THE AGE-DISTRIBUTION OF SCHIZOPHRENIA AND NEUROSIS: FINDINGS IN A NATIONAL SAMPLE

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Reprinted from

THE BRITISH JOURNAL OF PSYCHIATRY

Vol. 119, No. 551, October 1971

Brit. J. Psychiat. (1971), 119, 445–8

The Age-distribution of Schizophrenia and Neurosis: Findings in a National Sample

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The purpose of the present paper is to draw attention to a remarkable similarity in the age-incidence curves of schizophrenia and neurosis when the sexes are combined. Hare and Price (1969), in a study on the season of birth of schizophrenic patients, found that the age-distribution of cases of schizophrenia (I.C.D. 7th Revision nos. 300, 303) seen for the first time at the Bethlem-Maudsley Hospital during the years 1951–1963 was very similar to that of the cases of neurosis (I.C.D. nos. 310–18) seen there during the same period. However, these cases included out-patients as well as in-patients, were not necessarily first-ever attendances at a psychiatric clinic, and, because they had been referred to a teaching hospital which did not serve a particular geographical area, may have been a somewhat unrepresentative series. For these reasons, their findings (illustrated in Fig. 1 of their paper) might have been no more than a coincidence. But we have recently had the opportunity to examine a very large national sample of psychiatric cases, and this confirms and extends the findings from the Bethlem-Maudsley cases.

Materials and Results

The national sample, consisting of 168,271 cases, was compiled by the Department of Health and Social Security through their system of Mental Health Index Cards. It is a statutory requirement that certain information be recorded on these cards for every case admitted to a National Health Service psychiatric hospital in England and Wales (Ministry of Health, 1969). The present sample includes all first-ever in-patient admissions to such hospitals during the two years 1965 and 1966. The information available on each case included sex, age and marital status on admission, and diagnosis on discharge.

Table I shows the numbers of cases, by age-

Table I

Numbers of patients, by age and diagnosis. Sexes together

Age	Schizophrenia	Neurosis	Mania	Depression	Personality disorder
16–	1,922	1,962	104	1,864	1,310
20–	2,924	3,505	161	3,847	1,476
25–	2,747	3,754	143	4,254	1,036
30–	2,639	3,478	197	4,421	724
35–	2,628	3,306	188	5,121	528
40–	2,446	3,269	228	5,993	417
45–	1,821	2,463	214	5,750	323
50–	1,510	2,000	271	6,146	199
55–	1,176	1,647	232	6,113	116
60–	919	1,281	256	5,624	78
65–	708	858	192	4,477	40
70–	564	497	154	2,696	29
75 and over ..	970	356	211	2,288	40
Total ..	22,974	28,376	2,551	58,594	6,316

groups, diagnosed schizophrenia (I.C.D. 7th Revision nos. 300, 303, and 'schizophreniform psychosis'), neurosis (310–18), mania (301·0)*, depression (301·1, 301·2, 302, and 'endogenous depression'), and personality disorder (320, 321). The similarity in age-distribution between schizophrenia and neurosis can be represented as in Fig. 1. Figure 2 shows the corresponding age-distributions of the other three diagnostic groups. It can be seen that the age-distribution of mania, given the rather small number of cases per age-group, is similar to that of depression, while that of personality disorder is quite distinct from the other four groups.

A convenient way of expressing the variation in age-incidence between pairs of diagnostic groups is to plot the relative incidence by age. Figure 3 shows this for schizophrenia and neurosis, and for mania and depression. For each of these pairs, the relative incidence remains remarkably constant over the age-range 20–69 years. Figure 3 also indicates that below 20 years of age there is a relative excess of schizophrenia over neurosis and of mania over depression, and that the same is true at ages 70 and upwards.

Discussion

As far as we are aware, the similarity in age-distribution between schizophrenia and neurosis and between mania and depression has not been specially noticed before. There are good reasons for this, because the requirement for such an analysis is the collection of a very large number of cases in a relatively short time. Large numbers are needed because mania is a relatively rare condition, and a short time is necessary because the diagnostic habits of psychiatrists may change.

