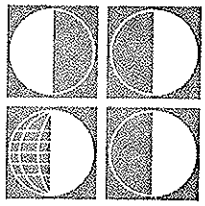
Reprinted for private circulation from SOCIAL BIOLOGY
Vol. 18, Supplement, September 1971, pp. S60-S73

Marriage and Fertility of Psychiatric Patients Compared with National Data



Eliot Slater, E. H. Hare, and *John Scott Price

*Institute of Psychiatry, Maudsley Hospital, London, England; and *Department of Psychological Medicine, University of Newcastle-upon-Tyne, Newcastle-upon-Tyne, England*

Studies of the fertility of mentally disordered patients have been largely limited to in-patients and to those with either schizophrenia or manic-depressive psychosis. We report here on the fertility and marriage rates of a sample of patients which included both those who were in-patients and those who were only out-patients, and which was large enough for consideration of five separate diagnostic groups. This study has been made possible by the routine collection in codable form of data on every patient attending the joint Bethlem-Maudsley Hospital since 1951, a procedure which was initiated and developed by C. P. Blacker (Blacker and Gore, 1955).

The data which are the subject of this report are derived from the front page of the patient's record on his first attendance at the Royal Bethlem and Maudsley Hospitals during the period 1952 to 1966 inclusive. The terms "first attendance" and "first admission" are used indifferently in this paper. Doctors and clerical officers enter demographic and other data on these front pages, the diagnostic classification being entered by the doctor when the patient is discharged. In respect to the data discussed here, the number of "not known" or blank entries is negligible. Errors by workers entering the data will also be very small in number. Errors or incorrect replies made by the patients cannot of course be excluded, and no estimate can be made of their frequency within any narrow limit; we do not believe, however, that they are a source of serious error in the statistics that follow.

Table 1 shows the numbers of patients, by diagnosis, sex and age, on which adequate information was available.

It must be borne in mind that the patient might have attended the Bethlem or Maudsley Hospitals before 1952, or have attended other psychiatric hospitals at any time. Thus, the whole concept of the patient's state "before first admission" and "after first admission," on which most previous studies of this sort have been based, does not apply here. However, it seemed to us that there is no reason why this concept *should* be applied. The idea that a patient's "first hospital admission" is a turning point in his life has become quite out of date. Formerly, this idea had importance because the first admission usually meant admission under certificate, and the patient was then likely to remain in hospital for some years, and perhaps for the rest of his life. But nowadays, because of the frequency of out-patient

TABLE 1

DIAGNOSTIC GROUPS BY SEX AND AGE OF PATIENTS FIRST ADMITTED TO THE BETHLEM-MAUDSLEY Hospital, 1952–1966

Age	Schizophrenia*		Manic-depression†		Personality Disorder		Obsessional Neurosis		Neurosis‡	
	M	F	M	F	M	F	M	F	M	F
16–	74	86	21	55	326	193	25	16	219	453
20–	155	115	62	111	414	205	37	28	380	717
25–	201	121	74	167	389	149	35	37	537	839
30–	185	161	125	204	318	121	38	48	592	888
35–	157	134	144	233	228	104	33	36	601	777
40–	85	117	141	271	205	63	25	20	479	599
45–	89	165	431	629	218	66	24	29	667	755
55–	35	110	363	532	54	27	11	15	320	398
65–	20	47	204	386	6	3	1	6	94	136
75+	2	30	41	104	0	1	0	0	19	34
All ages ..	1,003	1,086	1,606	2,692	2,158	932	229	235	3,908	5,596

* Including paranoid states.
† Including involutional melancholia.
‡ Neuroses other than obsessional.

treatment and the practice of relatively short periods of in-patient stay, the importance of the "first-ever admission" can be considered to have largely disappeared. Support for this view (at least as regards the chance of marriage) can be derived from the opinions of Essen-Möller (1935), of Ødegaard (1953), and of Stevens (1969), who all came to the conclusion that it is the personality of the patient, rather than the onset of his illness, which is important.

We have also not taken into account the duration of the in-patient stay—a matter which concerned earlier investigators—partly because most of our patients stayed only a relatively short time in hospital, and partly because even when patients stayed in hospital for a more extended time they had frequent periods of leave, during which time of course they might become pregnant. We have, in short, taken the view that a spell of in-patient treatment will not of itself affect either the patient's chance of marriage or her fertility.

These arguments lead us to think that it is legitimate to compare marital status and fertility for different diagnostic groups in our cases, provided that the groups are matched for: (*a*) age at hospital attendance; (*b*) age at marriage; (*c*) social class; and (*d*) religion and culture.

Our analysis deals with (*a*) and (*b*). As regards (*d*) we simplified our work by excluding all patients who were not of Protestant religion or not born in the British Isles; at least we did this as far as possible. As regards (*c*), it is probably not possible to exclude all bias from this cause, or to allow for it without making cumbersome adjustments which might themselves lead to new sources of bias or error. We took the view that, in as far as social class may affect fertility, the social class of the patient's family of origin is more important than his class at the time of attendance, because this latter may be affected by the fact of his illness.

