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Demographic Differences in Functional Psychoses

By MICHAEL S. McCABE

Summary

Only Scandinavian investigators have reported on demographic aspects of reactive psychoses. Data from the National Health Service, Denmark, for age at first admission, sex, and length of stay in hospital in reactive, manic-depressive and schizophrenic psychoses are analysed. Differences in sex incidence ratios, age at first admission and length of stay are evident between the three psychoses. The differences noted are considered to provide indirect evidence supporting the separate diagnostic categories.

Introduction

Population studies by Ødegaard (1945), Fremming (1951), Larsson and Sjögren (1954), Norris (1959), Garrone (1962), Helgason (1964), and Slater and Cowie (1971) have consistently shown differences in age of onset and sex distribution between manic-depressive psychoses and schizophrenia. Of the population studies, only those by Helgason (1964) and Fremming (1951) report on 'psychogenic' (reactive) psychoses. Recent reports (McCabe and Strömgren, in press and McCabe, in press) contribute clinical and genetic evidence supporting the use of a separate diagnostic category for reactive psychoses.

Demographic data collected from all psychiatric facilities in Denmark by the National Health Service of Denmark (1972) allow comparisons of functional psychoses which avoid sources of bias present in studies based upon patients drawn from more limited areas. Although there are significant differences in diagnostic practice among psychiatrists from different nations (W.H.O., 1973; Kendell *et al.*, 1971), these differences ought not to influence statistics concerning sex ratios, age at first admission, or duration of hospital admission. Strömgren (1968), in discussing aspects of diagnosis in schizophrenia, manic-depressive psychosis, and reactive psychoses, does not indicate that sex and age are factors in diagnosis. Danish psychiatrists (W.H.O., 1973) apply the diagnosis of reactive psychoses to patients who would likely be given a different diagnosis in other countries. Danish National Health Service Statistics (1972), while allowing comparisons of functional psychoses on demographic variables, do not allow us to ascertain the validity of diagnoses. Demographic differences, if noted, lend only indirect evidence for using separate diagnostic categories for reactive, manic-depressive and schizophrenic psychoses.

Method

All data are drawn from *Medical Report II* (1972) for the fiscal year 1967–1968. Information is reported on admissions and discharges for age, sex, diagnosis, and previous admission by all facilities, private and environmental, which admit patients with psychiatric disorders.

Mean ages of onset are compared by a t test. Other comparisons are by χ^2 with Yates' corrections. For all tests, a probability not exceeding p 0·001 is required for statistical significance.

Results

Age at first admission

Previous studies indicate that the age at first admission closely approximates to the age of onset in manic-depressive (Winokur and Clayton, 1967) and reactive psychoses (McCabe, in press), but not in schizophrenia (Zerbin-Rudin, 1963).

Table I reports by sex and diagnosis the incidence of first admissions for functional psychoses per 100,000 population in Denmark.

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TABLE I

*Age distribution and sex at first admission for functional psychoses to all psychiatric hospitals in Denmark**

Age	Reactive psychoses				Manic-depressive				Schizophrenia			
	Males		Females		Males		Females		Males		Females	
	Cases	Per 100,000	Cases	Per 100,000	Cases	Per 100,000	Cases	Per 100,000	Cases	Per 100,000	Cases	Per 100,000
0–19	18	2·3	48	6·4	5	0·6	7	0·9	25	3·2	6	0·8
20–24	20	9·2	56	30·0	11	5·0	28	13·5	30	13·8	17	8·2
25–29	23	13·9	42	26·3	11	6·6	20	12·5	24	14·5	14	8·8
30–34	27	18·8	43	30·1	14	9·7	21	14·7	12	8·4	5	3·5
35–39	43	30·9	58	41·2	18	12·9	21	14·9	5	10·8	9	6·4
40–44	34	23·3	50	33·4	15	10·3	32	21·4	5	3·4	11	7·3
45–49	31	20·4	46	29·6	25	16·5	40	25·8	8	5·3	7	4·5
50–54	33	23·2	45	30·6	18	12·7	40	27·2	5	3·5	14	9·5
55–59	17	12·0	35	23·6	25	17·6	27	18·2	2	1·4	7	4·7
60–64	11	9·2	22	16·8	25	21·0	37	28·2	3	2·5	7	5·3
65–69	4	4·2	13	11·4	16	16·6	24	21·1	7	7·3	8	7·0
70+	4	2·5	20	9·8	16	10·2	37	18·2	0	0	8	3·9
TOTAL First admissions:	265		478		199		334		136		113	
All admissions:	552		1,118		916		1,861		1,152		842	

* Based upon *Medical Report II*

In reactive psychoses the mean age at first admission was 40·2 years in males and 39·7 years in females. In manic-depressive psychosis the mean age at first admission was 48·9 years in males and 48·5 years in females. In schizophrenia the mean age at first admission in males was 31·5 years and in females 42·7 years.

Comparing mean ages at first admission by sex for each type of psychosis, we find that only in schizophrenia are mean ages different in males and females ($t = 5{\cdot}618$, $p < 0{\cdot}001$).

Across diagnoses, in males, the schizophrenics have the youngest age at first admission, followed by the reactives and the manic-depressives. All comparisons are statistically significant ($p < 0{\cdot}001$ *t* test).

