

FERTILITY IN OBSESSIONAL NEUROSIS

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Obsessional neurosis, insofar as it comes to the attention of the psychiatrist, is a comparatively rare disorder, comprising not more than about 3 per cent of all cases of neurosis. Its rarity is reflected in the fact that the largest series so far described, that of Pollitt (1957), consisted of only 150 cases, though a limited amount of information has been available from the somewhat larger series of the Bethlem-Maudsley Hospital (Blacker and Gore, 1955) and of the Registrar General (1964).

We have been able to make use of the more recent records of these last two sources to examine, in greater detail than has hitherto been possible, some general statistical aspects of the natural history of obsessional neurosis. Our principal aim was to see whether, in these larger series, we could confirm the findings of previous workers (Rüdin, 1953; Ingram, 1961) that patients with obsessional neurosis tend to have a high celibacy rate and a low fertility rate in marriage. But we have also compared our statistics for obsessional neurosis with those in comparable series for schizophrenia and affective psychoses to see whether this might throw some light on the vexed question of the relation of obsessional neurosis to these disorders.

MATERIAL AND METHODS

Our material consisted of two series of cases which received a primary diagnosis of obsessional neurosis: the first, the *national series*, was compiled by the Department of Health and Social Security through their system of mental health index cards; the second, the *hospital series*, was compiled from the case records of the Bethlem-Maudsley Hospital.

The national series, of 831 cases, comprised all first-ever admissions (i.e. in-patients) to psychiatric hospitals in England and Wales during the two years 1965 and 1966. Information was available for sex and (at the time of admission)

for age, marital status, number of years since patient's last pregnancy, and diagnosis. The hospital series consisted of all patients who attended the Bethlem-Maudsley Hospital, either as in-patients or as out-patients, between the years 1952 and 1966. As one of our primary aims was to study and compare fertility among diagnostic groups, and as fertility is probably influenced by religious background and country of origin, we confined our hospital series to patients who were born in Great Britain and were of Protestant religion. This gave a series of 464 cases. These patients were not necessarily first-ever attenders, and might have attended the Bethlem-Maudsley or another psychiatric hospital before 1952. Information was available for sex and (at first-attendance at the Bethlem-Maudsley Hospital) for age, marital status, age at first marriage, and number of live-born children; the diagnosis was that made at the time of the patient's first discharge from the hospital. New in-patients at the Bethlem-Maudsley Hospital during 1965 and 1966 would be included in both the hospital and the national series, but as their number was not greater than 25 the overlap may be considered unimportant.

The national series provides information on national incidence, but deals only with in-patients. The hospital series includes out-patients, but concerns persons who were not necessarily first-ever attenders, who were not drawn from any defined catchment area (though predominantly from South London), and who may have been subject to some selection for attendance at a post-graduate teaching hospital.

The case material for all types of neurosis, for schizophrenia and for the affective psychoses—material which we have used for comparison with obsessional neurosis—was drawn from the same sources and is subject to the same limitations. In both national and hospital series,

schizophrenia has been taken to include paranoid states, and affective psychosis to include involuntional melancholia. In the hospital series, but not in the national series, the diagnosis of affective psychosis included the sub-group 'manic and circular', but the number of manic cases (about 4 per cent of the total) seems too small to be of significance. The numbers of cases are shown in Table I; further details of these series have been given elsewhere (Slater *et al.*, 1971; Price *et al.*, 1971; Hare *et al.*, 1971).

RESULTS

1. *Obsessional neurosis as a proportion of all neuroses.* In the national series, obsessional neurosis comprised 0.5 per cent of all cases and 3 per cent of all neuroses (males 3.5 per cent, female 2.8 per cent). Obsessional neurosis formed a very similar proportion of all neuroses in the hospital series (males 3.8 per cent, females 2.8 per cent).

2. *Sex ratio.* In the national series 40 per cent of the cases of obsessional neurosis were male, but in the hospital series this proportion was 49 per cent. It is probable that female patients are more readily admitted as in-patients than are male patients, and so we may conclude that, for cases referred to hospital psychiatrists, obsessional neurosis is as common, or very nearly as common, in males as in females. Sex ratio by diagnosis is shown in Table I.