In a random sample of 549 patients, a search of birth certificates at the General Register Office provided us with information about the father's social class at the time of the patient's birth (Table 2). This showed that, as regards social class of patients' fathers, the differences between

schizophrenia and neurosis, and between manic-depression and neurosis, were not significant. However, if one takes the two psychotic groups schizophrenia and manic-depression together and compares them with the two remaining groups (personality disorder and neurosis) taken together, then the difference is significant at the 0.01 level. The possible bias introduced by this difference will be in the direction of magnifying the differential between the psychotic groups and the non-psychotic ones, so that our estimates of these differences may be a little too high. However, it seems most improbable that the error arising from this source plays any large part in causing the differences we have to report elsewhere in this paper.

We have taken one other liberty. We have not distinguished fertility in first marriage from total fertility arising either from more than one marriage or from illegitimacy. Thus, for female patients, the number of their children was the total live-born to them, without consideration of legitimacy; for male patients the number may be taken as that born in the patient's marital family.

Our approach to this study may be summarized as follows:

1. We have not considered that special attention need be paid to (*a*) age at onset of illness, (*b*) age at first-ever attendance, (*c*) number of attendances or of in-patient admissions, (*d*) duration of in-patient stay, or (*e*) time and duration of marital separation, divorce, or remarriage.

2. We have concerned ourselves only with the circumstances at the time of the patient's first attendance at the Bethlem-Maudsley Hospitals during the years 1952 to 1966. These are: age, marital state, age at first marriage, number of live-born children, diagnosis, religion and country of birth. Throughout this paper "first admission" and "first attendance" are used coterminously.

3. To control for the effects of religion and cultural background, we have excluded from the analysis all patients not Protestant and not born in Great Britain.

4. To determine the effects of socioeconomic level, we studied the social class of patients' families from their birth certificates in a sample of cases and concluded that no great error can result from this source in the comparison of diagnostic groups.

In the analyses which follow, comparisons are made between our psychiatric patients and the Registrar-General's data for England and Wales taken at the 1961 census. Our patient population should be looked upon as representative of a large urban community and therefore is likely to differ in some respects from the total

TABLE 2

FATHER'S SOCIAL CLASS, DISTRIBUTION PER CENT, IN A RANDOM SAMPLE OF 549 PATIENTS, SEXES TOGETHER, FROM BETHLEM-MAUDSLEY FIRST ADMISSIONS, 1952–1966

Social Class	Schizophrenia	Manic-depression	Personality Disorder	Neurosis
I, II	12	17	23	15
III	62	56	45	53
IV	13	16	11	12
V	13	11	21	21
Total	100	100	100	101
No.	119	109	103	218

population of England and Wales. However, much of the comparison data we required was only available for England and Wales as a whole, and it seemed therefore best to use that comparison throughout, without concerning ourselves with the regions.

RESULTS

Table 3 shows the census distribution of single, married, and widowed by sex and age. The census data for males show a progressive diminution in the proportion of those single with increasing age; but this is not true in the females. At the age of 45 and over, the proportion of single women, after having fallen rapidly at lower ages, once more increases. This is of course to be attributed to the holocaust of the 1914–18 war, in which many young marriageable women were deprived of the chance of marriage.

Table 4 shows the proportions of the ever-married in the hospital data, by diagnosis, sex, and age, compared with the census figures. The hospital data are also shown in Figure 1 and Figure 2. The most noteworthy feature of this comparison is the consistent way in which the proportion of the ever-married is lower in all psychiatric groups and in both sexes than it is in the general population. The deficiencies tend to be largest at the earlier ages. Sex differences within diagnoses seem to run parallel with sex differences in the census data; but we note that there are large differences within sexes between different diagnostic groups. The proportions of ever-married in the male and female schizophrenic groups are lower than in any other groups.

The reduced tendency of psychiatric patients to get married is paralleled by the tendency of their marriages to break

TABLE 3

NATIONAL DATA. DISTRIBUTION BY SEX AND AGE OF SINGLE, MARRIED, WIDOWED, AND DIVORCED, WITH PROPORTION OF EVER-MARRIED AND NOT WIDOWED WHO ARE DIVORCED (CALCULATED FROM THE 1961 CENSUS, ENGLAND AND WALES)

