

THE INCIDENCE AND PREVALENCE OF PSYCHIATRIC ILLNESS IN IRELAND
- A Progress Report

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INTRODUCTION

Traditionally man's knowledge of disease has advanced on three fronts. First, and most obviously there has been the clinical approach by which the physician's examination of a sick person leads him to conclusions or at least assumptions about the pathological process responsible for the symptoms of which the patient complains and the signs which the physician's clinical examination elicits. The clinical method is, of course, aided by numerous technical and laboratory investigations such as the x-ray, the estimation of blood and other levels of various metabolites. Some of these aids to clinical investigations have reached a technically very high level of sophistication. The second approach to understanding the forces of disease relates to the post-mortem examination of the dead individual in an attempt to correlate the pathological changes, either macroscopic or microscopic discerned at post-mortem examination with the observed ante-mortem clinical picture. Lastly, the epidemiological approach, which, as the name applies, originally concerned itself with the study of epidemic diseases, differs from the two previous approaches in that it is concerned not with disease or clinical symptoms in an individual patient but rather with observations on the mass aspects of diseases within whole populations and observing either naturally or by serendipitous experimental means, the factors influencing the distribution of various diseases. An example of one of the most important in the whole of medicine would be the decline in mortality from pulmonary tuberculosis throughout the latter half of the nineteenth and the early part of the twentieth century long before effective drugs were evolved to deal with the condition. The general interpretation of this decline lays it at the feet of a coincident improvement in socio-economic, particularly nutritional, circumstances during the same time period.

It is this third area which will be our concern today. Epidemiological observations deal broadly with the estimation of the incidence and prevalence of a given condition both in local communities, in whole nations as well as some sections of whole nations, such as the black and white races within the United States and internationally. For some conditions it is possible to set up a predictable standard prevalence and incidence of a condition, at least for a limited time period and it becomes possible then to search for variations from these standard incidences and prevalences. Where such deviations are discovered the next step is to seek environmental factors prevailing in this community which may be intuitively or experimentally suspected of influencing incidence and prevalence. Whenever an association is found the next step naturally is to strengthen the association so as to evaluate its total causal effect in the overall pattern of causation of the particular disease concerned. Thus to take some examples by way of illustration it is common knowledge that there is a strong association between cigarette smoking and lung cancer and furthermore the association strengthens with the volume of cigarettes smoked. None the less, it is also observed that some people who smoke cigarettes very heavily for long periods of time survive to old age and die without ever developing lung cancer; conversely, some people who have never smoked a cigarette in their lives often die from lung cancer at an early age. It is clear therefore that whilst the association between mortality from lung cancer and cigarette smoking is strong it is not absolute and therefore as a "cause" in relation to this condition we say it is neither sufficient since one who smokes heavily may not develop cancer, nor necessary since some people who never smoke develop the disease. Analogous situations exist in relation to cancer of the oesophagus or gullet and alcoholism. Many other examples from the cancer range of diseases can be cited since modern feeling is that the vast majority of cancers are environmentally determined and it has been the task of epidemiology to identify these environmental factors and to evaluate their contribution in the totality of causation of any particular cancer. At another level epidemiology is concerned with the distribution of diseases within families or related persons and can tell us for instance whether a disease is "familial" or, as far as relatedness is concerned, is random in its distribution. The finding that the disorder is familial in that the expectation of developing the disorder increases the more closely related the given individual is to an affected person opens the question whether the increased liability of the disorder exists on a genetic or inherited basis or environmental basis because clearly the more closely related people are the more likely they are to share the same environment both physical and social. Some uncommon medical conditions show a familial distribution which is so characteristic and predictable that this pattern conforms to various forms of genetic transmission or inheritance that have been worked out on other species and we know at once that the condition under observation because of its characteristic familial distribution must be genetic. For example, the characteristic familial distribution of haemophilia whereby the disease occurs only in males and in half the sons of unaffected females and in none of the children of these sons but in half the sons of their daughters makes it clear that we are dealing with a condition which is linked with the X chromosome and which is transmitted in a recessive manner.

Simple forms of genetic transmission of this kind are relatively uncommon and when they do occur are associated with disorders that are generally rare. The more common disorders, such as the mental illnesses which we will be later considering show a familial distribution which does not conform to any simple inheritance pattern. Therefore more

sophisticated research strategies have to be conceptualised and operationalised to evaluate the respective environmental and genetic contributions and the interaction between the two to the occurrence of the illness. A further example of such strategies has been the studies of monozygotic or identical twins raised together and raised apart. There, one member of the twinship is known to have suffered from the disorder being studied. Other strategies are the so called "cross fostering" studies where an individual with biological parents who are affected with a particular disorder is taken from its parents who do not suffer from the condition, or, the reverse situation, to observe whether the frequency of the disorder in the individual or propositus is nearer the random expectation of a person without hereditary taint or whether the frequency is nearer the raised expectation associated with an affected parent. Other strategies currently in use are the intensive longitudinal study of individuals, such as the children of affected parents, known to be at high risk for developing a particular disorder.