3. *Age distribution.* Age distribution, by sex, is shown for each series in Table II. The distribution is similar in the two series. Males are on the whole slightly younger than females, but for females the age group 30-34 forms a distinct mode, while in males there is a fairly equal distribution of cases between the age groups from 16 to 39. For each sex, and for each series,

TABLE I
Sex ratio in the diagnostic groups

Diagnosis	National series		Hospital series	
	Total patients	% males	Total patients	% males
Obsessional neurosis	831	40	464	49
All neuroses	28,376	35	8,968	41
Schizophrenia	22,974	45	2,089	48
Affective psychosis	58,594	35	4,298	37

TABLE II
Age-distribution in obsessional neurosis: numbers of patients

Age at attendance	National series		Hospital series	
	Males	Females	Males	Females
16-	48	40	25	16
20-	52	59	37	28
25-	40	71	35	37
30-	37	83	38	48
35-	45	57	33	36
40-	28	64	25	20
45-	23	41	24	29
50-	19	24		
55-	16	16	11	15
60-	12	17		
65-	10	13	1	6
70 and over	5	11		
Total	335	496	229	235
Median age	33.7	34.7	32.3	33.8
Mean age	33.6	34.5	31.1	33.5

the age distribution curve is similar to that of all neuroses taken together, though in males the peak for obsessional neurosis is somewhat earlier and for females somewhat later than for all neuroses. Fig. 1 shows these relations for females in the national series. Taking into consideration the age distribution of the psychoses, we find that the peak age for obsessional neurosis (30-34 years) falls mid-way between that of schizophrenia (35-39) and that of all neuroses (25-29), and is quite different from that of affective psychosis (50-54).

4. *Celibacy rate.* Table III shows the proportion by age of patients who were still single at the time of attendance. For each sex the distribution is similar in the two series. For each age-group (except one) the proportion of males who are single is greater than that of females, due no doubt to the later age at which males marry and to the cultural circumstance that entering into the married state requires more initiative on the part of the male. In consequence, the effect of mental disorder on marriage tends to be seen more clearly in males. Fig. 2 gives the male celibacy rate by age for obsessional neurosis and other diagnostic groups in the national series, and also for the 1961 Census of England and Wales. Compared with the Census figures, the celibacy rate is high in obsessional neurosis and

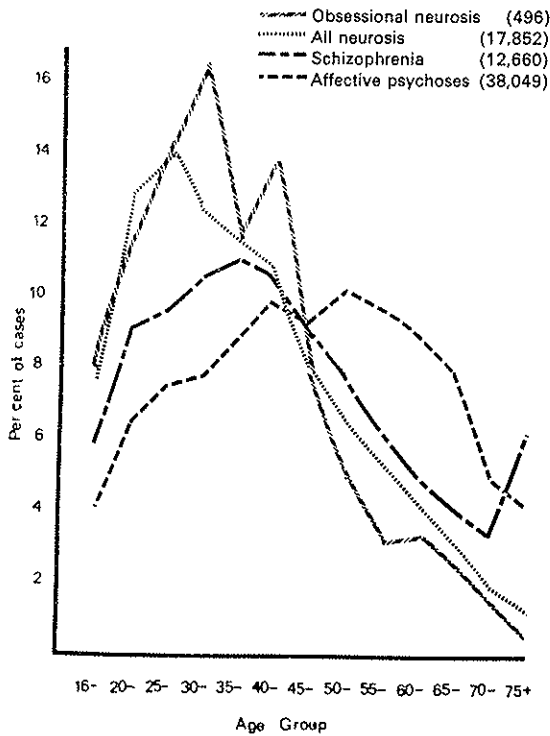


FIG. 1.—Age-incidence in females (national sample) by diagnosis.