Age	Single	Married	Widowed	Divorced
		Males		
16–	0.9895	0.0105	0.0000	0.0000
20–	0.6900	0.3095	0.0002	0.0004
25–	0.2944	0.7020	0.0008	0.0028
30–	0.1749	0.8175	0.0018	0.0057
35–	0.1323	0.8558	0.0038	0.0081
40–	0.1072	0.8764	0.0070	0.0094
45–	0.0922	0.8810	0.0171	0.0097
55–	0.0765	0.8716	0.0455	0.0064
65–	0.0745	0.7788	0.1433	0.0034
75–	0.0778	0.5453	0.3754	0.0015
		Females		
16–	0.9344	0.0655	0.0000	0.0000
20–	0.4204	0.5774	0.0009	0.0013
25–	0.1569	0.8347	0.0027	0.0057
30–	0.1094	0.8753	0.0059	0.0094
35–	0.0979	0.8751	0.0131	0.0139
40–	0.0968	0.8589	0.0273	0.0170
45–	0.1138	0.8029	0.0673	0.0160
55–	0.1408	0.6607	0.1874	0.0111
65–	0.1534	0.4362	0.4052	0.0052
75–	0.1597	0.1905	0.6481	0.0017

up. It would seem that the best estimate of broken marriage rates can be obtained by dividing the total of those divorced (alternatively, those divorced or separated) by the total of all those married and not widowed. These proportions by age, sex, and diagnosis, with comparative census figures, are shown, for the proportion divorced, in Table 5. The distribution of the numbers of the separated by sex and diagnosis, all ages, is shown at the foot of this table; but there are no census figures with which to compare them. In order to be able to make a comparison with census data, we have had to include the separated among the married (and remarried). Figure 3 shows the proportion of broken marriages (divorced and separated) by age, in the hospital patients.

Perhaps the best estimate of the marriage experience, particularly in connection with fertility, is given by the number of years between the ages of 20 to 44 inclusive which are spent in the married state, for which married persons are held to include the separated but not the widowed or divorced. These figures, with comparative census data, are shown in Table 6. They give some idea of the relative periods at risk of legitimate maternity or paternity.

The fertility of the ever-married was available in the form of number of live-born children born to number of patients, by sex, diagnosis, age now, and age at marriage in five-year groupings over the critical years. For the female patients, these data could be compared with census data which give the same information, but with duration of marriage instead of age at marriage, and only for women with uninterrupted first marriages. These women obviously do not exactly correspond with our ever-married, but the dif-

TABLE 4

HOSPITAL DATA. PROPORTIONS OF EVER-MARRIED BY AGE, SEX, AND DIAGNOSIS

Age	Schizophrenia	Manic-depression	Personality Disorder	Obsessional Neurosis	Neurosis	Census
			Males			
16–	0.0000	0.0476	0.0092	0.0400	0.0228	0.0105
20–	0.0323	0.1452	0.2024	0.1081	0.2447	0.3100
25–	0.1950	0.4865	0.4499	0.5429	0.5235	0.7056
30–	0.3297	0.6400	0.5786	0.5789	0.7770	0.8205
35–	0.5223	0.7639	0.6447	0.6970	0.8419	0.8677
40–	0.5714	0.8726	0.6829	0.7600	0.8497	0.8928
45–	0.5870	0.8701	0.6651	0.8750	0.8636	0.9078
55–	0.8286	0.8898	0.7222	0.9091	0.9406	0.9235
65–	0.9500	0.9216	0.6667	...	0.9043	0.9255
75–	...	...	...	...	...	0.9222
			Females			
16–	0.0000	0.0000	0.0881	0.0000	0.1214	0.0656
20–	0.2000	0.4865	0.3854	0.6786	0.5272	0.5796
25–	0.4959	0.7305	0.6644	0.7027	0.7938	0.8431
30–	0.6273	0.7990	0.6942	0.7917	0.8378	0.8906
35–	0.5746	0.8026	0.7596	0.8888	0.8636	0.9021
40–	0.6923	0.8229	0.7460	0.8000	0.8414	0.9032
45–	0.7030	0.8378	0.7121	0.8621	0.8265	0.8862
55–	0.7273	0.8195	0.6667	...	0.8442	0.8592
65–	0.9574	0.8575	...	...	0.8382	0.8466
75–	0.5333	0.8462	...	...	0.7941	0.8403

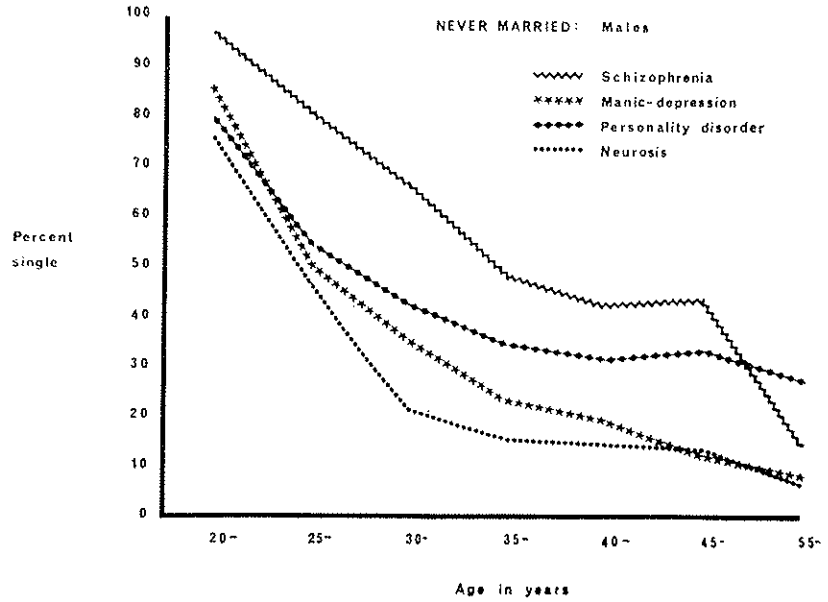


FIG. 1.—Proportion of male patients who were single at the time of their first admission to the Bethlem-Maudsley Hospital, 1952–1966.