Psychiatric Epidemiology

Most of the major disorders of mankind of the developed world are, unlike the situation in the earlier days of the infectious diseases, multifactorial in origin. For example, the disease model of an epidemic disorder which once ravaged European populations such as cholera is relatively simple. The host, that is man, ingests the pathogen, vibrio cholera in contaminated water. With a few hours of ingestion the clinical symptoms of cholera appear in the infected individual and within a few further hours he has either recovered from the condition or died. Furthermore, the invading pathogen, the vibrio cholera, can be isolated from the bloody and watery stools of the patient. No such simplicity of circumstances pertains to the great modern killer cardio-vascular disorders. Here causation is multifactorial, that is to say many factors are involved. Furthermore, whereas some of these factors, taking ischaemic heart disease or coronary heart disease as an example, such as raised blood pressure, cigarette smoking, obesity, lack of exercise, high intake of various fatty foods are known, there are many other factors which are undoubtedly contributory but are unknown. Moreover, the relative contribution of each of the known factors is not clear. As a consequence while on an epidemiological basis, that is dealing with a large number of individuals a weighted score or even a simple check list of the known contributory factors is a reasonable predictor of risk groups for this disorder, yet when applied to the individual person such indicators are relatively poor prognosticators.

Psychiatric Disorder

Turning now to the area of major concern this evening, that is the psychiatric disorders, we see ourselves in even greater difficulties. The very first difficulty is one of the greatest and it is this. Whereas with the physical disorders the diagnostic processes by which we identify a disease as being present or not being present are fairly objective and in most cases can be substantiated by appeal to objective measures such as the blood sugar level in diabetes or the blood pressure in essential hypertension, no such determinants exist in most of the psychiatric disorders. The history of nosology and classification in psychiatry, however, goes back about two centuries and in continental Europe, Germany particularly and also France, it has long been recognised that the various observed behavioural abnormalities or deviations from normal, seen in the deranged often followed a particular

pattern or, put another way, certain abnormalities were often seen to occur together. First, the group of symptoms which typifies what we now call manic-depressive psychosis has been recognised for at least two hundred years and descriptions in the medical literature of those days do not differ very much from the observed symptomatology of today. This is true also though to a lesser extent of schizophrenia. These two disorders comprise the major psychotic or serious mental illnesses. Although by comparison with general medicine the amount of research effort expended on psychiatric illness has been infinitesimally small yet schizophrenics and manic-depressive psychotics have been subjects of numerous post-mortem examinations but no abnormalities have been found either in their brains or elsewhere which could be related to the observed symptoms of disordered behaviour. And, again, although much effort and time has been spent on the examination of the blood, the urine and cerebro-spinal fluids and various other constituents of the schizophrenic human beings during their lifetimes no enduring abnormalities have been found. As a consequence these illnesses are often called "functional". They therefore stand in contrast to another group of psychiatric disorders which are called "organic". In this group of disorders post-mortem examinations show changes and damage to the brain which can be directly related to the memory loss, the confusion, the wandering, the deterioration of intellectual performance which characterise the dementing group of disorders or dementia as they are called.

I will return to this matter of diagnosis and the difficulties which it makes in the practical sense, later on. But, now I will change the focus of our attention to the particular difficulties surrounding the area of our own research.

The great area of the institutional treatment of mental illness began in the early nineteenth century. To some extent this was part of a wider development of institutional care for problems of all sorts and which was given a particular impetus by the Poor Laws of the early nineteenth century. From 1810 to 1890 approximately fifteen to twenty mental hospitals were built throughout this country. As the century went by the recognition of the need for more and more in-patient accommodation was being reiterated by many of the commissions of the time and by the reports of the Inspectors of Lunacy. One consequence of this was an acceleration of the hospital building programme and, secondly, the provision of hospitals auxiliary to the main ones.

By 1900 the number of patients in Irish mental hospitals had reached a proportion of five per thousand of population which by comparison with statistics from other countries seemed to be a higher rate of hospitalisation than existed elsewhere. During the twentieth century this figure was to rise higher until by 1958 it had reached a figure of seven per thousand of population. This figure is so much greater than any recorded elsewhere that it was a source of widespread comment. But not alone was the overall Irish figure very high, there were also enormous regional variations and these stretched from about 4.5 per thousand in the Dublin area to a staggering thirteen per thousand in the Sligo-Leitrim area. Some idea of the extent by which Irish hospitalisation rates for both psychiatric illness and all illness exceed those of other countries is given in Table 1 which is taken from the Report of the Commission of Enquiry on Mental Illness.

Table 1, of course, refers only to the numbers of occupied beds at any one point in time and is therefore a prevalence rate. Taking account now of admissions and prevalence together, Table 2 presents the "treated rate" which is a combination of the numbers of

Table 1: *Hospital beds per 1,000 population in different areas (1961 or nearest available year)*

Country	Total number of hospital beds per 1,000 population	Number of psychiatric beds per 1,000 population
Ireland*	21.4	7.3
Northern Ireland	11.9	4.5
England and Wales	10.4	4.6
Scotland	12.3	4.3
France	13.4	2.1
West Germany**	10.6	1.7
Spain	4.4	1.1
Portugal	5.3	0.9
Italy	9.3	2.2
Netherlands	7.6	2.3
Denmark†	10.0	2.2
Belgium	8.0	3.1
Norway	10.6	2.9
Sweden	15.9	4.8
Finland	9.2	3.6
USA	9.1	4.3
New Zealand	11.6	3.5
Canada	11.1	3.9
Australia	11.0	3.1
USSR	8.5	0.8
Japan	9.5	1.1

*Excluding Northern Ireland

**Including West Berlin

†Including Faroe Islands

Table 2: *Treated rate - mean 1955-1959*

Country	Rates/1,000 of population	Country	Rates/1,000 of population
Austria	2.96	England and Wales	5.34
Belgium	2.79	Northern Ireland	7.43
Denmark	7.15	Scotland	6.15
Finland	3.46	Australia	3.30
France	3.32	New Zealand	5.80
Iceland	2.60	Ceylon	1.14
Republic of Ireland	10.82	Cyprus	1.71
Italy	3.51	Israel	2.52
Luxembourg	3.70	Japan	0.64
Norway	4.12	Canada	5.88
Poland	2.01	United States	5.65
Spain	1.67	Ghana	0.26
Sweden	6.70	Portugal	1.32
Switzerland	6.34		

Population source: Demographic Yearbook 1959.