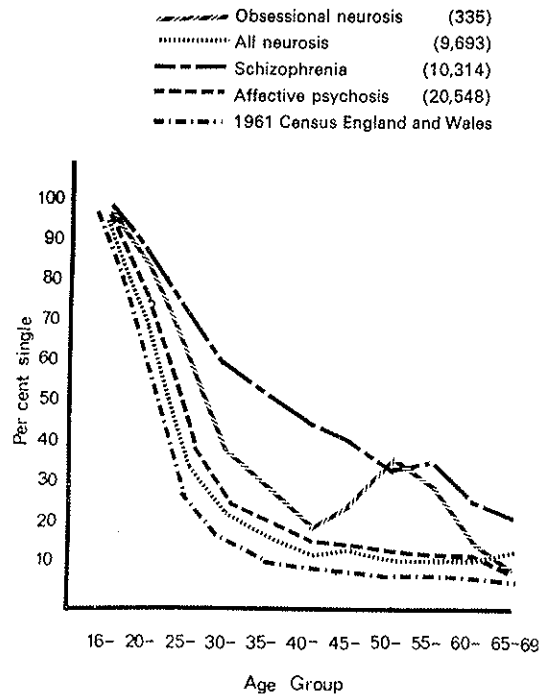


FIG. 2.—Celibacy rate in males (national sample), by diagnosis.

TABLE III
Celibacy rate (per cent of patients who were single) in obsessive neurosis

Age at attendance	National series % unmarried		Hospital series % unmarried	
	Males (335)	Females (496)	Males (229)	Females (235)
16-	98	98	96	100
20-	85	59	92	32
25-	60	24	46	30
30-	38	19	42	21
35-	31	7	30	11
40-	21	16	24	20
45-	31	19	12	14
55 and over	19	12	9	—
All ages	51	28	47	26

falls between all neuroses and affective psychosis on the one hand and schizophrenia on the other. Exactly the same relations hold for males in the hospital series. For females in both series, the celibacy rate by age for obsessive neurosis is

less like that of schizophrenia and tends to fall between the rates for neuroses and for affective psychosis.

5. *Marital breakdown.* A convenient index for marital breakdown is the number of patients separated or divorced, expressed as a proportion of all those who were married but not widowed. The number of cases in each age-group tends to be small for obsessive neurosis; but as the proportion of broken marriages did not vary greatly with age in any diagnostic group, the figures may be presented for all ages taken together. Table IV shows that the

TABLE IV
Broken marriage rates, per cent, for all ages

Diagnosis	National series		Hospital series	
	Males	Females	Males	Females
Obsessive neurosis	8	5	4	5
All neuroses ..	10	10	13	11
Schizophrenia ..	15	12	15	16
Depressive psychosis	7	7	7	8

TABLE V
Age at first marriage by diagnosis: the proportion (per cent) of patients in the hospital series who were married before the age of 25 years

Age at attendance	Males				Females			
	Obsessional neurosis	All neuroses	Schizophrenia	Affective psychosis	Obsessional neurosis	All neuroses	Schizophrenia	Affective psychosis
25-	53	64	61	58	84	82	82	79
35 and over ..	40	39	35	33	44	66	52	55
Total married, 25 and over ..	107	2,385	273	971	149	3,403	486	1,561

broken marriage rate is markedly less in obsessional neurosis than in schizophrenia or in all neuroses, and this is true for each sex in both series. It should be noted, however, that the numbers of cases of broken marriage in obsessional neurosis are small, being for the national and hospital series respectively, 13 males, 15 females and 5 males, 8 females.

6. *Age at marriage.* In calculations of fertility it may be important to take into account the age at marriage, for this affects the number of years during which a woman may have a child in marriage. We therefore examined age at first marriage in the hospital series. A simple index of this is the proportion of married patients who, for various ages at attendance, had married before the age of 25 (Table V). The differences in males are not statistically significant, but among females aged 35 and over the figure for obsessional neurosis is significantly lower than for all neurosis ($\chi^2 = 17.7$, $p < 0.01$) and for affective psychosis ($\chi^2 = 4.04$, $p < 0.05$). In general we may say that, among patients who married, those with obsessional neurosis tended to marry at a later age than those in other diagnostic groups.

7. *Years spent in the married state.* Celibacy, age at marriage, and breakdown of marriage are factors which will affect the proportion of time a person spends in a state of (unbroken) marriage during the fertile years (say between 20 and 44 years of age). This proportion of time is likely to be an important factor determining the net fertility of any particular population. We have therefore thought it of interest to calculate this proportion for the various diagnostic groups in the hospital series. The

results are shown in Table VI. For females with obsessional neurosis, low marriage rate and higher age at marriage are compensated by their lower rate of marital breakdown when compared with neuroses or affective psychosis, but this is not so for males.