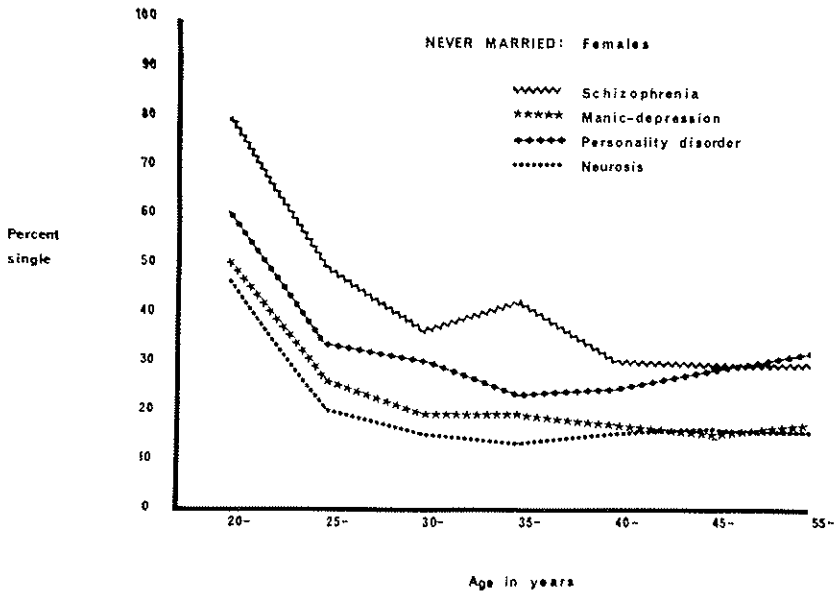


FIG. 2.—Proportion of female patients who were single at the time of their first admission to the Bethlem-Maudsley Hospital, 1952–1966.

ference is not likely to be important. The census data are shown in Table 7 as mean family sizes, in the same groupings as our patients shown in Table 8, except that the census data do not permit distinction between marriages between 16–19 and 20–24 in the women aged 75 years and over.

In Tables 8–12 we show the absolute

TABLE 5

PERCENTAGES OF THE EVER-MARRIED AND NOT WIDOWED WHO ARE DIVORCED

Age	Schizophrenia	Manic-depression	Personality Disorder	Obsession	Neurosis	Census
			Males			
16–	...	0	0	0	0	0
20–	0	0	2	0	0	0
25–	0	0	4	0	1	0
30–	5	1	2	5	2	1
35–	8	3	7	0	3	1
40–	11	1	6	11	4	1
45–	17	5	8	0	5	1
55–	4	2	6	0	2	1
65–	0	1	0	0	3	0
75–	...	0	...	...	0	0
Total						
Div.	21	29	45	3	78	176
Sep.	32	57	132	2	186	409
			Females			
16–	...	...	0	...	0	0
20–	0	0	1	0	1	0
25–	5	2	6	8	2	1
30–	4	2	7	3	4	1
35–	8	3	5	0	3	2
40–	4	1	7	0	5	2
45–	5	6	15	0	6	2
55–	9	4	18	8	4	2
65–	0	5	0	0	4	1
75–	0	0	0	...	0	1
Total						
Div.	26	57	28	4	137	252
Sep.	48	85	87	4	270	494

and relative fertilities of ever-married female patients (number of children born against number expected on census expectation) against all age groups; these numbers were calculated separately for each cell in the row and then summed. Summarizing, the ratios of numbers born to numbers expected, adjusted for age now and age at marriage, were, for the separate diagnoses:

Schizophrenia	0.730
Manic-depression	0.793
Personality disorder	0.814
Obsessional neurosis	0.603
Neurosis	0.754

The striking finding is, of course, that fertilities were depressed in all diagnostic groups, and so markedly.

We had the same information about the numbers of children born to the wives of the ever-married men among our patients; but here there were no comparative census data which could be used. It was, in fact, only possible to compare the diagnostic groups with one another. The way this was done was to calculate, in each cell, the fertilities of each of the five diagnostic groups, average these values (i.e., giving equal weight to each of the five), and then calculate the expected number of children for each group based on the number of mothers.

