

# MENTAL ILLNESS IN HUSBAND AND WIFE; A CONTRIBUTION TO THE STUDY OF ASSORTATIVE MATING IN MAN

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That marriage acts to some degree as a means of preventing the development of mental illness has often been argued. Stoddart (1926), for instance, states that "insanity" is at least twice as common among single as among married persons and that this difference cannot altogether be accounted for by the avoidance of marriage on the part of psychopaths, because a relatively high frequency of mental illness is observed among the widowed. Rosanoff (1927) points out that, although the incidence of "insanity" is higher in unmarried, widowed, and, especially, in divorced persons than in married persons, the significance of the findings is not clear. Figures recorded by Dayton (1936) also show the same trends. Recent statistics for Ontario are in agreement with earlier data and are given in Table 1. The age group below 15 years is best excluded from the survey, since it contains only single persons who are very rarely certified as mentally ill; certified cases are almost all defectives in this age group.

TABLE 1

	General population Ontario, 1941		First admissions to mental institutions Ontario, 1941-1942	
	Male	Female	Male	Female
Single, below age of 15 .....	469,011	455,232	115	77
Single, age 15 or over .....	524,254	420,963	582	404
Married or separated .....	865,201	844,564	444	498
Widowed .....	60,210	142,731	99	163
Divorced .....	2,291	2,865	7	13
Total .....	1,920,967	1,866,375	1,247	1,155
Rate of first admission per 1,000 of general population				
Single, below age of 15 .....			0.25	0.17
Single, age of 15 or over .....			1.11	0.96
Married or separated .....			0.51	0.59
Widowed .....			1.64	1.14
Divorced .....			3.05	4.55
Total .....			0.65	0.62

In spite of these facts, examination of clinical records of mental illnesses, which from time to time affect both husband and wife, gives rise to a general belief that cases occur in which marriage is actually a contributory cause of breakdown. The supposition usually made is that in such instances, a communicated psychosis or "*folie à deux*" develops, in which one partner is mainly responsible for initiating the abnormal reaction and the other is infected. However, in a large majority of cases reported as instances of "*folie à deux*," the affected pairs are blood relatives, most commonly sisters, and are therefore likely to have similarities both in their somatic and mental backgrounds. The literature, summarized by Gralnick (1942), gives 118 instances, among which 26 were husband and wife combinations, 35 sister pairs and only nine pairs where there was no family relationship. Thus it is not unreasonable to suppose that, when husband and wife both develop mental illnesses, there are common somatic and mental backgrounds. Pope and Pearson (1904) investigated the tendency for husbands and wives to resemble one another in a number of different respects. They showed, first of all, that tuberculosis was frequently found in married couples. They also showed that for stature, eye color and general physique, as judged by length of life, there were significant degrees of likeness. For intelligence, the similarity between husband and wife is probably more marked than for any physical trait yet measured (Jones, 1928; Penrose, 1938; Sheldon and Zeigler, 1938). Other mental characters are not easy to treat in this way, though Pearson did report significant husband and wife similarity in temperament, truthfulness, alcoholism and "insanity." Mental qualities, which may form either parts of the picture of mental disease or contribute toward mental breakdown, are less easy to assess than somatic traits but it seems quite likely, in view of the fact that other known qualities are found to be similarly assorted in husbands and wives, that some degree of assortative mating holds for psychopathic traits. The ascertainment of assortative mating and its measurement is of great importance in the study of conditions, which are wholly or partly determined by heredity, and, as shown by Price and Halperin (1940), is fundamental in the planning of preventive measures.

In order to investigate the question as to whether there is assortative mating with respect to the grosser forms of psychopathy, it can first be ascertained whether husbands and wives are more frequently admitted to mental hospitals than would be expected from random sampling of the population. Second, a sufficient number of actual instances of psychoses in both husband and wife need to be collected and analyzed.

There is, unfortunately, no easy way of tracing cases of husbands and wives both of whom are admitted to mental hospitals even if the survey is

confined to a given area. By searching the records in the Ontario Hospital, London, Ont., however, 22 instances were found. In eight of these, husband and wife were first admitted during the same calendar year; one pair in each of the years 1924, 1929, 1932, 1935, 1936, 1939, 1941 and 1942. It was difficult to be sure that cases of husband and wife admitted in different years were not missed but probably all cases of both admitted during the same year in the last 10 years were ascertained. The hospital serves an area which had an average population which contained, in 1941, 155,000 married males and 146,000 married females and thus should contain about 140,000 married couples. Over the most recent 10-year period, 1933 to 1943, the average number of married men admitted each year to the hospital for the first time was found to be 73, and the corresponding average number of married women admitted was 87. These data enable an estimate to be made of the random chance that a married couple will be among those first admitted to the hospital within a given year. The chance, in fact, is  $73 \times 87/140,000$  or 0.045, i. e., about 1 in 22. Hence, on the basis of random expectation, a husband and wife should be admitted to hospital, both for the first time within the year, only once every 22 years. Actually, (apart from one pair of patients both considered merely defective) four examples of this occurred in the last 10 years or once every two and one-half years, a frequency at least nine times as high as random expectation. This high actual frequency (0.4 per year) is very unlikely to be due to chance circumstances. The figures are given in Table 2.

TABLE 2. FIRST ADMISSIONS TO ONTARIO HOSPITAL, LONDON  
Average number per year

	Husbands	
	General population	Admitted to hospital
Wives		
General population .....	140,000	73
Admitted to Hospital .....	87	0.40*

\*The expected figure is 0.045.