8. *Fertility.* Fertility in marriage may be expressed in terms of the number of children born to ever-married patients for various age groups, though this index neglects age at marriage. Table VII gives the index for obsessional neurosis in the hospital series. Table VIII compares the fertility in obsessional neurosis, schizophrenia and affective psychosis against all neuroses. It is clear that at most age groups the relative fertility in obsessional neurosis is remarkably low and is substantially lower even than that in schizophrenia. The bottom line of Table VIII gives relative fertility

TABLE VI
Mean number of years spent in the married state (not widowed or divorced) between 20 and 44 years of age, for the Hospital series

Diagnosis	Males		Females	
	Mean years	Relative proportion ¹	Mean years	Relative proportion ¹
Obsessional neurosis	13.0	84	18.7	101
All neuroses ..	15.6	100	18.4	100
Schizophrenia ..	7.5	48	12.1	65
Affective psychosis	13.9	90	17.6	98
Census (1961) ..	17.8		20.1	

¹ Taking neuroses as 100.

(Modified from Table VI of Slater *et al.*, 1971.)

TABLE VII
Fertility in marriage of obsessional neurosis. Hospital series

Age at attendance	Males			Females		
	Patients [†]	Children	Fertility × 100	Patients [†]	Children	Fertility × 100
20-	5	3	60	19	16	84
25-	19	20	105	26	27	104
30-	21	23	109	38	52	137
35-	23	40	174	31	29	94
40-	19	27	142	15	29	193
45-	20	33	160	25	34	136
55-64	9	8	89	14	18	129

[†] Number of children not known for 3 male and 2 female patients.

TABLE VIII
Relative fertility in marriage (neurosis = 100). Hospital series

Age at attendance	Males			Females		
	Obsessional neurosis	Schizophrenia	Affective psychosis	Obsessional neurosis	Schizophrenia	Affective psychosis
20-	*	*	*	100	102	138
25-	109	101	139	76	88	99
30-	63	57	87	80	89	100
35-	107	118	106	51	86	104
40-	77	94	98	107	101	94
45-	85	92	86	81	89	98
55-64	*	91	112	69	98	90
All ages ²	90	98	107	81	95	101

* Fewer than 10 patients.

² Adjusted for differences in age and age-at-marriage.

at all ages for married patients, adjusted for age of patient and for age at marriage.

The only data bearing on fertility which were available for the national series concerned the number of years since the last pregnancy. For patients under the age of 45 years this question was answered in a surprisingly large proportion of cases (the not-knowns forming only about 2.0 per cent of the total ever-married patients for each diagnostic group); it is therefore a pity that a question on the number of the patient's children (which would perhaps have been even simpler and certainly much more informative) was not asked. Table IX shows the mean number of years since last pregnancy. For schizophrenia, this mean is substantially less than for neurosis; and, since all the evidence

is against schizophrenic women being pregnant more often than neurotic women, the most

TABLE IX
Mean number of years since last pregnancy, for females. National series

Age at attendance	Obsessional neuroses	All neuroses	Schizophrenia	Affective psychosis
20-	1.7	1.6	0.8	1.4
25-	2.9	2.7	2.1	2.6
30-	4.8	4.4	4.0	4.3
35-	8.2	7.3	6.4	6.5
40-44	11.6	10.7	9.9	10.8
Total (20-44)	120	4,542	1,550	6,249
No. never pregnant	14	610	368	793
Not knowns ..	2	64	22	155

probable explanation is that pregnancy (or childbrith) is a more important precipitating factor in schizophrenia than in neurosis for admission to hospital. The same argument probably applies in affective psychosis, but in obsessional neurosis the mean number of years since last pregnancy is, for every age group, greater than in neurosis, and it is difficult to account for this on any other ground than that of a relatively lower fertility in obsessional neurosis. The evidence of Pollitt (1957) that pregnancy and childbirth are not precipitating factors of illness more often in obsessional neurosis than in other psychiatric conditions would support this conclusion.