Table 3: Ratios of Irish hospitalisation rates to those of England and Wales in 1963 by age-group and diagnosis

Age Group Diagnosis	15-24		25-34		35-44		45-54		55-64		65-74		75+	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Schizophrenia	3.9	3.9	8.9	4.7	3.7	3.7	2.8	3.5	3.3	2.5	2.8	2.1	2.3	0.8
Neurosis	1.4	1.3	2.2	1.4	3.8	2.3	5.3	5.3	6.7	6.9	6.4	6.9	3.9	7.4
Manic depressive psychosis	1.3	1.2	2.5	1.6	3.7	2.4	3.7	2.9	4.0	2.6	2.9	1.9	2.1	1.3
Personality disorder and mental deficiency	9.4	6.9	13.1	10.9	11.9	8.2	4.8	6.7	5.0	3.4	2.4	2.8	1.6	2.5
All diagnosis	4.8	3.5	5.9	4.2	3.8	3.7	3.2	3.5	3.3	2.6	2.2	2.0	1.6	1.1

patients resident in hospital at the beginning of a year plus the numbers of admissions to hospitals during the course of the year. Once again it can be seen that the rates for Ireland are the highest recorded for the year under survey.

Turning now to more limited comparisons of hospitalisation rates - that between Ireland, England and Wales - by age, sex and diagnosis, let us look at Table 3.

It is clear that the Irish hospitalisation rates are greatly in excess of those in England and Wales, particularly for specific illnesses at particular ages. For instance, schizophrenia in young people, particularly in males, mental handicap in virtually all age groups and neurosis in higher age groups are particularly noteworthy.

Turning now to first admissions which are generally taken to be an indicator of the incidence of serious psychiatric conditions, we have Table 4 which presents first admission rates for Ireland, England and Wales by age for 1969.

It is quite clear that although not as great as the discrepancies for hospitalisation rates the Irish first admission rates are considerably in excess of those for England and Wales.

So far we have looked at Irish hospitalisation and admission rates as a totality but there are interesting differences across the country as Table 5 makes clear.

Table 4: Ireland and England and Wales. First admissions 1969. Rates per 100,000 population by age group with ratio of rates

Age Group	Male			Female		
	Ireland	England & Wales	Ratio of Ireland to England & Wales	Ireland	England & Wales	Ratio of Ireland to England & Wales
Under 15	11	17	0.6	17	12	1.4
15-19	190	146	1.3	171	165	1.0
20-24	394	227	1.7	340	245	1.4
25-34	443	218	2.0	410	298	1.4
35-44	487	206	2.4	344	266	1.3
45-54	407	190	2.1	367	245	1.5
55-64	442	177	2.5	384	207	1.9
65+	408	347	1.2	428	385	1.1
All ages	277	155	1.8	249	211	1.2

Table 5: *Hospitalisation rates per 1,000 population*

Hospital area	Rates per 1,000 population 1959
Waterford	8.60
Kilkenny	8.04
Enniscorthy	6.29
Ennis	9.26
Mullingar	7.82
Clonmel	6.99
Limerick	6.80
Monaghan	7.78
Dublin	5.55
Cork	7.60
Portlaoise	7.14
Sligo	11.00
Ballinasloe	9.26
Carlow	5.70
Killarney	8.29
Letterkenny	5.78
Castlebar	8.75
Republic of Ireland	7.14

The general trend is that hospitalisation rates rise as one progresses westwards and this trend has been fairly consistent in recent years. It appears to be a relatively recent development since 1900 although Irish rates in 1900 were already very high.

This data illustrates the points that I have been making earlier on and set the background for the setting up of the Commission of Enquiry on Mental Illness by 1961. The most relevant comment of the Commission itself on this state of affairs is worth quoting here in full:-

“Statistics in respect of different countries may not be directly comparable, but, even if allowance is made for this, the number of in-patients in Ireland seems to be extremely high - it appears to be the highest in the world. It is hard to explain this. There are indications that mental illness may be more prevalent in Ireland than in other countries; however, there are many factors involved, and in the absence of more detailed research, the evidence to this effect cannot be said to be conclusive. Special demographic features, such as the high emigration rate, the low marriage rate and problems of employment, may be relevant to the unusually high rate of hospitalisation. In a largely rural country with few large centres of population, social and geographic isolations may affect both the mental health of individuals and the effectiveness of the mental health services. The public attitude towards mental illness may not be helpful to the discharge of patients and their reintegration in the community. On all these points, the Commission could do little more than ask questions. To provide answers would demand years of scientific inquiry for which neither the personnel of the Commission nor the time at its disposal would have been adequate.

The Commission considers that a greatly expanded programme of research into these social and epidemiological problems is urgently necessary.”