Our findings have interesting implications only in so far as they are not the trivial consequence of particular British habits of diagnosis or of selection procedures for in-patient treatment in National Health Service hospitals. It is probable that the majority of cases of schizophrenia are admitted to psychiatric hospitals and that most cases are admitted fairly soon after the onset of the illness. The same cannot be said of neurosis. Only about 7 per cent of cases diagnosed neurotic by general practitioners are referred to psychiatrists (Shepherd *et al.*, 1966), and of those so referred only about 1 in 5 are admitted for in-patient treatment. Thus the neurotic cases in the present national series represent only a small proportion of all diagnosed cases, though they may reasonably be taken to represent the most seriously disturbed or handicapped proportion. Similarly, it is probable that most cases of mania are admitted as psychiatric in-patients but that only the more severe cases of psychotic depression will be admitted. Whether the age-incidence of in-patient cases of neurosis and psychotic depression is similar to that of all cases with these diagnoses is not easy to determine, but the point may be made that inasmuch as there is no clear dividing-line between these illnesses and normality some limiting definition of a case must be adopted if diagnosis and statistics are to have any function at all; and admission to a psychiatric hospital is a reasonable definition to take, especially where many hospitals and a large geographical area are concerned. It is worth noting, too, that the similarities of age-incidence found here for the national sample of in-patients are very similar to that found at the Bethlem-Maudsley Hospital where 60 per cent of the cases had been out-patients only.

In any study of age-distribution in psychiatric diagnoses it is necessary to consider how far a patient's age may be a factor influencing the diagnosis. There is an area of uncertainty here, but on clinical grounds it seems unlikely that age is a significant contaminating factor in the diagnosis of schizophrenia or mania, at least within the age-range 20–69 years. If diagnoses are confused because of age, then it might seem likely that there would be confusion between schizophrenia and mania in teenagers. The present findings do not support such a view, however, since, as Fig. 2 shows, both schizophrenia and mania are relatively more common (compared with neurosis and depression) at this age than later. For the same reason, the findings do not support the view

* This rubric concerns 'manic-depressive reaction, maniac and circular', but as all cases were first-ever admissions it is reasonable to take them as cases of mania.

that psychotic depression tends to be diagnosed as neurosis in teenagers. The excess of mania, relative to depression, which occurs in old age (70 and over), is unlikely to be due to any reluctance to diagnose depression then, and is more feasibly explained on the lines that senile brain changes make mania more likely to occur. Brain damage might also explain the relative excess of schizophrenia (mostly of the paranoid type) over neurosis in old age, though a reluctance to diagnose neurosis in old people is not improbable.

If the similarities of age-distribution shown in Figs. 1 and 2 are not merely trivial or coincidental, what might they imply? A wide

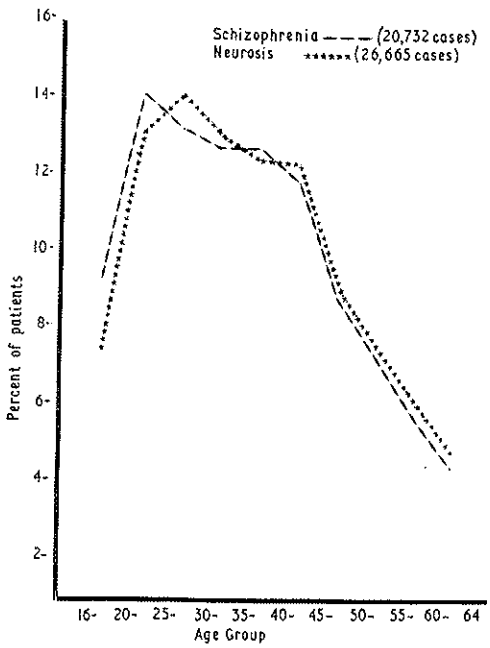

FIG. 1.

