denotes increased risk for poor mental health outcomes. Lower educational attainments, not cohabiting with a partner and unemployment during pregnancy were factors indicating socio-economic disadvantage associated with poorer mental health in the first postpartum year, while being born in a non-EU country was a socio-demographic factor associated with poorer mental health outcomes for mothers. Additionally, each of these socio-economic and socio-demographic factors was more common for the younger mothers compared to older mothers. For instance, only 27% of younger mothers (aged 18-24 years) had a postgraduate education compared to 76% of older mothers (aged ≥35 years), and 38% of younger mothers, compared to 5% of older mothers were unemployed during pregnancy. Again, these findings are comparable to international reports on socio-economic and socio-demographic risk factors for poor mental health in the postpartum period (Goyal *et al.* 2010). Moderate/severe stress was also more common for younger mothers. Younger age is linked to resource access, as decreased resource availability is strongly associated with stress for younger mothers (Easterbrooks *et al.* 2011), whereas older mothers may have more social and economic capital to buffer or protect their mental health. The current research found an association between CAD symptomatology and younger maternal age and lower educational attainment, which is in contrast to research conducted elsewhere in Europe (González-Mesa *et al.* 2020). Interestingly, the current research and González-Mesa's findings are in agreement in that both found CAD was associated with not having a partner and being unemployed during pregnancy (González-Mesa *et al.* 2020).

Socio-economic disadvantage indicates cumulative burden to individuals as a consequence of increased risk factor exposure and decreased protective resource access (Seabrook & Avison 2012). There is a cyclical sequela to poverty and physical and MHPs (Marshall Lee *et al.* 2022). Employment insecurity and financial instability are associated with increased stress (Horwitz 2005), stress is associated with increased prevalence of physical health issues such as heart disease, diabetes and gastro-intestinal disorders, and mental health issues such as PTSD (Salleh 2008), and financial hardship prevents individuals from accessing the healthcare that they need (Kimerling & Baumrind 2005, Goyal *et al.* 2010). Therefore, the socio-economic and socio-demographic factors (unemployment, lower educational attainment, living apart from a partner and being born in a non-EU country) identified by this research as associated with poorer maternal mental health outcomes draws attention to *at risk* groups. For example, the socio-demographic risk that is implied by a woman being born in a non-EU country is salient to an Irish context. The ethnic diversity of the population living and giving birth in Ireland is projected to continue to increase (Central Statistics Office 2016) and disparities in racial and ethnic minority access to mental health care is already noted in both Irish (Bojarczuk *et al.* 2015) and the international literature (Cook *et al.* 2017). Therefore, a healthcare system that is equipped with the skills and resources to provide services to an increasingly diversifying population is essential to meeting the needs of Ireland's growing and changing population (Central Statistics Office 2022). Women with one or more indices of socio-economic disadvantage may benefit from clear, simplified and expedited access to perinatal mental health services, as well as financial and educational resources and support.

Women who experienced preterm births (<37 weeks' gestation) were more likely to report symptoms of depression (and borderline statistically significant anxiety) in the postpartum period. This finding echoes existing literature, which reports two to six times increase of anxiety and/or depressive symptoms in the postpartum for mothers who have preterm infants (Farr *et al.* 2014).

Women who reported relationship problems or being afraid of their partner during pregnancy were also more likely to report depressive, anxiety, and stress symptoms in the postpartum period, even after adjusting for maternal age, education and relationship status. International research indicates that experiencing verbal and physical abuse during pregnancy is strongly associated with postpartum depression (Flach *et al.* 2011, Miura & Fujiwara 2017). Although the questions used in the current research to assess partner relationships do not measure, and are not intended to be conflated with, IPV these findings highlight the need for clinicians to provide all women with the opportunity to disclose potential problems and seek support. Additionally, effective and well-resourced pathways need to be in place in order for clinicians to make referrals with confidence, and for women to utilise with effect.

The findings from the perinatal data further add to the international literature which has shown that mental health symptoms prior to pregnancy are strong predictors of experiencing PMHPs postpartum (Dunkel Schetter & Tanner 2012, Bryson *et al.* 2021). The current research found that a confirmatory response to two single-item questions on the experience of depression or anxiety were associated with four to seven times increased odds of moderate/severe depressive, anxiety or stress symptoms in the postpartum period. Comparably, the two–item Whooley questions (which assess low mood and anhedonia), have high sensitivity in detecting depression, and high acceptability with women (Bosanquet *et al.* 2015, Yapp *et al.* 2019). Integration of the current questions into routine antenatal visits may offer a time-efficient and potentially non-invasive means of identifying risk for anxiety and depression symptoms among women who may benefit from more frequent and extended postpartum support. Additionally, the current research found that women who reported moderate/severe symptoms measured by the DASS-21 during pregnancy had a five to 12 times increased odds of moderate/severe symptoms postpartum. This finding suggests that the DASS-21 questions have potential as an antenatal screening tool for a broader range of MHPs in the postpartum period. However, some consideration must be given to context; endorsement of the two single-item and disclosure to the DASS-21 questions in the current study were made with the expectation of anonymity rather than to a HCP, which may circumvent self-censorship that arises from stigma or fear of child service intervention. Therefore, further investigation assessing the appropriateness, effectiveness, and acceptability of these measures in a screening capacity would be advisable.

Although self-reported and DASS-21 measured symptoms of depression or anxiety during pregnancy were strongly associated with MHPs after birth, the majority of women who reported significant depression and anxiety symptoms in the postpartum period had not reported any symptoms during pregnancy (69.1% and 71% respectively). Additionally, symptomology levels varied across the first year, with increases noted at six and 12 months' postpartum for depression and stress. These two findings, (the majority of women reporting first instance/new onset of symptoms in the postpartum period, and the variability of postpartum symptomatology) suggests that the current model of postpartum care in Ireland is insufficient to detect, and provide support for, women's mental health needs, and endorses the need for extended postpartum care and recurring enquiry about mental health in antenatal and postpartum care. Postpartum care for mothers' health typically concludes at six weeks' postpartum, yet these findings illustrate that significant symptoms arise and persist long after maternity care is brought to a close. Women giving birth in Ireland report that postpartum appointments intended to assess their health are often overshadowed by infant health enquiries, and they have few opportunities to address their own physical or mental health concerns (Daly *et al.* 2021). Augmenting the current model of care to provide additional postpartum appointments specifically for maternal heath may aid improved clinical detection and treatment for women who develop symptoms beyond the current model's provision.

The literature is increasingly demonstrating a bidirectional association between physical and mental health (Ohrnberger *et al.* 2017). Physical health conditions have been found to signify increased risk for the experience of mental illness and vice versa. For example, comorbidity between physical health/illness and ADs (Kariuki-Nyuthe & Stein 2015) as well as depressive disorders (Kang *et al.* 2015) have been recognised. However, physical health associations with CAD are less frequently documented (Winkler *et al.* 2015) among general or perinatal populations. The findings from the perinatal cohort provide a documented and integrated exploration of common physical and mental health issues experienced in pregnancy and the first postpartum year. Often, physical and mental health issues are presented as separate health concerns; however, when viewed in their entirety the true burden of maternal ill-health is demonstrated. Overall, the findings illustrate that women are experiencing a high burden of physical health issues throughout their first year of motherhood. Contrary to the assumption that full recovery from pregnancy and childbirth should be reached by six-weeks postpartum, the current data reveals that a significant proportion of women are experiencing exhaustion, pain and infections even at three and six months postpartum. Back pain was prevalent through the postpartum period, with almost half of women experiencing back pain at each postpartum data collection point. Twenty percent of women reported that they still had bowel issues at six months postpartum. Incidence of severe headache/migraines, constipation and haemorrhoids were above 10% even at 12 months postpartum.

Reports of coughs/colds, minor illness and severe headaches/migraines were a notable contrast to the general trend of physical health complaints being highest at three months postpartum and decreasing thereafter. Women giving birth in Ireland are entitled to 26 weeks (6 months) of maternity leave. Returning to paid employment and/or a child starting childcare presents increased opportunity for viral infection exposure, which may explain the increase in reports of these symptoms at six months. The increase in headaches/migraines may also be related to increased stress from combining work, childcare and domestic responsibilities, as both headaches and migraines are associated with stress intensity (Schramm *et al.* 2014, Stubberud *et al.* 2021). Typically, in heterosexual partnerships, women often shoulder the greater cognitive and emotional workload of coordinating family life than the male partner, with negative physical and emotional health outcomes for women (Craig & Churchill 2021, Dean *et al.* 2022).

The analysis found that at every data collection point, women who reported mental health symptomatology (CAD, anxiety, or depression) also had significantly greater or severe physical health issues (mean health issue score) than women who did not experience mental health symptoms. Although not indicative of causation, this finding makes an important contribution to the literature in demonstrating that increased physical health burdens are associated with poorer maternal mental health. Moreover, women reporting CAD symptoms also reported higher mean health issue scores than women reporting anxiety alone or depression alone, and these differences became more pronounced at nine and 12 months postpartum. Although a directly comparable study among the national and international literature was not found, recent research from Ethiopia found that experiencing a medical illness represented 3.6 times increased odds of CAD symptoms among pregnant women (Bante *et al.* 2021). The current findings support the need for an integrated approach to physical and mental health care in perinatal services. Some Irish maternal health policy documents reference the need for women's healthcare to incorporate physical, social, lifestyle and mental health needs (Department of Health 2016, Health Services Executive 2017). Likewise, the national mental health policy, Sharing the Vision, acknowledges the need for a 'whole person' approach to services with the goal of providing the highest possible standards of care (Goverment of Ireland 2022). However, in perinatal settings, the aims of mental health policy implementation appears focused on developing awareness between Primary Care and general Mental Health Services as to the need for, and referral pathways to, SPMHS (Goverment of Ireland 2022), rather than on the development of an integrated system of care.

This research used a robust data collection instrument (DASS-21), a large sample size, and frequent data collection timepoints to report prevalence, physical and mental health symptomatology associations, socio-economic and socio-demographic risk factors, and preceding mental and social risk factors for mental health symptomatology across the first postpartum year. When compared to national data, participants are broadly representative of women giving birth in Ireland in terms of nationality and age; however, the cohort contained more women with a postgraduate education, women in employment and living with a partner than is represented in national data. Therefore these women may be considered to be more socio-economically resourced than first-time mothers from the general population. Additionally, women who completed data collection at each timepoint were more likely to be older, born in Ireland or an EU country, have a postgraduate education, be in employment, report having a partner during pregnancy, and less likely to report mental health symptoms in pregnancy than women who did not complete each survey. Recruiting and retaining participants of diverse and minority backgrounds is a common challenge for health research (Galea & Tracy 2007). Individuals with less years of education and from ethnic minorities are more likely to decline participation (Svensson *et al.* 2012), and are more likely withdraw participation (Jones *et al.* 2020). Therefore, although findings may not be generalisable to a population with a broader range of socio-demographic characteristics, it may be reasonable to interpret the findings as a more optimistic depiction of PMHPs in Ireland, particularly with regards to CAD prevalence which appear lower than international figures (Falah-Hassani *et al.* 2017). Likewise, the already high number of physical health burdens among participants may be a conservative appraisal of the extent and severity of health problems experienced by women with less socio-economic means to access health care services and treatment than the current sample.

The conclusion of maternity care six weeks postpartum aligns with the conventional assumption that physical health concerns will resolve within this timeframe, and that postpartum depression will emerge before it (American Psychiatric Association 2013). However, taken together, the findings from the perinatal data reveal that for many women, both physical and mental health issues are far from resolved. Women may benefit from an integrated system of perinatal care that extends further, even up to one year postpartum. An integrated system of care which is provided by professionals who i) are knowledgeable of the associations between physical and mental health, ii) are prompted by incidence of physical health problems to enquire about mental health status and vice versa, and iii) are knowledgeable of pathways of referral for the variety of physical and MHPs that may arise in the perinatal period. An extended and integrated model of care is likely to have multiple benefits. It may increase opportunities for the detection and treatment of MHPs, thus interrupting negative effects to child health and developmental outcomes; this would benefit both family and society, and importantly, enable women to experience motherhood in better physical and mental health.

8.5.2 Phase 3: Discussion- Five-year data

- *Prevalence*

While there is a wealth of research examining mental health symptomatology in the perinatal period, less is known of mothers' MHPs, and mothers' mental well-being beyond this time. Likewise there is limited investigation of the demographic, social, emotional and relational factors that may function as protective or promotive factors for maternal mental ill-health or well-being. The current research contributes new knowledge to this area. This analysis revealed that the point prevalence for moderate/severe depressive, anxiety and stress symptoms at five years after first-time motherhood for women giving birth in Ireland were 11.2%, 12.6% and 14.2% respectively. This indicates higher point prevalence for all symptoms at five-year follow-up than at any point antenatally or in the first year postpartum for the current cohort. For example, the highest point prevalence for depression and stress symptoms in the perinatal period were recorded at 6 months postpartum, at 6.3% and 9.2% respectively, and highest prevalence for anxiety was recorded at 12 months postpartum at 4.3%. These findings add to, and reinforce, international research which shows that, beyond the perinatal period, the prevalence of significant mental health symptoms, such as depression, persist (Giallo *et al.* 2014, van der Waerden *et al.* 2015, Giallo *et al.* 2017) and even increase (Woolhouse *et al.* 2015) at four-years postpartum. Comparably, Bryson *et al.* (2021), using the DASS-21, found that depression, anxiety and stress were all higher at the five-year postpartum data collection point than at one year postpartum (Bryson *et al.* 2021). Additionally, literature demonstrates meaningful proportions of sub-clinical (22%), persistent (3%) and increasing (5%) symptoms of depression and anxiety between four to eleven years postpartum (Wajid *et al.* 2020).

The Covid-19 pandemic likely introduced socio-economic adversity that influenced symptomology levels, indeed the proportions of depression, anxiety and stress observed in data collected during and after the implementation of health restrictions in Ireland are higher than those of data collected before. Multiple studies have found significantly increased levels of depression, anxiety and stress (Varma *et al.* 2021, World Health Organization 2022, Kupcova *et al.* 2023) in association with the effects of the pandemic. However, it should be noted that even without the context of the pandemic's effects, proportions recorded in pre-Covid data were still higher at five-year follow-up than at the highest recorded proportions measured in perinatal data, thus aligning with trends indicating increasing symptomatology levels beyond the perinatal period. (Pre-Covid collection prevalence: Depression: 9.8%, Anxiety: 11.3%, Stress: 12.3%. Post-Covid collection prevalence: Depression: 14.9%, Anxiety, 16%, Stress: 19.4%. Overall Five-year Follow-up prevalence: Depression 11.2%, Anxiety: 12.6%, Stress: 14.2%).

Prevalence of 'Flourishing' mental well-being for the 277 participants who completed the MHC-SF was 60.4%, while moderate/languishing mental health was observed as 38.9%. These percentages are markedly difference from international research using the MHC-SF that report proportions for Languishing mental health around 12-17%, Moderate Mental Health as most common around 65% and Flourishing between 18-20% (Keyes 2005, Keyes *et al.* 2008). However, some research conducted during the pandemic, i) in Ireland with non-maternal populations (Dempsey & Burke 2021), and ii) in Portugal with pregnant women (Monteiro *et al.* 2023) suggests that these high proportions are not so unusual.

For example, Dempsey et al. (2021) found that 59.5% of school leaders were 'Flourishing' two months after the introduction of health measures in Ireland, and slightly less (51.8%) of the same cohort were flourishing three months after the reopening of schools. While Monteiro et al., (2023) found that, during a period of major health restrictions in Portugal, 82.2% of pregnant women surveyed reported flourishing mental well-being, 23.5% of whom also reported clinically significant levels of depressive and/or anxiety symptoms.

Associations between symptoms and flourishing mental well-being were also examined. The analysis demonstrated that lesser symptom severity reports were associated with increased odds of flourishing, which is consistent with research that indicates that higher levels of well-being protects against symptoms of depression and anxiety (Lamers *et al.* 2015, Schotanus-Dijkstra *et al.* 2017). However, high symptomology levels did not inevitably denote the absence of well-being, as women who reported moderate/severe symptoms of depression, anxiety, and stress were also observed to report flourishing well-being, (e.g. Depression x Flourishing: 15%; Anxiety x Flourishing: 21.9%; Stress x Flourishing: 28.9%), thus supporting the conceptualisation of mental ill–health and mental well-being as interrelated yet separate continua (Westerhof & Keyes 2010).

- *Social-demographic and socio-economic factors*

These findings also illustrate some socio-demographic and socio-economic factors associated with mental health symptoms and mental well-being at five-years. For example, younger mothers (<30 years) had approximately four-times increased odds of reporting moderate/severe symptoms of depression, anxiety and stress. Younger age is frequently identified as a socio-demographic factor associated with poorer mental health outcomes in general (Varma *et al.* 2021) and maternal populations (Giallo *et al.* 2014). Unlike the perinatal findings, region of birth was not associated with reports of mental health symptoms at five-year follow-up, which is in contrast to research which has found that non-nationals are at increased risk for reporting persistent levels of depression from pregnancy to five years (van der Waerden *et al.* 2015).

Partner status is a socio-demographic factor with socio-economic implications as it potentially represents increased income and decreased financial burden. Similar to the perinatal data, women who were single or not living with a partner had 3-times higher odds of reporting depression and anxiety and 2-times higher odds of stress symptoms. Interestingly, there was no statistical difference in symptoms between women who were or were not employed at five-year follow-up. Although not compared in the current analysis, previous research has found that mothers who are single and employed report higher stress than mothers who are partnered and employed (Bull & Mittelmark 2009).

Additionally, women who had one child were more likely to report depressive symptoms than women with two children at five years; they also reported higher anxiety and stress symptoms which almost reached statistical significance. This is in contrast to some research which indicates that psychological distress (Matthews & Power 2002) and depressive symptoms (Sperlich *et al.* 2011) increase for mothers with more children. Further analysis revealed that women with one child were less likely to have attained a postgraduate education, more likely to be employed, and seven-times more likely to be single or not living with a partner in comparison to women who had two children. Higher education level is associated with women choosing not to become a mother, however, once a mother, women with postgraduate educations have slightly more children than women without (Westphal & Kamhöfer 2019). It would appear that the current results also support this conclusion; women with two or more children were more likely to have a postgraduate education at the time of pregnancy, more likely to be living with a partner and less likely to be employed. Taken together, partner status, more education, more children and unemployment could be indicative of socio-economic stability or advantage for these women. A stable relationship with an employed partner may provide financial security to choose to have more children, and not necessitate a return to paid employment. However, the current research did not collect data on employment or education of partners, or on the factors that influenced women's employment or family planning decisions. Although a potential link may be suggested between these factors, the analysis presents association. Further analyses may be warranted to investigate the influence of these multiple socio-demographic and socio-economic factors on maternal mental health outcomes.

Of the socio-demographic and socio-economic factors examined, maternal age, region of birth, partner status and maternal income made only minimal difference to odds of reporting flourishing mental well-being and none reach statistical significance. However, having a postgraduate education was associated with nearly three-times increased odds of flourishing reports. These findings demonstrate clear benefits of receiving a tertiary education before entering motherhood. Women who had not attained a postgraduate education at the time of their index pregnancy were twice as likely to report symptoms of depression, anxiety and stress at five-year follow-up. Therefore, less years of education may be considered a risk factor for poorer maternal mental health outcomes, whereas higher education levels are promotive of mental well-being in motherhood.

- *Social support*

The study examined the associations between practical and emotional supports and mental health outcomes. The majority (62.4%) of women reported having 2-3 sources of practical supports in their lives. Having a lesser number of practical supports was strongly associated with mental distress symptoms. However, even women who had 2-3 sources of practical supports were 2.9 times and 1.7 times more likely to report depressive and stress symptoms respectively, than women who had 4 or more sources of support. Research in the postpartum period has previously demonstrated that good partner support is linked to decreased depression and anxiety, while support from women's own mothers is associated with increased sense of self-efficacy, demonstrating that different sources of support have benefits to different facets of women's mental health (Razurel *et al.* 2017). The current findings suggest that this may also be true for the early years of motherhood, as different sources of support were found to have differing implications for maternal mental health. Partner and familial support were particularly salient as women who did not have support from a partner were more likely to report depression, anxiety and stress symptoms, while not having support from extended family such as a mother, sister or other relative was associated with increased reports of depression and stress.

Additionally, women who did not have personal time while someone else was caring for their child were between 3.5 and 4.5-times more likely to report symptoms of depression, anxiety and stress. Frequency was also important, as increased frequency of personal time showed a pattern of decreased odds of reporting symptoms of depression, anxiety and stress. This is similar to previous research which indicates that a lack of social support and feeling that too much time is spent with their child is a risk factor for poor maternal mental health (Mistry *et al.* 2007). Mothers experience more time pressure than fathers in parenthood which, when compared, is associated with their poorer mental health outcomes (Ruppanner *et al.* 2019). Interestingly, while the number and sources of practical supports made a difference to symptomatology reports, they had no statistical effect on women's odds of reporting flourishing mental well-being. However, having personal time at least once a week meant that women were both less likely to report mental health symptomatology and more likely to report flourishing well-being. One may interpret these findings as indicating that practical support may act to prevent symptomatology, but may not be enough to facilitate mental well-being. In other words, practical support may secure illness absence, whereas having personal time (once or 2/3 times per week) is protective against symptomatology *and* promotive of well-being.

Satisfaction with partners' contributions to household tasks, childcare and parental involvement were also associated with symptomatology and flourishing mental well-being. Women who replied that they were not happy with their partner's contribution to household tasks or childcare were up to 6-times more likely to report mental health symptoms, and dissatisfaction with their partner's contribution was associated with a 70% decrease in odds of reporting flourishing mental health for both these questions. Similarly, lesser degrees of perceived partner involvement in being a parent were associated with increased odds of symptomatology reports. Reports that a partner was 'Somewhat involved' in parenting was associated with 50% decreased odds of reporting flourishing mental health. The effects of partner support and parental involvement is more frequently researched in the perinatal period; for example, poor partner support is associated with increased maternal depression and anxiety (Giardinelli *et al.* 2012), while active partner involvement in infant care is associated with decreased maternal stress (Kim *et al.* 2016). Recent literature finds similar associations for mothers with children up to five years of age, for example, mothers' perceptions of greater paternal involvement with childcare responsibilities contributed to decreased depression and stress, and increased relationship quality between the couple (deMontigny *et al.* 2020). However, the median age of children in deMontigny et al.'s cohort was 22 months, therefore the current findings demonstrate that practical support from a partner and their (perceived) parental involvement remain salient risk and protective factors for mothers' mental health and well-being at five years after first-time motherhood.

The current findings also introduce an important consideration regarding women's interpretation of their lived circumstances; while receiving practical support from a partner was associated with decreased symptomatology, it was not associated with increased well-being, yet *satisfaction* with a partner's contribution was associated with both symptomatology and well-being. This demonstrates that women's appraisal of the support that a partner is available to give, is relevant to maternal mental health outcomes.

- *Emotional and relational factors*

Qualitative research with mothers with MHPs show that women view emotional support from partners and family members as essential to facilitating mental well-being (Perera *et al.* 2014, Awram *et al.* 2017). Although participants were not required to specify from whom they needed emotional support (i.e., partner, family or HCP), the high proportions of women responding that they 'definitely' and 'possibly' (44.4%) would have liked more emotional support, and the associations with increased depressive, anxiety and stress symptoms indicate that many mothers' emotional needs are not being met at five years after first-time motherhood. Perceptions of having sufficient emotional social support is associated with affective and eudemonic well-being (Cobo-Rendón *et al.* 2020). Among the current cohort, perceptions of enough emotional support appear to be a protective factor, as women who indicated that they did not need more emotional support were almost five-times more likely to report flourishing mental well-being.

Previous research has indicated that a positive partner relationship serves a protective function against depressive symptoms in the perinatal period (Giallo *et al.* 2014) and in early motherhood (Easterbrooks *et al.* 2011). Similarly, less emotional satisfaction in a relationship and experiencing relationship problems occasionally/often represented risk for increased mental health symptom reports in the current cohort. Good emotional support and a positive partner relationship has been associated with a cascade of protective effects, for example, facilitating secure mother-child attachment (Goodman *et al.* 2011), and mitigating '*maternal harsh parenting'* which buffers against externalised problem behaviour in children (Black 2022, p. 1). Additionally, perceived partner support facilitates psychological well-being for women during pregnancy (Ilska & Hanna 2020). The current research serves as a first example, to the author's knowledge, that greater emotional satisfaction and few relationship problems represent protective/promotive factors associated with mental well-being for mothers (where well-being is not defined by illness absence), beyond the perinatal period, as both indicated 3 and 5-times increase odds of reporting flourishing mental well-being.

The study collected mental health symptomatology and mental well-being data from a large cohort of first-time mothers to examine prevalence of, and risk and protective factors associated with, ill-health and well-being at five-year follow-up. There were some limitations to the study, for example, data collection did not account for potential changes to women's socio-demographic/economic characteristics from the perinatal period to five-years, consequently it is unknown how many women may have achieved a postgraduate education since becoming a mother and the implications that further education may have for mental health outcomes at five-years. Additionally, data were not collected to reflect if women's children had special health needs, which have implications for maternal mental health outcomes (Linares *et al.* 2020), or on partner's education or employment which may indicate further socio-economic vulnerability or stability.

The findings illustrate that prevalence of mental health symptoms are higher at five years after first-time motherhood than at any data collection point in the perinatal period surrounding the birth of women's first child. There are several socio-demographic/economic factors and social, emotional and relational factors associated with increased odds of reporting moderate/severe symptoms at five-year follow-up, such as younger maternal age, not living with a partner, not having a postgraduate education before first-time motherhood. In addition, factors such as having less social supports, less personal time, and less satisfaction with practical and emotional supports and partner contribution were also associated with increased odds of reporting moderate/severe symptoms at five-year follow-up. Although a high proportion of flourishing mental well-being was observed, the findings also highlighted that risk factors for increased reports of symptomatology did not necessarily translate into the opposite being observed as a protective or promotive factor for well-being as demonstrated by differences between extent and sources of practical support for the two measures.