9. *Childless marriages.* A low fertility in marriage might largely be due to a high proportion of childless marriages. Our findings are shown in Table X. For the hospital series, there is a close similarity between the sexes, and this holds true when smaller age groups are examined. The proportion of childless marriages in obsessional neurosis is greater than in all neuroses or in affective psychosis, and for females the proportion exceeds that in schizophrenia.

However, the high proportion of childless marriages in obsessional neurosis does not of itself account for the low fertility. When only fertile marriages are considered, the relative fertility of the diagnostic groups remains almost exactly the same as for all marriages.

10. *Reproductive fitness.* This index, expressed as a ratio of the number of children born to the total number of patients in any group,

TABLE X
Childless marriages: the proportion, per cent, of ever-married patients who were childless at the time of attendance. Hospital series

Diagnosis	Males (aged 25-54)	Females (aged 20-54)
Obsessional neurosis ..	28	29
All neuroses	23	24
Schizophrenia	29	27
Affective psychosis ..	23	19
Census 1961	—	18.9

takes into account both celibacy rate and fertility in marriage. Table XI shows relative reproductive fitness, taking all neuroses as a basis for comparison. For males, obsessional neurosis has a relative fitness which is even lower than schizophrenia, and for females there is little difference between these diagnoses. The figures are not substantially altered when allowance is made for differences in age at marriage.

DISCUSSION

1. *The two series of cases compared.* The findings in the hospital series are similar to those in the national series. The similarity holds not only for indices of age-distribution, celibacy rate and broken marriage in obsessional neurosis, but for their comparison with the other diagnostic groups. This may suggest, perhaps, there there is not much difference here between incidence (given by the national series) and the type of prevalence given by the hospital series, a circumstance which would not be surprising in

TABLE XI
Relative reproductive fitness (neurosis = 100). Hospital series

Age at attendance	Males			Females		
	Obsessional neurosis	Schizophrenia	Affective psychosis	Obsessional neurosis	Schizophrenia	Affective psychosis
25-	109	101	139	69	52	93
30-	63	57	87	79	65	99
35	107	118	106	51	56	98
40-	77	94	98	78	86	91
45-	88	92	86	90	72	103
55-64	50	91	112	73	80	89
25-64	80	90	104	72	69	97

a condition which tends to be long-lasting and where there is often difficulty in deciding when a constitutional disposition passes into an illness. But the similarity of the two series may give confidence in the reliability of the findings, for on the one hand the national series cannot be subject to any general sampling bias but is based on the diagnosis of psychiatrists working in many different hospitals, while on the other hand the hospital series may be a selected one but, throughout the period concerned, there was close agreement among all the medical staff on the criteria for diagnosing obsessional neurosis—the criteria proposed by Lewis (1935).

2. *High celibacy and low fertility.* The results confirm the impression of previous investigators that the celibacy rate is high in males with obsessional neurosis; that is to say, it is considerably higher than in the general population and higher than in other neurotic conditions or in affective psychosis. For females, however, celibacy rates in obsessional neurosis were only slightly higher than in all other neuroses and were on the whole lower than in affective psychosis. The fertility in marriage of patients with obsessional neurosis was strikingly low for both sexes (compared with all other neuroses and with affective disorder), and was even lower than schizophrenia (Table VIII). A number of studies have found that patients with obsessional neurosis tend to be of higher social class than those with other neurotic conditions, and this might be put forward as an explanation of their lower fertility. In our hospital series, obsessional neurosis was indeed under-represented in social class V (on the Registrar General's classification) compared with all other neuroses, but this was balanced by an over-representation in social class III and not in social classes I or II (Table XII); Rüdin's findings (1953) were similar. However, in our view a person's fertility is less likely to be related to his own social class than to that of his parents. We have not examined the social class of the fathers of patients with obsessional neurosis, but we have done so for the other diagnostic groups considered here (Slater *et al.*, 1971), and have found no significant difference between them. It does not seem probable to us that the low

TABLE XII
Social class in obsessional neurosis; males, hospital series

Social class	Obsessional neurosis per cent ¹	All diagnoses ²	Census 1961 ²
I	8	7	3.7
II	11	17	9.1
III	59	43	56.5
IV	14	16	16.3
V	8	17	14.4
Total of known social class (= 100%) ..	72	8,400	—

¹ Patients first attending during 1964-1969; social class not known for 4 patients with obsessional neurosis and for 537 in the group of all diagnoses.