This result can be compared with that obtained by surveying the histories (taken at the time of admission) in 1,000 cases of mental illness admitted to the Ontario Hospital, London. Of these patients, 31 had fathers known to have been certified as mentally ill and 25 had mothers certified. In two cases, both parents were known to have been certified, and the random expectancy would have been 0.77, i. e.,  $25 \times 31/1,000$ , or less than one such instance. The excess, here, of parents both affected, is in itself not statistically significant. However, in an earlier intensive survey of the

parents of 1,280 patients with mental defect (Penrose, 1938), 40 instances were found of psychosis, not necessarily certified, in the father and 61 instances in the mother. In this series of cases, there were six instances of father and mother both psychotic; and the expected number would be only 1.9 instances, i. e.,  $\frac{40 \times 61}{1280}$ , a frequency significantly less than the observed number. These figures are set out in Table 3.

TABLE 3  
Parents of 1,000 Patients with Mental Disease

	Fathers		
	Uncertified	Certified	Total
<b>Mothers</b>			
Uncertified .....	946	23	969
Certified .....	29	2*	31
<b>Total</b> .....	<b>975</b>	<b>25</b>	<b>1,000</b>

\*Expected number, 0.77.

Parents of 1,280 patients with mental defect

	Fathers		
	Nonpsychotic	Psychotic	Total
<b>Mothers</b>			
Nonpsychotic .....	1,185	55	1,240
Psychotic .....	34	6*	40
<b>Total</b> .....	<b>1,219</b>	<b>61</b>	<b>1,280</b>

\*Expected number, 1.9.

When the specific instances of mental illness in husband and wife are examined in detail, several further points emerge. As can be seen in Table 4, there is a strong relationship between the diagnosis in the husband and diagnosis in the wife, when both are patients. Thus, out of the 22 instances, eight have exactly the same diagnosis for both husband and wife, schizophrenia, manic-depressive psychosis, senile paranoia, involuntional melancholia, mental defect and senile types of psychosis. Moreover, the ages on first admission are closely correlated for the two members of each pair. The relatively large number of cases of depression as compared with the number of schizophrenia cases in the group is noteworthy; but it is to be explained on the grounds that only married persons are represented here and that the diagnosis, schizophrenia, is more rarely made in married psychotics than in the general run of patients.

TABLE 4. LIST OF HUSBANDS AND WIVES WHO WERE BOTH PATIENTS IN THE  
ONTARIO HOSPITAL, LONDON

No.	Husband		Wife	
	Date of first admission	Age on first admission	Date of first admission	Age on first admission
1.	1942	58	1932	38
2.	1935	44	1931	34
3.	1941	84	1941	51
4.	1938	56	1942	53
5.	1942	74	1942	64
6.	1943	57	1941	48
7.	1935	78	1935	76
8.	1933	56	1937	46
9.	1932	50	1932	50
10.	1943	86	1912	52
11.	1939	24	1939	28
12.	1911	67	1927	65
13.	1924	44	1924	37
14.	1929	57	1934	69
15.	1910	51	1920	54
16.	1921	88	1924	91
17.	1911	37	1931	52
18.	1936	52	1936	51
19.	1929	60	1929	44
20.	1924	53	1940	67
21.	1940	51	1932	33
22.	1931	70	1932	72

Reactive depression  
 Schizophrenia  
 Senile psychosis  
 Manic-depressive (mixed type)  
 Senile psychosis  
 Psychoneurosis, hypochondria  
 Senile paranoia  
 Psychosis with cerebral arteriosclerosis  
 Involutional melancholia  
 Senile psychosis  
 Alcoholism  
 Manic-depressive, depression  
 Paranoid schizophrenia  
 Senile psychosis  
 Huntington's chorea  
 Senile psychosis  
 Schizophrenia  
 Mental defect  
 General paresis  
 Manic-depressive, depression  
 Manic psychosis with mental defect  
 Psychosis with cerebral arteriosclerosis  
 Manic-depressive, depression  
 Schizophrenia  
 Involutional melancholia  
 Involutional paranoia  
 Paranoid schizophrenia  
 Psychosis with cerebral arteriosclerosis  
 Paranoia  
 Senile psychosis  
 Hysterical insanity  
 Senile psychosis  
 Psychoneurosis  
 Mental defect  
 Schizophrenia  
 Reactive depression  
 Catatonic schizophrenia  
 Psychosis with cerebral arteriosclerosis

The survey shows that both members of married couples are more likely to be admitted to hospital than would be expected, allowing for the general tendency for married persons to be less susceptible to hospitalization than those who are single or widowed. It further shows that there is a strong likeness in the type of psychosis which develops in husband and wife in the instances studied. These findings can be explained either by assuming (a) that the husband and wife, living together, tend to influence one another and that one partner may "infect" the other with abnormal mental reactions, (b) that similarity of environment, diet, economic state and common sources of anxiety may contribute to common breakdown, or (c) that there is a tendency for persons of like constitutions to marry one another. The first two views have the support of numerous psychiatric authorities and the third is supported by observations made by biometricians.

Probably all the assumptions are partly correct, and it is impossible at present to decide which of them is the more significant. The position of mental illness, in fact, lies somewhere between tuberculosis and eye color, in that it is less dependent upon environment than tuberculosis but less dependent upon heredity than eye color. Hence the observed interparental correlation for mental illness, though weaker evidence of assortative mating than the similar correlation for eye color, is stronger evidence than the positive correlation found in the case of tuberculosis.

The conclusion seems justified that assortative mating does exist with respect to traits which form part of the background of mental disease.

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