In females, the reactives have a younger age at first admission than the manic-depressives ($t = 7{\cdot}708$, $p < 0{\cdot}001$). The comparison between schizophrenics and manic-depressives falls just short of our $p < 0{\cdot}001$ level of significance ($t = 3{\cdot}239$, $p < 0{\cdot}0025$). The comparison between reactive and schizophrenic females is not significant.

The male : female ratio of incidence of first admissions in reactive psychoses was 0·66, in manic-depressive psychosis 0·64, and in schizophrenia 1·09. Both reactive and manic-depressive psychoses have male : female ratios which differ significantly from that found in schizophrenia ($\chi^2 = 27{\cdot}8$, d.f. $= 1$, $p < 1 \times 10^{-5}$, $\chi^2 = 20{\cdot}0$, d.f. $= 1$, $p < 1 \times 10^{-5}$ respectively). In manic-depressive psychoses the proportion of first admissions is higher than in schizophrenia ($\chi^2 = 37{\cdot}0$, d.f. $= 1$, p 1×10^{-5}).

The male : female ratio for each type of psychosis did not change significantly from first admissions to all admissions.

Duration of admission

Duration of stay in hospital is the factor most likely to influence diagnosis, longer-stay patients being more likely to be given a more serious diagnosis. Table II reports discharges according to diagnosis, sex, and duration of stay.

Males with reactive psychoses have a briefer duration of stay in hospital than either manic-depressives or schizophrenics ($\chi^2 = 49{\cdot}8$,

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TABLE II

*Discharges from all psychiatric facilities in Denmark for functional psychosis according to sex and length of stay**

	Schizophrenia		Manic-depressive		Reactive psychoses	
	M	F	M	F	M	F
14 days	153	67	92	143	121	208
14 days–1 month	192	111	263	416	173	276
1–2 months	274	228	282	708	152	362
2–3 months	126	118	118	283	59	137
3–4 months	69	95	52	131	25	68
4–5 months	54	39	24	61	19	25
5–6 months	30	29	16	28	9	17
6–9 months	58	42	24	43	9	19
9 months–1 year	39	31	4	18	2	14
1–5 years	85	63	17	44	9	10
5–10 years	24	11	10	6	1	0
10+ years	76	89	12	10	0	1
Total	1,180	919	914	1,891	579	1,137

* Based upon *Medical Report 11*

d.f. = 11, $p < 11 \times 10^{-5}$, and $\chi^2 = 153 \cdot 7$, d.f. = 11, $p < 1 \times 10^{-5}$ respectively). For manic-depressive males the duration is shorter than for schizophrenics ($\chi^2 = 153 \cdot 0$, d.f. = 11, $p < 1 \times 10^{-5}$).

Females with reactive psychoses have a briefer stay in hospital than either manic-depressives or schizophrenics ($\chi^2 = 104 \cdot 0$, d.f. = 11, $p < 1 \times 10^{-5}$; $\chi^2 = 317 \cdot 0$, d.f. = 11, $p < 1 \times 10^{-5}$ respectively). Manic-depressive females also have a shorter stay than schizophrenic females ($\chi^2 = 302 \cdot 9$, d.f. = 11, $p < 1 \times 10^{-5}$).

DISCUSSION

Results confirm previous reports; both manic-depressive and reactive psychoses have nearly identical male : female incidence ratios and differ significantly from schizophrenia in that respect. It might be expected that a large number of patients would be given an initial diagnosis of reactive psychosis, only to be changed subsequently to either manic-depressive or schizophrenia. If this were the case, the male : female ratio for schizophrenia would change, but the ratio in manic-depressive psychosis would not. In fact, no changes were evident in male : female ratios.

In males the mean age at first admission was earliest in schizophrenia, followed by reactive and manic-depressive psychosis. All comparisons were significant. In females, reactives differed from manic-depressives in mean age of admission, but the comparison between schizophrenics and manic-depressives fell just short of statistical significance. The question arises whether factors determining hospital admission in females are not similar in reactive psychoses and schizophrenia. In reactive psychoses, stress is presumed to play an important role, but it may also be important in exacerbations of schizophrenia, as suggested by Brown *et al.* (1973).

Leonhard (1959), Perris (1966), Angst and Perris (1968), Winokur *et al.* (1969) and Dorzab *et al.* (1971) suggest that manic-depressive psychosis should be divided into unipolar (depression only) and bipolar (mania and depression) groups. This report makes no such division and therefore cannot address questions of possible interrelationships of reactive and schizophrenic psychoses with unipolar and bipolar psychoses.

Comparisons based on length of stay in hospital established that in both sexes reactive psychoses required the briefest stay, followed by manic-depressives and schizophrenics respectively.

For some demographic comparisons, reactive psychoses resemble manic-depressive psychoses; in others, the similarities with schizophrenia

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are more striking; but for some comparisons—incidence of new cases, mean age at first admission in males, and length of stay—each psychosis differed from the other two.

The differences identified in sex incidence ratios, age at first admission, incidence of first admission, and length of stay provide indirect evidence for distinguishing reactive, manic-depressive and schizophrenic psychoses.

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