BIRTH ORDER, FAMILY SIZE AND NEUROSIS

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The relationship between family size and birth order with ethiology of mental diseases have attracted the attention of many investgators for many years. The statistical analysis of hare and price[1] on neurotic patients shows that very many of them are significantly from the second half of family(x^2 = 18.94 dF = 1 p$<$0.0005).The results of many researchers on schizophrenia shown similar cases of neurosis in Europe and in the United States, but first half birth order were over represented among schizophrenic patients in India[2] Iran[3] and ehinese mental patients in Singapor[4]. I got the same results in Iranian addicted patients in different study.

Contrasting findings in Asian and Western European countries made Barry and Barry to opine that the relationship of mental disorders to birth position may be influenced by culture. To bring more light to the question of cultural influence, the present paper reports on an investigation on the relationship of birth rank and family size with the incidence of neurosis in Iranian patients.

Methods:

Data for this study were obtained from the neurotic patients reffered to psychiatric clinic for insured workers from March 1972 to March 1973. questionnaire were filled out for 1120 neurotic patients. Out of these 1120 patients, 91 cases who did not reveal adequate information, and those who were twin and also those where the only child were excluded from this study, for the remaining 1029 patients (497 males and 532 females) informations regarding the birth order and the family size were recorded. In this study "family size" was defined as the number of children born live to the patients mothers, and "birth order" was difined as the patients ordinal position among the siblings the data, together with data on sex and age has been coded and families having 12 sibship size or more were coded as twelve, this is not unrepresentative since the largest number of siblings more than 12 was not remarkable. Diagnosis of neurosis bases on I.C.D. classification was confirmed at least by 3 different prychiatrists.

Family Size

Table I and II shows the birth position and the family size of 1029 Neurotic patients(male and female).The unequal distribution of patients in these tables indicate a relationship between birth order and Neurosis.If the cases were distributed randomly each half of the birth order was expected to include about 50 per cent of the cases for each family size, whereas there is a marked difference between two halves of the birth positions,

Table I. Distribution of neurotic patients by fourth position and family size.

	1	2	3	4	5	6	7	8	9	10	11	12+	Total
1	20												20
2	9	15											24
3	8	17	17										42
4	26	17	25	20									88
5	23	23	33	32	24								135
6	40	30	32	31	16	13							162
7	26	25	22	21	21	15	14						144
8	18	17	25	33	11	10	5	11					130
9	11	14	11	7	18	15	6	8	8				98
10	12	11	9	9	8	8	1	6	2	3			69
11	5	4	5	6	3	4	1	2	4	-	4		38
12+	10	6	10	6	7	6	8	6	3	5	2	10	79
Total	188	179	189	165	108	71	35	33	17	8	6	10	1009

$$x^2 = 11/38 \qquad 0.0005 < P < 0.005 < D.F. = 1$$

Family Size	First Half	Last Half	Total
2 - 4	69	85	154
5 +	508	347	855
Total	577	432	1009

Table II. Family size and birth rank in both sexes.

the cases in small families being overrepresented in second half, and in large families in first half of birth positions.

If we compare the frequency of cases in different sexes among small and large families in due respect to the birth position Tables 3,4,5 and 6) we obtain the same picture as in tables, 1 and 2, the difference between two variables for male and both sexes as a whole is significant Dut not for female(for male is x^2 = 8.80 d.f = 1. $0.0005 < p < 0.005$ for both sexes is x^2 = 11.38 d.f.= 1 $0.0005 < p < 0.005$, for female is x^2=3.74 N.S.).

Birth Order

Family Size	1	2	3	4	5	6	7	8	9	10	11	12+	Total
1	12												12
2	4	7											11
3	3	9	8										20
4	12	8	16	11									47
5	12	16	16	14	12								70
6	20	16	20	14	10	8							88
7	9	15	9	12	13	7	9						74
8	11	6	11	20	6	5	3	5					67
9	4	6	4	1	8	7	4	2	4				40
10	3	5	3	5	2	3	-	4	1	1	-		27
11	2	2	2	1	2	-	1	2	-	-	3		15
12+	4	-	4	3	5	-	1	4	1	1	1	2	26
Total	84	90	93	81	58	30	18	17	6	2	4	2	485

Table III. Distribution of male probands by birth order and family size.

$$x^2 = 8/80 \quad 0.0005 < P < 0.005 \quad D.F. = 1$$

Family Size	First Half	Last Half	Total
2 - 4	32	46	78
5 +	241	166	407
Total	273	212	485

Table IV. Family size and halves of families in male
patients.

Birth order

Now in order to determine the place of the higher in-
cidence of the illness in the range of different birth
positions, without considering the "halves" of families,
and to ascertain wether it is far from a random distrib-
ution, we made use of Greenwood Yule method[6].