Summing all these expectations for the whole material gave a figure which deviated by a few per cent from the total number of children produced; the expectations

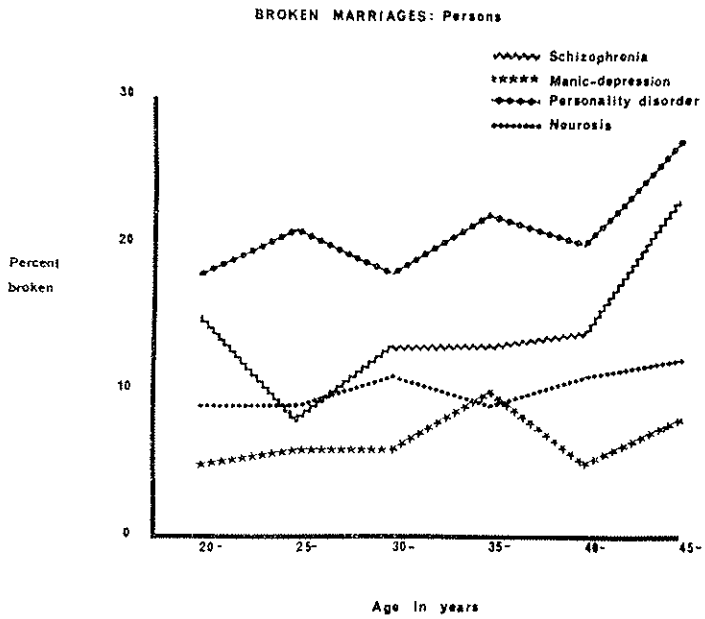


FIG. 3.—Proportion of marriages, not ended by death, which were broken by divorce or separation at the time of the patient's first admission to the Bethlem-Maudsley Hospital, 1952–1966

were then scaled down so that the two totals should agree. The figures obtained in this way are shown in Table 13. As we know about the female marital fertility from the census comparison, it is useful to bring our internal comparisons onto the same scale as the census comparison, by setting an arbitrary value of 1.00 for the marital fertility of the neurotic group, in both sexes. This comparative material is shown in Table 14. It is interesting to see that, on the female side, the internal comparison produces relative estimates of marital fertility which correspond quite closely with the census comparison, which may perhaps give us some confidence in the fairness with which the internal comparison was made. We are unfortunately not able to make an estimate of absolute fertility among the male patients without further assumptions. But if we can take it that the fertility of the male neurotics is 0.754 as in the case of the female neurotics, then we are able to suggest the fol-

TABLE 6

MEAN NUMBER OF YEARS SPENT IN THE MARRIED STATE (NOT SINGLE, WIDOWED OR DIVORCED) DURING THE 25 YEARS FROM AGE 20 TO 44 INCLUSIVE.

Populations*	Males	Females
General population (Census, 1961)	17.8060	20.1070
Schizophrenia	7.5115 (0.42)	12.0680 (0.60)
Manic-depression	13.8610 (0.78)	17.5990 (0.88)
Personality disorder	12.1010 (0.68)	15.1275 (0.75)
Obsessional neurosis	13.0375 (0.73)	18.6914 (0.93)
Neurosis	15.6465 (0.87)	18.4070 (0.92)

* Against the diagnostic groups are given the ratios in parentheses, with the census number as denominator.

TABLE 7

NATIONAL DATA. MEAN FAMILY SIZE FOR WOMEN WITH UNINTERRUPTED FIRST MARRIAGE: AGE AT CENSUS AND AGE AT MARRIAGE (CALCULATED FROM TABULATED DURATION OF MARRIAGE, 1961 CENSUS, ENGLAND AND WALES)

Age Now	Age at Marriage							
	16–	20–	25–	30–	35–	40–	45–	All
16–	0.4915	...	...	...	...	...	...	0.4915
20–	1.9068	0.7419	...	...	...	...	...	0.8270
25–	2.6431	1.7519	0.8334	...	...	...	...	1.4519
30–	2.8861	2.2213	1.6448	0.8449	...	...	...	1.8950
35–	2.9522	2.3622	1.9494	1.4331	0.7364	...	...	2.0536
40–	3.3777	2.4317	2.0209	1.6275	1.0576	0.5239	...	2.0827
45–	3.4394	2.6351	1.9327	1.5202	1.0540	0.5270	0.3216	1.9740
55–	3.7973	2.8896	1.9800	1.4180	0.9614	0.4975	0.2545	2.0016
65–	4.7799	3.5346	2.3975	1.6754	1.1092	0.5920	0.3393	2.3925
75–	.... 4.3367		2.9734	2.0657	1.3938	0.7989	0.4792	2.9587

TABLE 8

MARITAL FERTILITY OF HOSPITAL PATIENTS (NO. OF CHILDREN/NO. OF PATIENTS). SCHIZOPHRENIA: FEMALES.