Later the report on the specific subject of research had this to say:-

“There is in the community an unknown, but clearly considerable, number of persons suffering from mental illness of some degree. Practically every mentally ill person has an affect on others, so that a very large proportion of the population is affected directly or indirectly by mental illness. Despite this fact, hardly any research is being done into the treatment of mental illness, into the efficacy of different forms of care or into causes and possible methods of prevention. The Commission regards it as essential that such research should be carried out. While Ireland can benefit to a considerable extent by research carried out in other countries, there are many particular problems (e.g., the problem of the exceptionally high hospitalisation rate, the problem of late marriages and the effect of the Irish social structure on mental illness) which research in other countries will do little to solve”.

In the main the Commission Report stressed that the Medico-Social Research Board should be responsible for undertaking and co-ordinating research. With regard to the type of research undertaken the Commission had this to say:-

“The Commission does not regard it as practical or desirable to suggest the exact form research in this country should take, but it considers that a social and medical investigation of the causes of the high hospitalisation rate in this country should be undertaken as soon as possible”.

and also

“The Commission appreciates that this county may not be able to spend as much money on research, even proportionately, as larger and wealthier countries.

However, in the light of the foregoing figures and of the many special problems needing attention, the Commission considers that this country would be justified in spending an appreciable amount of money on research into mental illness”.

One of the first acts of the Commission was to set up a fact-finding committee to elucidate and throw light on some of the factors associated with this enormous hospitalisation rate. However, their efforts were not entirely satisfactory as when they came to examine the evidence they found there was little data available. Although the Inspectors of Lunacy had first provided annual reports detailing the numbers of admissions and discharges and deaths in mental hospitals and some of the characteristics of patients admitted and discharged and these were continued as the reports of Inspectors of Mental Hospitals in later years, they were not very detailed and did not provide sufficient evidence to enable any hypotheses concerning the reason for our high hospitalisation rates to be put forward. The Commission instigated a new individual patient reporting system by which an admission and a discharge form was to be completed for each patient coming into hospital after midnight on the 31st March 1963 and the whole operation began with the census of all patients in hospital at that point. They further suggested that more detailed examination

of the whole question should be carried out by the Medico-Social Research Board. They were conscious that cross-sectional information obtained on these forms was not of itself adequate and that some attempt at long-term follow-through of individual patients should be attempted. Therefore they suggested that each admission should be given an individual register number and that this number should be applied to this patient on each subsequent admission to that, or to any other hospital that he might enter and here they encountered their first difficulty.

The designation "first" admission has some epidemiological importance as, at least for serious illnesses, it is often taken to represent a measure of "incidence" of a condition on the basis that all cases of this illness, because of its severity, will be admitted to hospital at some time or another. Now the designation of any admission as a "first" admission from a system such as the one set up by the Commission of Enquiry on Mental Illness, depends entirely on the patient or his relatives being sufficiently honest or having sufficiently good memories or being so totally in touch with the situation as to know and say that this admission is a "first psychiatric" admission. It is well known from several studies that first admissions are seriously over-reported. Patients may deliberately conceal that they have previously been admitted to a mental hospital, they may forget or they may be unaware that they were in a psychiatric unit of a general hospital and if asked simply have they ever been in a mental hospital before may quite truthfully say that they had not. It had been the intention of the commission sub-committee that our remembering and truthful patient would tell the staff on his re-admission to hospital, where he has been hospitalised for the first time, and so his present hospital would telephone to the previous hospital and find out from them what index number he had on that occasion and the same index number would be allocated to him in his present hospital. Thus, in theory anyway, all his hospitalisations, wherever they might have been in this country, would be followed longitudinally and so the outcome of cohorts of patients might be undertaken.

Our Research Activities

When the completed forms accumulated by the Department of Health since the initial census in 1963 were passed on to us at the Medico-Social Research Board we analysed them and presented a series of reports. From these it emerged that the high Irish hospitalisation rate, which at least seemed incontrovertible was accompanied by high first admission rates which in some cases ran up to three times greater than those of England and Wales. Our instincts, however, and some more direct evidence from various hospitals suggested that there might be greater over-usage of the "first" admission rubric in Irish hospitals than elsewhere. To cite the most prominent example we had a feeling that some hospitals were using the word first to imply first to their hospital. Now it so happens that a lot of patients in Ireland migrate from rural areas to urban areas particularly to Dublin so that many individuals hospitalised in Dublin may have had a previous hospitalisation in the district hospital wherein they had spent their early years. Furthermore, it is a characteristic of our divided form of health care that some patients experience hospitalisation in private hospitals in the earlier stages of their illness but then later on, and in less affluent circumstances are hospitalised in local authority hospitals. Accordingly, if these hospitals interpret "first" to mean only to their hospital then there would be serious distortion of the meaning of the words first admission.

Another problem is the issue of diagnosis. It had been maintained for instance that labels like "schizophrenia" are much more commonly employed in Ireland than elsewhere and that some of the discrepancies might be a consequence of peculiarities of the diagnostic behaviour of Irish psychiatrists. None the less, even if Irish psychiatrists were using diagnostic categories differently from psychiatrists elsewhere the fact still remains that the total number of patients in hospital whatever their diagnosis was relatively large.

To remedy some of these difficulties our strategy of research here at the Medico-Social Research Board Mental Health Section began with the refinement of the In-patient Reporting System. We designed new forms on which we concentrated on requesting from the hospitals a minimum amount of information with the greatest degree of accuracy. To this end each hospital was supplied with a glossary of terms with definitions for each of them and with rigid instructions detailing the procedure to be adopted in completing the forms. In particular we were at pains to see that the "occupation" of patients was returned accurately so as to enable us to code occupation from the census of population classification of occupations. In relation to diagnosis we requested that the diagnostic categorisation returned be in conformity with Section 5, Mental Disorders, of the eighth revision of the International Classification of Diseases and supplied each consultant psychiatrist in all hospitals with the glossary of diagnoses provided by the select committee appointed by the Minister for Health in England. These forms all returned here and each one is meticulously checked to see that it is in order that nothing is omitted and that there are no obvious errors before it is coded.