As it can be derived from Tables 7 and 8 the observed
distribution of birth ranks, when the males and females
are considered separately, does not differsignificantly
from the expected, whereas it gains significance when the
effect of birth rank is considered irrespective of sex
difference $x^2 = 49.80$ d.f = 11 $p < 0.0005$ however, if we
compare the frequency of cases in youngest with that of

the eldest children we obtain table 9 which shows that female neurotics are significantly more often first born and less often last-born than expected (x^2 = 7.35 d.f = 1, 0.025 p< 0.05) male neurotics also appear to be more often first born and less often last born, but not in si-

	Birth Order												
Family Size	1	2	3	4	5	6	7	8	9	10	11	12+	Total
1	8												8
2	5	8											13
3	5	8	9										22
4	14	9	9	9									41
5	11	7	17	18	12								65
6	20	14	12	17	6	5							77
7	17	10	13	9	8	3	5						70
8	7	11	14	13	5	5	2	6					63
9	7	5	7	6	10	8	3	6	4				58
10	9	6	6	7	6	5	1	2	1	2			42
11	3	2	3	5	1	4	1	1	3	1	1		12
12+	6	6	6	3	2	6	7	2	2	4	1	6	53
Total	104	89	96	84	50	41	17	16	11	6	2	8	524

Table V. Distribution of female patients.

$$x^2 = 3/74 \qquad \text{N.S.}$$

Family Size	First Half	Last Half	Total
2 - 4	37	39	76
5^+	271	177	448
Total	308	216	524

Table VI. Family Size and halves of families in female patients.

femalés .... X^2 = 49/80 DF=11 X^2 = 41/83 DF=11   N.S. X^2 =20/08
P. 0.0005   P. 0.0005

Birth Order	Male and females		Male Patients		Female Patients	
	Observed	Expected	Observed	Expected	Observed	Expected
1	188	166/64	84	82/21	104	84/44
2	179	166/64	90	82/21	89	84/44
3	189	154/64	93	76/71	96	77/94
4	165	140/64	81	70/04	84	70/61
5	108	118/64	58	58/29	50	60/36
6	71	91/64	30	44/29	41	47/36
7	35	64/64	18	29/62	17	35/03
8	33	44/07	17	19/05	16	25/03
9	17	27/82	6	10/67	11	17/15
10	8	16/93	2	6/23	6	10/71
11	6	10/03	4	3/53	2	6/51
12+	10	6/58	2	2/17	8	4/42
Total	1009	1009	485	485	524	524

Table VIII. Observed and expected distributions of birth order.

$x^2 = 7/35$ d. F=1

$0.025 < P < 0.05$

$x^2 = 2/16$ d.F = 1

N. S.

$x^2 = 7/32$ d.F = 1

$0.025 < P < 0.05$

	Female Patients		Male Patients		Male & Female Patients	
	Expected	Observed	Expected	Observed	Expected	Observed
Eldest	84/44	104	82/21	84	166/65	188
Youngest	84/44	69	82/21	69	166/65	139
Total	168/88	173	164/42	152	333/30	327

Table IX. Observed and expected distribution of youngest and eldest for male and female and both sexes.

	Observed	Expected	$\frac{O-E}{E}$ X 100	$\frac{(O-E)^2}{E}$
Last – but – one	122	161/22	-39/22	9/54
Others	843	805/78		1/72
Sibships of 2	24			$x^2 = 11/26$
Only children	20			
Total	1009			0.0005 P 0.005

Table X. Distribution of patients in Last-but-one position.

gnificant way. When sex is not considered the first-born position gains more significance ($x^2=7.32$, d.f = 1 0.025 p< 0.05). For lastbut one position compared with other birth ranks (sibships of two and only children excluded) with the Greenwood-Yule method, shows an underrepresentation ($x^2 = 11.26$ d.f = 1 0. 0005 P <0.005).

Comment

The difference which exist in family distribution of patients between Iranian families and Western families (article by Hane and Price) proves that the culture is playing a very important role in this distribution. In the Iranian culture the more attention is paid to the younger children, and the first male child takes the family responsibilities in the absence of his parents. However in western culture (article by Bary) the first male child does not necessorily takes the family responsibilities

Summary

In an attempt to investigate the relationship of birth rank and family size with the incidence of neurosis in an Iranian culture, case notes of 1029 schizophrenic patients as (497 males and 532 females) referred to psychiatric clinic for insured workers were studied.

The incidence of neurasis appeared to be significantly more frequent among the first-half position of birth orders in The families of 5 children and over; this bei-

ng more marked-in males than in females; and the first second births comprising the lighest incidence of the illness.

Acknowledgment

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