² Occupied males in Greater London.

fertility in obsessional neurosis is to be explained in terms of social class.

Not only was fertility in marriage low, but the overall fertility (reproductive fitness) was also low in obsessional neurosis compared with other neuroses (Table IX). Rüdin's studies (1953) emphasized the heredity factor in obsessional neurosis: inasfar as heredity may be important, the low fertility poses a problem similar to that in schizophrenia.

3. *Relation with schizophrenia and affective psychosis.* Our findings indicate that obsessional neurosis is closer to schizophrenia than to affective psychosis as regards sex ratio, age-distribution, fertility and (for males only) marriage rate; obsessional neurosis was closer to affective psychosis for the rate of broken marriage (Table IV) and—closely related to this—to the proportion of time spent in the unbroken married state (Table VI).

Gittleson (1966), comparing cases of depressive illness with and without obsessional symptoms, found no difference between these two groups for age-distribution, social class, or a previous history of mania. Kendell and DiScipio (1970), while concluding that people with obsessional personalities are prone to depression, found obsessional symptoms to be as common in neurotic as in psychotic depression and to be absent in mania. Snaith *et al.* (1971) found no significant relation between obsessiveness and any of the clinical features of primary

depressive illness. It may be concluded from these studies that there is no clinical or demographic association between the obsessional constitution and affective psychosis. Our own findings suggest no demographic association between obsessional neurosis and affective psychosis: the sex ratio is 1 : 1 in obsessional neurosis, 2 : 3 in affective psychosis, and the age-distribution peaks twenty years earlier in the former than the latter illness. Thus, on present evidence, neither obsessional personality nor obsessional neurosis is specifically associated with affective psychosis, though of course it is well recognized clinically that depression may occur as a reaction to severe obsessional symptoms.

On the other hand, our findings do lend support to a similarity between obsessional neurosis and schizophrenia. Of course a similarity does not imply a causal relation. But it has been suggested on clinical grounds that the obsessional constitution exercises a protective function against schizophrenia (Stengel, 1945; Sargant and Slater, 1950); and if one were to suppose that there are persons who would otherwise have become schizophrenic but, being protected by their constitution, have developed obsessional neurosis instead, then such persons might be expected to show demographic features typical of schizophrenia.

SUMMARY

1. A study was made of two series of cases of obsessional neurosis. The national series (831 cases) was of first-ever admissions to psychiatric hospitals in England and Wales during the two years 1965 and 1966. The hospital series (464 cases) was of all patients attending the Bethlem-Maudsley Hospital (either as in-patients or as out-patients) during the years 1952 to 1966 and who were native-born and of Protestant religion. Comparisons were made with three other diagnostic groups: (a) all other neurotic conditions, (b) schizophrenia and (c) affective psychosis. The findings in obsessional neurosis and the comparisons with the other diagnoses were essentially similar for the two series of cases.

2. Obsessional neurosis formed 3 per cent of all neuroses. The proportion of males in the

hospital series of obsessional neurosis was 49 per cent. The peak age-distribution in obsessional neurosis fell midway between that of all neuroses and of schizophrenia and was quite different from that of affective psychosis.

3. For males with obsessional neurosis there was a high celibacy rate; it was higher than that of all neuroses or of affective psychoses but not so high as that of schizophrenia. For females, the celibacy rate in obsessional neurosis was similar to that in all neuroses and affective psychosis. For both sexes, the rate of marriage breakdown was lower in obsessional neurosis than in the other diagnostic groups. Age at marriage tended to be higher in obsessional neurosis than in the other diagnostic groups.

4. Fertility in marriage was low in obsessional neurosis, being in both sexes lower than schizophrenia. This was not specially due to a high proportion of childless marriages. For males total reproductive fitness was lower in obsessional neurosis than in schizophrenia; for females it was equal to schizophrenia.

5. These statistical findings suggest that obsessional neurosis has a closer affinity with schizophrenia than with affective psychosis.

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