8.6 Strengths and limitations

Achieving the objectives of the research project benefitted from the mixed-methods design, which facilitated the development of wider and deeper insight as to women's mental health experiences in the motherhood transition. The PPI component enabled the adoption of a woman/mother-endorsed theoretical perspective, namely a social-ecological view on resilience and perinatal mental health. The quantitative data demonstrated prevalence of symptomatology and mental well-being, and associated risk or resilience factors in the perinatal period and early motherhood, while the qualitative data produced a multi-level description of resilience processes in this context.

The research drew on data collected from a large cohort over the course of the perinatal period and at five years after first-time motherhood, which permitted an exploration of change in prevalence of symptomatology over time. Although the participants were broadly representative of the population giving birth in Ireland at the time of recruitment in terms of nationality and age, there were more women with a postgraduate education and in employment, indicating that they were more socio-economically resourced than first-time mothers from the general population. Additionally, analysis of attrition characteristics demonstrated a similar trend observed in other longitudinal research, in that individuals with indices of socio-economic advantage were more likely to continue with participation. Consequently, the results should be considered in light of the changing demographic characteristics of the population in Ireland and the generalisability of the findings to women with less social and economic resources, the quantitative data may be a conservative estimate of the true physical and mental health burdens experienced by mothers giving birth in Ireland. Similarly, although efforts were made to ensure the inclusion of diverse voices, most women who took part in phase 1 and phase 2 interviews were in long-term relationships, heterosexual, employed and had a postgraduate education. Therefore, the considerable challenges and barriers to mental health and well-being in motherhood described and experienced by participants in the interviews may be more pronounced for women with less resources and social supports.

A strength of the five-year data collection was the incorporation of symptomatology data and well-being data, which enabled identification of socio-demographic, social, emotional and relational factors as risk or protective and promotive factors for symptoms or mental well-being. The finding that some factors have influence on symptomatology levels but not well-being or vice versa add nuance to the literature in this context. A limitation exists within the five-year follow-up data collection in the form of a missed opportunity. Although the data collected socio-demographic information which provided insight as to the social and economic context, and included the additional of the MHC-SF to reflect well-being, building a deeply systemic understand of resilience in this context from the quantitative phase may have been aided through the collection of a wider set of social, economic and ecological data. For example, employment and education status of partners, annual household income, maternal education attainment at five-year follow-up, and number of and access to community resources (i.e., childcare facilities, health and fitness centres, family resource centres, primary care centres, libraries, schools etc.). However, this omission may also be viewed in light of the learning processes of research and provide an opportunity to improve upon and extend successive research in this area. Future research development will need to consider creating a balance between the time burden and cognitive labour that extensive data collection places on participants and the data collection requirements to achieve a systemic understand of resilience in this context.

8.7 Conclusion

Within this chapter, the meta-inferences made from supporting qualitative and quantitative findings were presented. The participatory research process that comprised phase 1 was examined, and followed by a considered of the findings of phases 2 and 3. The discussion of phase 2 demonstrated that the findings of the in-depth qualitative interviews provided a multi-level description of resilience processes in motherhood, while a discussion of phase 3's findings identified risk factors, and protective and promotive factors for both symptomatology and well-being in motherhood. The chapter concluded with a reflection on some strengths and limitations of the overall project.

Chapter 9: Recommendations and Conclusion

9.1 Introduction

The aim of this final chapter is to present recommendations for policy, healthcare service provision, education and training, and future research, which have been developed from the findings of this research. Recommendations contained herein are not limited to perinatal mental health and reflect the findings that multiple domains of health, function and experience are interrelated and have implications for mental well-being. A plan for dissemination of the findings that have emerged from the current study is outlined and, finally the chapter closes with a personal reflection.

9.2 Recommendations from thesis

The follow sections outline the recommendations for policy, healthcare service provision, education and training, and future research.

9.2.1 Recommendations for policy

The following recommendations are related to social policies that may improve mothers' financial and mental well-being. These recommendations would require government funding and cross-department cooperation and coordination, from departments such as the Department of Health, Health and Well-being Unit, Mental Health Unit, Health Service Executive and the Service Reform Fund. Although ambitious, the following recommendations are broadly in line with the social and community encompassing approach taken by the one hundred recommendations within the Sharing the Vision Implementation Plan 2022 to 2024 (Goverment of Ireland 2022) and may inform the second and third policy implementation plans to be developed in the series. Mothers face financial and structural barriers to accessing mental health services in the perinatal period and early motherhood as demonstrated by the qualitative data relating to navigating mental health care access and services and encountering narrow gateways to, and narrow pathways of, care. Additionally, the qualitative data demonstrates that current policy provisions relating to maternity and paternity leave, and high childcare costs exacerbate financial burdens for mothers, embed societal expectations in terms of care provision, and leave mothers feeling they are regarded as 'less' within society.

It is recommended to:

1. Extend the Treatment Benefit Scheme, funded though PRSI payments, to include 6-8 subsidised sessions (to correspond with the current number of counselling sessions covered by the General Medical Card scheme (Health Service Executive 2022)) per year with a qualified mental health

professional. Mothers who earn above the threshold to access medical card covered services are excluded from accessing care due to prohibitive costs.

2. Introduce funding schemes to sponsor the training of counselling psychologists to the same extent as funding currently provided for clinical psychologists (Psychological Society of Ireland 2022). Women support psycho-social and ecological research of resilience and mental health and, in the context of some women's lived experiences; they felt they would have benefited from a psycho-social understanding of their mental health and well-being as opposed to a psychopathology focus.
3. Extend paternity leave to at least one month, ensure ample paternity leave pay and provide tax incentives to employers to protect against negative social attitudes or negative outcomes to career and employment. Women endorse improvements to paternity leave and benefits as both the qualitative and quantitative data demonstrate that positive partner support is beneficial to women's mental well-being in motherhood.
4. Consider amendments to pension schemes to counteract the 'motherhood tax' effect on women's long-term financial well-being resulting from decreased pension contributions during maternity or parental leave.
5. Continue to progress subsidies for childcare in Ireland currently led by the Department of Children, Equality, Disability, Integration and Youth.

9.2.2 Recommendations for healthcare service provision

Recommendations to improve healthcare service provision in the perinatal period and early motherhood are predicated on the findings from phase 2, and the findings from the perinatal and five-year data from phase 3. The quantitative data demonstrates that a significant proportions of women experience symptoms of depression, anxiety and stress far beyond the conclusion of standard maternity care in Ireland. Therefore, women are not supported by a comprehensive and integrated system of care which may detect physical and mental health problems as they arise, and direct women to, and provide women with, appropriate healthcare. The qualitative data concerning narrow gateways and navigating gaps in healthcare services demonstrates that women must traverse confusing systems to be referred to or access mental healthcare. Issues of accessing care are especially salient as most women recognised that they needed and wanted support after postpartum maternity care services were no longer available to them. These recommendations may inform the next iteration of the National Maternity Strategy and be implemented by the National Women & Infants Health Programme, with support from Women's Health Taskforce and Department of Health.

It is recommended that:

1. New, integrated pathways of accessing physical and mental perinatal healthcare are established in Ireland. Extending postpartum care to include contact with a wider range of care professionals, in easily accessible community-based settings may have multiple benefits for women and families, and alleviate workload issues that remain a challenge in general practice. Acknowledging that well-being comprises interactive and multiple domains, a multi-disciplinary healthcare service may serve as an access point to physical, psychological and social treatments or resources, through which mothers', and thus families', overall well-being may be improved.
2. The duration of perinatal mental health services offered by the 'hub' hospitals within SPMHS are all standardised to at least one year postpartum, with the aim to extend further. Currently, the duration of service provision lack uniformity, meaning that mothers are subject to a 'postcode lottery' dependant on the (spoke) maternity hospital that they attend and access to the SPMHS 'hub' it is networked with.
3. The roles of PHNs are minimally extended; PHNs are ideally placed to connect mothers in the months following birth, and may be provided with protected time and resources to enable them to take a *facilitative role* in establishing community-based peer-led support groups at local levels.
4. This recommendation may also be linked to a recommendation for future research, specifically, to examine the feasibility of extending the roles of community midwives and PNHs through a community care scheme to include prolonged contact (build rapport/ knowledge of health history and family context) with mothers following birth as they journey through motherhood to provide support, on-going evaluation of physical and mental health needs, and disclosure opportunities for women.

9.2.3 Recommendations for education and training

Recommendations for education and training are made in the context that they are derived from mothers' experiences of mental healthcare systems and HCP interactions, rather than identified through a review of respective HCPs' perceptions of training needs.

It is recommended that:

1. HCPs offering care to women in the perinatal period and early motherhood have access to synopsised, easily-accessed information which will enable them to:
   - understand and recognise PMHP symptoms and symptoms of mental health problems,
   - be aware of complexities around stigma and making disclosures regarding mental distress in the context of motherhood,

  - have detailed understanding of treatment pathways and referral procedures, and how best to communicate these options to mothers,
  - have comprehensive access to contact details of psycho-social resources, charities and supports available beyond HSE service provision for mothers and families.

2. As the above recommendation is based in the experiences women shared in phase 2, further research may be required to assess HCPs knowledge and training needs with regards to perinatal and maternal mental health. Specifically, understanding and recognising PMHP symptoms, knowledge of treatment pathways, and HCPs' roles and responsibilities in referral pathways and resource access. This may involve large scale data collection with HCPs who are commonly involved in perinatal care and family health, such as midwives, obstetricians, gynaecologists, GPs, PHNs, and women's health physiotherapists. Additionally, such research may benefit from assessment of the needs specific to each of the HCP roles.

9.2.4 Recommendations for research

The findings from each phase of the current study identify areas for, and approaches to, future research. Some recommendations are relevant to researchers in mental health and resilience in a maternal context, and other recommendations are specific to advancing the mental health strand of the MAMMI study research.

Approaches to mental health and resilience research in a maternal context:

1. Operationalisation of resilience may benefit from taking a broader lens on well-being and positive functioning in this context and explore the use, and validity, of measures relating to more diverse domains such as quality of life, mental well-being, identity (social, personal, continuity, function etc.,), creativity, and goal orientation.
2. Moreover, future research in the areas of mothers' mental health and resilience may be elevated through increased inclusion of women who are mothers in research processes, from consultancy to active research members.
3. Researchers of resilience in this context should ensure that research design and dissemination of findings do not convey that mothers should be expected to be resilient in motherhood.
4. Additionally, further research, quantitative and qualitative, is required to develop in-depth knowledge of *the processes* involved in resilience in this context, with the aim of understanding how to leverage resilience factors to facilitate resilience processes during this life transition.

Advancing the mental health strand of the MAMMI study:

1. Further insight regarding women's mental health and well-being may be established through continued analysis of the MAMMI study's perinatal and five-year follow-up data.

   I will be responsible for future analysis of the perinatal data in regards to:

   - The frequency of contact with HCPs among women with anxiety/depression, and their health and help-seeking behaviours in the perinatal year.
   - Women's perceptions of HCP's readiness to address mental health/sensitive issues, and the factors that influence women's confidence and comfort in disclosing mental health/sensitive issues in the perinatal year.

   I will be responsible for future analysis of the five-year follow-up data in regards to:

   - Women's mental health symptomatology and Quality of Life, and associated major life events, socio-demographic, interpersonal and child-health factors.
2. The MAMMI study is a longitudinal study approaching its tenth year. Data collection within the ten-year follow-up survey may be informed by the findings of this research and include a wider array of social, economic and ecological variables to establish a fully systemic understanding of women's mental health and resilience experiences as they progress through their motherhood journey. Data collection may include variables in relation to annual household income, employment and education status of partners, maternal education attainment at ten-year follow-up, maternal employment and hours worked per week, food security and childcare costs, child health and special health or education needs, number of and access to community resources (i.e., childcare facilities, health and fitness centres, family resource centres, primary care centres, libraries, schools etc.). Such additions may shed light on a wider range of (risk and resilience) social and economic factors that may have influence on mental health and well-being in motherhood. I will be responsible for selecting variables to create an efficient but brief socio-economic data collection section for inclusion in the ten-year follow-up survey.

9.3 Dissemination plan

Dissemination of findings through peer-reviewed publications and conference presentations has been on-going. To date, four manuscripts arising from the results of this research project have been published in peer-reviewed journals and I have presented at three conferences and been an invited speaker to three seminars and workshops (Appendix 9.1). Additionally, findings from the research were used to inform teaching material for midwives.

Future dissemination includes:

- Four more manuscripts
    - *Manuscript title:* Navigating to and negotiating for mental well-being– a qualitative exploration of resilience processes in motherhood.
    - *Manuscript title:* The ‘villageless-ness’ of modern motherhood: mothers’ experiences of psychosocial isolation from birth to the early school years.
    - *Manuscript title:* Healthcare across the first year postpartum and experiences of women with anxiety/depressive symptoms: a longitudinal cohort of first-time mothers in Ireland (MAMMI).
    - *Manuscript title*: Mothers’ mental well-being during the COVID-19 pandemic in Ireland- the role of practical and emotional social support.
- Continued oral presentation submissions to national and international conferences.
- Dissemination of findings through presentation to voluntary and consumer organisations, such as Prevention and Early Intervention Network and Area Based Childhood Programme.
- Dissemination of findings to the women who participated in the MAMMI study through study’s website (https://www.tcd.ie/mammi/), the bi-annual newsletters and social media channels.

9.4 Conclusion

Supported by the individual and integrated findings of the three phases of the research project this final chapter presented recommendations for policy, healthcare service provision, education and training, and future research, with the understanding that multiple domains of health, function and experience are interrelated and thus have implications for mothers’ mental health and well-being.

9.5 Personal reflection

Completing a PhD during a (hopefully) once in a life-time phenomenon, the Covid-19 pandemic, has involved a practical lesson in resilience alongside my theoretical learning. Navigating and negotiating the PhD process is a challenge even in the best of circumstances and the pandemic introduced challenges that I could not have envisioned encountering at the start of this journey. Thankfully, the MAMMI study comes with its own village. Just as I, and the team, adapted and found solutions to enable the research to progress, I am fortunate and grateful that the participants adapted with us and embraced research participation and collaboration under the ‘new normal’ conditions.

Theoretically, I entered the PhD process with an admittedly shallow understanding of the conceptual area I was about to be immersed in. While I had a keen interest in learning what differentiates those who can withstand adversity without injury from those who ‘cannot’, I did not yet fully appreciate the complexity of the resilience concept, its historical development, or the ethical implications that a particular viewpoint may have for approaches to research, and for the people involved in the research. My early investigations of the literature were shaped by the impending challenge of grappling with a large volume of longitudinal data, and so my early thinking was influenced by quantitative perspectives on resilience. However, the more I learned about how quantitative approaches operationally defined resilience, the less sure I was that quantitative exploration would ‘unveil’ resilience in my project. Though I could, and still do, see value in understanding differing quantitative trajectories of mental distress and well-being, I questioned the capacity of such approaches to capture the whole scope and nuance of resilience. While a mixed-methods design had been planned from the outset, delving into different perspectives of resilience consolidated in my mind that a mixed-methods approach was essential to understand resilience in the context of the perinatal period and early motherhood.

Finally, I found conducting the PPI and in-depth interviews personally beneficial. Though the interviews dealt with challenging and intense topics, they became a source of inspiration and motivation. I was inspired by women’s thoughtful self-reflections on the difficulties they faced in their lives and how they addressed them, and motivated to ensure that the rich data resultant from the interviews be used to advance knowledge about women’s mental health and resilience for their benefit.

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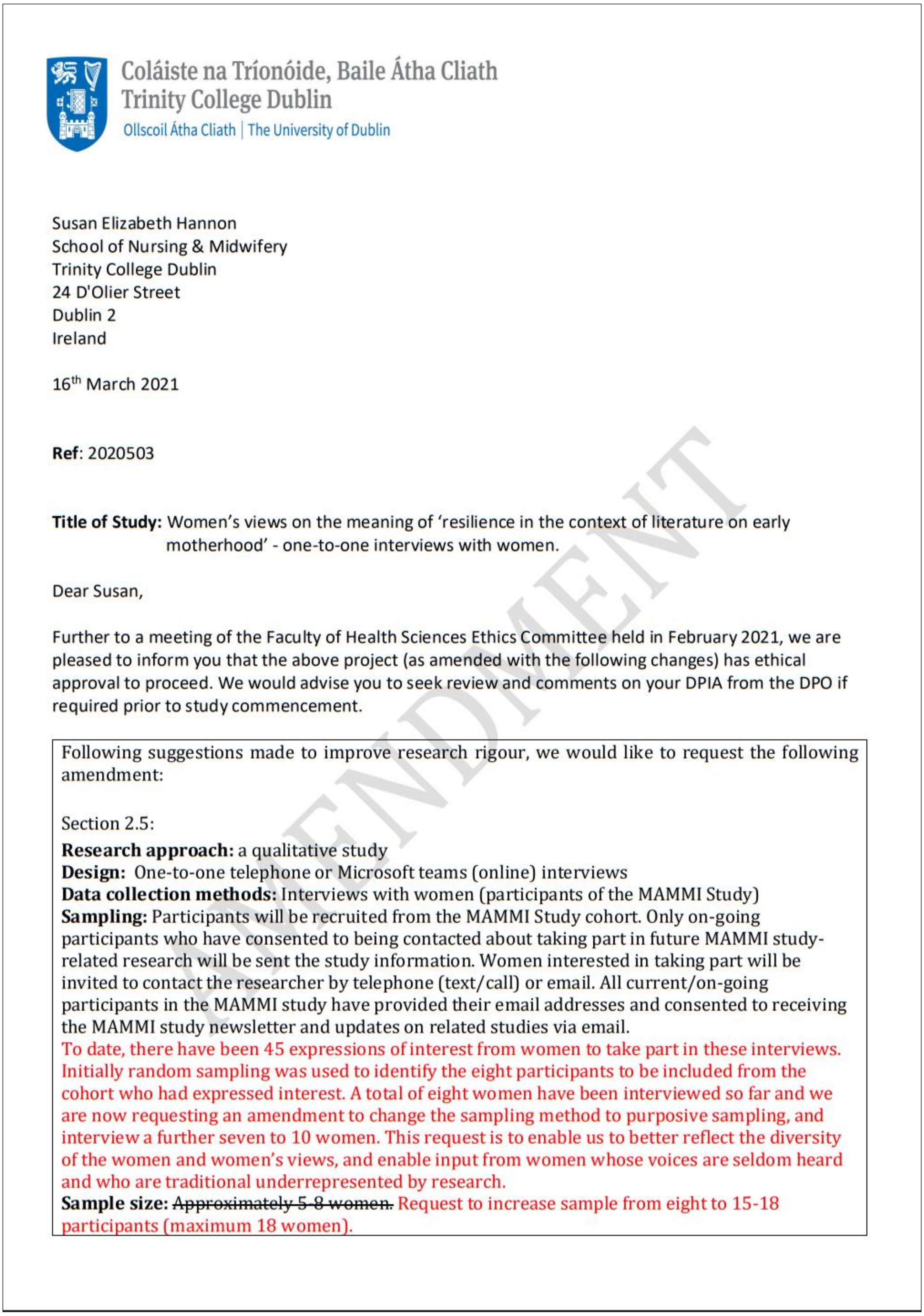
Appendix 4.1: Letter of approval for amendment from the Research Ethics Committee, Faculty of Health Sciences, 16th March 2021



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Susan Elizabeth Hannon
School of Nursing & Midwifery
Trinity College Dublin
24 D'Olier Street
Dublin 2
Ireland

16th March 2021

Ref: 2020503

Title of Study: Women's views on the meaning of 'resilience in the context of literature on early motherhood' - one-to-one interviews with women.

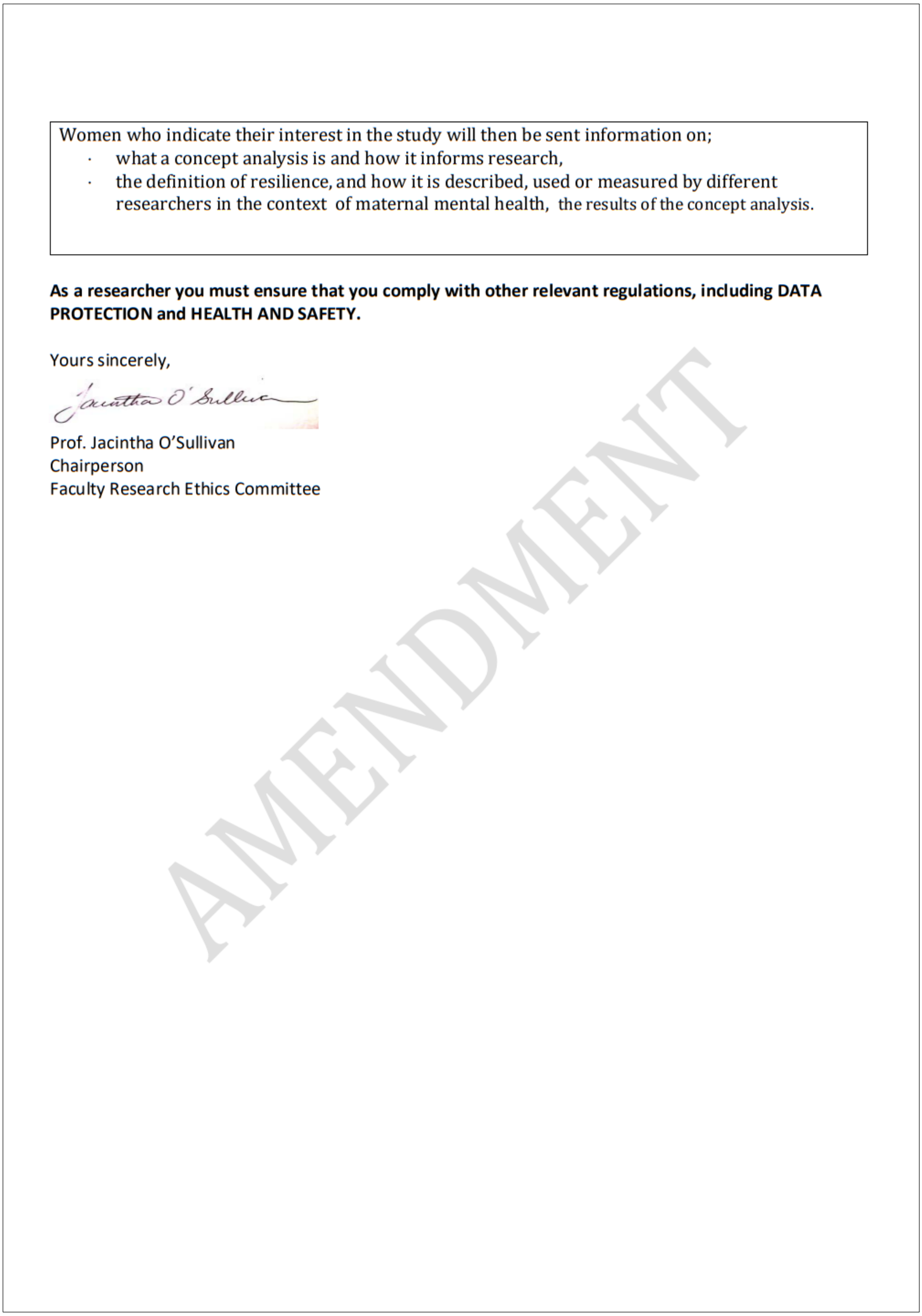
Dear Susan,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in February 2021, we are pleased to inform you that the above project (as amended with the following changes) has ethical approval to proceed. We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement.

Following suggestions made to improve research rigour, we would like to request the following amendment:

Section 2.5:

Research approach: a qualitative study
Design: One-to-one telephone or Microsoft teams (online) interviews
Data collection methods: Interviews with women (participants of the MAMMI Study)
Sampling: Participants will be recruited from the MAMMI Study cohort. Only on-going participants who have consented to being contacted about taking part in future MAMMI study-related research will be sent the study information. Women interested in taking part will be invited to contact the researcher by telephone (text/call) or email. All current/on-going participants in the MAMMI study have provided their email addresses and consented to receiving the MAMMI study newsletter and updates on related studies via email.
To date, there have been 45 expressions of interest from women to take part in these interviews. Initially random sampling was used to identify the eight participants to be included from the cohort who had expressed interest. A total of eight women have been interviewed so far and we are now requesting an amendment to change the sampling method to purposive sampling, and interview a further seven to 10 women. This request is to enable us to better reflect the diversity of the women and women's views, and enable input from women whose voices are seldom heard and who are traditional underrepresented by research.
Sample size: ~~Approximately 5-8 women.~~ Request to increase sample from eight to 15-18 participants (maximum 18 women).



Women who indicate their interest in the study will then be sent information on;

- what a concept analysis is and how it informs research,
- the definition of resilience, and how it is described, used or measured by different researchers in the context of maternal mental health, the results of the concept analysis.