Age Now	Age at Marriage								
	16–	20–	25–	30–	35–	40–	45–	All	O/E*
16–	...	...	...	...	...	...	...	...	...
20–	13	6	...	...	...	...	...	19	0.65
	11	11	...	...	...	...	...	22	
25–	24	38	5	...	...	...	...	67	0.64
	16	32	8	...	...	...	...	56	
30–	39	79	25	1	...	...	...	144	0.69
	20	54	22	1	...	...	...	97	
35–	24	64	26	2	...	...	...	116	0.68
	15	32	24	3	...	...	...	74	
40–	31	62	39	12	0	0	...	144	0.86
	9	28	26	9	3	2	...	77	
45–	37	71	39	4	3	1	0	155	0.63
	10	45	34	10	10	1	1	111	
55–	14	64	31	11	6	4	...	130	0.79
	8	26	21	7	5	4	...	71	
65–	23	44	15	2	...	...	3	87	0.85
	6	13	9	3	...	...	3	34	
75–	7	18	13	6	...	...	1	45	0.89
	1	8	3	3	...	...	1	16	
All	212	446	193	38	9	5	4	907	...
	96	249	147	36	18	7	5	558	

* Expectations calculated from data of 1961 Census. Total children expected, 1,242.458; observed 907. O/E = 0.730.

lowing values for mean marital fertility, relative to the general population, for males as for females:

	Males	*Females*
Schizophrenia	0.737	0.730
Manic-depression	0.804	0.793
Personality disorder	0.828	0.814
Obsessional neurosis	0.678	0.603
Neurosis	0.754	0.754

The above analysis of fertility concerns the fertility of ever-married patients. However, to determine the total reproductivity (or "fitness") of a sample of patients, their marriage rate must be taken into account. Whether one should also take into account the sample's distribution by age, and by age at marriage, will de-

TABLE 9

MARITAL FERTILITY OF HOSPITAL PATIENTS (NO. OF CHILDREN/NO. OF PATIENTS). MANIC-DEPRESSION: FEMALES.

AGE NOW	AGE AT MARRIAGE								
	16–	20–	25–	30–	35–	40–	45–	All	O/E*
16–	...	...	...	...	...	...	...	...	...
20–	33	30	...	...	...	. .	...	63	1.02
	21	29	...	...	...	...	..	50	
25–	59	86	13	...	...	...	...	158	0.72
	30	72	16	...	...	...	...	118	
30–	95	128	47	1	...	...	...	271	0.77
	38	78	39	5	...	...	...	160	
35–	76	189	66	8	1	...	...	340	0.82
	34	93	41	8	2	...	...	178	
40–	72	180	85	9	5	0	...	351	0.73
	29	104	53	11	7	1	...	205	
45–	83	441	255	51	8	0	0	838	0.77
	29	210	176	46	21	9	4	495	
55–	121	334	178	44	13	3	0	693	0.73
	39	165	122	40	19	10	10	405	
65–	130	310	228	59	8	1	0	736	0.89
	29	99	109	34	12	5	5	293	
75–	49	124	71	13	0	0	8	265	0.92
	10	33	27	9	1	1	4	85	...
All	718	1,822	943	185	35	4	8	3,715	...
	259	883	583	153	62	26	23	1,989	...

* Expectations calculated from data of 1961 census. Total children expected, 4,682.944; observed 3,715. O/E = 0.793.

TABLE 10

MARITAL FERTILITY OF HOSPITAL PATIENTS (NO. OF CHILDREN/NO. OF PATIENTS). PERSONALITY DISORDER: FEMALES

AGE NOW	AGE AT MARRIAGE								
	16–	20–	25–	30–	35–	40–	45–	All	O/E*
16–	6	...	...	...	...	...	...	6	0.72
	17	...	...	...	...	...	...	17	
20–	48	29	...	...	...	...	...	77	0.80
	34	43	...	...	...	...	...	77	
25–	56	78	5	...	...	...	...	139	0.77
	26	58	11	...	...	...	...	95	
30–	60	70	22	0	...	...	...	152	0.89
	19	38	16	6	...	...	...	79	
35–	42	61	16	12	0	...	...	131	0.77
	16	34	15	9	2	...	...	76	
40–	17	36	22	6	2	...	...	83	0.80
	5	18	13	8	3	...	...	47	
45–	40	44	7	8	...	...	...	99	0.88
	10	21	6	7	...	...	...	44	
55–	...	7	8	1	3	...	...	19	0.56
	...	5	8	1	2	...	...	16	
65–	...	...	5	...	...	0	...	5	1.67
	...	...	1	...	...	1	...	2	
75–	...	7	...	...	...	...	...	7	1.61
	...	1	...	...	...	...	...	1	...
All	269	332	85	27	5	0	...	718	...
	127	218	70	31	7	1	...	454	...

* Expectations calculated from 1961 census data. Total children expected, 882.421; observed, 718. O/E = 0.814.

TABLE 11

MARITAL FERTILITY OF HOSPITAL PATIENTS (NO. OF CHILDREN/NO. OF PATIENTS). OBSESSIONAL NEUROSIS: FEMALES.