So far analysis of our census returns has thrown some light on the extent and magnitude of the problem here. Our raised hospital prevalence is inflated by a contribution of 13.5 percent of persons with a diagnosis of mental handicap as against less than 5 percent for the corresponding diagnosis in psychiatric hospitals in England and Wales. This is largely a consequence of the lack of separate provision for adult mentally handicapped in this country. Again among the patients in our psychiatric hospitals particularly the long-stay is a very disproportionate representation of the unskilled and persons from the lower socio-economic classes.

So far we have catered only for cross-sectional information but the necessity for long-term longitudinal studies of outcome of cohorts of psychiatric patients is essential for rational future planning of psychiatric services. With this end in view we decided to set up a record-linked system that is electronically record-linked whereby a master file carrying individual indentifying information for each patient will enable us to link any subsequent movement of this patient through the system and in this way we will be able to build up a cohort of groups of patients followed over a long period of time. The technical difficulties in such a system are very considerable but I will not go into them here.

Case Registers

So far we have taken the story to the point of refinement of the in-patient reporting system, but clearly before we can make definitive statements about the extent of mental illness in the Irish community we must extend our enquiries beyond the hospital. It could be for instance that our in-patient hospital figures are merely a reflection of a greater number of Irish patients being hospital treated with correspondingly fewer being treated by out-patient means in comparison with other countries. To deal with this problem we

set up what we call "a case register" of treated persons in three Irish counties chosen because they represent the spectrum of psychiatric and socio-economic morbidity. That is to say one county had very high hospital figures relative to its population, was poor, had higher out-migration, low marriage rates whereas the other county was at the other extreme and the third intermediate between the two. A register in its simplest sense is simply a collection of items or people with common characteristics. Our case register therefore is simply a collection of names of cases coming to any form of treatment be it in-patient or out-patient, day hospital, night hospital, hostel, sheltered work shop, from defined communities served by these local health services. Furthermore, the case register is a longitudinal instrument in that the aggregated treatment experience of these cases is continued indefinitely during their lifetimes. The information that we gathered about these patients is fairly detailed and consists mainly of various social items chosen because of their interest to us and their relevance for psychiatric illness. To gather them we have used trained interviewers - that is to say community nurses who know their areas and their patients extremely well and who we have trained here in Dublin for a week at the Board before returning to the field. There are approximately ten of these in the three counties involved. They have been trained together, they use standardised terms, they apply them in a standard way and if in doubt about any point they contact us here for a ruling in relation to some item that we may not have foreseen in setting up the study. Registers are maintained locally and in addition we get information from private hospitals about individuals from the designated areas who seek their treatment in private hospitals and in this way we have a total picture of all psychiatric illness that comes to the specialised psychiatric services from these three areas. The diagnostic problem has been dealt with by a standardisation of diagnosis operation which took place here in Baggot Street with all the psychiatrists from the three areas being brought together here in Dublin and given a training session in diagnostic standardisation by means of video-taped symptom-rating and diagnosis-making carried out for us by the US/UK diagnostic team from the Institute of Psychiatry, University of London. Half way through the study a further boost in diagnostic standardisation was given to the psychiatrists.

Community Study

So far we have dealt with the refinement of hospital data and now with standardised information from all forms of psychiatric care. But the question may still be asked about psychiatric illness in the community that is being treated by treating agencies other than by the psychiatric ones e.g., by general practitioners or psychiatric illness that is not being treated at all but that is lying in the community undetected.

To deal with this situation we have set up a further study which is concentrating on one of the serious mental illnesses, schizophrenia, and is taking the diagnostic standardised approach a step further in that instead of a number of different psychiatrists using an unstandardised interview we have a field psychiatrist spending a year in each of the three areas and examining by means of a standardised interview technique called the present state examination, the PSE for short, which is being used in some major international studies such as the IPSS - the International Pilot Study of Schizophrenia by the World Health Organisation - and which provides final diagnosis by computerisation. In addition this study is going to search for further possible cases of this illness not known to the

psychiatric services. The methodology used here is that of the "key informant" method whereby those people in the community likely to know, such as general practitioners, public health nurses, teachers, police and so on are requested to indicate to the field psychiatrist anyone whom they think may be suffering from schizophrenia. Thereupon the psychiatrist will attempt to get an interview with these people and if she thinks any of them may be suffering from schizophrenia will then try to interview them with the PSE.

Relevant Factors In The Irish Environment

Two of the most striking features of the Irish environment which set our society apart from most other European countries are both demographic and are first, our peculiar patterns of marriage behaviour, and second, the high out-migration which has characterised this country for almost a century and a half. Both of these factors may well be relevant to the psychiatric illness scene.

As far as marriage is concerned an association between marital status and schizophrenia has been known for almost a century. The observation that schizophrenia is commoner in the single has led to two main possible explanations. The first of these is the "selection by marriage" postulation which claims that persons who have already developed schizophrenia or people who have not yet developed the illness but who will subsequently develop it are, by reason of their "pre-schizophrenia" personality characteristics, precluded from marriage. The other postulated explanation is the "protection by marriage" one which claims that marriage does not discriminate against pre-schizophrenic personality, but the married state protects (a) against the development of the illness and (b) against hospitalisation for the illness if it develops after marriage.