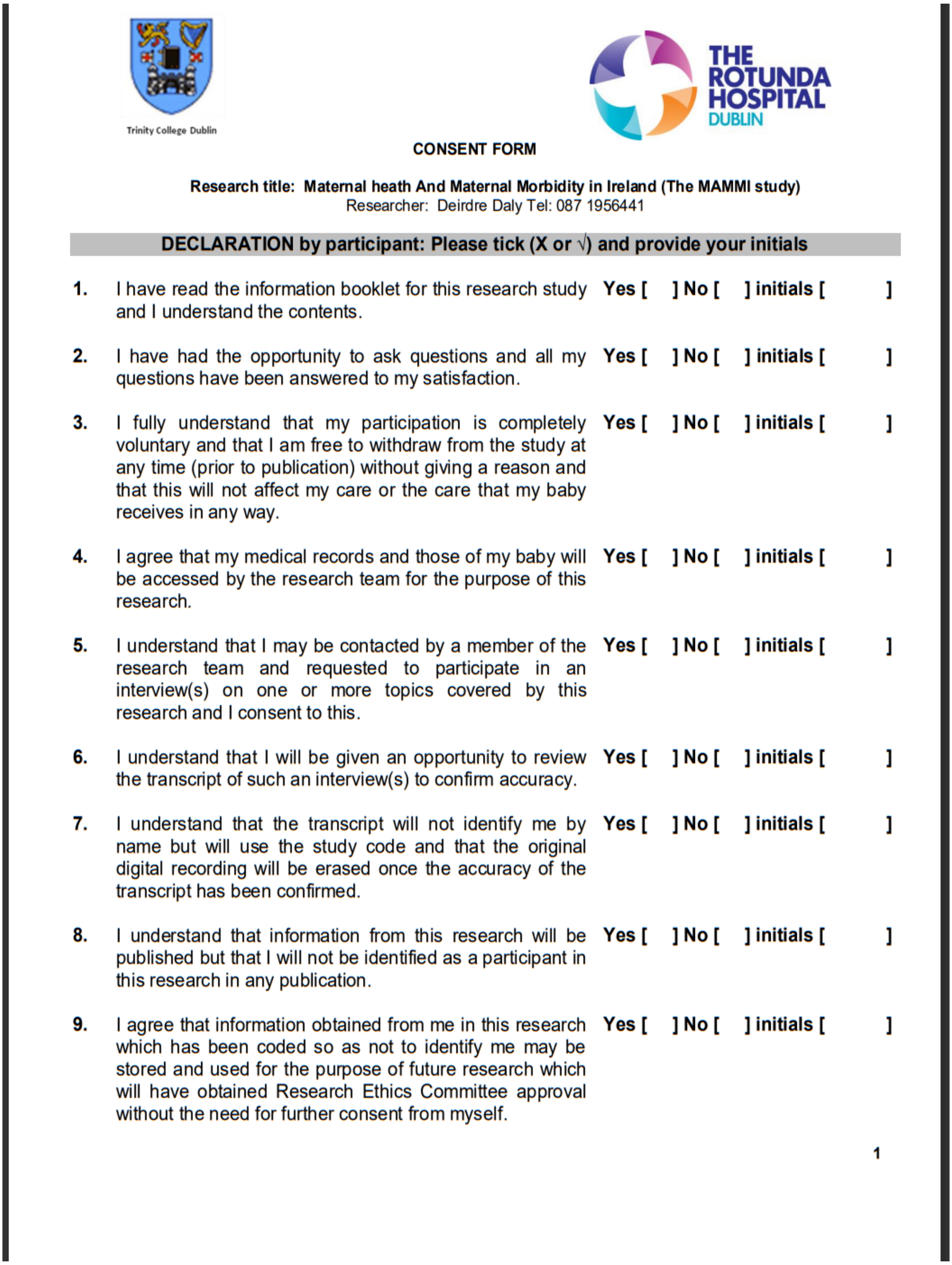
As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

Jacintha O'Sullivan

Prof. Jacintha O'Sullivan
Chairperson
Faculty Research Ethics Committee

Appendix 4.2: MAMMI study enrolment consent form



Trinity College Dublin

THE ROTUNDA HOSPITAL DUBLIN

CONSENT FORM

Research title: Maternal heath And Maternal Morbidity in Ireland (The MAMMI study)
Researcher: Deirdre Daly Tel: 087 1956441

DECLARATION by participant: Please tick (X or √) and provide your initials

1. I have read the information booklet for this research study and I understand the contents. **Yes [ ] No [ ] initials [ ]**

2. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. **Yes [ ] No [ ] initials [ ]**

3. I fully understand that my participation is completely voluntary and that I am free to withdraw from the study at any time (prior to publication) without giving a reason and that this will not affect my care or the care that my baby receives in any way. **Yes [ ] No [ ] initials [ ]**

4. I agree that my medical records and those of my baby will be accessed by the research team for the purpose of this research. **Yes [ ] No [ ] initials [ ]**

5. I understand that I may be contacted by a member of the research team and requested to participate in an interview(s) on one or more topics covered by this research and I consent to this. **Yes [ ] No [ ] initials [ ]**

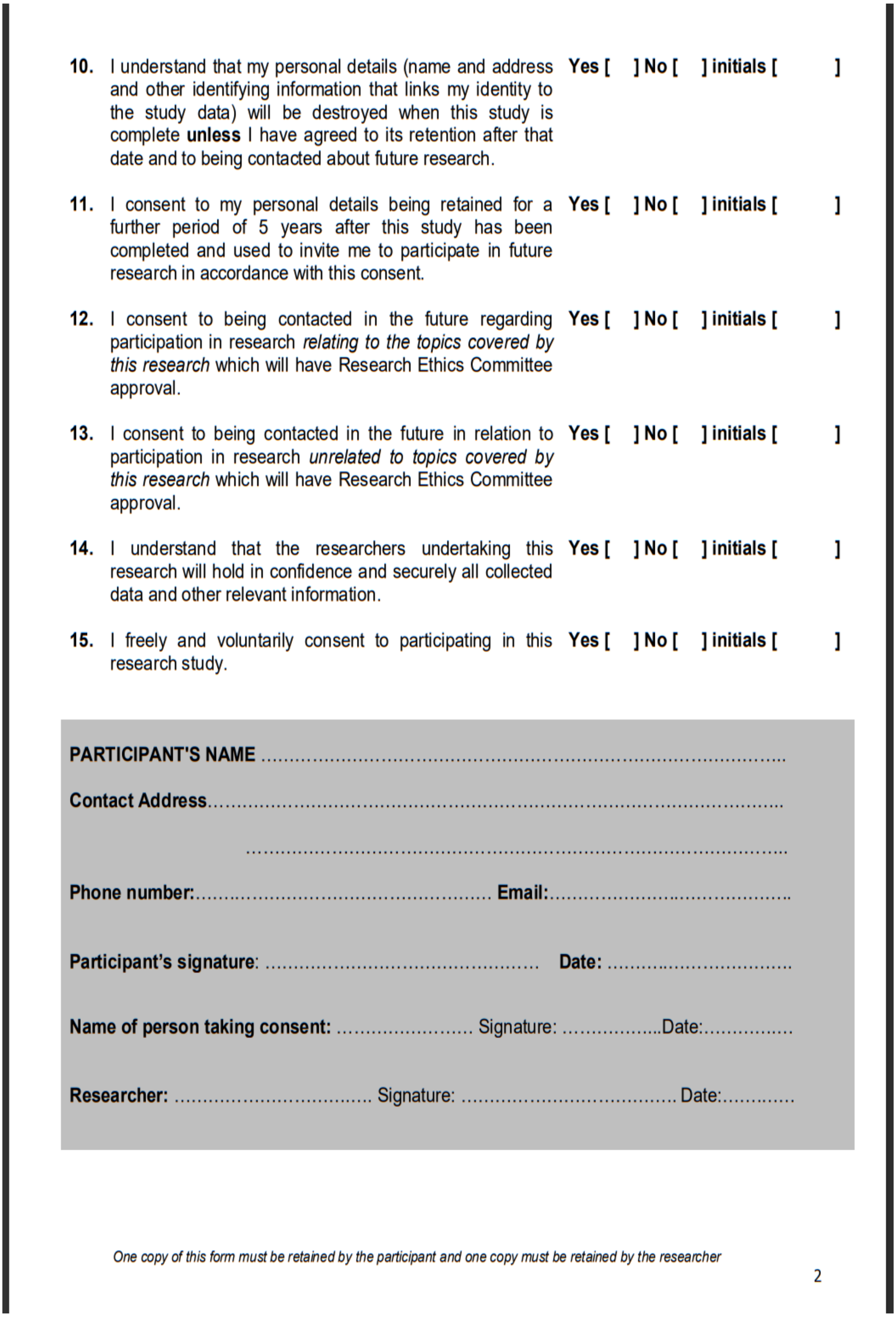
6. I understand that I will be given an opportunity to review the transcript of such an interview(s) to confirm accuracy. **Yes [ ] No [ ] initials [ ]**

7. I understand that the transcript will not identify me by name but will use the study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed. **Yes [ ] No [ ] initials [ ]**

8. I understand that information from this research will be published but that I will not be identified as a participant in this research in any publication. **Yes [ ] No [ ] initials [ ]**

9. I agree that information obtained from me in this research which has been coded so as not to identify me may be stored and used for the purpose of future research which will have obtained Research Ethics Committee approval without the need for further consent from myself. **Yes [ ] No [ ] initials [ ]**

1



10. I understand that my personal details (name and address and other identifying information that links my identity to the study data) will be destroyed when this study is complete **unless** I have agreed to its retention after that date and to being contacted about future research. **Yes [ ] No [ ] initials [ ]**

11. I consent to my personal details being retained for a further period of 5 years after this study has been completed and used to invite me to participate in future research in accordance with this consent. **Yes [ ] No [ ] initials [ ]**

12. I consent to being contacted in the future regarding participation in research *relating to the topics covered by this research* which will have Research Ethics Committee approval. **Yes [ ] No [ ] initials [ ]**

13. I consent to being contacted in the future in relation to participation in research *unrelated to topics covered by this research* which will have Research Ethics Committee approval. **Yes [ ] No [ ] initials [ ]**

14. I understand that the researchers undertaking this research will hold in confidence and securely all collected data and other relevant information. **Yes [ ] No [ ] initials [ ]**

15. I freely and voluntarily consent to participating in this research study. **Yes [ ] No [ ] initials [ ]**

PARTICIPANT'S NAME ……………………………………………………………………………..

Contact Address……………………………………………………………………………………..

……………………………………………………………………………………..

Phone number:……………………………………………… **Email:**……………………………………..

Participant's signature: ………………………………………… **Date:** ………………………………

Name of person taking consent: …………………… Signature: ……………..Date:…………….

Researcher: ……………………………. Signature: ………………………………. Date:…………

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Appendix 4.3: Phase 1, PPI Interviews- Participant Information Leaflet

INFORMATION LEAFLET
Maternal health **A**nd **M**aternal **M**orbidity in Ireland (**MAMMI**) Study

Women's views on the meaning of 'resilience in the context of literature on early motherhood' - one-to-one interviews with women.

Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

Dear MAMMI Study Participant,

We would like to invite you to take part in a one-to-one telephone or online (audio only) call interview with a member of the MAMMI research team on your views of the findings of a concept analysis on 'Resilience in Early Motherhood' with the **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland (**MAMMI**) study at the School of Nursing and Midwifery, Trinity College Dublin.

Before deciding whether you wish to take part, please read this information leaflet. If you have any questions about the study that are not answered by this information leaflet, please feel free to contact Susan Hannon at the contact details on page 6.

Please note you do not have to take part in this research. You can change your mind about taking part in the study at any time up to data anonymisation or publication, and you can opt-out without providing a reason.

Part 1: Study Details- What does taking part involve?

Why are you doing this study?

The MAMMI Study was designed to gain knowledge on first time mothers' health and health problems during pregnancy and in the first year after the baby's birth. For some women, health problems might persist for longer than one year after birth and there is a lack of knowledge about the long-term consequences for women in Ireland.

What does taking part in the one- to one interview involve?

The current study aims to look at the mental health of mothers in the first postpartum year and five years after first time motherhood.

At the moment, there isn't a lot of research about what helps women to maintain good or positive mental health in the postpartum period and early motherhood. To better understand the research that *is* available we conducted a *concept analysis* on what it means to be 'resilient' after pregnancy and in early motherhood.

A concept analysis is a method of research that examines how certain topics of interest (in this case *resilience*) are used in theory, practice and research, so that we can see what areas of this topic need to be more closely investigated.

As part of this study we will present the findings of the concept analysis to 5-8 participants who wish to be involved in this strand of research and give each woman an opportunity to provide her thoughts, opinions and feedback on the findings, and talk about which aspects do or do not resonate with each woman's *own experiences* of resilience in motherhood. The interviews are all about women's *opinions* and *lived experiences*, there are no right or wrong answers.

If you are interested in joining the research you will be emailed:

1. The presentation on 'resilience in the context of literature on early motherhood'
2. The interview guide (list of interview questions)
3. A link to an electronic consent form, where you can enter your decisions for consent.
4. A PDF copy of the consent form *(this soft copy is for your own accounts only, so that you will have a record of what you did or did not consent to).*

Expressing interest in receiving these documents will not be taken as consent to participation and you may decline to participate at any point.

One week after you have received the presentation and study documents, the researcher will send you an email reminder to complete the consent forms, confirm if you wish to conduct the interview online or via telephone and schedule an interview date, *if you still wish to participate in the interview*.

Interviews may take 20-30 minutes. Interviews can be conducted via telephone or using an online calling application depending on your preference, all interviews will be audio recorded and transcribed for analysis. Further details on data storage and protection can be found on pages 3-6.

At the beginning of the interview the researcher will reconfirm your consent to participant and give you an opportunity to talk and ask questions about the presentation.

You are free to stop the interview at any time without providing a reason.

You may request a transcript of the interview for you to review should you wish to have it.

What can I expect from the concept analysis presentation and what kind of questions will I be asked?

The presentation will be shared with participants by email; it will show how the topic of 'Resilience in Early Motherhood' is currently being researched and what information is already available.

The presentation will talk about:

- What a concept analysis is and how it informs research
- How resilience is defined,
- the different words, terms or expressions used to explain resilience,
- how resilience is used or measured by different researchers in the context of maternal mental health,
- how applicable the research is to women's everyday life.

You will be asked:

Before the interview you will receive the interview guide, this contains the some general questions around what resilience in motherhood means to you and what it looks like in your own life.

The researcher will cover the main points of the presentation with you and you will be encouraged to ask questions and share your views and opinions of the content of the presentation.

Finally you will be asked to look at how resilience, *as it is portrayed in the presentation*, compares to your life and experiences in motherhood. Do the research findings resonate with your own experiences? How is it similar, or how does it differ?

What are the potential RISKS for me and my child(ren)?

We do not think there are any risk(s) with taking part in the one-to-one telephone interview. Your participation is voluntary and you can decide not to take part or withdraw at any time. However, there is always potential for interviews to be distressing for an individual woman and lead to recall of upsetting issues, therefore the contact details of various sources of help and support, support groups etc., are included at the end of this leaflet, on page 7.

Are there any potential BENEFITS for me and my child(ren)?

This study will not be of benefit to you personally. However, we hope that the information women provide will increase understanding of mental health and resilience in early motherhood.

Who can participate?

Women who have taken/are taking part in the MAMMI study, who have indicated that they are willing to be contacted about taking part in future research, and have given written consent to taking part in this follow-up study, by completing the enclosed consent form.

Can I withdraw from the study?

Participation in the research is voluntary; you are free to withdraw from the study, without providing a reason, at any time. Should you wish to withdraw from the study all you have to do is text or call Susan Hannon on 087 1186762; to inform her of your wish to withdraw or email her at mammistudy@tcd.ie or write to her at the address on the enclosed letter

Please note that it will not be possible to withdraw your data after the data have been anonymised or before publication of results.

What happens to the information at the end of the study?

The interviews will be digitally/audio recorded and transcribed (typed out). Each participant will be given a study ID which will replace their personal details (such as your name) in the transcripts. The audio-recording from the interview/s will be erased (deleted) after the transcripts have been checked for accuracy. The findings from all the interviews will be pooled together for the purpose of analysing the data. After this point it will not be possible to identify individual participants. Your consent form will be retained for a period of seven years after the completion of the study in compliance with Trinity College Dublin' guidelines, during this time all hardcopies will be stored in a locked cabinet in a locked office where only designated researchers have access, after this period the hardcopies will be destroyed.

What about confidentiality and protecting my private and personal information?

All the information you provide will be private and confidential and held and processed according to the General Data Protection Regulation (GDPR). The one-to-one telephone interviews will be audio-recorded, then written out (transcribed). It is likely that women's first names will be used during the interviews, and when we transcribe the recordings, we will replace any names with a study number. This means that what you say in the interview will not be linked to you as an individual. Your personal details, name, address, phone number, this study number and your consent form will be stored securely in Trinity College Dublin, separate from the transcripts.

How can I see the results of the research?

The results of the study will be reported in scientific journals and conferences. No information which reveals your identity will be disclosed. The findings will also be made available on the MAMMI website at www.tcd.ie/mammi.

What do the options on the consent form mean?

The consent form asks if you to agree to the following options:

Paragraphs 1-4: these options are about ensuring that you understand what taking part means, that your participation is voluntary and that you are free to withdraw any time before the results are published.

Paragraphs 5-7: these sections guarantee that we will keep all study information secure and confidential.

Paragraph 8: asks for your permission to us keeping the data that you provide for the purpose of future research which will have obtained Research Ethics Committee approval.

Paragraph 9: ensures that your personal details will be destroyed in keeping with procedures outlined by Trinity College Dublin.

Paragraphs 10 -11: ensures that you are freely and explicitly giving consent to participation in the study.

Remember, you do not have to agree to any or all of these options and you may decide you do not wish to take part.

Why have I received this information pack?

You have received this information pack because you are a participant in the MAMMI study and, at the time of joining the study when you had your first child, you consented to being contacted about taking part in future MAMMI study-related research. This information leaflet will tell you about the aim of the current interview study and what taking part involves.

Part 2: Data Protection Information

Who is the data controller for the study?

Trinity College Dublin

How will my information be used?

We will use the information you provide to study the mental health of mothers in the first year and five years after the birth of their first baby. Information collected will be used by the researcher as part of a degree of Doctor of Philosophy, with the School of Nursing & Midwifery, Trinity College Dublin.

Where you give consent, your information will be retained for a period of seven years following completion of the MAMMI Study, and used for the purposes of future research related to the topics covered by the MAMMI Study surveys. All future research will receive Research Ethics Committee approval, without the need for further consent from participants. The findings from the research study will be presented and published. It will not be possible to identify any woman individually in these presentations and publications.

Audio files will be deleted after they have been transcribed. Personal details and identifiable information will be removed from the transcripts and each interview given a study code to protect participant identity. Seven years after the study has been completed, the electronic data will be erased in accordance with Trinity College Dublin's procedures.

What is the lawful basis to use my personal data?

Your data will be processed (collected, held, analysed) in compliance with **General Data Protection Regulation Article 6.1 (e):** *processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller;* and **Article 9. 2 (j):** *processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes in accordance with Article 89 (1) based on Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject.*

Participants have the right to restrict or object to having their data processed, unless the request would make it impossible or make it very difficult to conduct the research. For example, it will not be possible to remove data after anonymization, analysis or publication.

Participants have the right to have their personal data deleted, unless their request would make it impossible or make it very difficult to conduct the research. For example, it will not be possible to remove personal data and maintain future contact with consenting participants.

How will you protect my personal information?

- We keep all the information you give us private and confidential.
- We will give your interview transcript a unique number (a code), and we will store your personal details securely and separately from the interview data.
- Interviews will be audio recorded, we will keep an electronic version of the information you give us on a Trinity College's main server. Only the research team have access to this information. We use password protection on every file containing personal data, encryption (special software to scramble the information so it cannot be read) and anti-virus software to protect the information on the computer.
- The audio of interviews conducted by telephone will be transcribed by a recognised and approved transcription service with an establish confidentiality agreement with Trinity College Dublin.

Do you have procedures in place if there is a data protection breach?

In the unlikely event of a data protection breach, there is the potential for your personally identifiable information to become compromised. We hold, and will continue to hold and process, all personal and sensitive information in compliance with the General Data Protection Regulation and the Health Research Regulations 2018. If a data breach should occur, the MAMMI Study team will follow Trinity College Dublin's Data Protection Breach procedures that comply with the General Data Protection Regulation. You may also read about out data protection procedures on our website at www.mammi.ie.

Who will have access to my information?

Only the researcher, Susan Hannon, and supervisors Dr Deirdre Daly and Prof Agnes Higgins, who have a legitimate need to access data in the performance of their professional research duties, will have access to your personal data. Like all members of the University community these team members must abide by the Data Protection Policy, Data Protection Procedures and IT Security Policy. All MAMMI Study team members who are involved in carrying out research must enrol in and successfully complete an assessed online training module entitled 'Data protection, IT security and Data Management'.

Will you share my personal data with third parties?

Data collected from the one-to-one interviews will not be shared.

Can I access my personal data?

You have the right to request access to a copy of your data, and you have the right to have inaccurate information about yourself corrected or deleted. Access and corrections to your data will be provided where this can be reasonably accommodated. You have the right to data portability, this means that you may request to have your data moved from one data controller to another. If you wish to obtain a copy or make a correction to your personal data please contact the research at the details provided on page 6.

Only the researchers involved in the current study will have access to the study data, if however, a participant wishes for only one of the researchers to access their data you may make this request by contacting the researchers at the details provided on page 6.

Will my data be used for any automated decision-making, including profiling?

No, the MAMMI Study will not conduct any form of automated decision- making of personal data or profiling.

What do I do if I have a data protection complaint?

If you have a complaint regarding the MAMMI Study's protection of your data, you may contact the following people or departments:

Researcher:
Susan Hannon
Telephone number : 01-8962604 or 087 1186762
Email: mammi@tcd.ie
No.2 Clare Street, Trinity College Dublin,
Dublin 2.

The MAMMI Study Principal Investigator:
Dr Deirdre Daly
Telephone number : 01-8962604 or 087 1186762
Email of principle: mammi@tcd.ie

Trinity College Dublin Data Protection Officer:
Data Protection Officer,
Secretary's Office,
Trinity College Dublin,
Dublin 2, Ireland.
Email of TCD DPO: dataprotection@tcd.ie

Data Protection Commission:
Data Protection Commission
21 Fitzwilliam Square South
Dublin 2, Ireland.
D02 RD28.
Phone: +353 (0)761 104 800
+353 (0)57 868 4800
Website: www.dataprotection.ie/en

Part 3: Costs, Funding & Approval

Has this study been approved by a research ethics committee?

Yes, this study has been approved by the Faculty of Health Sciences Research Ethics Committee Approval was granted on 13th August 2020

Who is organising and funding this study? Will the results be used for commercial purposes?

The study will be conducted by Susan Hannon, Dr Deirdre Daly & Prof Agnes Higgins in partial fulfilment of the requirements for a degree of Doctor of Philosophy, with the School of Nursing & Midwifery, Trinity College Dublin. Susan Hannon's doctorate research is funded by the Provost award from Trinity College Dublin. There is no conflict of interest between this funding and the aims or results of the study. No part of this study will be used for commercial purposes.

Is there any payment for taking part?

No, we are not paying participants to take part in the study.

I have read the Information leaflet, how do I take part in the study?

1. Email the researcher, Susan Hannon, at mammi@tcd.ie or text/ call at 085 8118446 to confirm that you are interest in participating in, and receiving the documents for, the research study.
2. You will receive the study documents and a link to the electronic consent form
3. Complete the electronic consent form.

4. After you have completed the electronic consent form the researcher will contact you to confirm how you wish to conduct the interview (via telephone or online calling application) and to schedule a date that best suits you.

Further information

If you have any questions about the MAMMI Study or our data protection procedures, you can contact us for more information at 085 8118446 or mammi@tcd.ie. You can also visit the website at www.mammi.ie.

Kind Regards,

Susan Hannon.

Information & Support Services in Ireland

Mental Health Services in Ireland

Post Natal Depression Ireland : *www.pnd.ie*
Email: support@pnd.ie
Cork: 021 492 2083
Kerry: 086 787 2107

Women throughout Ireland can use this website and discussion forum, or seek support and information through the helpline or email. Post Natal Depression Ireland also organises monthly support meetings in Cork city

Mental health services by location in Ireland: *www.hse.ie/eng/services/list/4/mental-health-services*

The HSE provides a list of local mental health services across Ireland.

Aware: *www.aware.ie*
Phone: 1800 80 48 48
Monday – Sunday, 10am - 10pm

Aware provide emotional and practical support to those affected by depression, bipolar and related disorders. Aware also provide positive mental health and resilience training.

Find a Psychologist- Psychological Society of Ireland (PSI): *www.psychologicalsociety.ie*

Find an accredited psychologist in your area through the PSI’s directory.

Irish Association for Counselling and Psychotherapy: *iacp.ie*

Find an Accredited Therapist in your area through the IACP’s website directory.

Pregnancy & Birth

The Birth Trauma Association (BTA):
www.facebook.com/groups/TheBTA
Email: @birthtraumaassociation.org.uk

The Association is run by mothers who wish to support other women who experienced difficult childbirth experiences.

AIMS Ireland Birth Healing support group:
aimsireland.ie/
www.facebook.com/aims.ireland
Email: support@aimsireland.com

AIMS Ireland is a consumer-led voluntary organisation formed by women, their mission is to speak on behalf of the service user experience in Ireland as to where evidence based practices are lacking and as to where new investment and services are needed. AIMS Ireland also run a closed Facebook group for women who have experienced a difficult or traumatic childbirth, offering a safe place to share stories and provide peer support. If you are interested in this group, please contact them by email or via Facebook private messages.

Family & Parenting

Parentline: *www.parentline.ie*
LoCall 1890 927 277 or 01 873 3500
Monday - Thursday 10am- 9pm, Friday 10am-4pm

Parentline is a national helpline for parents, offering support, guidance and information on all aspects of being a parent.

One Family: *onefamily.ie*
Phone: 01 662 9212
Lo-Call: 1890 662212
Email: info@onefamily.ie

Supporting people who parent alone, share parenting, are separated or separating, ONE Family's services include professional counselling services, children's play therapy, mediated parenting plans, mentoring and courses.

Treoir - Informing Unmarried Parents: *www.treoir.ie*

Phone: 01 6700 120
Lo-Call: 1890 252 084
Email: info@treoir.ie

Treoir provide a free, confidential information service for unmarried parents, living together or apart, their extended families and those working with them. The topics covered include legal issues (guardianship, access, custody, birth registration, passports, cohabiting parents, etc.); social welfare (One-Parent Family Payment, Rent Supplement, welfare to work, etc.); shared parenting and other issues such as income tax, childcare, housing, etc.

Doras Buí - Parents Alone Resource Centre
dorasbui.ie

Phone: 01 848 4811

A resource centre for single parents who provide services including information, advice and advocacy on a wide range of topics including social welfare, health, parenting and legal issues and personal matters.

Intimate Partner Violence Services

Women's Aid Ireland: *www.womensaid.ie*

Phone: 1800 341 900

Women's Aid is a national organisation providing a 24/7 hour helpline for callers experiencing abuse from intimate partners. Women's Aid also offers a court accompaniment service and referrals to local refuges and support services.

Safe Ireland: *www.safeireland.ie*

Safe Ireland provides contact information for the 37 intimate partner violence refuges and services across the Republic of Ireland.