Age distribution (16-64 years) of incidence of Schizophrenia and Neurosis (sexes together) (Mental Health Enquiry Cards, 1965–66).

field is open for speculation, but several points seem worth noting. Thus, almost nothing is known of the factors which, in a person prone to manic-depressive psychosis, cause him to have a manic rather than a depressive attack. The similarity of the age-incidence curves of mania and depression suggest that age is

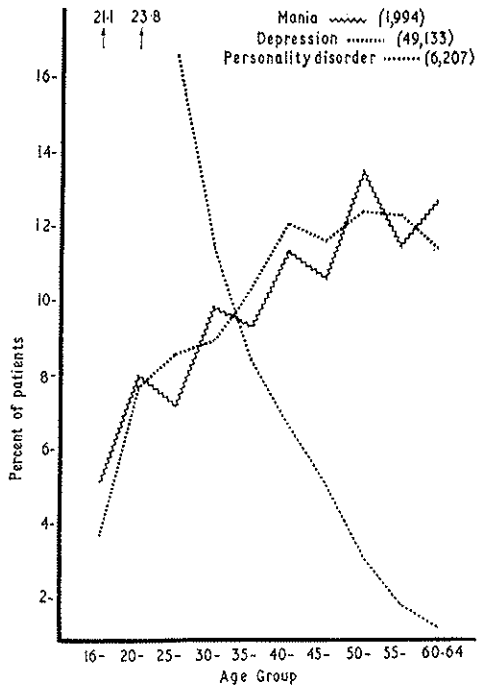

FIG. 2.

Age distribution (16–64 years) of incidence of Mania, Depression and Personality disorder (sexes together).

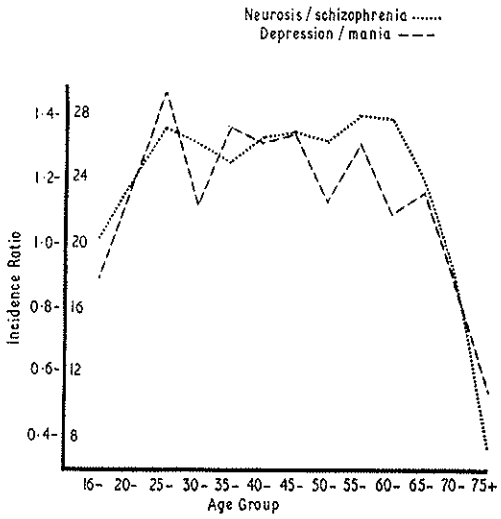

FIG. 3.

Incidence ratio, by age, of neurosis/schizophrenia (scale 0·4–1·4) and of depression/mania (scale 8–28); sexes together.

not one of the factors involved. In other words, it suggests that the environmental factors responsible for precipitating an attack of affective psychosis are the same for mania as for depression—in so far, at least, as these factors vary with age. The same reasoning might suggest that the similar age-incidence curves of schizophrenia and neurosis reflect a similarity in their environmental precipitants. There is a deep clinical conviction that neurosis is commonly precipitated by environmental stress, though it is a conviction which has proved difficult to substantiate epidemiologically. Stress as a precipitating cause of schizophrenia is less often invoked by clinicians, but a study by Brown and Birley (1968) has suggested its importance. Whatever the nature of such stresses, it may be assumed that their virulence varies in any given culture with the age of the patient, for age will affect not only a person's biological resistance but also his social resistance in so far as social roles are allotted to various age-groups.

Summary

1. The age-distribution of five diagnostic groups is examined for 168,271 first-ever admissions to psychiatric hospitals in England and Wales during the two-year period 1965–66.

2. There is a close similarity between the age-distribution curves of schizophrenia and neurosis, and also between those of mania and psychotic depression.

3. The suggestion is made that similarity in age-distribution reflects a similarity in environmental precipitating factors.

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Acknowledgements

We are indebted to the Department of Health and Social Security, and in particular to Dr. E. R. Bransby, for making the data on psychiatric admissions available to us; and to Dr. C. C. Spicer, Director of the M.R.C. Computer Unit, and to Mrs. Angela Mott, for their advice and for the preparation of tables from the Department's tapes.

A synopsis of this paper was published in the June 1971 *Journal*.

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(*Received 10 March 1971*)