Since the age of marriage in Ireland has generally been delayed beyond that in other countries and since there is no convincing evidence that the age of onset of schizophrenic illness in Ireland is later than in other countries and since the peak age at onset for schizophrenia is in the early twenties we may postulate that a higher proportion of people who are to develop schizophrenia in Ireland will do so before they have entered the "period of risk" for marriage. Whatever about pre-schizophrenic personality traits it is quite clear that once the illness has developed a lack of drive is one of its main characteristics and since the selection and marriage of a mate requires a certain amount of drive particularly in the male in our society, the development of schizophrenia removes from the pool of eligible males a number which in society with more normal marriage patterns would have married before they had developed their schizophrenic illness. Therefore the frequency of single psychiatric males in this country is likely to be higher than elsewhere. Furthermore, since a single schizophrenic is less likely to derive the same support from family sources, particularly from a spouse, than married schizophrenics, we may postulate further that the prevalence of the handicap from schizophrenia illness in the single would be greater in Ireland than in a country where a higher proportion of schizophrenics are married.

Where marriage patterns have been so biased towards non-marriage as they have in Ireland we may regard marriage as a more highly selective process in this country than elsewhere with fewer schizoid individuals getting through the net or into the marriage bed. In consequence one might expect the married in Ireland to be less schizophrenia-prone

than is the case elsewhere. In relation to pre-schizophrenic personality characteristics it must be remembered that whereas approximately half of individuals who will later develop schizophrenia show some "schizoid" traits as being loners, not mixing well and having difficulties entering into personal relationships, yet the other half of embryoschizophrenics show no pre-illness abnormalities of personality and the illness in these people usually occurs quickly and is of sudden onset.

Our abnormal marriage behaviour may also have been responsible for some genetic effects of relevance to major psychiatric illness and particularly for schizophrenia which is the illness I am using to illustrate this discussion. Evidence from twin studies and cross-fostering studies indicate that the genetic contribution to schizophrenia must be at least equal in extent to the environmental one and therefore it is relevant to look at the Irish marriage patterns in their genetic effects. One of the main problems in relation to schizophrenia is the difficulty in explaining the virtual constancy of the frequency of this disease from population to population over long periods of time in view of the decreased fitness of the schizophrenic individual. By this we mean to say that the fertility of schizophrenics is only 70 percent of that of non-schizophrenics and consequently there should be constant elimination of schizophrenic genes from any community's gene pool. Accordingly, the frequency of schizophrenia should fall but this is contrary to observation. Therefore it is necessary to invoke a number of explanations to counter the observed non-elimination. Among these is that of mutation - that is to say that previously healthy genes may become, for a number of reasons, deleterious and that includes the mutation of fresh schizophrenic genes in previously healthy individuals. One of the factors known to increase the risks of mutation is increased parental age. Therefore in Ireland where the parental age of birth of children is a good deal higher than elsewhere we may in a theoretical sense invoke a higher mutation rate as partial explanation for the possibility of a raised incidence of schizophrenia. Out-migration - the second notable feature of Irish demography to be considered - has been the source of much study in relation to mental illness and particularly in relation to schizophrenia. The evidence from the many studies conducted is equivocal and no broad generalisations can be made other than to say that the relation between migration and mental illness varies according to the particular circumstances of the migration. Nevertheless, the Irish situation has been extreme, particularly in western areas so that it is common to invoke it as a partial explanation for our high rates of mental illness. Specifically the theory runs that the more driving and intelligent individuals will leave rural areas and migrate either out of the country altogether or towards the east coast, in particular to Dublin. Whereas it seems clear that mental defectives are less likely to move far from their birthplace than more intelligent individuals - and this is a fairly ubiquitous finding - the situation is less clear for illnesses such as schizophrenia which are largely independent of intelligence but as I have indicated earlier are related to the drive component which is so essential a feature of human activity. We may look at age-at-migration and age-at-onset of schizophrenia in the same way that we look at age at marriage earlier on. Clearly if age-at-schizophrenia-onset predates age-at-out-migration then because of diminished drive we may postulate that schizophrenic individuals are removed from the pool of migrating people and remain at home. This is of course a rather simplified consideration and considers drive as the only variable within the schizophrenic system relevant to migration. However, it must be remembered that many schizophrenics have a