Sexual Assault Treatment Unit (SATU): *www.hse.ie/eng/services/list/5/sexhealth/satu*

If you are worried or concerned about unwanted or forced sexual activity and wish to get help or advice, you can contact your local Garda Station or a Sexual Assault Treatment Unit (SATU). SATU's provide holistic, patient focussed care and support to anyone who has experienced a sexual crime, regardless of whether they report the crime or not. SATU services can be accessed 24 hours a day 365 days a year. There are 6 SATU's in Ireland. Your local Rape Crisis Centre can provide you with accompaniment support to the SATU.

Legal Aid Board : *www.legalaidboard.ie/en*

The Legal Aid Board provides legal aid and advice in civil cases to people in Ireland who cannot afford to pay a solicitor privately.

FLAC (Free Legal Advice Centres): *www.flac.ie*

FLAC are an independent, human rights organisation that promotes equal access to justice for all. Members of the public can access basic, confidential legal advice across all areas of law in a network of clinics around Ireland.

Support Resources for Minority Groups

Cairde: *cairde.ie*

City Centre Office: 19 Belvedere Place, Dublin 1.
Phone: 01 855 2111
Email: info@cairde.ie.

Balbriggan Office: Old St. Georges School, Hampton St., Balbriggan, Co. Dublin.
Balbriggan Phone: 01 8020785
Email: balbriggan@cairde.ie
sarah@cairde.ie
marianna@cairde.ie.

Cairde works to improve access to health services for ethnic minority communities (from Africa, Eastern Europe and the Baltic states). Cairde's Health Information & Advocacy Centres (HIAC), in Dublin city centre and in Balbriggan, provide relevant, accurate and culturally appropriate health information to individuals and groups.

Irish Refugee Centre: *www.irishrefugeecouncil.ie*

Drop-In Centre: 37 Killarney Street, Dublin 1
Phone: 01 764 5854
Email: info@irishrefugeecouncil.ie

The Irish Refugee Centre is a free and confidential drop-in centre, open every Monday, Tuesday and Thursday, giving advice on the asylum process, Direct Provision and Family Reunification.

Doras Luimní: *doras.org*

Advice & Information centre
Mon: 9:30am - 12:30pm & 2pm t- 4:30pm
Tues: 10:30am - 12:30pm & 2pm - 4:30pm
Thurs: 9:30am to 12:30pm & 2pm to 4:30pm

Doras is an independent, non-profit organisation working to support and promote the rights of migrants living in Ireland. Doras run basic English language classes twice a week and also provide advice and support to recognised & suspected victims of trafficking for the purposes of sexual & forced labour exploitation.

Pavee Point Traveller & Roma Centre: *www.paveepoint.ie*
Phone: 01 878 0255
Email: info@pavee.ie

Pavee Point Traveller & Roma Centre
46 Charles Street Great
Dublin 1
Ireland

Pavee point works to improve the quality of life, living circumstances, status and participation of Travellers and Roma through working innovatively for social justice, greater solidarity, development, equality and human rights.

Appendix 4.4: Phase 1, PPI Interviews- Consent form

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Maternal health And Maternal Morbidity in Ireland (MAMMI) study

Women's views on the meaning of 'resilience in the context of literature on early motherhood' - one-to-one interviews with women.

Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

DECLARATION by participant: Please tick (X or √) and provide your initials		
1	I have read the information booklet for this research study and I understand the contents.	**Yes [ ] No [ ] initials [ ]**
2	I have had the opportunity to ask questions and all my questions have been answered to my satisfaction.	**Yes [ ] No [ ] initials [ ]**
3	I fully understand that my participation is completely voluntary and that I am free to withdraw from the study *at any time* (prior to publication) *without*	**Yes [ ] No [ ] initials [ ]**
4	I understand that I will be given an opportunity to review a summary of the findings of the interview to confirm accuracy	**Yes [ ] No [ ] initials [ ]**
5	I understand that the transcript will not identify me by name but will use a study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed.	**Yes [ ] No [ ] initials [ ]**
6	I understand that the researchers undertaking this research will hold in confidence and securely all collected data and other relevant information.	**Yes [ ] No [ ] initials [ ]**
7	I understand that information from this research will be published but that I will not be identified as a participant in this research in any publication.	**Yes [ ] No [ ] initials [ ]**
8	I agree that information obtained from me in this research which has been coded so as not to identify me may be stored and used for the purpose of future research by the MAMMI Study, Trinity College Dublin, in the area of mental health which will have obtained Research Ethics Committee approval without	**Yes [ ] No [ ] initials [ ]**
9	I understand that my personal details (name and address and other identifying information that links my identity to the study data) will be destroyed when this study is complete unless I have agreed to its retention after that date and to being contacted about future research.	**Yes [ ] No [ ] initials [ ]**
10	I freely and voluntarily consent to participating in this research study.	**Yes [ ] No [ ] initials [ ]**
11	I give informed explicit consent to have my data processed as part of this research study.	**Yes [ ] No [ ] initials [ ]**

Please continue overleaf

Maternal health And Maternal Morbidity in Ireland (MAMMI) study

Women's views on the meaning of 'resilience in the context of literature on early motherhood' - one-to-one interviews with women.

Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

Participant Details:

Participant's Name:	
Contact Address:	
Phone number:	
Participant's signature:	**Date:**
E-mail:	
Researcher's signature:	**Date:**

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Appendix 4.5: Lay Synopsis of Findings from Resilience in the Perinatal Period and Early Motherhood Concept Analysis and Interview Guide

Philosophical Principle	Lay Synopsis of Concept Analysis Findings derived from (Hannon *et al.* 2022b)	Interview Guide
Epistemological findings: *'How is resilience defined?'*	Most often resilience was defined as a trait: trait definitions approach resilience as a set of personal/internal traits which are a stable feature of someone's personality, and these traits help someone to be resilient when they are faced with challenges. In this approach, resilience is often measured using a scale. There is lots of good research to show how certain aspects of personality are associated with better mental health outcomes during or after adversity. Though it may be difficult to develop resilience based interventions that can be used with a large number of people if resilience is considered related to individual personalities. Resilience was sometimes defined as a process: process definitions consider resilience to be an on-going process influenced by a multiple individual, contextual, familial, social, environmental, political, economic and cultural factors. These approaches sometimes look at mental health outcomes (low psychopathology, high mental well-being) and/or positive adaptation outcomes (functionality, competence etc.). The rest of the studies provided an explanation of how they would measure resilience (usually as stable levels of depression or anxiety over time), or did not give a definition of resilience.	*What are your thoughts on these definitions and perspectives?* *Do you agree/disagree with these definitions?* *How do you define resilience?* *What perspective should researchers take in resilience research?*
Linguistic findings: *'What kind of language is used in resilience research?*	In the perinatal and early motherhood literature the terms coping or coping strategies, adaptation and adjustment, protection and resistance were commonly used or associated with resilience.	*What do you think about these terms?* *How do you feel they fit into the concept of resilience?*
Logical findings: *How is resilience in motherhood measured?*	i) Resilience scales: resilience scales are usually used where researchers take a trait approach to resilience; however they are rarely used alone and are often used alongside mental health outcome measures. ii) Mental health outcomes: depression was the leading mental health outcome of interest in the maternal literature, followed by stress disorders such as PTSD, and anxiety. In most cases, low symptomology or illness-absence is considered indicative of resilience as this is an ideal outcome, especially in contexts of adversity. Some studies also included measures for mental well-being, quality of life, self-compassion or psychological flexibility. iii) Positive adaptation outcomes: positive outcomes in the perinatal period and early motherhood literature frequently related to a woman's adaptation and competence in the parental role, such as parenting sense of competence or family functioning.	*What are your thoughts on the ways that resilience is currently measured?* *How would you like to see resilience measured in future research?*

Pragmatic findings: *How are the findings from resilience research in motherhood being applied to practice?*	*Usefulness to research:* none of the included studies presented women's perspectives on how resilience should be defined or measured, in the perinatal period and early motherhood. *Usefulness to clinical practice:* the concept analysis did not find any examples of resilience research used in clinical practice. Though several authors made suggestions as to how their findings might be implemented.	*What are your thoughts on the ways that resilience has been used in research?* *What are your thoughts or suggestions for resilience in practice?* *How would you like to see the concept of resilience used in research and practice?*

Appendix 4.6: Phase 2, Qualitative interviews- Formal invitation letter

Maternal health And Maternal Morbidity in Ireland (MAMMI) Study

Women's mental health and resilience in the early years of first-time motherhood.

Dear

I hope you and your family are all doing well.

I am delighted to invite you to take part in the research interview on 'Women's mental health and resilience in the early years of first-time motherhood', with the **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland (**MAMMI**) study at the School of Nursing and Midwifery, Trinity College Dublin.

Enclosed in this envelope you will find the ***Participant Information Leaflet***, this contains all of the information about taking part in the study.

You will also find *two* copies of the ***Consent Form***, a ***Participant Characteristics Form*** and a ***FREEPOST*** envelope.

Please complete one Consent Form and the Participant Characteristics Form and return these to the researcher, Susie Hannon, in the FREEPOST envelope. The second consent form is for you to keep for your own records.

I have also included the interview guide; this is an example of the questions and topics that the interview aims to address.

After I have received your consent form, I will contact you to confirm:

i) If you still wish to proceed with the interview.
ii) Reconfirm your preferred method of holding the interview (in person, via telephone or online video call).
iii) A date and time for the interview.

If you have any questions at all, please feel free to contact me at the below number or email address.

Kind Regards,

Susie Hannon.

Telephone number: 087 1186762
Email: mammi@tcd.ie

School of Nursing and Midwifery,

No.2 Clare Street,

Trinity College Dublin,

Dublin 2

INFORMATION LEAFLET
Maternal health And Maternal Morbidity in Ireland (MAMMI) Study

Women's mental health and resilience in the early years of first-time motherhood.

Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

Dear MAMMI Study Participant,

We would like to invite you to take part in an interview based research study conducted by Susan Hannon, a PhD student with the MAMMI Study, on 'Women's mental health and resilience in the early years of first-time motherhood', with the **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland (**MAMMI**) study at the School of Nursing and Midwifery, Trinity College Dublin.

Before deciding whether you wish to take part, please read this information leaflet. If you have any questions about the study that are not answered by this information leaflet, please feel free to contact Susan Hannon at the contact details on page 6.

Please note you do not have to take part in this research. You can change your mind about taking part in the study at any time up to data anonymisation or publication, and you can opt-out without providing a reason.

Part 1: Study Details- What does taking part involve?

Why are you doing this study?

The MAMMI Study was designed to gain knowledge on first time mothers' health and health problems during pregnancy and in the first year after the baby's birth. For some women, health problems might persist for longer than one year after birth and there is a lack of knowledge about the long-term consequences for women in Ireland.

The current study aims to look at the mental health of mothers in the first postpartum year and five years after first time motherhood.

At the moment, there isn't a lot of research about what helps women to maintain good or positive mental health in the postpartum period and early motherhood.

To better understand the research that *is* available we conducted a review on all the published literature that looks at resilience in the first five years of motherhood. Then we presented the findings of this review to a small group of MAMMI participants, we wanted to receive women's thoughts, opinions and feedback on how representative the findings were in relation to each woman's own experiences of mental health in motherhood. *We then used this feedback from women to develop the questions and topics that will be addressed in this interview study.*

What does taking part in the one- to one interview involve?

The interviews are all about women's *opinions* and *lived experiences*, there are no right or wrong answers.

If you are interested in joining the research you will receive the study documents, these are:

5. Two hardcopy consent forms.
6. A participant characteristics form.
7. A freepost pre-addressed envelope to return the i) consent form and ii) participant characteristics form to the researcher.
8. The interview guide (a list of general questions and topics the interview will cover).
9. A hardcopy of the Participant Information Leaflet with support sources.

Expressing interest in receiving these documents will not be taken as consent to participation and you may decline to participate at any point.

One week after the researcher has received your completed consent form, she will contact you to confirm;

i) If you still wish to proceed with the interview.

ii) How you wish to conduct the interview (in person, via telephone or online conference call application).
iii) Date and time for the interview.

As the interviews may cover topics that are sensitive to the participant (for example mental illness, mental health problems or upsetting experiences) a face-to-face interview is recommended, however this is completely your choice and you may decide how you wish for the interview to be conducted.

Interviews may take 1- 1.5 hours. Interviews can be conducted face-to-face, via telephone or using an online calling application depending on your preference. All interviews will be audio recorded and transcribed for analysis. Further details on data storage and protection can be found on pages 4-7.
At the beginning of the interview, the researcher will reconfirm your consent to participant and give you an opportunity to talk and ask questions about the process.

- You are free to stop the interview at any time without providing a reason.
- You may request a transcript of the interview for you to review should you wish to have it.

What is involved in a face-to face interview?

If you wish to conduct the interview face-to-face you may choose a location which is convenient for you. This may be: i) Your home.
ii) An office in Trinity College Dublin (this will be organised by the researcher).

What is involved in a telephone interview?

If you wish to conduct the interview via telephone, simply choose a date and time that is most convenient for you to speak without interruption. The researcher will call you, reconfirm your consent, remind you that the interview will be recorded and conduct the interview.

What is involved in a conference call interview?

If you wish to conduct the interview via conference call, simply choose a date and time that is most convenient for you to speak without interruption. The researcher will send you a Microsoft Office Teams link three days before the interview is scheduled to take place. Before the interview begins the researchers will reconfirm your consent, remind you that the interview will be recorded.

What kind of questions will I be asked?

These interviews will broadly address:

i) The different experiences of mental health and well-being in motherhood.
ii) How mental illness or mental health problems affect women's well-being and quality of life.
iii) The social, cultural and economic factors in women's lives that may exacerbate or support women's mental health.
iv) Self-help and health-seeking behaviours.

What are the potential RISKS for me and my child(ren)?

We do not think there are any risks with taking part in the interview. Your participation is voluntary and you can decide not to take part or withdraw at any time. However, there is always potential for interviews to be distressing for an individual woman and lead to recall of upsetting issues, therefore the contact details of various sources of help and support, support groups etc., are included at the end of this leaflet.

If, during an interview a participant discloses information about herself, her child or the care she has received that gives cause for concern, the interview will be suspended if required, and the participant will be directed to the appropriate contacts, patient advocacy and support services, or hospital support services.

If, during an interview a participant discloses information which indicates that a child is being harmed. It is the researcher's professional duty to report such disclosures to the appropriate authorities.

Are there any potential BENEFITS for me and my child(ren)?

This study will not be of benefit to you personally. However, we hope that the information women provide will increase understanding of mental health and resilience in early motherhood.

Who can participate?

Women who have taken/are taking part in the MAMMI study, who have indicated that they are willing to be contacted about taking part in future research, and have given written consent to taking part in this follow-up study, by completing the enclosed consent form.

Can I withdraw from the study?

Participation in the research is voluntary; you are free to withdraw from the study, without providing a reason, at any time. Should you wish to withdraw from the study all you have to do is text or call Susan Hannon on 087 1186762; to inform her of your wish to withdraw or email her at mammistudy@tcd.ie or write to her at the address on the enclosed letter

Please note that it will not be possible to withdraw your data after the data have been anonymised or before publication of results.

What happens to the information at the end of the study?

The interviews will be digitally/audio recorded and transcribed (typed out). Each participant will be given a study ID which will replace their personal details (such as your name) in the transcripts. The audio-recording from the interview/s will be erased (deleted) after the transcripts have been checked for accuracy. The findings from all the interviews will be pooled together for the purpose of analysing the data. After this point it will not be possible to identify individual participants. Your consent form will be retained for a period of seven years after the completion of the study in compliance with Trinity College Dublin' guidelines, during this time all hardcopies will be stored in a locked cabinet in a locked office where only designated researchers have access, after this period the hardcopies will be destroyed.

What about confidentiality and protecting my private and personal information?

All the information you provide will be private and confidential and held and processed according to the General Data Protection Regulation (GDPR). The one-to-one interviews will be audio-recorded, then written out (transcribed). It is likely that women's first names will be used during the interviews, and when we transcribe the recordings, we will replace any names with a study number. This means that what you say in the interview will not be linked to you as an individual. Your personal details, name, address, phone number, this study number and your consent form will be stored securely in Trinity College Dublin, separate from the transcripts.

How can I see the results of the research?

The results of the study will be reported in scientific journals and conferences. No information which reveals your identity will be disclosed. The findings will also be made available on the MAMMI website at www.tcd.ie/mammi.

What do the options on the consent form mean?

The consent form asks if you to agree to the following options:

Paragraphs 1-4: these options are about ensuring that you understand what taking part means, that your participation is voluntary and that you are free to withdraw any time before the results are published.

Paragraphs 5-7: these sections guarantee that we will keep all study information secure and confidential.

Paragraph 8: asks for your permission to us keeping the data that you provide for the purpose of future research which will have obtained Research Ethics Committee approval.

Paragraph 9: ensures that your personal details will be destroyed in keeping with procedures outlined by Trinity College Dublin.

Paragraphs 10 -11: ensures that you are freely and explicitly giving consent to participation in the study.

Remember, you do not have to agree to any or all of these options and you may decide you do not wish to take part.

Part 2: Data Protection Information

Who is the data controller for the study?

Trinity College Dublin

How will my information be used?

We will use the information you provide to study the mental health of mothers in the first year and five years after the birth of their first baby. Information collected will be used by the researcher as part of a degree of Doctor of Philosophy, with the School of Nursing & Midwifery, Trinity College Dublin.

Where you give consent, your information will be retained for a period of seven years following completion of the MAMMI Study, and used for the purposes of future research related to the topics covered by the MAMMI Study surveys. All future research will receive Research Ethics Committee approval, without the need for further consent from participants. The findings from the research study will be presented and published. It will not be possible to identify any woman individually in these presentations and publications.

Audio files will be deleted after they have been transcribed. Personal details and identifiable information will be removed from the transcripts and each interview given a study code to protect participant identity. Seven years after the study has been completed, the electronic data will be erased in accordance with Trinity College Dublin's procedures.

What is the lawful basis to use my personal data?

Your data will be processed (collected, held, analysed) in compliance with **General Data Protection Regulation Article 6.1 (e):** *processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller;* and **Article 9. 2 (j):** *processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes in accordance with Article 89 (1) based on Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject.*

Participants have the right to restrict or object to having their data processed, unless the request would make it impossible or make it very difficult to conduct the research. For example, it will not be possible to remove data after anonymization, analysis or publication.

Participants have the right to have their personal data deleted, unless their request would make it impossible or make it very difficult to conduct the research. For example, if you wish for your personal data to be removed, please note that the researchers will not be able to contact you about participation in future research

How will you protect my personal information?

- ✓ We keep all the information you give us private and confidential.
- ✓ We will give your interview transcript a unique number (a code), and we will store your personal details securely and separately from the interview data.
- ✓ We will keep an electronic version of the audio recording on a Trinity College's main server. Only the research team have access to this information. We use password protection on every file containing personal data, encryption (special software to scramble the information so it cannot be read) and anti-virus software to protect the information on the computer.
- ✓ The audio of interviews will be transcribed by a recognised and approved transcription service with an establish confidentiality agreement with Trinity College Dublin.

Do you have procedures in place if there is a data protection breach?

In the unlikely event of a data protection breach, there is the potential for your personally identifiable information to become compromised. We hold, and will continue to hold and process, all personal and sensitive information in compliance with the General Data Protection Regulation and the Health Research Regulations 2018. If a data breach should occur, the MAMMI Study team will follow Trinity College Dublin's Data Protection Breach procedures that comply with the General Data Protection Regulation. You may also read about out data protection procedures on our website at www.mammi.ie.

Who will have access to my information?

Only the researcher, Susan Hannon, and supervisors Dr Deirdre Daly and Prof Agnes Higgins, who have a legitimate need to access data in the performance of their professional research duties, will have access to your personal data. Like all members of the University community these team members must abide by the Data Protection Policy, Data Protection Procedures and IT Security Policy. All MAMMI Study team members who are involved in carrying out research must enrol in and successfully complete an assessed online training module entitled 'Data protection, IT security and Data Management'.

Will you share my personal data with third parties?

Data collected from the interviews will not be shared.

Can I access my personal data?

You have the right to request access to a copy of your data, and you have the right to have inaccurate information about yourself corrected or deleted. Access and corrections to your data will be provided where this can be reasonably accommodated. If you wish to obtain a copy or make a correction to your personal data please contact the research at the details provided on page 6.

Will my data be used for any automated decision-making, including profiling?

No, the MAMMI Study will not conduct any form of automated decision- making of personal data or profiling.

What do I do if I have a data protection complaint?

If you have a complaint regarding the MAMMI Study's protection of your data, you may contact the following people or departments:

Researcher: Susan Hannon *Telephone number* : 087 1186762 *Email:* mammi@tcd.ie No.2 Clare Street, Trinity College Dublin, Dublin 2.	**The MAMMI Study Principal Investigator:** Dr Deirdre Daly *Telephone number* : 01-8962604 *Email of principle:* mammi@tcd.ie No.2 Clare Street, Trinity College Dublin, Dublin 2.
Trinity College Dublin Data Protection Officer: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. *Email of TCD DPO:* dataprotection@tcd.ie	**Data Protection Commission:** Data Protection Commission 21 Fitzwilliam Square South, Dublin 2, Ireland. D02 RD28. *Phone:* +353 (0)761 104 800 +353 (0)57 868 4800 *Website:* www.dataprotection.ie/en

Part 3: Costs, Funding & Approval

Has this study been approved by a research ethics committee?

Yes, this study has been approved by the Faculty of Health Sciences Research Ethics Committee Approval was granted on REC approval received on June 1st 2021, Reference number: 210509

Who is organising and funding this study? Will the results be used for commercial purposes?

The study will be conducted by Susan Hannon, Dr Deirdre Daly & Prof Agnes Higgins in partial fulfilment of the requirements for a degree of Doctor of Philosophy, with the School of Nursing & Midwifery, Trinity College Dublin. Susan Hannon's doctorate research is funded by the Provost award from Trinity College Dublin. There is no conflict of interest between this funding and the aims or results of the study. No part of this study will be used for commercial purposes.

Is there any payment for taking part?

No, we are not paying participants to take part in the study.

I have read the Information leaflet, how do I take part in the study?

5. Contact the researcher, Susan Hannon, at mammi@tcd.ie or text/ call at 087 1186762 to confirm that you are interest in participating in, and receiving the documents for, the research study.
6. You will receive the study documents, a pre-addressed envelope and two copies of the consent form.
7. Complete both consent forms, keep one copy for your own records and return the other in the freepost pre-addressed envelope to the researcher.
8. When the researcher receives your completed consent form she will contact you to confirm how you wish to conduct the interview (in person, via telephone or online calling application) and to schedule a date that best suits you.

Further information

If you have any questions about the MAMMI Study or our data protection procedures, you can contact us for more information at 087 1186762 or mammi@tcd.ie. You can also visit the website at www.mammi.ie.

Kind Regards,

Susan Hannon.

Information & Support Services in Ireland

Mental Health Services in Ireland

Post Natal Depression Ireland : **Email:** support@pnd.ie
www.pnd.ie
Cork: 021 492 2083
Kerry: 086 787 2107

Women throughout Ireland can use this website and discussion forum, or seek support and information through the helpline or email. Post Natal Depression Ireland also organises monthly support meetings in Cork city

Mental health services by location in Ireland: *www.hse.ie/eng/services/list/4/mental-health-services*

The HSE provides a list of local mental health services across Ireland.

Aware: *www.aware.ie* **Phone:** 1800 80 48 48
Monday – Sunday, 10am - 10pm

Aware provide emotional and practical support to those affected by depression, bipolar and related disorders. Aware also provide positive mental health and resilience training.

Find a Psychologist- Psychological Society of Ireland (PSI): *www.psychologicalsociety.ie*

Find an accredited psychologist in your area through the PSI's directory.

Irish Association for Counselling and Psychotherapy: *iacp.ie*

Find an Accredited Therapist in your area through the IACP's website directory.

GROW Mental Health: www.grow.ie/

Grow Mental Health is a registered charity delivering Mental Health Education Programmes both within the community and the workplace. GROW Mental Health also offers a support community of people drawn together by first-hand experiences of mental health problems, through The Grow Program, a 12-step mental health recovery program.

National Counselling Service: https://www.hse.ie/eng/services/list/4/mental-health-services/national-counselling-service/

The HSE National Counselling Service is available free of charge across the country to residents in the Republic of Ireland.
The aim of the NCS is to support clients to improve their quality of life and reduce their psychological distress through the provision of evidence-based, professional, client centred counselling.
Face to face, counselling by phone and online video counselling are available.

Pregnancy & Birth

The Birth Trauma Association (BTA): **Email:** @birthtraumaassociation.org.uk
www.facebook.com/groups/TheBTA

The Association is run by mothers who wish to support other women who experienced difficult childbirth experiences.

AIMS Ireland Birth Healing support group: **Email:** support@aimsireland.com
aimsireland.ie/
www.facebook.com/aims.ireland

AIMS Ireland is a consumer-led voluntary organisation formed by women, their mission is to speak on behalf of the service user experience in Ireland as to where evidence based practices are lacking and as to where new investment and services are needed. AIMS Ireland also run a closed Facebook group for women who have experienced a difficult or traumatic childbirth, offering a safe place to share stories and provide peer support. If you are interested in this group, please contact them by email or via Facebook private messages.

Family & Parenting

Parentline: *www.parentline.ie*
LoCall 1890 927 277 or 01 873 3500
Monday - Thursday 10am- 9pm, Friday 10am- 4pm

Parentline is a national helpline for parents, offering support, guidance and information on all aspects of being a parent.

One Family: *onefamily.ie*
Phone: 01 662 9212
Lo-Call: 1890 662212
Email: info@onefamily.ie

Supporting people who parent alone, share parenting, are separated or separating, ONE Family's services include professional counselling services, children's play therapy, mediated parenting plans, mentoring and courses.

Treoir - Informing Unmarried Parents: *www.treoir.ie*
Phone: 01 6700 120
Lo-Call: 1890 252 084
Email: info@treoir.ie

Treoir provide a free, confidential information service for unmarried parents, living together or apart, their extended families and those working with them. The topics covered include legal issues (guardianship, access, custody, birth registration, passports, cohabiting parents, etc.); social welfare (One-Parent Family Payment, Rent Supplement, welfare to work, etc.); shared parenting and other issues such as income tax, childcare, housing, etc.

