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Title	Hospitalized psychiatric morbidity in Ireland : a suggested approach
Author(s)	Walsh, Dermot; Walsh, Brendan M.
Publication date	1967-06
Publication information	The British Journal of Psychiatry, 113 (499): 675-676
Publisher	Royal College of Psychiatrists
Link to online version	http://bjp.rcpsych.org/cgi/reprint/113/499/675
Item record/more information	http://hdl.handle.net/10197/1490

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Hospitalized Psychiatric Morbidity in Ireland: A Suggested Approach

By DERMOT WALSH and BRENDAN WALSH

Ireland has the highest rate of hospitalized mental illness on record. This is borne out both by the World Health Organization figures for treated mental illness (W.H.O., 1961), by international comparisons of point prevalence rates (Arentsen and Strömngren, 1959) and by consideration of first admission rates (Hammer and Leacock, 1961). The Irish national figures for each of these measures were respectively 7.12, 10.81 and 1.45 per 1,000 population in 1959. The rates exhibit a distinct geographical pattern within Ireland: they are highest on the coastal areas furthest from Dublin, while in the Dublin area they are as low as those of most western European countries. All three measures have risen over time, and the intercounty variation has also increased since 1900. In 1959 the coefficients of variation for both first admission and hospitalization rates were equal to 25.1 per cent.

Because information from an individual patient reporting system established in 1963 is not yet available, our data on hospital admissions and populations are crude and summary. In particular, we are handicapped by the absence of age- and sex-specific rates by county. However, the data that are available serve as a basis for some preliminary hypothesis-testing.

We believe that socio-economic factors have an important role to play in the explanation of the Irish hospitalization and first admission rates and their intercounty variation. It is impressionistically clear that the regional pattern of these rates and of certain socio-economic variables is similar. From 1900 to 1959 these rates increased throughout the country, but this increase was most rapid in counties with high rates of net (out-) migration and high ratios of the aged to total population (partly a consequence of population loss through migration). These counties are mainly in the west, south-west and north-west.

In order to explore this relationship further we have employed a regression model. We believe that the data lend themselves to testing in this manner.* Table I shows the values of the t-ratio for the simple regression coefficients of hospitalization rate by

* For a discussion of the statistical properties of regression models the mathematically oriented reader is referred to Geary (1963).

TABLE I
*Values of t-Ratio for Simple Regression Coefficients
(sign indicates nature of relation)*

Independent Variable	% Population aged 65+	Net (out-) Migration Rate
<i>Dependent Variable</i>		
HR 1959	4.50*	3.24*
FAR	2.61*	2.47*
HR schizophrenia ..	4.02*	3.37*
HR defective	4.95*	3.68*
HR manic depressive	2.11*	3.10*
HR senile	1.09	0.76
HR neurosis	1.77	0.70

* denotes $p < .05$ if true regression coefficient = 0.

diagnosis on two socio-economic variables. The results substantiate the impression of the relation between these variables and HR for schizophrenia and mental defect and for first admission rates, but not for HR for senility and neurosis. A further test shows no significant relationship between the percentage of population aged over 65 and the percentage of an area's hospital patients aged over 65. It seems likely, therefore, that the relationships of Table I would hold also for age-standardized rates.

Table II presents some multiple regression results. We have introduced the level of expenditure on mental health per person in an area as a measure of the availability of hospital facilities in that area. We suggest the following commentary on the results. The HR increases with the percentage of persons aged over 65 and with expenditure per person. The net influence of the age structure on HR schizophrenia remains significant after the introduction of the expenditure variables. A high net migration rate is associated with a high HR for schizophrenia, mental defect and manic depressive psychosis and a low rate for neurosis. This may support the hypothesis that patients in the first three diagnostic categories migrate less frequently than the population at large, while those in the fourth migrate more frequently. However, the results shown for HR schizophrenia regressed on "% Population over 65" and "Expenditure per Person" show the difficulty of separating the age-structure influence from the migration

TABLE II
Values of t-ratio for Regression Coefficients, Selected Multiple Regressions

Independent Variables	% Population aged over 65	Net migration rate	Expenditure per head	R ²
Dependent Variable				
HR 1959	2·85*		2·73*	·67
FAR 1959	1·26		1·86*	·35
HR schizophrenia ..	2·75*		1·01	·53
HR schizophrenia ..		2·23*	1·33	·48
HR defective		2·63*	0·97	·49
HR manic depressive..		2·89*	-0·58	·31
HR senile	-0·29		2·28*	·22
HR neurotic	3·29*	-2·24*	2·52*	·47

* denotes $pt < .05$ if true regression coefficient = 0.

influence with the available data: including both variables in the one regression usually led to the age-structure variable remaining significant and the migration variable becoming insignificant. The need for data standardized by age, sex, marital status and urban/rural residence is evident. Finally, it appears that hospitalization for senility and neurosis increases with the increased availability of facilities, as measured by expenditure. The results for first admission rates lend support to the overall interrelation between the socio-economic variables selected and this measure of the incidence of mental illness.

In summary it may be said that the first admission and hospitalization rates are highest in areas that have experienced high out-migration and have a high percentage of their population aged over 65. The variable "% aged over 65" appears to affect hospitalization in some way other than through the higher rate of hospitalization among the elderly. The association between migration rates and hospitalization by diagnosis suggests some interesting relationships, and may be related to other findings in this field. The conclusions we have drawn from our data are tentative and refer to the Irish experience; cross-cultural validity is not claimed. The ability of the data to support any hypotheses regarding different diagnostic groups is limited by the sharpness with which these groups are defined and diagnosed. Although we believe that first admission rates are meaningful in relation to severe mental illness, it is realized that hospitalized mental illness is not coter-

minous with mental illness in the community. We have, however, corrected at least partially for regional variations in the difference between illness and hospitalization through the use of a measure of the availability of mental health care.

We claim that the present approach holds promise in the study of the remarkably high rates and variation of rates of hospitalized mental illness in Ireland, for which no explanation has been offered so far (Walsh, 1962). We feel that socio-economic variables exert a considerable influence upon mental illness in Ireland. The present results, however, are based upon inadequate data and are therefore of use only in establishing very broad interrelations. As more and better data become available it is hoped to pursue these topics in greater detail.

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(Received 17 May, 1966)