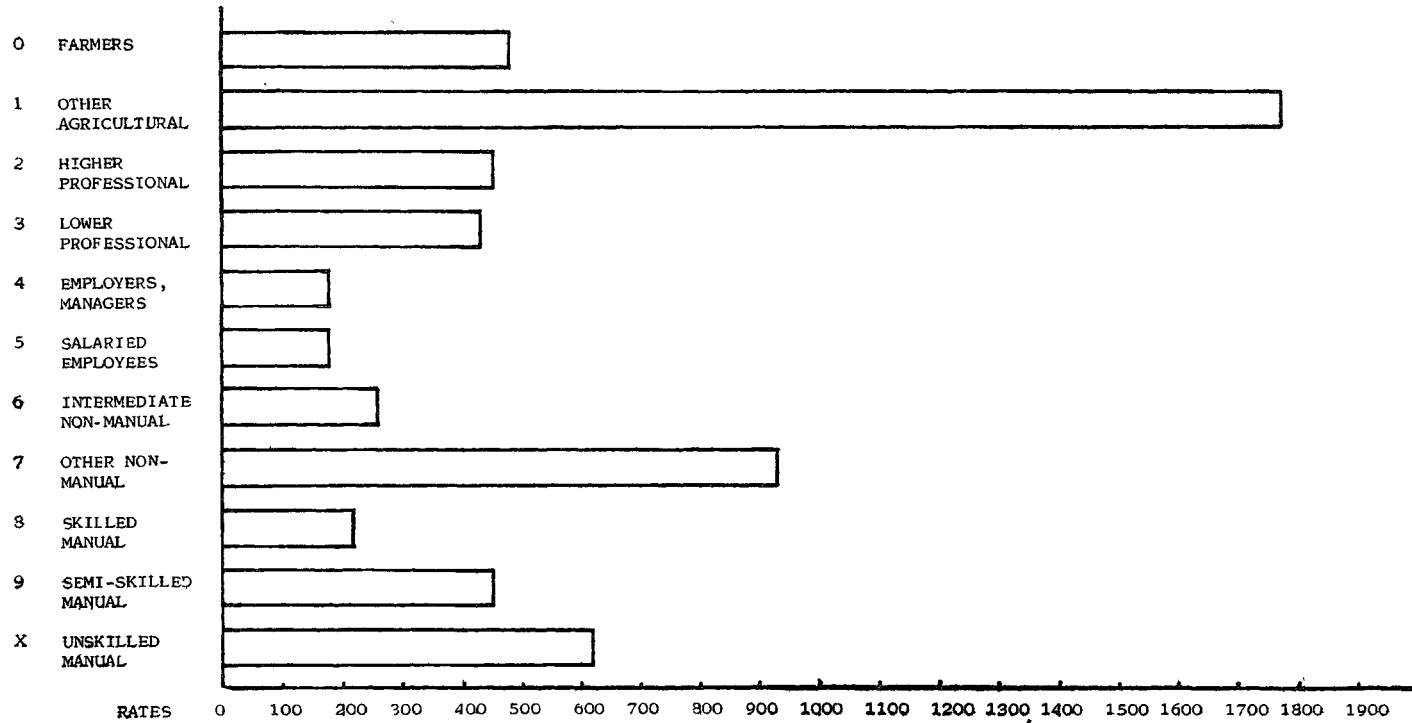
restlessness, an anomie to misuse Durkheim's term and seek the anonymity of new surroundings away from the emotional pressures which their families bring to bear on them and which they cannot sustain. It might be that this restlessness and search for anonymity determine that schizophrenic individuals were more rather than less likely to migrate from their birthplace. There is, unfortunately, no clear evidence as to the selectivity of migration in relation to major psychiatric illness but it is noteworthy that whereas all sources commenting on the Irish both within Ireland and outside of Ireland are unanimous in finding high rates of alcoholism among the migrant Irish and reports from the United States and from Britain in the 'fifties and 'sixties do not show the Irish as having rates for schizophrenia that are any greater than the indigenous populations. This might suggest that the pattern has changed and that whereas the earlier Irish migrations being on a larger scale were determined by social factors of greater dimension than mere personality characteristics and therefore were unselective of mental illness, later migrations in different social circumstances when conditions had improved considerably and when to remain behind did not mean to die, may have become more determined by personality characteristics and therefore more selective in relation to psychiatric illness than in the past.

Finally, there is some evidence from Irish hospital figures that illnesses, such as the neuroses, which are more totally determined by environmental circumstances than is the case with schizophrenia, may be commoner in certain parts of Ireland than elsewhere. For instance, our national hospital rates for neuroses are far higher than is the case in England and Wales and what is also noticeable is that this is particularly true of older people in rural areas. The suggestion is that the stresses of loneliness, isolation, unemployment and advancing years bear more heavily on individuals in isolated rural areas than their urban counterparts. Some support for this situation comes from a consideration of suicide rates in Ireland by urban and rural districts. Among younger people suicide is generally higher in urban areas but with increasing age the trend reverses until in the higher age groups rural suicide rates are considerably higher than those in the urban areas. If we regard suicide as a response to unbearable stress - a not unreasonable assumption - then the suggestion from this data is that rural areas provide more stresses particularly for elderly people than is the case in urban areas.

Lastly, it is worth looking at hospitalisation figures by social groups.

It is seen quite clearly that the hospitalisation rates for psychiatric illness - and this is mainly from schizophrenia - are much greater for other agricultural workers, for other non-manual and for unskilled manual workers. These, by and large, are unskilled groups and it is clear that whatever the incidence of illness the prevalence is greater in these groups. By this I mean that once a schizophrenic illness develops its course is determined to some extent by the persons personality make-up including intelligence and, more particularly, the vocational skill that he has acquired. When he is low both in intelligence and vocational skill then his symptoms of illness will be much more prolonged and more difficult to eradicate. This situation is clearly reflected in the Irish scene and makes a not insubstantial contribution to our overall burden of morbidity.

*Irish Psychiatric Hospital Census 1971.
Social Group. Rates per 100,000 Population.
(Rates corrected to nearest 10).*



SUMMARY

I have tried in this review of our activities to outline our approach to the problem that I identified at the outset - that is the application of the methods of epidemiology to the question whether the high Irish hospital figures represent a truly high incidence of schizophrenia in the Irish community and I have briefly looked at some Irish environmental factors which may be relevant to this situation. We have seen how we have worked from the hospital outwards by undertaking community searches of certain areas to assess the extent of untreated schizophrenia in these areas. In this way we would have achieved a final assessment of the extent of schizophrenia in parts of this country. Should the incidence and prevalence of the disorder be found to be unduly high then we will have a duty to proceed further in our researches but the answer to our basic question must stand for a few more years until the findings of the field investigators have been completed and analysed.