Doras Buí - Parents Alone Resource Centre
Phone: 01 848 4811
dorasbui.ie

A resource centre for single parents who provide services including information, advice and advocacy on a wide range of topics including social welfare, health, parenting and legal issues and personal matters.

Intimate Partner Violence Services

Women's Aid Ireland: *www.womensaid.ie*
Phone: 1800 341 900

Women's Aid is a national organisation providing a 24/7 hour helpline for callers experiencing abuse from intimate partners. Women's Aid also offers a court accompaniment service and referrals to local refuges and support services.

Safe Ireland: *www.safeireland.ie*

Safe Ireland provides contact information for the 37 intimate partner violence refuges and services across the Republic of Ireland.

Sexual Assault Treatment Unit (SATU): *www.hse.ie/eng/services/list/5/sexhealth/satu*

If you are worried or concerned about unwanted or forced sexual activity and wish to get help or advice, you can contact your local Garda Station or a Sexual Assault Treatment Unit (SATU). SATU's provide holistic, patient focussed care and support to anyone who has experienced a sexual crime, regardless of whether they report the crime or not. SATU services can be accessed 24 hours a day 365 days a year. There are 6 SATU's in Ireland. Your local Rape Crisis Centre can provide you with accompaniment support to the SATU.

Legal Aid Board : *www.legalaidboard.ie/en*

The Legal Aid Board provides legal aid and advice in civil cases to people in Ireland who cannot afford to pay a solicitor privately.

FLAC (Free Legal Advice Centres): *www.flac.ie*

FLAC are an independent, human rights organisation that promotes equal access to justice for all. Members of the public can access basic, confidential legal advice across all areas of law in a network of clinics around Ireland.

Support Resources for Minority Groups

Cairde: *cairde.ie*

City Centre Office: 19 Belvedere Place,
Dublin 1.
Phone: 01 855 2111
Email: info@cairde.ie.

Balbriggan Office: Old St. Georges School, Hampton St.,
Balbriggan, Co. Dublin.
Balbriggan Phone: 01 8020785
Email: balbriggan@cairde.ie
sarah@cairde.ie
marianna@cairde.ie.

Cairde works to improve access to health services for ethnic minority communities (from Africa, Eastern Europe and the Baltic states). Cairde's Health Information & Advocacy Centres (HIAC), in Dublin city centre and in Balbriggan, provide relevant, accurate and culturally appropriate health information to individuals and groups.

Irish Refugee Centre:
www.irishrefugeecouncil.ie

Drop-In Centre: 37 Killarney Street, Dublin 1
Phone: 01 764 5854
Email: info@irishrefugeecouncil.ie

The Irish Refugee Centre is a free and confidential drop-in centre, open every Monday, Tuesday and Thursday, giving advice on the asylum process, Direct Provision and Family Reunification.

Doras Luimní: *doras.org*

Advice & Information centre
Mon: 9:30am - 12:30pm & 2pm t- 4:30pm
Tues: 10:30am - 12:30pm & 2pm - 4:30pm
Thurs: 9:30am to 12:30pm & 2pm to 4:30pm

Doras is an independent, non-profit organisation working to support and promote the rights of migrants living in Ireland. Doras run basic English language classes twice a week and also provide advice and support to recognised & suspected victims of trafficking for the purposes of sexual & forced labour exploitation.

Pavee Point Traveller & Roma Centre:
www.paveepoint.ie
Phone: 01 878 0255
Email: info@pavee.ie

Pavee Point Traveller & Roma Centre
46 Charles Street Great
Dublin 1
Ireland

Pavee point works to improve the quality of life, living circumstances, status and participation of Travellers and Roma through working innovatively for social justice, greater solidarity, development, equality and human rights.

Patient Advocacy

Patient Advocacy Service: www.patientadvocacyservice.ie
Phone: 0818 293 003
Email: info@patientadvocacyservice.ie
The Patient Advocacy Service provides is a free, independent and confidential Advocacy Service for users of Public Acute Hospitals. The service can support you to make a complaint about the care you have experienced in a public acute hospital.

HSE Advocacy Support List: https://www.hse.ie/eng/services/yourhealthservice/feedback/services/

Appendix 4.8: Phase 2, Qualitative interviews- Consent form

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Women's mental health and resilience in the early years of first-time motherhood.
Maternal health And Maternal Morbidity in Ireland (MAMMI) study

Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

DECLARATION by participant: Please tick (X or √) and provide your initials		
1	I have read the information booklet for this research study and I understand the contents.	**Yes [ ] No [ ] initials [ ]**
2	I have had the opportunity to ask questions and all my questions have been answered to my satisfaction.	**Yes [ ] No [ ] initials [ ]**
3	I fully understand that my participation is completely voluntary and that I am free to withdraw from the study *at any time* (prior to publication) *without*	**Yes [ ] No [ ] initials [ ]**
4	I understand that I will be given an opportunity to review a summary of the findings of the interview to confirm accuracy	**Yes [ ] No [ ] initials [ ]**
5	I understand that the transcript will not identify me by name but will use a study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed.	**Yes [ ] No [ ] initials [ ]**
6	I understand that the researchers undertaking this research will hold in confidence and securely all collected data and other relevant information.	**Yes [ ] No [ ] initials [ ]**
7	I understand that information from this research will be published but that I will not be identified as a participant in this research in any publication.	**Yes [ ] No [ ] initials [ ]**
8	I agree that information obtained from me in this research which has been coded so as not to identify me may be stored and used for the purpose of future research by the MAMMI Study, Trinity College Dublin, in the area of mental health which will have obtained Research Ethics Committee approval without	**Yes [ ] No [ ] initials [ ]**
9	I understand that my personal details (name and address and other identifying information that links my identity to the study data) will be destroyed when this study is complete unless I have agreed to its retention after that date and to being contacted about future research.	**Yes [ ] No [ ] initials [ ]**
10	I freely and voluntarily consent to participating in this research study.	**Yes [ ] No [ ] initials [ ]**
11	I give informed explicit consent to have my data processed as part of this research study.	**Yes [ ] No [ ] initials [ ]**

Please continue overleaf

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Women's mental health and resilience in the early years of first-time motherhood.
Maternal health And Maternal Morbidity in Ireland (MAMMI) study
Researcher: Tel: 087 1186762. E-mail: mammi@tcd.ie

Participant Details:

Participant's Name:	
Contact Address:	
Phone number:	
Participant's signature:	**Date:**
E-mail:	
Researcher's signature:	**Date:**

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Appendix 4.9: Phase 2, Qualitative interviews- Interview guide

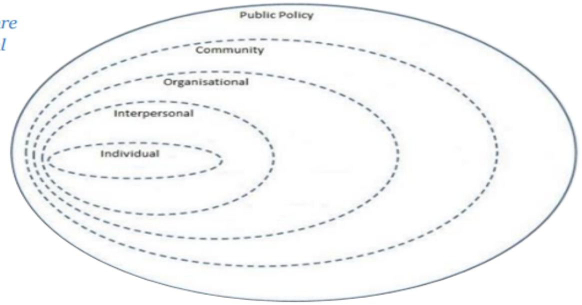
Women's mental health and resilience in the early years of first-time motherhood: Interview guide

This is a general guide of the interview topics and questions. The interview may not cover all of the questions. You do not have to answer any question you do not feel comfortable answering. Interviews are audio-recorded; you may request a copy of the transcript for your interview. You may stop the interview at any time without providing a reason and your decision will be respected by the researcher. You may withdraw from the study at any point before the data has been anonymised (coded so that no individual personal can be recognised), or published.

If you disclose information about yourself, your child, or the care you have received that gives cause for concern, the interview will be suspended if required, and you will be directed to the appropriate contacts, patient advocacy and support services, or hospital support services.

If you disclose information that indicates that a child is being harmed. It is the researcher's professional duty to report such disclosures to the appropriate authorities.

These interviews are all about women's opinions and lived experiences, many of the topics/questions covered in today's interview came from suggestions and feedback of MAMMI study participants as part of another study (PPI) about women's opinions on how maternal mental health and resilience is currently researched and investigated, there are no right or wrong answers.

Introduction and purpose of interview	*Welcome, introductions and space for questions from the participant.* · Did you have a chance to read the interview schedule before the interview? Do you have any concerns or questions? · Is there anything you want the researcher to know? Are there any topics you do not wish to address/ talk about?
Mental Health Concepts	*Mental health, mental wellbeing and resilience may mean different things for different people, here we will talk about what they mean for you.* · What does being 'mentally well' mean to you? What are your thoughts on mental illness? · What does *resilience* or *being resilient* mean to you? How do you think *resilience* fits into mental health? · What do you think it means to be resilient as a mother? · Where do you think your ideas on what it means to be resilient have come from? (Childhood and upbringing, culture, society?) · Would you call yourself *resilient*? Can you give an example of a time when you feel you were resilient? Do you think others would describe you as *resilient*?
Mental Health and Motherhood; Culture and Society.	*Mental health, mental ill health and well-being in motherhood can be influenced, supported or hindered by the beliefs, values, attitudes and resources within the cultures, communities, societies and environments that we live in. Here we talk about how these impact on you.* *In the PPI interviews women said we should look at the various* ***layers or sources of support*** *that are* ***available*** *or* ***unavailable*** *to each individual woman. Later in the interview, we will look at individual and personal factors. Here we will talk about some social and cultural factors.* What are your thoughts on the social or cultural expectations of mental health in motherhood? Can you tell me about **if** and **how** you think **mothers** and their **mental health** and **wellbeing** are **valued/supported** by: · your particular culture (Irish, Traveller, immigrant, ethnic minority, other minority)? · Irish society? · Irish health system? · through Government policies?  **We will return to this image throughout the conversation if you find it helps to organise your thoughts*
Your Mental Health Journey	*Most people experience changes in mental health during their lifetime, and I am interested in teasing out normal reactions to situations/events from other mental health issues, and what factors help or hinder women from seeking help or support.* Before pregnancy: · How would you describe your mental health/emotional wellbeing before pregnancy? (Major events, times you felt you needed help and if you sought help. Also, times of mental wellbeing; when you felt well, thriving or flourishing.)

Women's mental health and resilience in the early years of first-time motherhood: Interview guide

	During pregnancy: · How would you describe your mental health/emotional wellbeing during pregnancy? In the first year of motherhood: · How would you describe your mental health/emotional wellbeing in the first year of motherhood? · What kind of changes did you experience in your mental health? · How did your mental health experiences impact on your life? (For example; self-image, relationships, career or education, personal goals). What were the factors/ supports/ resources in your life that: · Helped you stay mentally well? · Helped you recover from stress, depression, anxiety, or mental health problems? · Did you find it difficult or easy to find resources/ support? What were there factors in your life that: · Prolonged or worsened experiences of stress, depression, anxiety, or mental health problems? · Were you able to/ how did you manage these? In what ways did you support your mental health? (For example, *Self-help books, blogs, podcasts, meditation/mindfulness Apps or resources, friends, family, partner, GP, counselling, psychiatrist, other?*) In your first year of motherhood, what was your opinion of how you were doing mentally and emotionally? Looking back now, do you have the same opinion of yourself? How does it differ? At the time, would you have called yourself resilient?
Your Mental Health and Resilience **Now**	*Here we will talk about your recent emotional and mental health experiences.* Mental health in motherhood (Life now): · How would you describe your mental health/emotional wellbeing now? · How do you think your mental and emotional health has changed since the first postpartum year? · How do your mental health experiences impact on your life? (For example; self-image, relationships, career or education, personal goals). · What do you do now to support your mental health? Why/ why not? (For example: *Self-help books, blogs, podcasts, meditation/mindfulness Apps or resources, friends, family, partner, GP, counselling, psychiatrist, other?*) In our PPI interviews women said they wanted to see a focus on **Positive Outcomes** (growth, thriving or wellbeing) **beyond** a woman's role as a mother or partner, and **even** when women are experiencing mental health problems. Women in the interviews said we should look for positive outcomes in relation to women's: 1) *Creativity* 2) *Nurturing a Sense of Self & Identity* 3) *Career or Personal Goals* ❖ What about **you**: What areas of your life do you feel you are doing well in? ❖ What steps do you take to support your own creativity, identity and goals? What factors/ supports/ resources are currently in your life that: · Help you stay mentally well. · Help you manage stress, depression, anxiety, or mental health problems · Is there anything in your life now that you think stops you from being mentally well? · Is there anything you do/can do to lessen the negative impact of these barriers?
Closure	*Reflect on the conversation.* Is there anything you wish to add? Is there anything you felt should have/ shouldn't have been asked? Is there anything you wish you had not spoken about?

Appendix 4.10: Phase 3, Five-year follow-up- Participant Information Leaflet

INFORMATION LEAFLET

Maternal health And Maternal Morbidity in Ireland (MAMMI) Study

5-Year Follow-Up Study

Research Tel: 087 118 6762. Research E-Mail: mammi@tcd.ie

Dear MAMMI Study Participant,

We would like to invite you to take part in the 5-year follow-up survey with the **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland (**MAMMI**) study.

Before deciding whether you wish to take part, please read this information leaflet. If you have any questions about the study that are not answered by this information leaflet, please feel free to contact Deirdre Daly at the contact details on page 6.

Researchers with the School of Nursing & Midwifery at Trinity College Dublin, Dr Deirdre Daly, Dr Francesca Wuytack, Dr Patrick Moran and Dr Cecily Begley are conducting the MAMMI study 5-year follow-up and Second Baby follow-up (SIM) studies.

Please note, you do not have to take part in this research. You can change your mind about taking part in the Study at any time up to data anonymisation or publication, and you can opt-out without providing a reason.

Why are you doing the 5 year follow up?

The MAMMI Study was designed to gain knowledge on first time mothers' health and health problems during pregnancy and in the first year after the baby's birth. For some women, health problems might persist for longer than one year after birth and there is a lack of knowledge about the long-term consequences for women in Ireland. This follow-up study is designed to fill in some of the gaps and examine the health and health problems women are experiencing up to five years after the birth of their first baby.

The 5-year survey also asks if you have given birth to your SECOND CHILD within the past twelve months. If you have had your second child within the past twelve months AND you have consented to being contacted about future related research, you may be **invited** to complete the second baby follow-up survey.

Again, you do not have to take part in the second baby follow-up study.

Why have I received this information pack?

You have received this information pack because you were a participant in the MAMMI study when you had your first child five years ago and, at that time of joining the study, you consented to being contacted about taking part in future MAMMI study-related research. This information leaflet will tell you about the MAMMI 5-year follow-up study and what taking part involves.

What kind of questions will I be asked?

The MAMMI 5-year follow-up study will ask you questions on many of the same topics that were covered when you had your first child. In this survey, there will be questions about:

- General physical health and pain
- Mental health
- Urinary and anal incontinence
- Sexual health, relationships, and relationship issues
- Current living and work status

In addition, we have included three new sections to the MAMMI 5-year follow-up survey:

- Major life events
- Economic or financial impact of health problems
- Your opinions on data sharing

What are the potential RISKS for me and my child(ren)?

There are no foreseen risks with participation in the research study to you or your child(ren).

Are there any potential BENEFITS for me and my child(ren)?

This research study will describe women's health and health problems five years after their first baby's birth. The study will not benefit you individually but as many women are being invited to complete this survey, we hope that the information women provide will increase understanding of what causes some of these problems or makes problems persist long term for women.

Responses and comments made by women who completed the MAMMI surveys after the birth of their first child showed that taking part in the study alone helped some women become aware of health issues that might present after pregnancy. Completing the surveys also prompted women to seek professional assistance for various health concerns, made them feel less alone, and gave women a chance to reflect on their experiences.

For more information on women's experiences in taking part in the MAMMI Study please visit the MAMMI Study website, or read the research paper titled '*Stop, think, reflect, realize- first-time mothers' views on taking part in longitudinal maternal health research'* which is available to download for free at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/hex.12861

Who can participate?

Women who participated in the MAMMI Study and who consented to being contacted about future related research and give written consent to taking part in this follow-up study, by completing the enclosed consent form.

What does taking part in the Study mean for me?

We are asking you to complete ONE survey now that your first child is five years old. The survey should take about 45 minutes to complete. If you wish to take part, please return the SURVEY and COMPLETED CONSENT form to us in the FREEPOST envelope included in the pack. If you did not receive, or have misplaced, the FREEPOST envelope, consent form or the survey, please feel free to contact the team to request another.

Can I withdraw from the study?

You are free to withdraw from the study, without providing a reason, by ticking the ‘withdraw’ box on the front of the enclosed survey and returning it to us in the FREEPOST envelope, OR by contacting a member of our team via text or call on 087 118 6762, or by emailing the team at mammi@tcd.ie.

Please note that it will not be possible to withdraw your data after the data have been anonymised or before publication of results.

What happens to the information at the end of the study?

We will publish the findings from the study and give talks about the findings. It will not be possible to identify you or your answers in any of these publications or talks.

The information from the surveys may also be used in future research projects. However, the researchers will not contact you unless you give your consent to future contact.

We will also present the results to healthcare policy makers and service providers in Ireland, in order to raise awareness and improve knowledge of women’s experiences. By doing this, we hope that the information you have given us will be used to shape and influence future services for women as they become mothers.

How can I see the results of the research?

Results from the MAMMI Study will be presented at national and international conferences. The findings will also be made available on the MAMMI website at www.tcd.ie/mammi

What do the options on the consent form mean?

The consent form asks you to sign your name to show that you agree to take part in this study.

The consent form asks if you to agree to the following options:

Paragraphs 1-4: these options are about ensuring that you understand what taking part means, that your participation is voluntary and that you are free to withdraw any time before the results are published.

Paragraph 5: this option guarantees that we will keep all study information secure and confidential.

Paragraphs 6-8:

- *Paragraph 6:* lets you agree to information collected from you as part of this Study being used for future research studies that have been approved by a Research Ethics Committee.

- *Paragraph 7:* lets you say if you want your personal details such as your name and address to be destroyed after this stage (MAMMI Study: 5-year follow up) of the research. If you say yes, the research team will not be able to contact you when this stage of the research is over to inform you of future developments.

- *Paragraph 8:* lets you agree to us keeping your personal details for five years after the end of this stage (MAMMI Study: 5-year follow-up) of the research. If you say yes, the research team will contact you and *invite* you to take part in future studies; you do not have to participate in them if you wish.

- *Paragraph 9:* lets you say if you consent to a member of the research team contacting you to invite you to take part in interviews relating to topics covered by the MAMMI Study.

Remember, you do not have to agree to any or all of these options and you may decide you do not wish to take part. However, if you do agree, you will help us to continue our study of the health problems experienced by pregnant women, mothers and their babies, and the longer-term impact on women's health and lives.

Data Protection Information

How will my information be used?

We will use your information to study the long-term health and health problems experienced by women in Ireland five years after the birth of their first baby.

Where you give consent, your information will be retained for a period of five years following completion of the MAMMI Study, and used for the purposes of future research related to the topics covered by the MAMMI Study surveys.

Five years after the Study has been completed, the electronic data will be anonymised and the paper copies of the surveys will be shredded and disposed of in accordance with Trinity College Dublin's procedures.

All future research will receive Research Ethics Committee approval, without the need for further consent from participants. All future data processed will relate to the content covered by the MAMMI surveys. The findings from the research study will be presented and published. It will not be possible to identify any woman individually in these presentations and publications.

Your data will be processed (collected, held, analysed) in compliance with **General Data Protection Regulation 2016 Article 6.1 (e):** *processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller;* and **Article 9.2 (j):** *processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes in accordance with Article 89 (1) based on Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject.*

Participants have the right to restrict or object to having their data processed, unless the request would make it impossible or make it very difficult to conduct the research. For example, it will not be possible to remove data after anonymization, analysis or publication.

Participants have the right to have their personal data deleted, unless their request would make it impossible or make it very difficult to conduct the research. For example, it will not be possible to remove personal data and maintain future contact with consenting participants.

How will you protect my personal information?

- We keep all the information you give us private and confidential.
- We give your survey information a unique number (a code), and we store your personal details and your code number securely and separately from the completed survey/s.
- Paper copies of the surveys are stored in locked cabinets, in a locked office where few designated people have access.
- We keep an electronic version of the information you give us on a Trinity College's main server. Only the research team have access to this information. We use password protection on every file containing personal data, encryption (special software to scramble the information so it cannot be read) and anti-virus software to protect the information on the computer.

Do you have procedures in place if there is a data protection breach?

In the unlikely event of a data protection breach, there is the potential for your personally identifiable information to become compromised.

We will hold and process all personal and sensitive information in compliance with the General Data Protection Regulation 2018 and the Health Research Regulations 2018. If a data breach should occur, the MAMMI Study team will follow Trinity College Dublin's Data Protection Breach procedures that comply with the General Data Protection Regulation 2018.

You may also read about out data protection procedures on our website at www.mammi.ie.

Who will have access to my information?

Only MAMMI Study team members who have a legitimate need to access data in the performance of their professional research duties will have access to your personal data. These members must sign a confidentiality agreement form, and, like all members of the University community, must abide by the Data Protection Policy, Data Protection Procedures and IT Security Policy. All MAMMI Study team members who are involved in carrying out research must enrol in, complete and successfully pass an assessed online training module entitled 'Data protection, IT security and Data Management'.

Will you share data from the MAMMI Study?

1. Where participants have given their consent to data sharing, anonymised data collected from the MAMMI study will be shared with the Maternal Health Study (MHS) research group: Murdoch Children's Research Institute, Australia.

2. Where participants have given their consent to data sharing, anonymised data collected from the MAMMI study will be shared with the Multidisciplinary Opinion and Democracy Research Group (MOD), Department of Political Science, University of Gothenburg, Sweden.

The data shared with the MHS research group and the MOD group will only contain the information collected from the paper surveys in an electronic format, it WILL NOT CONTAIN ANY PERSONAL DETAILS. In other words, the MHS and MOD researchers will receive anonymised data.

All personal identifiable information such as study numbers, names, or place names WILL BE REMOVED from the data shared with these researchers. This renders the data anonymised.

The MHS and MOD research groups will not receive any information that might directly, or indirectly, lead researchers to identify any individual participant.

Only members of the MHS and MOD research teams will have access to the data that the MAMMI Study team share with them. The anonymised data that they receive will also be protected using passwords and encryption (special software to scramble the information so it cannot be read) and anti-virus software to protect the information when used on their computers.

Participants have the right to refuse to have their data shared. Please note that it will not be possible to withdraw your data after the data have been anonymised or before publication of results.

Can I access my personal data?

You have the right to request access to a copy of your data, and you have the right to have inaccurate information about yourself corrected or deleted. Access and corrections to your data will be provided where this can be reasonably accommodated. You have the right to data portability, this means that you may request to have your data moved from one data controller to another.

Will my data be used for any automated decision-making, including profiling?

No, the MAMMI Study will not conduct any form of automated processing of personal data or profiling.

What do I do if I have a data protection complaint?

If you have a complaint regarding the MAMMI Study's protection of your data, you may contact the following people or departments:

The MAMMI Study Principal Investigator: Dr Deirdre Daly

Telephone number of principal investigator: 01-8962604 or 087 1186762

Email of principle investigator: mammi@tcd.ie

Trinity College Dublin Data Protection Officer:
Ms Jennifer Ryan
Postal Address:
Data Protection Officer
Secretary's Office, Trinity College Dublin,
Dublin 2, Ireland.
Email of TCD DPO: dataprotection@tcd.ie

Data Protection Commission:
Postal Address:
Data Protection Commission
21 Fitzwilliam Square South
Dublin 2, Ireland.
D02 RD28
Phone: +353 (0)761 104 800
+353 (0)57 868 4800
Website: https: //www.dataprotection.ie/en

I have read the Information leaflet, how do I take part in the study?

Participating in the study means signing the consent form and completing the included survey form and returning both to us in the FREEPOST envelope provided. The survey takes approximately 45 minutes to complete. The second copy of the consent form in this pack is for you to keep.

- Sign the consent form.
- Keep a copy for yourself.
- Post the original *signed consent* form and your *completed survey* using the stamped addressed envelope that came with this leaflet.

Further information

If you have any questions about the MAMMI Study or our data protection procedures, you can contact us for more information at 087 1186762 or mammi@tcd.ie. You can also visit the website at www.mammi.ie.

Kind Regards,

The MAMMI Team

Appendix 4.11: Phase 3, Five-year follow-up- Consent form

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

CONSENT FORM: 5 Year Follow up Survey.

Maternal health And Maternal Morbidity in Ireland (MAMMI) study

5-year follow-up study

Researcher: Tel: 087 1186762. E-Mail: mammistudy@tcd.ie

DECLARATION by participant: Please tick (X o r √) and provide your initials		
1	I have read the information leaflet for this research study and I understand the contents.	**Yes [ ] No [ ] initials [ ]**
2	I have had the opportunity to ask questions and all my questions have been answered to my satisfaction.	**Yes [ ] No [ ] initials [ ]**
3	I fully understand that my participation is completely voluntary and that I am free to withdraw from the study *at any time* (prior to publication) *without giving a reason*	**Yes [ ] No [ ] initials [ ]**
4	I understand that I will be given an opportunity to review a summary of the findings of the interview to confirm accuracy	**Yes [ ] No [ ] initials [ ]**
	STORAGE AND FUTURE USE OF INFORMATION	
5	I understand that the researchers undertaking this research will hold in confidence and securely all collected data and other relevant information.	**Yes [ ] No [ ] initials [ ]**
6	I agree that information obtained from me in this research which has been coded so as not to identify me may be stored and used for	**Yes [ ] No [ ] initials [ ]**
7	I understand that my personal details (name and address and other identifying information that links my identity to the study data) will	**Yes [ ] No [ ] initials [ ]**
8	I consent to my personal details being retained for a further period of 5 years after this study has been completed and used to invite me to participate in future research in accordance with this consent.	**Yes [ ] No [ ] initials [ ]**
	FUTURE CONTACT	
9	I understand that I may be contacted by a member of the research team and requested to participate in interviews on one or more topics covered by this research and I consent to this.	**Yes [ ] No [ ] initials [ ]**
10	I consent to being contacted in the future regarding participation in research relating to the topics covered by this research which will have Research Ethics Committee approval.	**Yes [ ] No [ ] initials [ ]**
11	I consent to being contacted in the future regarding participation in research unrelated to the topics covered by this research which will have Research Ethics Committee approval.	**Yes [ ] No [ ] initials [ ]**

Please continue overleaf

Page 1 of 2

	SHARING DATA WITH OTHER RESEARCHERS	
12	I understand that information obtained from me in this research, which has had all my personally identifiable information removed so that I may not be identified as a participant in this research, may be shared with other researchers as outlined in the Participant	**Yes [ ] No [ ] initials [ ]**
13	I freely and voluntarily consent to participating in this research study having been fully informed of the risks, benefits and alternatives.	**Yes [ ] No [ ] initials [ ]**
14	I give informed explicit consent to have my data processed as part of this research study.	**Yes [ ] No [ ] initials [ ]**

Please PRINT your details in CAPITAL LETTERS

PARTICIPANT'S NAME: ....