AGE NOW	AGE AT MARRIAGE								
	16–	20–	25–	30–	35–	40–	45–	All	O/E*
16–	...	...	...	...	...	...	...	...	...
20–	11	5	...	...	...	...	...	16	0.61
	8	11	...	...	...	...	...	19	
25–	4	22	1	...	...	...	...	27	0.55
	6	18	2	...	...	...	...	26	
30–	9	35	7	1	...	...	...	52	0.62
	7	23	7	1	...	...	...	38	
35–	1	13	12	2	0	...	...	28	0.47
	1	10	14	3	2	...	...	30	
40–	...	14	9	...	...	...	...	23	0.78
		8	5	...	...	...	...	13	
45–	0	18	14	2	...	...	...	34	0.61
	1	11	9	4	...	...	...	25	
55–	6	5	5	...	...	0	0	16	0.52
	2	4	6	...	...	1	1	14	
65–	10	7	1	2	...	...	...	20	0.78
	1	2	1	1	...	...	...	5	...
75–	...	...	...	...	...	...	...	...	...
All	41	119	49	7	0	0	0	216	...
	26	87	44	9	2	1	1	170	...

* Expectations calculated from data of Census 1961. Total children expected, 357.999; observed 216. O/E = 0.603.

TABLE 12

MARITAL FERTILITY OF HOSPITAL PATIENTS (NO. OF CHILDREN/NO. OF PATIENTS). OTHER NEUROSES: FEMALES.

AGE NOW	AGE AT MARRIAGE								
	16–	20–	25–	30–	35–	40–	45–	All	O/E*
16–	30	...	...	...	...	...	...	30	1.20
	51	...	...	...	...	...	...	51	
20–	216	93	...	...	...	...	...	309	0.67
	163	204	...	...	...	...	...	367	
25–	362	498	30	...	...	...	...	890	0.73
	167	402	81	...	...	...	...	650	
30–	352	732	125	7	...	...	...	1,216	0.77
	148	411	133	25	...	...	...	717	
35–	277	692	189	30	4	...	...	1,192	0.79
	117	363	127	29	10	...	...	646	
40–	213	479	158	24	8	0	...	882	0.76
	84	249	103	25	14	3	...	478	
45–	203	513	223	46	4	1	0	990	0.72
	74	268	159	49	20	11	7	558	
55–	98	314	135	37	1	2	0	587	0.76
	32	145	84	32	13	7	3	316	
65–	52	109	49	12	1	1	0	224	0.70
	16	39	35	9	3	2	1	105	
75–	27	28	15	3	3	1	0	77	0.84
	4	10	8	2	1	1	1	27	...
All	1,830	3,458	924	159	21	5	0	6,397	...
	856	2,091	730	171	61	24	12	3,945	...

* Expectations calculated from 1961 census data. Total children expected, 8,484.226; observed, 6,397. O/E = 0.754.

TABLE 13

RELATIVE MARITAL FERTILITIES OF DIAGNOSTIC GROUPS, IN TERMS OF NUMBER OF CHILDREN OBSERVED AND EXPECTED, ADJUSTED FOR AGE OF PATIENT AND AGE AT MARRIAGE

DIAGNOSTIC GROUPS	MALES			FEMALES		
	Obs.	Exp.	Ratio	Obs.	Exp.	Ratio
Schizophrenia	452	476.01	0.95	907	951.00	0.95
Manic-depression	2,218	2,140.46	1.04	3,715	3,666.50	1.01
Personality disorders	1,416	1,327.13	1.07	718	655.46	1.10
Obsessional neurosis	150	171.63	0.87	216	266.27	0.81
Neurosis	4,168	4,288.77	0.97	6,397	6,413.78	1.00
Totals	8,404	8,404.00	...	11,953	11,953.01	...

TABLE 14

RELATIVE FERTILITIES, RATIOS IN EVER-MARRIED MALES AND FEMALES BEING ADJUSTED TO GIVE A VALUE OF 1.00 FOR THE NEUROSIS GROUPS

DIAGNOSTIC GROUPS	MALES	FEMALES	
	Non-census	Non-census	Census
Schizophrenia	0.98	0.95	0.97
Manic-depression	1.07	1.01	1.05
Personality disorder	1.10	1.10	1.08
Obsessional neurosis	0.90	0.81	0.80
Neurosis	1.00	1.00	1.00

pend on the purpose for which the figures are required. If the purpose is a comparison with another sample in which the distribution by age and by age at marriage is appreciably different, then the appropriate procedure would be to allow for these factors. If, however, the purpose is simply to show the fitness of a particular sample of patients in absolute terms, then age and age at marriage need not be given special consideration. We have made both types of calculation.

Table 15 gives fitness estimates, by age and diagnostic groups, in comparison with

TABLE 15

FEMALES: ESTIMATES OF "FITNESS"*

Age Now	Schiz. %	Man.-dep. %	Pers. Dis. %	Obs. Neur. %	Neurosis %
20–	22	86	53	71	61
25–	38	62	61	46	69
30–	49	69	69	55	72
35–	43	73	65	46	76
40–	66	67	66	69	71
45–	50	73	71	59	67
55–	67	70	43	...	75
65–	96	90	...	...	69

* Observed number of children at each age divided by expected number of children calculated from census data, allowing for age at marriage, multiplied by expectation of being ever-married at this age, divided by census expectation of being ever-married at this age × 100. These figures can be calculated from those provided in Tables 4 and 8–12.