DISCUSSION

Professor G. Bourke: I would like to begin by thanking you for inviting me this evening to the Statistical and Social Inquiry Society to speak briefly on Dr. Walsh's paper, and to propose a vote of thanks to him.

I have known Dermot Walsh for some years, and I have followed with great interest his painstaking collection of epidemiological data in the psychiatric field. It is then a particular pleasure for me this evening to talk on his paper which is a progress report on the incidence and prevalence of psychiatric illness in this country.

The area under study is a difficult one with many problems. Dr. Walsh meets the problems well, though the actual interpretation of the statistics is complex. Statistics generally, indicate that half the population of the Western World is mentally ill and that neurosis is more prevalent in the upper social groups and psychosis commoner among the lower social groups.

The hospitalisation data in Table 1 relates to 1961 - to data of fifteen years ago; and in Table 2, to data of a longer time ago. In Table 3 the data dates back to 1963 - 13 years ago. These data were a springboard for research but one wonders if today the position with regard to these statistics has improved or deteriorated.

In the First Admissions rates for 1969 (Table 4) although showing the same trend, the discrepancies are not as marked as the hospitalisation rates of earlier years. Interesting too are the hospitalisation rates within Ireland which date back seventeen years. Do these rates bear as marked discrepancies today?

Returning to Table 1 - relating to 1961 - this part of our country appears "over-bedded" and 34 percent of our beds are psychiatric; this figure is 38 percent in Northern Ireland, 44 percent in England and Wales, and 35 percent in Scotland. So, looked at in another way, interpretation is again difficult.

In Table 2 which refers to the years 1955-59 the 'treated rate' is shown. In these years the out-patient services here were limited, and indeed these figures may reflect poor out-patient development, and hence the need to admit larger numbers to hospitals. However, we must accept the figures as indicators that mental illness may be more prevalent in the Republic of Ireland than in other countries studied.

Dr. Walsh quotes the Commission of Enquiry on Mental Illness, that there are many factors involved and in the absence of more detailed research, the evidence of an excess of mental illness cannot be said to be conclusive. Dr. Walsh agrees with this and has undertaken this important research in order to reach a correct conclusion. He makes no claims that are not fact and has extended the scope of the research, and thus covers the loopholes well; such loopholes as diagnostic difficulties, possible over-usage of the 'first admissions' term, and figures which include patients with mental handicaps. Extension of the research to case registers and community studies is also important and will help to clear up some of the problems.

The social group data are also interesting, but I feel it would be worth enquiring into the specific occupations of 'other agricultural', 'other non-manual' and 'unskilled manual' groups. Might clusters of specific occupations be found if this were done? If persons in a specific occupation or occupations were found to be more susceptible than by making comparisons with other occupations in the same social groups more clues to causation might be found. Is the social group picture one of cause or effect? Does being in the lower social groups in some way make individuals more susceptible to psychosis or do people with this illness tend to 'drift' into lower social groups?

Finally, when all this work is complete we will know whether the available statistics of the incidence and prevalence of mental illness in the Republic of Ireland are a true reflection or not. However, unless similar comparative studies are carried out in other countries, for example, in England and Wales, we will not know if we have very high rates of mental illness or not. The statistics for England and Wales also require intensive study and could be spuriously low.

Tomorrow's answers appear to be in finding solutions to the causes of mental illness and by improved diagnosis and treatment. It is forecast that in the 1980s marked progress in the early detection of schizophrenia and certain other psychoses will be made, and further progress will be made in the prevention of this condition in those found to be at risk. In the 1990s it is again forecast that major advances, following discovery of biochemical causes, will result in the introduction of chemotherapy to combat this serious illness.

Mr. Chairman, it is now my pleasant duty to propose a vote of thanks to Dr. Walsh for this excellent account of his continuing research into mental illness in this country. Whatever the outcome of the research we will be indebted to him for his meticulous research and for tackling a problem which causes so much distress to patients, their families, and our nation.

Dr. B. O'Donnell: I wish to second the vote of thanks to Dr. Walsh. I am familiar with Dr. Walsh's epidemiological studies through the many papers which he has published from time to time.

Dr. Walsh began by pointing out, correctly, that in the case of many diseases of obscure causation, such as some cancers, the epidemiological approach has yielded valu-

able information, and this applied to mental disorder also. He has clearly illustrated in his paper the various ways by which the prevalence and incidence of mental illness in a community might be estimated.

As regards hospitalisation rates, the figures for one country versus another, or even for one part of this country versus another, gave no indication at all. Clearly, it could not be accepted that mental illness was three times more prevalent in Sligo than in Dublin, or three times more prevalent in Ireland than in the Netherlands. First admissions to psychiatric hospitals have been widely used as a yardstick for measuring the prevalence of mental illness. Dr. Walsh pointed out the pitfalls in using this yardstick. The next step was the three county survey, the three counties selected constituting a representative sample of the country as a whole. Information had been collected on all persons in these three counties who had come to psychiatric care, whether in hospital or community. Dr. Walsh's investigation had then logically proceeded to the collection of information on all persons in these three counties who had mental illness, the information being obtained from all the sources available.

In other countries, such as Britain and the USA valuable epidemiological information had been obtained by the investigation of the prevalence of mental illness in different immigrant ethnic groups. Much information had been obtained concerning the prevalence of mental illness among Irish immigrants both in Britain and in the USA. I note with much interest the remarks which Dr. Walsh has made concerning these findings.