Contact Address: ....

....

Phone number: ....

Participant’s signature: .... **Date:** ....

E-mail: ....

Researcher’s signature: .... **Date:** ....

One copy of this form must be retained by the Participant and one copy must be retained by the Researcher

Appendix 4.12: List of re-categorised and re-coded perinatal variables

Variable type	Source	Variable	Initial coding	Coding/ re-coding
Socio-demographic factors	Survey 1	Maternal age	Scale	1- 18-24 years 2- 25-29 years 3- 30-34 years 4- 35+ years
	Survey 1	Region of birth	Nominal	1- Ireland 2- Other Europe county 3- Non-European county
	Survey 1	Education attainment	1- No formal qualifications 2- Primary or first school 3- Lower secondary 4- Junior/Inter/Group Cert/ O levels/ GCSE, NCVA Foundation cert etc 5- Upper secondary Leaving Cert - applied and vocation progs., A Levels, NCVA level 1 etc. 6- Completed apprenticeship, NCVA level 2/3, Teagasc cert, dip or equivalent 7- Both upper secondary and technical or vocational qualification 8- National cert, diploma NCEA/ Institute of Technology or equivalent, Nursing Diploma 9- Primary degree 10- Professional qualification of degree status 11- Postgraduate cert or diploma 12- Postgraduate degree Masters 13- Doctorate PhD	1- Postgraduate level and above 2- Secondary level or less
	Survey 1	Employment status	1- Full time paid work 2- Part time paid work 3- Casual paid work 4- Looking for first job	1- In paid employment 2- Not in paid employment

			5- Unemployed 6- Student or pupil 7- Looking after home/family 8- Unable to work due to sickness/disability 9- Unpaid voluntary work	
	Survey 1	Relationship status	1- Married 2- Divorced or separated 3- Widowed 4- Single 5- Living with partner 6- In a relationship - not living together	1- Married or living with a partner 2- Single or not living with a partner
Maternal physical heath	Survey 1	Pre-pregnancy body mass index	Scale	1- Underweight (<18.5) 2- Average weight (18.5–24.9) 3- Overweight/obese (≥25)
Birth factors	Survey 2	Mode of birth	1- Labour started spontaneously 2- Labour started induced vaginal pessary/pessaries 3- Labour started induced waters broken artificially 4- Labour started induced syntocinon drip 5- No labour had caesarean section never went into labour	1- Spontaneous vaginal 2- Operative vaginal 3- Caesarean section
	Survey 2	Gestation at birth	Scale	1- Preterm (<36.9 weeks) 2- Term (37–41.9 weeks) 3- Post-term (≥42 weeks)
	Hospital data	Infant birth weight	Scale	1- ≤ 2500 g 2- 2500–3999 g 3- 4000 g ≥
Mental health symptomatology	All perinatal surveys	DASS-21	1- Normal 2- Mild 3- Moderate 4- Severe 5- Extremely Severe	1 Normal/Mild 2- Moderate/ex-severe
	Survey 1	Retrospective mental health report	1- Occasionally 2- Often	1- Occasionally/often 2-Never/rarely

			3- Never 4- Rarely	
Physical health factors	Survey 1	Global health	1 Excellent 2- Very good 3- Poor 4- Very poor	1 Excellent/very good 2- Poor/very poor
	Survey 1	Fertility treatment	1- No 2- Fertility drugs 3- IVF/ICSI	1- Treatment 2- None
Social/ relational factors	Survey 1	Relationship problems	1- Occasionally 2- Often 3- Never 4- Rarely	1- Occasionally /often 2- Never/rarely
	Survey 1	Fear of partner	1- Yes 2- No	1- Yes 2- No
Postpartum physical health	Survey 2-5	Common physical health issues	1- Occasionally 2- Often 3- Never 4- Rarely	1- Occasionally /often 2- Never/rarely

Appendix 4.13: List of re-categorised and re-coded five-year variables

Variable type	Source	Variable	Initial coding	Coding/ re-coding
Socio-demographic factors	Survey 1	Maternal age	Scale	1- 18-24 years 2- 25-29 years 3- 30-34 years 4- 35+ years
	Survey 1	Region of birth	Nominal	1- Ireland 2- Other Europe county 3- Non-European county
	Survey 1	Education attainment	1- No formal qualifications 2- Primary or first school 3- Lower secondary 4- Junior/Inter/Group Cert/ O levels/ GCSE, NCVA Foundation cert etc 5- Upper secondary Leaving Cert - applied and vocation progs., A Levels, NCVA level 1 etc. 6- Completed apprenticeship, NCVA level 2/3, Teagasc cert, dip or equivalent 7- Both upper secondary and technical or vocational qualification 8- National cert, diploma NCEA/ Institute of Technology or equivalent, Nursing Diploma 9- Primary degree 10- Professional qualification of degree status 11- Postgraduate cert or diploma 12- Postgraduate degree Masters 13- Doctorate PhD	1- Postgraduate level and above 2- Secondary level or less
	5-year survey	Employment status	1- Paid work 2- Working and studying (part time) 3- Paid maternity leave 4- Unpaid maternity leave	1- Income 2- No income

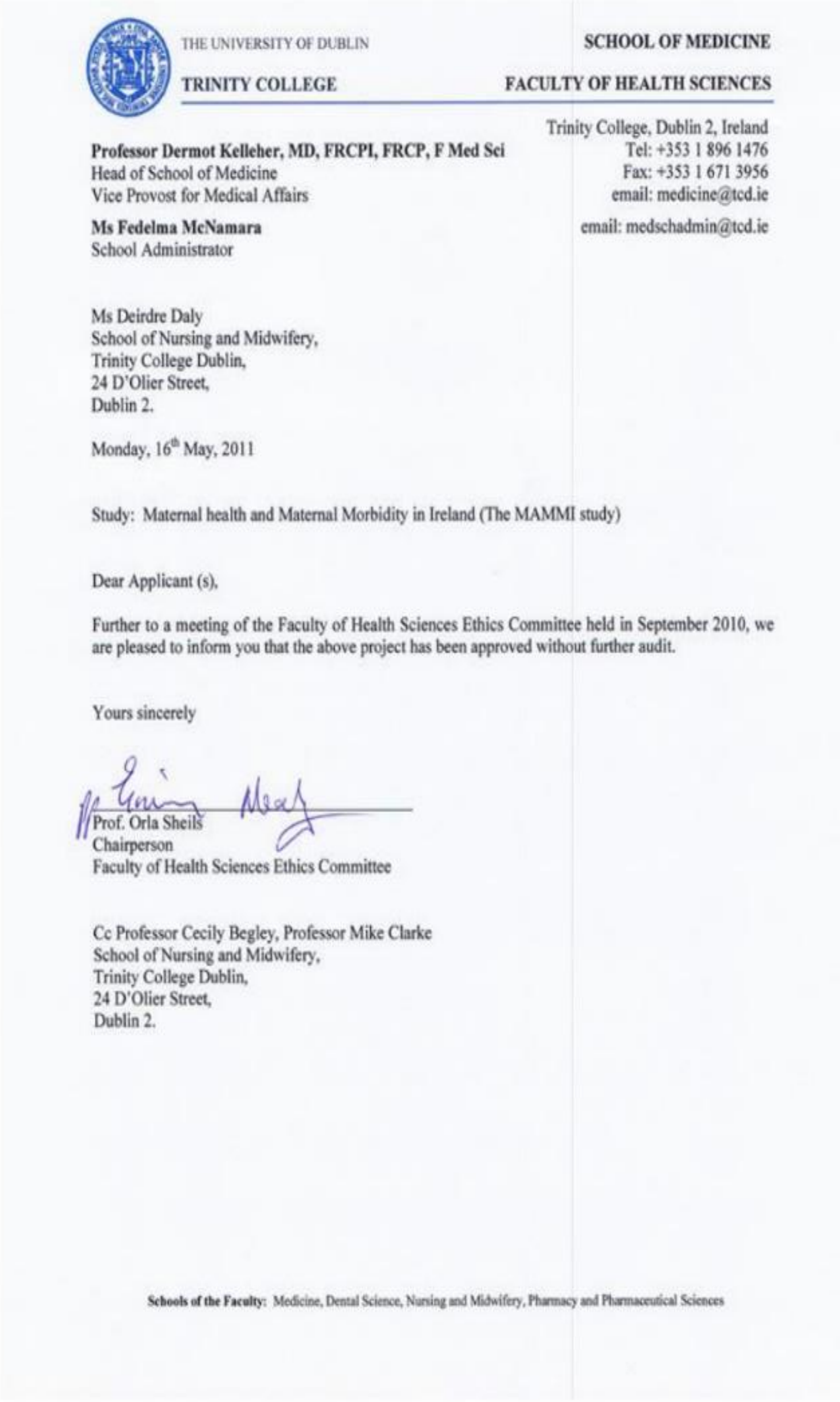
			5- Studying (full time) 6- Unemployed	
	5-year survey	Relationship status	1- Married 2- Living with a partner (boyfriend/girlfriend) 3- Same sex relationship 4- Divorced or separated 5- In a relationship - not living together 6- Widowed 7- Single	1- Married or living with a partner 2- Single or not living with a partner
	5-year survey	Number of children	Nominal	1- 1 Child 2- 2 Children 3- 3 Children 4- 4 Children
	5-year survey	Date of five-year follow-up survey completion	Scale	1- Pre-restrictions 2- Post-restrictions
Mental health symptomatology	5-year survey	DASS-21	1- Normal 2- Mild 3- Moderate 4- Severe 5- Extremely Severe	1 Normal/Mild 2- Moderate/ex- severe
Mental well-being	5-year survey	MHC-SF	0-Never 1-Once or twice 2- About once a week 3- About 2 or 3 times a week 4- Almost Everyday 5- Everyday	1- Flourishing 2-Moderate Mental Health 3- Languishing
Social factors	5-year survey	Practical support: Sources and extent	1- Partner, 2- Mother 3-Sister, 4- Other relative, 5- Friends or neighbours,	1- None or one source 2- 2-3 sources3- 4 or more sources

			6- Childcare/day-care facilities 7- Housekeeper, 8- Nanny or 9- Other	
		Practical support: Perception of need	1- Yes, definitely 2-Yes, possibly 3- No, I had enough help	1- Yes 2- No
		Time availability	1- Yes 2- No	1- Yes 2- No
		Frequency of time availability	1- Hardly ever 2- Less than once a fortnight 3- About once a fortnight 4- About once a week 5- Usually two to three times a week 6- Usually four or more times a week	1- Hardly ever 2- Less than once a fortnight 3- About once a fortnight 4- About once a week 5- Usually two to three times a week 6- Usually four or more times a week
	5-year survey	Partner contribution: Household	1- Yes, definitely 2- Yes, in the circumstances 3- No 4- N/A	1- Yes, definitely 2- Yes, in the circumstances 3- No 4- N/A
		Partner contribution: Childcare	1- Yes, definitely 2- Yes, in the circumstances 3- No	1- Yes, definitely 2- Yes, in the circumstances 3- No
		Partner contribution: Parental involvement	1- Really involved 2- Somewhat involved 3- Not really involved	1- Really involved 2- Somewhat involved 3- Not really involved
Emotional and relational factors	5-year survey	Emotional support-general	1- Yes, definitely 2- Yes, possibly 3- No, not really	1- Yes, definitely 2- Yes, possibly 3- No, not really
	5-year survey	Emotionally satisfying relationship	1- Not sure' 2- Not at all	1- Not sure/Moderately 2-Very/Extremely

			3- Slightly 4- Moderately 5- Very’ 6- Extremely	
	5-year survey	Relationship problems	1- Occasionally 2- Often 3- Never 4- Rarely	1- Occasionally /often 2- Never/rarely
	5-year survey	Fear of current partner	1- Yes 2- No	1- Yes 2- No

Appendix 4.14: Letter of approval from the Research Ethics Committee, Faculty of Health Sciences, TCD.
16th May 2011

Letter of approval from the Research Ethics Committee, Faculty of Health Sciences, TCD.



THE UNIVERSITY OF DUBLIN
TRINITY COLLEGE

SCHOOL OF MEDICINE
FACULTY OF HEALTH SCIENCES

Trinity College, Dublin 2, Ireland
Tel: +353 1 896 1476
Fax: +353 1 671 3956
email: medicine@tcd.ie

Professor Dermot Kelleher, MD, FRCPI, FRCP, F Med Sci
Head of School of Medicine
Vice Provost for Medical Affairs

Ms Fedelma McNamara
School Administrator
email: medschadmin@tcd.ie

Ms Deirdre Daly
School of Nursing and Midwifery,
Trinity College Dublin,
24 D'Olier Street,
Dublin 2.

Monday, 16th May, 2011

Study: Maternal health and Maternal Morbidity in Ireland (The MAMMI study)

Dear Applicant (s),

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in September 2010, we are pleased to inform you that the above project has been approved without further audit.

Yours sincerely

Prof. Orla Sheils
Chairperson
Faculty of Health Sciences Ethics Committee

Cc Professor Cecily Begley, Professor Mike Clarke
School of Nursing and Midwifery,
Trinity College Dublin,
24 D'Olier Street,
Dublin 2.

Schools of the Faculty: Medicine, Dental Science, Nursing and Midwifery, Pharmacy and Pharmaceutical Sciences

Appendix 4.15: Letter of approval from the Research Ethics Committee, Rotunda Hospital. 3rd October 2011

Letter of approval from the Research Ethics Committee, Rotunda Hospital

ROTUNDA
HOSPITAL
Parnell St • Dublin 1
Tel: 01 - 817 1700 • www.rotunda.ie

DR SAM COULTER-SMITH
MASTER

3rd October, 2011.

Ms. Deirdre Daly,
Lecturer in Midwifery/Research Fellow,
School of Nursing & Midwifery,
24 D'Olier Street,
Dublin 2.

Re: The MAMMI Study (Maternal health And Maternal Morbidity in Ireland)

Dear Deirdre,

Just a note to confirm that the Research Ethics Committee of the Hospital are now happy for you to commence the above study. We wish you well with this work.

Kind regards.

Yours sincerely,

Mike

Dr. Michael Geary.
Chairman.
Research Ethics Committee.

not for prescription purposes

• Tel: 01 - 817 1731 • Fax: 01 - 873 0932
• email: masterssecretary@rotunda.ie

Appendix 4.16: Letter of approval from the Research Ethics Committee, Galway University Hospital. 31st May 2013

Letter of approval from the Research Ethics Committee, Galway University Hospital

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Merlin Park University Hospital
Ospidéal na h-Ollscoile, Páirc Mheirlinne
GALWAY UNIVERSITY HOSPITALS

Clinical Research Ethics Committee
Main Administration Building
Merlin Park Hospital
Galway.

31st May, 2013.

Professor Declan Devane
Chair of Midwifery
Aras Moyola
School of Nursing & Midwifery
National University of Ireland
University Road
Galway.

Ref: C.A. 900 – Maternal Health and Maternal Morbidity Ireland (MAMMI)

Dear Professor Devane,

I have considered the above project, and I am happy to grant Chairman's approval to proceed.

Yours sincerely,

P.P. Colette Collins
Dr. Shaun T. O'Keeffe
Chairman Clinical Research Ethics Committee.

c.c. Professor Cecily Begley, Chair of Nursing & Midwifery, Trinity College Dublin, 24 D'Olier Street, Dublin 2.

Profess John Morrison, Chair of Obstetrics, National University of Ireland, Galway.

Merlin Park University Hospital, OSPIDÉAL NA H-OLLSCOILE, PÁIRC MHEIRLINNE,
Galway, Ireland. Tel: 00 353 (0)91 757631

Appendix 4.17: Letter of approval from the Research Ethics Committee, Coombe Women and Infants University Hospital. 2nd April 2014

Letter of approval from the Research Ethics Committee, Coombe Women and Infants University Hospital

Coombe Women & Infants University Hospital
Excellence in the Care of Women and Babies
Foirfeacht i gCúram Ban agus Naíonán

Cork Street
Dublin 8
telephone +353 1 408 5200
fax +353 1 453 6033
www.coombe.ie

MC/MJ

02 April 2014

Ms Sunita Panda
Staff Nurse Neonatology Unit
CW&IUH

Re.: ***Study No. 9 – 2014 – The MAMMI Study (Maternal health and Maternal Morbidity in Ireland)- Caesarean section strand.***

Dear Ms Panda

This application was considered at the recent research ethics committee meeting held on 19th March 2014. Approval was given to the MAMMI study with the exception of the caesarean section strand as there was no information regarding the format of interviews of clinical staff and selection of same. The study can go ahead with the inclusion of appropriate logos and references to the Coombe Women & Infants University Hospital.

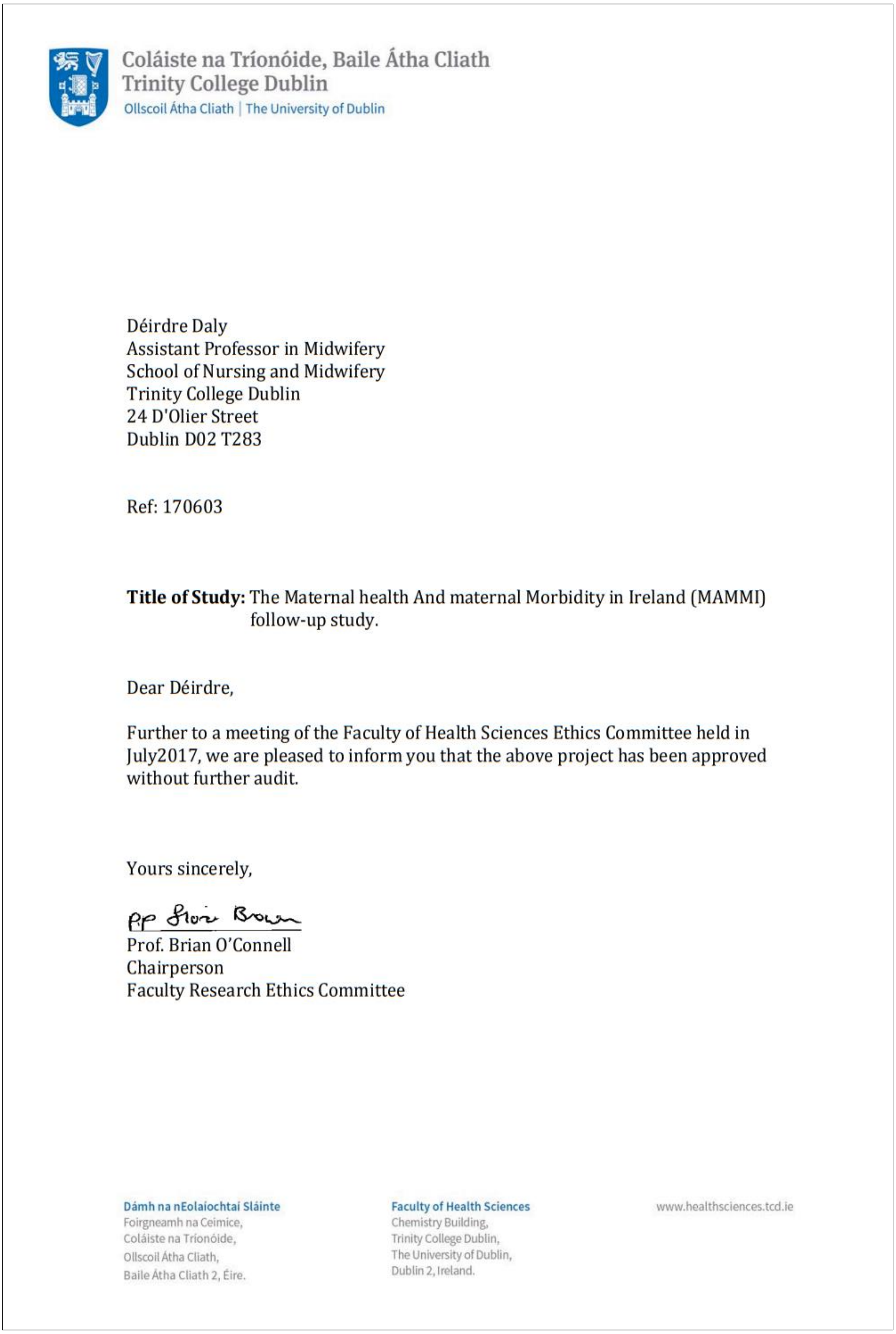
The second part of the study cannot go ahead until receipt of more information regarding methodology of clinical staff selection and interview.

Yours sincerely

Dr Michael Carey
Chairman

Copy: Prof. Cecily Begley, School of Nursing & Midwifery, TCD, 24 D'Olier Street,
Dublin 2

Appendix 4.18: Letter of approval from the Research Ethics Committee, Faculty of Health Sciences, TCD. July 2017



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Déirdre Daly
Assistant Professor in Midwifery
School of Nursing and Midwifery
Trinity College Dublin
24 D'Olier Street
Dublin D02 T283

Ref: 170603

Title of Study: The Maternal health And maternal Morbidity in Ireland (MAMMI) follow-up study.

Dear Déirdre,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in July2017, we are pleased to inform you that the above project has been approved without further audit.

Yours sincerely,

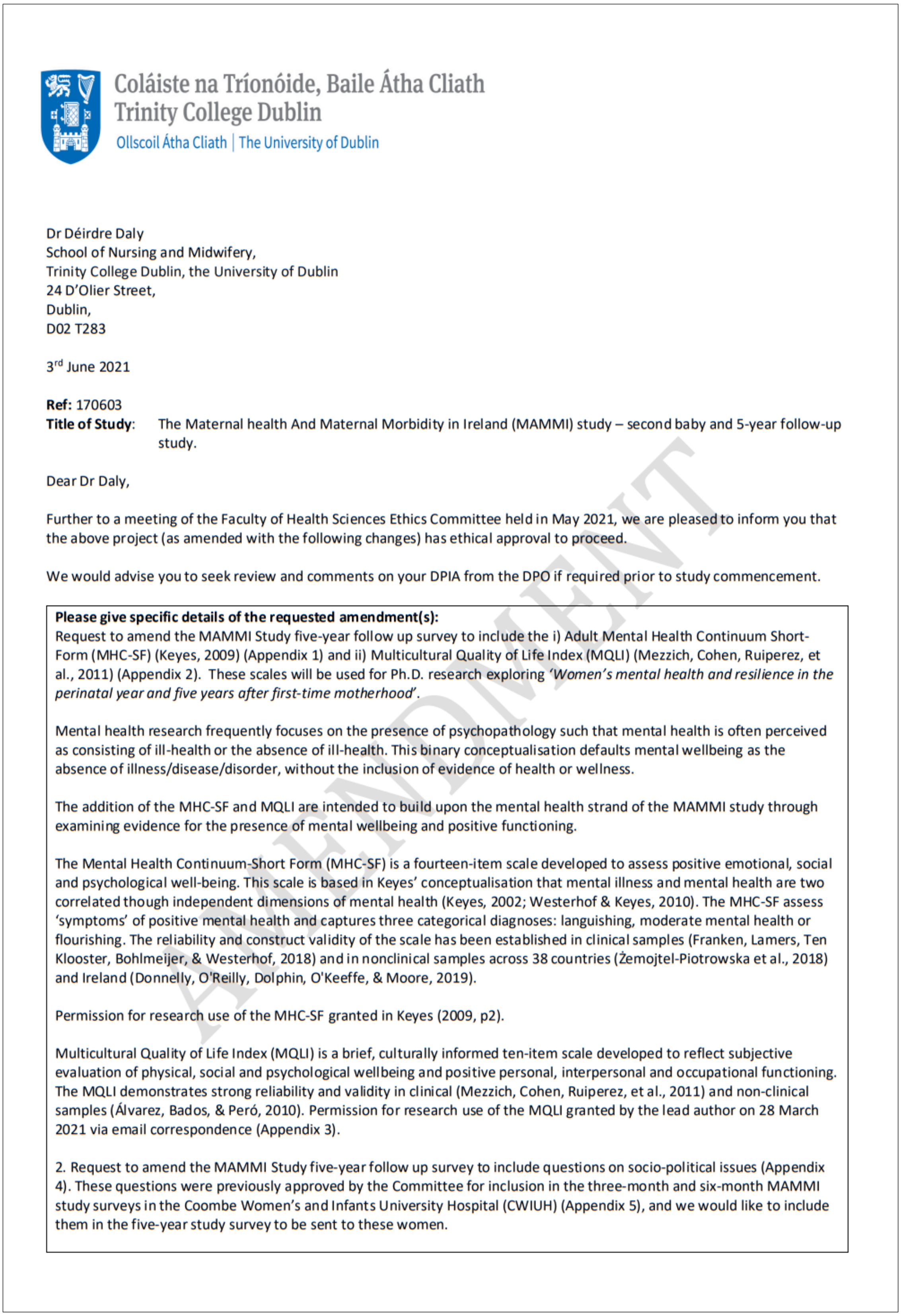
PP Fiona Brown
Prof. Brian O'Connell
Chairperson
Faculty Research Ethics Committee

Dámh na nEolaíochtaí Sláinte
Foirgneamh na Ceimice,
Coláiste na Tríonóide,
Ollscoil Átha Cliath,
Baile Átha Cliath 2, Éire.

Faculty of Health Sciences
Chemistry Building,
Trinity College Dublin,
The University of Dublin,
Dublin 2, Ireland.

www.healthsciences.tcd.ie

Appendix 4.19: Letter of approval for amendment from the Research Ethics Committee, Faculty of Health Sciences, TCD. 3rd June 2021



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Dr Déirdre Daly
School of Nursing and Midwifery,
Trinity College Dublin, the University of Dublin
24 D'Olier Street,
Dublin,
D02 T283

3rd June 2021

Ref: 170603
Title of Study: The Maternal health And Maternal Morbidity in Ireland (MAMMI) study – second baby and 5-year follow-up study.