the expectation in the general population; allowance has here been made for differences between the diagnostic groups and the general population in age at marriage. Table 16 gives data on marriage and fertility for patients at all ages, without consideration of age at marriage. This table has been constructed so as to be comparable with that of Table 2 in the report by Erlenmeyer-Kimling et al. (1969). Figures for each diagnostic group in Table 16 are, of course, much influenced by its age distribution. Thus, the apparently low figure for the number of children per patient among patients with personality disorder (0.7 for males, 0.8 for females), is largely to be attributed to the preponderance of young patients in this group. It can be seen from Table 15 that at most age groups, the reproductivity in female personality disorder is similar to that in manic-depression and neurosis. It is thus necessary to be cautious in making comparisons of reproductivity between two samples of patients (whether of the same or different diagnosis) unless differences in distribution by age and by age at marriage are taken into account.

SUMMARY

1. An investigation is described into the civil state (single, married, separated, widowed, divorced, remarried) of 8,904 male and 10,541 female psychiatric patients admitted as in-patients or out-patients to the Bethlem and Maudsley Hospitals during the years 1952 to 1966 inclusive.

2. The diagnostic classification was into schizophrenia (1,003 males, 1,086 females), manic-depression (1,606, 2,692), personality disorder (2,158, 932), obsessional neurosis (229, 235), and other neuroses (3,908, 5,596).

3. The hospital data were compared with the data of the Census of England and Wales, 1961.

TABLE 16

HOSPITAL PATIENTS: MARRIAGE AND FERTILITY DATA BY DIAGNOSIS AND SEX

Marriage and Fertility Groupings	Females					Males				
	Schiz.	Manic-Dep.	Pers. Dis.	Obsess.	Neurosis	Schiz.	Manic-Dep.	Pers. Dis.	Obsess.	Neurosis
Number of patients	1,086	2,692	932	235	5,596	1,003	1,606	2,158	229	3,902
Number of children	907	3,715	718	216	6,397	452	2,218	1,416	150	4,168
Children per patient	0.9	1.4	0.8	0.9	1.1	0.5	1.4	0.7	0.7	1.1
Children per marriage	1.7	1.9	1.6	1.3	1.6	1.5	1.9	1.6	1.4	1.6
Children per fertile marriage	2.2	2.4	2.2	1.8	2.1	2.2	2.4	2.2	2.0	2.2
Proportion of patients ever-married (%)	54.0	79.1	50.6	74.4	73.6	32.7	79.1	42.5	47.2	69.6
Proportion of marriage childless (%)	24.9	20.1	26.7	29.5	23.4	27.7	21.5	25.4	30.9	25.1
Proportion of patients with children (%)	38.9	61.1	35.6	52.4	54.0	21.8	58.2	30.3	33.6	49.4

4. The proportions of the ever-married were lower in all psychiatric groups than in the general population at all ages, and markedly so in the earlier age groups. This lowering of the proportion of the ever-married was greater in the schizophrenic groups, male and female, than in other psychiatric groups.

5. Among those ever-married patients who were not widowed, the proportion of the divorced was raised in all diagnostic groups, except perhaps in the obsessionals where numbers were small. About twice as many were separated as were divorced. The broken-marriage rate was highest in personality disorder, next highest in schizophrenia.

6. The proportion of the 25 years between the ages of 20 and 44 which patients spent in the married state without being either widowed or divorced was markedly depressed in both sexes and in all diagnostic groups. The reduction from normal expectations was most marked in schizophrenia.

7. Fertilities were estimated as the numbers of children born alive to ever-married female patients (or born of the marriage, in the case of male patients). These were compared with figures for family size provided by the census of 1961. Account was taken of age now (age at census) and age at marriage (duration of marriage at time of census). This direct comparison was possible in the case of the females; in the case of the males, an indirect method of estimating relative fertility was used, as census data for males are not available.

8. Compared with census expectations, marital fertilities were markedly depressed in both sexes and in all diagnostic groups, differences between the diagnostic groups being rather less striking than might have been expected. Comparison between the diagnostic groups showed a relatively high fertility in personality disorder and a low marital fertility in obsessional states; the fertility in schizophrenia was only marginally below that in neurosis.

REFERENCES

BLACKER, C. P., and A. T. GORE. 1955. Bethlem Royal Hospital and the Maudsley Hospital triennial statistical report, years 1949–1951. London.

ERLENMEYER-KIMLING, L., S. NICOL, J. D. RAINER, and W. E. DEMING. 1969. Amer. J. Psychiat. **125**:916.

ESSEN-MÖLLER, E. 1935. Untersuchungen über die Fruchtbarkeit Gewisser Gruppen von Geisteskranken. Levin and Munksgaard, Copenhagen.

ØDEGAARD, Ø. 1953. New data on marriage and mental disease. J. Ment. Sci. **99**:778.

STEVENS, B. C. 1969. Marriage and fertility of women suffering from schizophrenia and affective disorders. Oxford Univ. Press, London.