Dear Dr Daly,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in May 2021, we are pleased to inform you that the above project (as amended with the following changes) has ethical approval to proceed.

We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement.

Please give specific details of the requested amendment(s):
Request to amend the MAMMI Study five-year follow up survey to include the i) Adult Mental Health Continuum Short-Form (MHC-SF) (Keyes, 2009) (Appendix 1) and ii) Multicultural Quality of Life Index (MQLI) (Mezzich, Cohen, Ruiperez, et al., 2011) (Appendix 2). These scales will be used for Ph.D. research exploring *'Women's mental health and resilience in the perinatal year and five years after first-time motherhood'*.

Mental health research frequently focuses on the presence of psychopathology such that mental health is often perceived as consisting of ill-health or the absence of ill-health. This binary conceptualisation defaults mental wellbeing as the absence of illness/disease/disorder, without the inclusion of evidence of health or wellness.

The addition of the MHC-SF and MQLI are intended to build upon the mental health strand of the MAMMI study through examining evidence for the presence of mental wellbeing and positive functioning.

The Mental Health Continuum-Short Form (MHC-SF) is a fourteen-item scale developed to assess positive emotional, social and psychological well-being. This scale is based in Keyes' conceptualisation that mental illness and mental health are two correlated though independent dimensions of mental health (Keyes, 2002; Westerhof & Keyes, 2010). The MHC-SF assess 'symptoms' of positive mental health and captures three categorical diagnoses: languishing, moderate mental health or flourishing. The reliability and construct validity of the scale has been established in clinical samples (Franken, Lamers, Ten Klooster, Bohlmeijer, & Westerhof, 2018) and in nonclinical samples across 38 countries (Żemojtel-Piotrowska et al., 2018) and Ireland (Donnelly, O'Reilly, Dolphin, O'Keeffe, & Moore, 2019).

Permission for research use of the MHC-SF granted in Keyes (2009, p2).

Multicultural Quality of Life Index (MQLI) is a brief, culturally informed ten-item scale developed to reflect subjective evaluation of physical, social and psychological wellbeing and positive personal, interpersonal and occupational functioning. The MQLI demonstrates strong reliability and validity in clinical (Mezzich, Cohen, Ruiperez, et al., 2011) and non-clinical samples (Álvarez, Bados, & Peró, 2010). Permission for research use of the MQLI granted by the lead author on 28 March 2021 via email correspondence (Appendix 3).

2. Request to amend the MAMMI Study five-year follow up survey to include questions on socio-political issues (Appendix 4). These questions were previously approved by the Committee for inclusion in the three-month and six-month MAMMI study surveys in the Coombe Women's and Infants University Hospital (CWIUH) (Appendix 5), and we would like to include them in the five-year study survey to be sent to these women.

3. Request for timeline extension to cover the proposed research, proposed date: December 31st 2022.

References:

Álvarez, I., Bados, A., & Peró, M. (2010). Factorial Structure and Validity of the Multicultural Quality of Life Index. *Quality of Life Research, 19*(2), 225-229. Retrieved from http://www.jstor.org/stable/40539904

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Franken, K., Lamers, S. M. A., Ten Klooster, P. M., Bohlmeijer, E. T., & Westerhof, G. J. (2018). Validation of the Mental Health Continuum-Short Form and the dual continua model of well-being and psychopathology in an adult mental health setting. *J Clin Psychol, 74*(12), 2187-2202. doi:10.1002/jclp.22659

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Keyes, C. L. M. (2009). Atlanta: Brief description of the mental health continuum short form (MHC-SF). Available: https://www.aacu.org/sites/default/files/MHC-SFEnglish.pdf

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Żemojtel-Piotrowska, M., Piotrowski, J. P., Osin, E. N., Cieciuch, J., Adams, B. G., Ardi, R., . . . Maltby, J. (2018). The mental health continuum-short form: The structure and application for cross-cultural studies-A 38 nation study. *J Clin Psychol, 74*(6), 1034-1052. doi:10.1002/jclp.22570

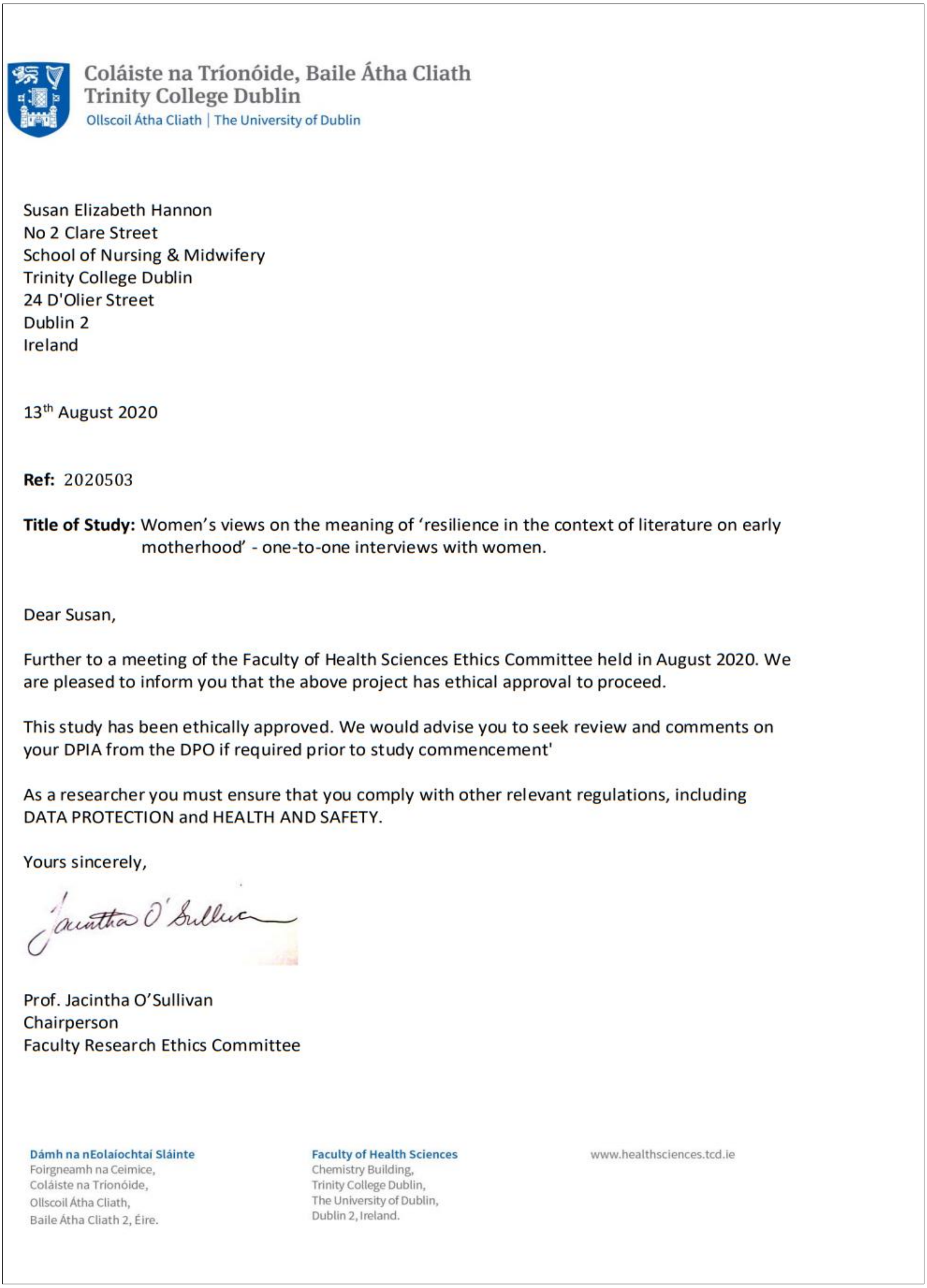
As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

Jacintha O'Sullivan

Prof. Jacintha O'Sullivan
Chairperson
Faculty Research Ethics Committee

Appendix 4.20: Letter of approval from the Research Ethics Committee, Faculty of Health Sciences, 11th August 2020



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Susan Elizabeth Hannon
No 2 Clare Street
School of Nursing & Midwifery
Trinity College Dublin
24 D'Olier Street
Dublin 2
Ireland

13th August 2020

Ref: 2020503

Title of Study: Women's views on the meaning of 'resilience in the context of literature on early motherhood' - one-to-one interviews with women.

Dear Susan,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in August 2020. We are pleased to inform you that the above project has ethical approval to proceed.

This study has been ethically approved. We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement'

As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

Jacintha O'Sullivan

Prof. Jacintha O'Sullivan
Chairperson
Faculty Research Ethics Committee

Dámh na nEolaíochtaí Sláinte
Foirgneamh na Ceimice,
Coláiste na Tríonóide,
Ollscoil Átha Cliath,
Baile Átha Cliath 2, Éire.

Faculty of Health Sciences
Chemistry Building,
Trinity College Dublin,
The University of Dublin,
Dublin 2, Ireland.

www.healthsciences.tcd.ie

Appendix 4.21: Letter of approval from the Research Ethics Committee, Faculty of Health Sciences, 1st June 2021

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Susan Elizabeth Hannon
No 2 Clare Street,
School of Nursing & Midwifery,
Trinity College Dublin, the University of Dublin,
Dublin 2,
Ireland

1st June 2021

Ref: 210509

Title of Study: Women's mental health and resilience in the early years of first-time motherhood

Dear Susan,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in May 2021. We are pleased to inform you that the above project has ethical approval to proceed.

This study has been ethically approved. We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement'

As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

Jacintha O'Sullivan

Prof. Jacintha O'Sullivan
Chairperson
Faculty Research Ethics Committee

Dámh na nEolaíochtaí Sláinte
Foirgneamh na Ceimice,
Coláiste na Tríonóide,
Ollscoil Átha Cliath,
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Dublin 2, Ireland.

www.healthsciences.tcd.ie

Appendix 5.1: Summary of Study Characteristics

Quantitative Designs			Resilience Operationalised						
				Mental Ill-Health					
Author- Discipline	**Country- Characteristics of sample**	**Resilience Definition**	**Resilience Scales**	Depressi	Anxiety	Stress	PTSD	Other	**Well-being or positive functioning**
(Andersson *et al.* 2021) *Computer Science*	**Sweden.** 4313 postpartum women from a population-based prospective cohort study. Data collected at 6 weeks PP.	No formal definition	**Resilience Scale for Adults (RSA)** (Wagnild & Young 1993)	X	X			X	Sense Of Coherence
(Angeles Garcia-Leon *et al.* 2019) *Psychology.*	**Spain.** 151 pregnant women with low-risk pregnancy. Data collected in third trimester and approximately 15 days PP.	Trait/ ability	**Spanish translation of the CD- RISC (CD-RISC-10)** (Notario-Pacheco *et al.* 2014).	X		X		X	Psychological Well-being
(Asif et al. 2020) *Medicine*	**Sweden**. Sub-sample (n = 2026/6478) women. Data collected at 17 & 32 weeks' gestation and 6 weeks' PP.	Trait/ ability	Resilience was operationalised by the Sense of Coherence (SOC) scale (Antonovsky 1987)	X					
(Assal-Zrike *et al.* 2021) *Psychology.*	**Israel.** Fifty-seven mothers of full-term infants and 48 mothers of preterm infants. Mothers were ethnic minority Bedouin- Arabs living in Israel. Data collected at 12 months' PP.	No formal definition	Investigate the role of social support as a resilience factor for reduced Postpartum Emotional Distress.	X	X			X	
(Asuncion Lara *et al.* 2016) *Psychology.*	**Mexico.** 280 low-income Mexican mothers aged ≥20 years. Data collected in pregnancy (>26 weeks) and at 6 weeks and 6 months' PP.	No formal definition	**Resilience Inventory (RESI)** (Gaxiola *et al.* 2011).	X	X			X	
(Bennett & Kearney 2018) *Human Nutrition.*	**Ireland.** 270 Irish and British women giving birth in Ireland. Data collected in pregnancy (>24 weeks) and at 17 weeks' PP.	Trait/ ability	**Resilience Scale for Adults (RSA)** (Wagnild & Young 1993)					X	*Maternal Well-Being
(Chasson & Taubman–Ben-Ari 2021) *Social Work*	**Israel.** 152 first-time Israeli mothers, whose children were no older than two years old; 76 were single mothers by choice and 76 were in a couple relationship.	Trait/ ability	**Brief Resilience Scale (BRS)** (Smith *et al.* 2008)					X	Posttraumatic Growth
(Denckla *et al.* 2018) *Public Health.*	**England.** Data available from 12,121 women at two points during pregnancy and at 8 months' and 2, 3 & 5 years' pp.	No formal definition	Resilience was operationalised as a trajectory of stable, low levels of depressive symptoms.	X					
(Fonseca *et al.* 2014)	**Portugal**. 43 couples (43 mothers and 36 fathers), aged ≥18 years, literate, with an infant	Operational definition:	Resilience was operationalised as low psychological distress and high quality of					X	Quality of Life

Psychology.	diagnosed with a congenital abnormality (CA). Data collected at time of CA diagnosis and 6 months after the childbirth.	'Maintenance of healthy adjustment over time, without disruption of functioning' (p113)	life.						
(Gagnon *et al.* 2013) *Epidemiology & Public Health.*	**Canada**. 16 international migrant women (aged 27–38 years) participants had high psychosocial risk (low income, experience of violence, war or trauma, physical abuse). Data collected between 1 week and 4 months' PP.	Dynamic process	Resilience was operationalised as low depression, no symptoms of anxiety/ somatization or PTSD.	X	X		X		
(Gerstein *et al.* 2009) *Psychology*	**USA**.115 families with a child with an intellectual disability between three to five years of age.	Dynamic process	Effects of Parental Wellbeing, Marital Adjustment, Parent-Child Interaction (resilience factors) on trajectories of daily parenting stress (resilience outcome).			X			*Parental Well-Being
(Grote & Bledsoe 2007) *Psychology.*	**USA**. 179 married first-time parents. Data collected at five months of pregnancy and 6 and 12 months' PP.	Dynamic process	'Risk and resilience' theoretical framework to examine the degree to which optimism (resilience factor) conferred protection against PPD (resilience outcome).	X		X			
(Hain *et al.* 2016) *Psychology*	**Germany.** 297 women (aged 20- 45 years). Data collected in the third trimester of pregnancy and at 6 and 12 weeks' PP.	Both trait and process definitions	**The RS-11 (Resilienzskala)** (Schumacher *et al.* 2005).	X	X	X		X	
(Handelzalts *et al.* 2020) *Psychology*	**USA.** Subset (n=108/268) of women recruited from a longitudinal study oversampled for women who reported childhood abuse. Data collected at 4, 6, 12, 15 months' PP.	No formal definition	Religiosity and spirituality as resiliency factors for positive postpartum adjustment (resilience outcome) defined as low depression and high QoL.	X					Maternal Quality Of Life
(Harville *et al.* 2010) *Epidemiology*	**USA**. 295 pregnant women (222 completed) and 365 postpartum (eight weeks) women (292 completed) living in Louisiana who were exposed to Hurricane Katharina.	No formal definition	Resilience was operationalised as low depression and low/ no PTSD.	X			X		Perceived Benefits: Personal Growth (single item)
(Harville *et al.* 2011) *Epidemiology*	**USA.** 365 mothers exposed to multiple disasters. Data collected via phone interview at 2 months' PP and survey questionnaire at 12 months PP.	Trait/ ability	**Brief Resilience Scale (BRS)** (Smith *et al.* 2008).	X			X		Perceived Benefi

(Julian *et al.* 2021) *Psychology*	**USA.** 233 ethnically diverse women from a prospective longitudinal study. Resilience resource data were collected during pregnancy and depressive symptoms were assessed between 4 to 8 weeks' PP	Trait/ ability	Moderating role of Mastery, Dispositional Optimism and Spirituality (*resilience resources*) against the impact of stressful life events occurring in pregnancy and subsequent symptoms of PPD.	X					
(Kikuchi *et al.* 2021) *Psychiatry*	**Japan.** Sub-sample (n=11, 668/22,493) women. Women were recruited in pregnancy and depressive symptoms assessed at 1 month and 1 year PP.	Operational definition: 'not depressed throughout 1 year postpartum'. (p632)	Resilience was operationalised as a trajectory of depressive symptomology absence.	X					
Ladekarl et al. (2021).(Ladekarl *et al.* 2021) *Obstetrics and Gynaecology*	**Denmark.** 73 women enrolled during pregnancy before (n=26) and during (n=47) the Covid-19 pandemic. Data were collected in the second trimester and at two months' PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X	X	X			
(Liu *et al.* 2021) *Mental Health*	**USA.** 506 postpartum women taking part in the PEACE (Perinatal Experiences and Covid-19 Effects) study. Data were collected online within 6 months' PP.	No formal definition	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X	X		X	X	
(Margalit & Kleitman 2006) *Psychology*	**Israel.** 70 mothers from 'intact families' with infants aged 2–39 months and diagnosed as at-risk for delayed development.	Trait/ ability	Resilience was operationalised by the Sense of Coherence (SOC) scale (Antonovsky 1987)			X			Family Adaptability & Cohesion, Coping
(Martinez-Torteya *et al.* 2018) *Psychology*	**USA.** Sub-sample (n=131/256) of women from a longitudinal study over sampled for women who reported childhood abuse. Data collected at 4 and 6 month's PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X					Parenting Sense Of Competence
(Mautner *et al.* 2013) *Psychology*	**Austria.** 67 women German-speaking women who were diagnosed with preeclampsia in a previous pregnancy, and who gave birth within the last four years.	Trait/ ability	**The RS-13** (Leppert K 2008).	X			X		Health Related Quality Of Life
(McNaughton Reyes *et al.* 2020)	**South Africa.** 1480 pregnant women who recently became aware of their HIV positive status	No formal definition	Moderating role of Socio-economic status, family social support, religiosity,					X	

Health Behaviour	in South Africa. Participants were recruited in pregnancy and data collected at 14 weeks and 9 months' PP.		or a vulnerability effect: baseline distress, childhood abuse history, HIV diagnosis (resiliency factors) on the long-term impact of physical/sexual IPV exposure and subsequent postpartum distress.						
(Mikuš *et al.* 2021) *Obstetrics and Gynecology*	**Croatia.** 227 puerperal women giving birth in Croatia. Data collected on day 3 PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)					X	
(Miranda *et al.* 2012) *Psychology*	**Brazil.** 52 women with low socioeconomic status who experienced a PTB 6-12 months prior to the study.	No formal definition	Resilience was operationalised as low depressive symptoms and /or low PPD.	X					
(Mitchell & Ronzio 2011) *Social Science*	**USA.** 209 African American mothers (aged 21-45 years) of varying socioeconomic status whose babies were two to 18 months old.	No formal definition	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X	X				
(Mollard *et al.* 2021) *Nursing.*	**USA.** 885 women who gave birth in the USA during the first wave of the COVID- 19 pandemic in the USA.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)			X			Mastery
(Monteiro *et al.* 2020) *Psychology*	**Portugal.** 661 postpartum women with infants between 0 and 12 months.	Dynamic process	**Resilience Scale for Adults (RSA)** (Wagnild & Young 1993)	X					Mental Well-being, Maternal Confidence, Self-Compassion, Psychological Flexibility
(Muzik *et al.* 2016) *Psychiatry*	**USA.** Sub-sample (n=116/256) of women from a longitudinal study over sampled for women who reported childhood abuse. Data collected at 4, 6 and 18 months' PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)					X	
(Nishi & Usuda 2017) *Psychiatry*	**Japan.** 117 women (aged ≥20 years), Japanese speaking and literate, recruited in pregnancy at 12–24 weeks gestation and assessment follow-up completed at 4 weeks PP.	Trait/ ability	**Tachikawa Resilience Scale (TRS)** (Nishi *et al.* 2013)	X					Post Traumatic Growth
(Perez *et al.* 2021) *Psychology*	**USA.** 70 mothers and 50 fathers, (data were separable) of a child diagnosed with a	No formal definition	Resilience was operationalised as a trajectory of 'consistently low levels of	X					

	disorder/difference of sex development (DSD). Participants were recruited when their child was < 2 years old. Data were collected prior to a child receiving genitoplasty, and at 6 and 12 months post-surgery.		(depression) symptoms across time.' (p589).						
(Puertas-Gonzalez *et al.* 2021) *Psychology*	**Spain.** 212 participants, 96 gave birth before the Covid-19 pandemic and 116 during the Covid-19 pandemic. Data were collected one month PP.	No formal definition	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X		X		X	
(Sahin 2022) *Psychiatry*	**Turkey.** 120 women recruited in pregnancy. 120 completed assessment during pregnancy and 77 women completed assessment one month PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X				X	Maternal Attachment
(Schachman & Lindsey 2013) *Psychology*	**USA.** 71 women married to (but were not themselves active-duty service women) active-duty military members stationed at USA military base, delivered a singleton live baby within 3 months of the study.	Dynamic process	Effects of Family Changes & Strains, Self-Reliance, Social Support (protective factors) on Postpartum Depression (outcome).	X					Family Changes & Strains, Self-Reliance, Social Support
(Sexton *et al.* 2016) *Psychology*	**USA.** Sub-sample (n=141/256) of women from a longitudinal study over sampled for women who reported childhood abuse.. Data collected at 4 months' PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X			X		Family Specific Well-Being, Postpartum Mastery
(Sexton *et al.* 2015) *Psychology*	**USA.** Sub-sample (n=214/256) of women from a longitudinal study over sampled for women who reported childhood abuse. Data collected at 4 months' PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X			X		Family Functioning, Postpartum Sense of Competence
(Verstraeten *et al.* 2021) *Obstetrics & Gynecology*	**Canada**. 200 women who experienced a wildfire in Canada during or shortly before pregnancy. Women were recruited within one year of the wildfire.	Both trait and process definitions	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)				X	X	
(Werchan *et al.* 2022) *Cognitive Science*	**USA.** Data collected during the Covid-19 pandemic from 4,412 pregnant and postpartum (within first 12 PP months) women used to identify risk and protective/resiliency factors associate with four behavioural coping phenotype profiles.	No formal definition	Research identified coping phenotypes or profiles associated with risk and resiliency for adverse mental and physical health outcomes.	X	X			X	

(Yu *et al.* 2020) *Public Health*	**China.** 1126 women recruited in pregnancy from two urban maternal and child health hospitals in Hunan province, China. Data were collected at four time points (3 times during pregnancy and at 6 weeks' PP).	Trait/ ability	**Brief Resilience Scale (BRS)** (Smith *et al.* 2008)	X	X			X	
(Zhang & Zhang 2021) *Gynecology and Obstetrics*	**China.** 200 pregnant women admitted to hospital for preterm labour. Postpartum PTSD was evaluated at 6 weeks PP.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)			X		X	
	Mixed-Methods Designs		**Resilience Operationalised**						
Author- Discipline	**Country- Characteristics of sample**	**Resilience Definition**	**Resilience Scales**	Depressio	Anxiety	Stress	PTSD	Other	**Well-being or positive functioning**
(Davis *et al.* 2021) *Mental Health*	**Australia.** Sub-sample (n=174/461) of perinatal women living through the Covid-19 pandemic in 2020 comprised the quantitative component of the research. A stratified sub-sample (n=14/174) completed the qualitative component.	Trait/ ability	Resilience was operationalised through scales measuring mindfulness and self-compassion.			X			Mental Well-being
			Qualitative Findings: Interviews conducted with seven women from 'high' resilience group and seven from 'low' resilience group. Both groups identified the social, emotional, psychological, healthcare service and informational needs of perinatal women during the Covid-19 pandemic.						
(Farewell et al. 2020) *Health & Behavioural Sciences*	**USA.** 31 pregnant and postpartum women (within 6 months PP), living in Colorado, during the Covid-19 pandemic.	No formal definition	**Brief Resilience Scale (BRS)** (Smith *et al.* 2008)	X	X			X	Mental Well-being
			Qualitative Findings: Sources of resilience identified by participants included the use of virtual communication platforms, having positive partner emotional support, being outdoors, focusing on gratitude, and setting daily routines, and self-care behaviours such as engaging in physical activity, getting adequate sleep and eating well.						
(Kinser *et al.* 2021) *Nursing*	**USA**. Mixed-Methods research with 524 pregnant and postpartum (up to 6 months' PP) women. Data were collected during the early stages of the Covid-19 pandemic.	Trait/ ability	**Connor-Davidson Resilience Scale (CD-RISC)** (Connor & Davidson 2003)	X	X		X		
			Qualitative Findings: Adaptability and resilience building activities were defined as: taking time to get outdoors, getting exercise and eating well, use of mindfulness practices						

			and meditation, use of prayer, using social media for connection with family and friends, and accepting help
(Edge & Rogers 2005) *Epidemiology*	**England.** Theoretic sampling of 12, inner city, Black-Caribbean women for in-depth interviews in the perinatal period (6-12 months' PP).	No formal definition	The authors presented resilience under the narrative of 'Strong- Black-Women'. An identity theme characterised by an active resistance to symptomatology and labelling, with resilience being linked to coping & problem solving. Quantitative data was not reported.
	Qualitative Designs		**Resilience Operationalised**
Author- Discipline	Country- Characteristics of sample	Resilience Definition	
(Farewell *et al.* 2021) *Health and Behavioural Sciences*	**New Zealand.** 74 mothers of children under the age of five, living in a high deprivation neighbourhood in Auckland, NZ. Data were collected via one-to-one interviews and focus groups.	No formal definition	'Protective factors' and 'resources' were presented as promoting resilience/positive mental health and well-being in this research. The researchers developed a priori codes hypothesised to promote resilience among mothers across ethnic groups. Themes linked to socio-ecological resources that support positive mental health and well-being included: 1) Social support: Support from family and friends offering emotional and instrumental support. 2) Community level: Neighbourhood cohesion, community involvement, community resources. 3) Societal-level factors: Cultural identity and alignment with social and cultural norms.
(Gewalt *et al.* 2018) *Public Health.*	**Germany** Nine asylum-seeking women (aged 22-37 years) living in state provided accommodation. Interview data collected at two points during pregnancy and at 6 weeks' PP.	No formal definition	Authors interpret social support and coping styles as factors that increase resilience and act counterbalance to psychosocial stressors.
(Goodman *et al.* 2020) *Obstetrics and Gynecology*	**USA.** Ten women in New England who had entered treatment for Opioid Use Disorder during pregnancy, and engaged in treatment in the postpartum period. Data were collected in interviews between 2 weeks and 1 year PP.	Dynamic process	Within data collected in semi-structured interviews with women with Opioid Use Disorder, who continued to engage in treatment during the postpartum period, the theme of resilience was identified by the researchers as emerging and developing as an adaptive and dynamic process. Resilience was considered evident through complex interactions between individual-level inner motivations and self-efficacy, and women's abilities to positively utilise external resources such as engagement with clinicians and peers.
(Keating-Lefler & Wilson 2004) Nursing Science.	**USA.**20 single, first time mothers, Medicaid-eligible and living in poverty. Recruited in pregnancy and interviewed at 1, 2, and 3 month's PP. Aged ≥19 years, English-speaking.	Trait/ ability	Authors position qualitative findings within a grief framework; resilience was considered integral to the negotiation of 'multiple losses' experienced by un-partnered mothers, and held within the theme of 'reformulating life'.
(Keating-Lefler *et al.* 2004)	**USA**. 5 single mothers with and infant less than 1 year, low income, not living with child's father,	No formal definition	Resilience was a subtheme of 'Transition', though resilience and its attributes were undefined by this study.

Nursing Science.	and attending a Women, Infants, and Children clinic.		
(Nuyts *et al.* 2021) *Midwifery/ Epidemiology*	**Belgium.** Purposive sample of 13 women without pre-existing bipolar and psychotic disorders or a depressive or anxiety disorder, admitted to an Infant mental health outpatient service in Belgium when their infant was aged 1 to 24 months.	Dynamic process	Data concerned the professional support needs of mothers prior to admission to an infant mental health day clinic. Three themes identified were 'Experience of pregnancy, birth, and parenthood'; 'Difficult care paths'; and 'Needs and their fulfilment'. The theme 'Experience of pregnancy, birth, and parenthood' contained three subthemes: 1) 'Reality does not meet expectations', 2) 'Resilience under pressure' 3) 'Despair'. The theme 'Resilience under pressure' was not developed and the term resilience appeared interchangeable with 'mental health'.
(Rossman *et al.* 2017) *Nursing Science.*	**USA.** Socio-economic and ethnically diverse subsample (n=23/69) of mothers of very-low birth weight infants derived from a study on maternal role attainment. Qualitative interview data collected between 4 and 8 weeks' PP.	Dynamic process	Characteristics considered demonstrative of resilience were; mothers using resources to actively promote their mental health, reframing or redefining their lives, acceptance of reality, advocating for their infants, positive functioning in daily life, and envisioning the future.
(Schaefer *et al.* 2019) *Psychology.*	**USA.** Racially diverse sample of 10, low-income women who experienced Intimate Partner Violence (IPV) during or immediately prior to pregnancy and had given birth within the last year, and 46 service providers who interacted directly with women exposed to IPV in pregnancy.	Dynamic process	Authors identified the overarching theme of 'Strengths' which was comprised of 'Transformation' and 'Resilience'. 'Strengths' were understood as character traits possessed by pre and postpartum mothers exposed to IPV around pregnancy. Resilience was considered demonstrated through women's continued efforts to access individual resources and seek community support.
(Shadowen *et al.* 2022) *Obstetrics and Gynaecology*	**USA**.8 postpartum women receiving medication for opioid use disorder. Data were collected between 2 and 6 months' PP.	No formal definition	The researchers identified the theme of 'building resilience amidst trauma and pain' within the qualitative data provided by postpartum women receiving medication for opioid use disorder. 'Building resilience' was linked with themes of transformation and perseverance in overcoming traumatic experiences and stigma as part of their recovery journey.
(Shaikh & Kauppi 2010) *Sociology.*	**Canada.** 12 women (aged 24-39 years), residing in underserviced rural communities, with a psychiatric diagnosis of Postpartum Depression (PPD), or who self-identified as having suffered from PPD within one year after birth and no more than five years prior to the study.	No formal definition	Authors equated resilience with 'coping strategies leading to successful adaptation or positive outcomes under stressful or adverse circumstances.' (p3). Coping strategies were identified using four theoretical components: *Existential philosophy:* Meaning making strategies,; *Cultural relational theory:* Seeking support; *Feminist standpoint theory:* Nurturing oneself and advocacy work; *Beyond theoretical framework:* Connecting with nature.
(Theodorah & Mc'Deline 2021) *Nursing*	**South Africa.** Qualitative interviews with 10 first-time mothers within the first six months PP.	Dynamic process	Two themes and subthemes were identified: 1) 'Challenges, empowerment, support and resilience during initiation of exclusive breastfeeding' –subcategory: 'Support and resilience during early breastfeeding (EBF) initiation; 2) 'Diverse support and resilience

	during maintenance of exclusive breastfeeding' – subcategory: 'Support and resilience during EBF maintenance'. Differences between categories were not well specified and themes of resilience were not developed.

*Psychopathology tools used to measure 'well-being' or 'positive function.

** Table reproduced from (Hannon et al. 2022b)

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Appendix 5.2: Phase 1, Women's perspectives on resilience and resilience research in motherhood- Four Principles

<table>
<tr><th colspan="2">Opinions and views on the Epistemological use of resilience in research</th></tr>
<tr><td>Trait perspectives
❖ If I was to have it as a picture in my head, resilience in motherhood would be like a woman who's real strong and confident, independent. (Keva)
❖ Head down, mouth shut, power through and just get on, and get through it, and get the work done. (Aashvi)
❖ I always thought it's... it's more about not asking for help rather than asking for help. (Eleni)</td><td>Dynamic process perspectives
❖ I know we all change but I don't think that I have fundamentally changed that much, but the circumstance around (the) births did change. So, I would think resilience is more of a dynamic process than a personality trait. (Inés)
❖ Whether it's an innate trait that people have, or if it's to do with environmental factors or so on, I think it's kind of a mix between the two, and I think it can be influenced from an early age. (Evelyn)</td></tr>
<tr><th colspan="2">Opinions and views on the Linguistic use of resilience in research</th></tr>
<tr><td>Coping: Perspective 1
❖ It's, like... it means that you have a failing. That there's something wrong with you when you're not coping. (...) I don't think that you... that other people would talk about it because it's seen as a failing, you know? As soon as that 'oh, she's not a good mother because she's not coping well with having a baby'. (Catherine)
❖ (Not coping is) something that's definitely negative and I think that's the problem that women have in talking about their problems, is they don't want to make it sound like they don't like their child, you know? (Saoirse)
❖ Nobody should have to 'cope' with motherhood. - It just gives a negative taste to the whole experience which I don't think there ought to be, or which... maybe it would be time now to move away from that sentiment. (Sana)</td><td>Coping: Perspective 2
❖ I do see coping the same as resilience, you know? Managing things and getting on with things, you know? You... as you go through different life stages you learn to adjust. You learn to adjust with different things happening in your life and to just to get on with it. (Aashvi)
❖ I think coping is part of resilience and so is adaption and adjustment and so on. The only thing I'd be a little bit conscious about around the language is... the risk of sort of alienating people who are taking a little longer to adjust than others, you know? (Evelyn)
❖ It's the one that jumps out at me most by far because to my mind, resilience is it is like a form of coping. (Eugenie)</td></tr>
<tr><td>Adaptation and adjustment
❖ It gives you more agency, in that, you know... It's like, ok well, now you know what you have to do, you know? Coping is kind of getting the head down and waiting for it to go away, whereas adaptation is making the changes that can turn it into something nice. (Saoirse)</td><td>Resistance and protection
❖ Resilience is, it's obviously really linked with resistance, but it's not only resisting, it's also making it work so you get over it enough to keep going and even thriving a bit, you know, like (it) is mentally through those challenges and actually try to learn and grow from them and keep going. (Raquel)</td></tr>
<tr><th colspan="2">Opinions and views on the Logical use of resilience in research</th></tr>
<tr><td>Perspectives on operationalising scales measuring psychopathology
❖ To take one single slice of the whole picture and then try to extrapolate from that and try to see, uhm whether... ok this woman has great mental health therefore everything is fine, therefore she has great resilience or, this woman scores high on a resilience score and therefore everything is perfect, No! (Sana)
❖ I was so focused on making sure me and my family would recognise if there</td><td>Perspectives on operationalising resilience beyond psychopathology or the mothering role
❖ There's more to resilience than just, I suppose the absence of depression and stuff like that, you know? It's, I suppose; it's what you'd call multifaceted. (Eugenie)
❖ 'Mother' would not be the first thing that comes to me. It is an important part of my life, but it's not the most important, it's equally important as some other parts.</td></tr>
</table>

were mental illness issues, like postnatal depression. I was very aware of that, but it nearly kind of eclipsed everything else, because it was an all or nothing, either you're thriving and it's easy, and you're making it look easy, or there's a mental illness. There is definitely a middle ground in which people can learn to think that motherhood is hard. (Sadhbh) ❖ To simplify it, I don't agree with this kind of scales at all, and that it correlates straightaway with depression and panic attacks with not being resilient. (Eleni)	(Hania) ❖ If you have that social circle that can support you, but also remind you that you are still this other person, because that can also get lost for a long time. (Sadhbh) ❖ Resilience moves beyond being a mother and partner. (Eleni)
Opinions and views on the Pragmatic application of resilience in research	
Inclusion of women's perspectives in research ❖ I think women have a voice and they have an important voice in our society, and how, we all grow up... most of us would have been kind of nearly raised by our mothers, by our grandmothers, by that kind of support figure. So, I would think that the best way to conduct things is actually to invite women to this space, and to get them to talk about resilience. (Inés) ❖ (The MAMMI study) they put the woman in a central position like we... kind of... the mother participated in the way the research was on-going. So I like how you're approaching rather than having kind of the typical more... you know, men writing their things while women, you know, whatever... the distance between the participant and the whatever you call it, the researcher. So, you're making a woman central in your research, and I think that, uh, to me... in every research should be like that You know? (Eleni)	**Ethical concerns about application of resilience research in motherhood** ❖ (Resilience) as a word, I think it has a kind of positive kind of, it's situated in a positive way. However, it's also, in a way, an expectation. (Eleni) ❖ I think what it does is it kind of turns the responsibility for things onto the person, you know? It's almost another way of giving everybody a personal responsibility when I think that society can really work against mothers. (Saoirse)

Appendix 6.1: Phase 2, Illustrative quotes- Theme 1, Sub-theme, 1, 2 and 3

Sub-theme 1: ***Internalised narrative: The superhuman mother***	❖ It's Wonder Woman, that's really the Irish mammy. (Clara) ❖ I do think women are expected to do more, and take on more, and bear more (…) I feel like the bar for women is so much higher when it comes to caring for children, caring for parents, caring in general. I think women are just expected to be very caring people, and I think most of the time women are very caring and it's a really inherent thing. But I also think it can be really damaging when that becomes like… this sort of sum total of who they are. *(Madison)* ❖ An image of what it is to be a strong, resilient mother… I think those sort of images can be really actually very unhelpful when it comes to the realities of motherhood and of life in general. *(Madison)*
Sub-theme 2: ***Internalised narrative: The sacrificing mother.***	❖ You're supposed to just… buckle up and get on with it, you're a mother now. You know, and I actually was told that at one stage, like 'you're a mother now, get on with it', and I was like, uh! *(Dawn)* ❖ I thought about it but then how do you explain to work, like 'can I take one hour off?' and it's not just one hour, like, the time to travel and come back. I was always hesitant to ask work. And then if you take that time off, you have to make up for the loss. And, you know, if you have a family, it's just a bit awkward. So I don't know how other women do. (Emi) ❖ It's something that people don't put enough focus on… how much it actually takes and how much…. How difficult that is and how much of yourself you give up in order for this baby to just kind of happen (Eliza) ❖ I do feel like that's not recognised, the amount you give up, the person you were before you had these kids. Obviously, I wouldn't give my kids back for all the money in the world. But I feel like… loss of identity isn't recognised for women. I feel like I'm no longer Grace, I'm mammy. *(Grace)* ❖ I don't take it [setting aside time for myself] for granted because it wasn't accessible to me for a good few years, and I'm fine with it because it wasn't the priority and I was happy to put (first) whatever else had to be the priority. But I see that I actually missed it. It's now that I have it back that I'm like, you know what? I really need this to thrive. I don't just need to be… A good mother. I hate the term, but you know? My life is definitely not fulfilled by just doing what needs to be done for the house or the kids. I need to challenge myself intellectually, physically, that's how, personally, I feel like I'm living my best life! (laughs) No, but I feel like this is, for me, the way I judge how I fill my life, how I live my life at the fullest and otherwise I really felt (I was in) survival, more than living. (Renelle)
Sub-theme 3: ***The stigma and fear of the 'struggling' mother.***	❖ I thought 'I better pretend that everything is fine in front of the public health nurse!' (..) a very irrational (thought of) 'don't want my baby taken away!' But at the time I was all like… 'everything's fine. Yes, we're good. Yes, we're good. Everything is fine!' As opposed to 'No. I'm really struggling and I need some help' (Clara) ❖ There is still a stigma attached to mental health, especially when you look at it through the lens of motherhood, because mothers are expected to be perfect at all times. (Olivia) ❖ There's lots of women out there who don't get that help because they're afraid of the consequences. Are afraid of what people might say or what doctors might say or what anyone might say about them. *(Gemma)*

Appendix 6.2: Phase 2, Illustrative quotes- Theme 2, Sub-theme, 1, 2 and 3

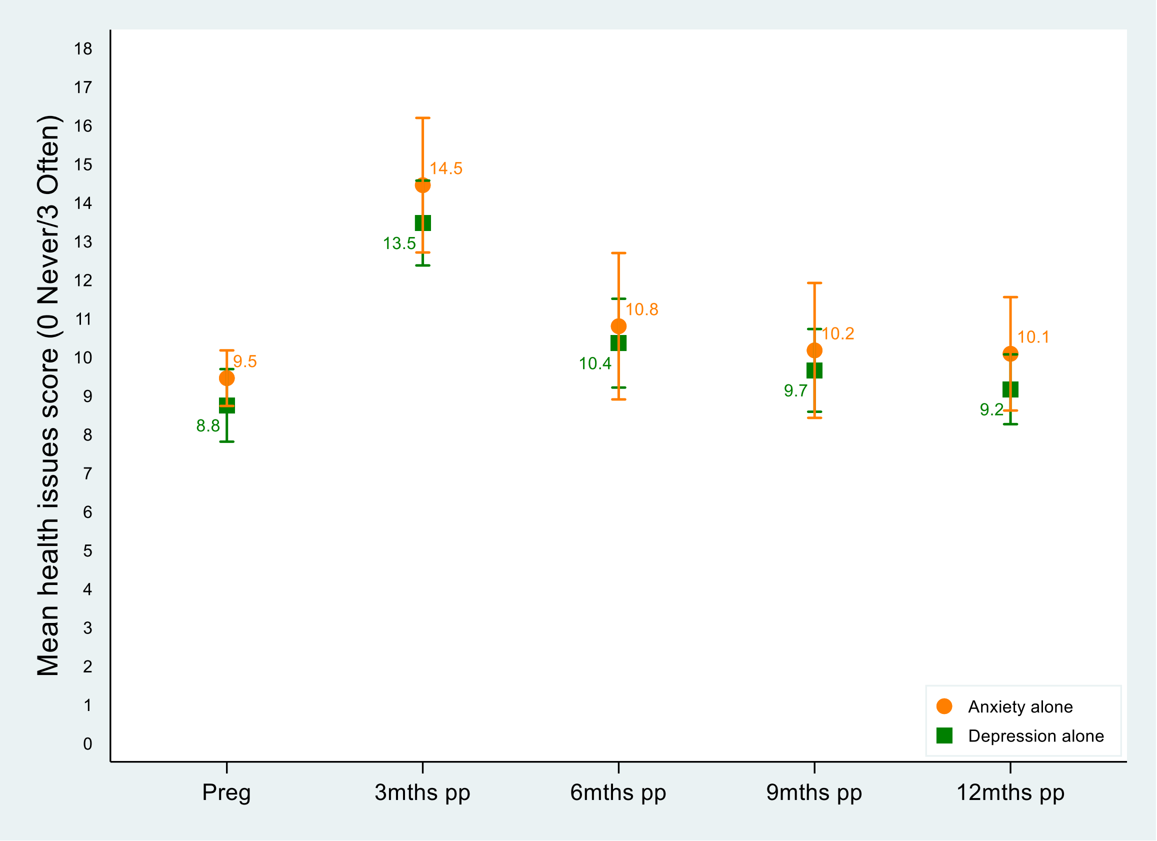
Sub-theme 1: ***Early Days: Absence and barriers to guidance, resources or supports***	❖ Another midwife was already feeding him a bottle, even though I had specifically said I want to breastfeed and she was like; ’look, it's just easier this way’. So like with breastfeeding as well, I think a lot more support needs to go into it. And it is now, but I think it's still something that needs to be worked on as well, because it can really help with mother’s mental health if they want to do something like breastfeeding. And as well like, even if it's something they want to try and combination feed or whatever, to have that support there to know what to do, and how to do it, makes a big difference. *(Gemma)* ❖ I was having some issues breastfeeding. I was ready to (breastfeed), in my head, I thought; I'll breastfeed what I can and complete it with formula at home. But there was some pressure in the maternity hospital and I remember the midwife was saying… because I was ready to be cleared and the midwife in the morning was really lovely, just like; ‘yeah, let's see how you go for the next few hours, I think you can go home’ and the one in the evening was the toxic one. She was like, ‘you can’t even feed your baby, how can I send you home?’ And I stayed for that extra day. (Camila)
Sub-theme 2: ***Maternity leave and the ‘motherhood tax’***	❖ (My maternity pay) they'd reduced it to a flat rate of 230, and then they decided they tax it. Like, sorry? So you can be (on) a benefit, but you’ll be taxed? (…) and again, your pension and all that, at the moment I'm still throwing on the extra for the pension to try and make up for the time I lost (on maternity leave). Things like that definitely are not supported in terms- I suppose government policy around that. (Orla) ❖ I think it's a reflection of society as a whole that like if you're not in paid employment, which is like if the government actually had to pay people to care for their children like, that's a whole other day's work, but you know there's such a value in that work, but I feel because it's not paid, it's not really valued… in the true sense of the word, and I think definitely it comes out in things like policy. I think it comes out in the provision of health care to women, and I think like… My own experience was not great, as in, when I had babies, it was not a positive one and I think some of that maybe comes from… Just this expectation that ‘this is what women do’, you know? Like women have babies, it's very normal. And yes, it is very normal in society. But for each individual, it's very new. (…) And because the work isn't always glamorous, and it's often unseen, and I suppose the other thing is, it's often behind closed doors. *(Madison)*
Sub-theme 3: ***Feeling disillusioned but striving for change***	**Disillusioned:** ❖ Politically… not enough is being done, it's not loud enough. Nothing is ever loud enough. Women's voices are never fucking loud enough, in no country! I think…. It's changing? I don't think it's changing fast enough. I think on the bigger scale, it takes time. And I think the political landscape will have to follow the societal changes that are going… that are about to happen with this new generation coming up. So politically, right now I'm disillusioned. I don't think much will change until the older or until the current political generation- people who are in office right now, kind of, go the way of the dodo, and retire. (Olivia) ❖ I don't think so at all. I think within my experience within the family and my partner, yes, and on a family level (I have support). But when you step outside that, I don’t think so. (…) And from a government perspective, from a community perspective, there really wasn't many supports. (…) There was no checks on my mental health. (…) I don't think one single person from community or anywhere who

	asked me ‘Was I OK?’ *(Catherine)* **Striving for change:** ❖ To see if I could help, and if you can help, other people and other mothers to be. (Valentina) ❖ I think ultimately I wanted to be heard. (Emi) ❖ I just think it's really good that there is some kind of research being done that is trying to build a picture of what it's really like, and then also what improvements can be made to make it… (to) maybe (make) some of the harder parts a little bit easier or a little bit more seen, and I think that is like really, really worthwhile. *(Madison)*

Appendix 7.1: Comparison of ‘completer’ sample with full cohort.

BASELINE DEMOGRAPHICS	Full Cohort n (%)	‘Completer’ sample	Excluded (Missing data) n (%)	Odds of complete data OR [95%CI]
Age				
18-24 years	247 (8.2)	88 (35.6)	159 (64.4)	1.0 [ref]
25-29 years	646 (21.5)	329 (50.9)	317 (49.1)	1.9***[1.4,2.5]
30-34 years	1308 (43.6)	835 (63.8)	473 (36.2)	3.2***[2.4,4.2]
35+ years	798 (26.6)	546 (68.4)	252 (31.6)	3.9***[2.9,5.3]
Region of birth				
Ireland	2117 (71.5)	1327 (62.7)	790 (37.3)	1.0 [ref]
EU country	609 (20.6)	356 (58.5)	253 (41.5)	0.8[0.7,1.0]
Non-EU country	236 (8.0)	98 (41.5)	138 (58.5)	0.4***[0.3,0.6]
Relationship status in pregnancy				
Partner	2896 (96.6)	1750 (60.4)	1146 (39.6)	1.0 [ref]
No partner	101 (3.4)	48 (47.5)	53 (52.5)	0.6*[0.4,0.9]
Postgraduate Qualification				
Yes	2027 (68)	1331 (65.7)	696 (34.3)	1.0 [ref]
No	956 (32)	463 (48.4)	493 (51.6)	0.5***[0.4,0.6]
Paid employment				
Yes	2672 (89)	1662 (62.2)	1010 (37.8)	1.0 [ref]
No	329 (11.0)	139 (42.2)	190 (57.8)	0.6*[0.4,0.9]
BMI (Pre-pregnancy)				
Underweight(<18.5)	68 (5.1)	38 (55.9)	30 (44.1)	1.0 [ref]
Normal weight(18.5-24.9)	933 (69.4)	575 (61.6)	358 (38.4)	1.3[0.8,2.1]
Overweight/Obese(25)	343 (25.5)	186 (54.2)	157 (45.8)	0.9[0.6,1.6]
Depression and anxiety (DASS-21)				
Neither	2729 (91.2)	1678 (93)	1051 (88.5)	1.0 [ref]
Depression OR Anxiety	191 (6.4)	99 (5.5)	92 (7.7)	0.7** [0.5,0.9]
Depression AND Anxiety	72 (2.4)	27 (1.5)	45 (3.8)	0.4*** [0.2,0.6]
Gestation at birth				
Preterm (<36.9 wks)	172 (6.0)	101 (58.7)	71 (41.3)	1.0 [ref]
Term (37-41.9 wks)	2654 (92.1)	1667 (62.8)	987 (37.2)	1.2[0.9,1.6]
Post-term (42+ wks)	56 (1.9)	33 (58.9)	23 (41.1)	1.0[0.5,1.9]
Hospital report Birthweight				
Less than 2500g	140 (5.1)	65 (46.4)	75 (53.6)	1.0 [ref]
2500-3999g	2275 (82.1)	1435 (63.1)	840 (36.9)	2.0***[1.4,2.8]
4000g or more	357 (12.9)	220 (61.6)	137 (38.4)	1.9**[1.2,,2.7]
Mode of birth				
Vaginal birth	845 (34.5)	627 (74.2)	218 (25.8)	1.0 [ref]
Operative vaginal	810 (33.0)	581 (71.7)	229 (28.3)	0.9[0.7,1.1]
Caesarean Section	797 (32.5)	579 (72.6)	218 (27.4)	0.9[0.7,1.1]
Total	3009 (100)	1804 (60.0)	1205 (40.0)	

Appendix 7.2: Mean health issues score for women reporting anxiety alone or depression alone at each time point



Appendix 9.1: Dissemination to Date

Publications

Hannon S, Gartland D, Higgins A, Brown SJ, Carroll M, Begley C, Daly D (2022) Maternal mental health in the first year postpartum in a large Irish population cohort: the MAMMI study. *Archive of Women's Mental Health* **2**(3), 641-653.

Hannon S, Gartland D, Higgins A, Brown SJ, Carroll M, Begley C, Daly D (2023) Physical health and comorbid anxiety and depression across the first year postpartum in Ireland (MAMMI study): A longitudinal population-based study. *Journal of Affective Disorders* **19** (328), 228-237.

Hannon S. Daly D. & Higgins A. (2022) Resilience in the Perinatal Period and Early Motherhood: A Principle-Based Concept Analysis. *International Journal of Environmental Research and Public Health* **19**(8), 4754.
Hannon, S, Higgins, A, Daly, D. (2023) Women's perspectives on resilience and research on resilience in motherhood: a qualitative study. *Health Expectations* **26**(4), 1575-1583

Presentations

Hannon S, Higgins A, Daly D (2021) Resilience in pregnancy and early motherhood: a principle-based concept analysis. Trinity Health and Education International Research Conference. Online, 10-11 March 2021 Oral Presentation.

Hannon S, Higgins A, Daly D. (2022). Women's perspectives on resilience and research on resilience in motherhood. Trinity Health and Education International Research Conference. Online, March 2022 Oral Presentation.

Hannon S, Higgins A, Daly D. (2022). Women's perspectives on the use of the concept of resilience in mental health research in motherhood- a qualitative study, The International Marcé Society Biennial Conference 2022, London and Virtual, 19-23 September 2022.

Invited speaker

Women's Mental Health in the First Year of Motherhood: Findings from the MAMMI study. Perinatal Mental Health Study Day. Health Service Executive (HSE), Centre for Nursing and Midwifery Education. Online May 31st 2023.

Women's mental health in the first year of motherhood. At: National College of Ireland & The Prevention and Early Intervention Network (PEIN). 24th November 2022.

A real-world example of a different way: Conducting research with and for peripartum women ethically and with integrity. 6th European Training School of RiseupPPD. (Cost Action CA18138). Training School on Screening for Perinatal Mental Health Disorders. University of Malta, Valletta, Malta, 30th May- 1st June 2022. COST Action CA18138.