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PREVALENCE OF SCHIZOPHRENIA IN AN URBAN COMMUNITY IN MADRAS

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SUMMARY

Several studies have estimated the prevalence of Schizophrenia. Widely varied rates have in part been due to methodological and diagnostic differences. This paper presents the epidemiological indices for Schizophrenia, estimated as a part of a large study of over 1,00,000 urban population for Functional Psychoses. The age corrected prevalence rate is estimated and discussed.

A study of socio-demographic aspects showed the prevalence of Schizophrenia to be higher among males; in slums; in extended and joint families; in those with no schooling and in unemployed. The focus of discussion is on methodological issues of prevalence estimation and the socio-demographic aspects of Schizophrenia.

Introduction

Trends in epidemiology of Schizophrenia, although widely studied and reviewed (Mischler and Scotch 1963, Dunham 1965, Yolles and Kramer 1969, Gruenberg, 1974) should be viewed as critically today, as it was 25 years ago (Mischler and Scotch 1963).

Most recent reviews by Jablensky and Sartorius (1975), Torrey (1980), Leff (1981) and Sartorius et al. (1986) have differed in their interpretation. Jablensky (1986), Leff (1981), Sartorius (1986) and Hafner (1987) have focussed on a fairly consistent prevalence rate of the world over. However, Torrey (1980) and Eaton (1985) concluded differently for they found a ten-fold variation in the rates in different parts of the world. In Croatia, Yugoslavia, statistically significant differences were found in the studies in Sinj-Trogir and Labin (Kulcar et al. 1971). The variation in the rates and interpretations could be explained on the basis of methodological fallacies, stringency of diagnostic criteria, population life expectancies and the course of the illness (Torrey 1987).

A number of epidemiological studies have been conducted in India (Dube 1970, Elnagar 1971, Verghese 1973, Sethi et al. 1974, Thacore 1975, Nandi 1975, and others). The prevalance rates in these studies have varied from 1.5/1,000 (Surya et al. 1964) to 2.5/1,000 (Sethi et al. 1974). When corrected for age at risk, these estimates ranged between 2.6/1,000 to 3.4/1,000. Evaluation of these studies shows

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that the samples sizes range from 327 (Ganguly 1968) to 29,468 (Dube 1970). The instruments used vary considerably. Hence, interpretation of the estimates become difficult.

Keeping this in view, a prevalence survey the ICMR Functional Psychosis Project was designed for perhaps the largest community based mental health survey in India. This is a joint effort by Madras Medical College and Schizophrenia Research Foundation. The finding in this communication pertain to Schizophrenia in an urban population of over 1,00,000.

Material and Methods

Two areas within the catchment area of Govt. General Hospital and Madras Medical College, Chintadripet and Triplicane were chosen. This population of 1,01,229 was heterogenous and non migrant.

Case Detection and Confirmation:

Two stages procedure was adopted for detection of cases of Functional Psychoses. This involved a complete enumeration survey (door to door) in the residential localities using the Indian Psychiatric Survey Schedule (IPSS) (Kapur et al. 1974) to detect cases of Functional Psychoses. The screening was done by four trained field staff. The probable cases detected were then examined by one of the two psychiatrists who took a detailed history and did mental status examination. Reliable and accurate quantitative data of the clinical symptoms was obtained using the Present State Examination (Wing 1976) and the cases confirmed. The Present State Examination has been used in the Tamil version which has been standardised and used in the ICMR Task Force Study on Factors affecting course and outcome of Schizophrenia (SOFACOS). The criteria for inclusion were- a) age 15 years and above, b) presence of symptoms suggestive of psychoses in the IPSS, c) fulfilling ICD-9 criteria for Schizophrenia (295), Affective disorder (296), Paranoid states (297), or other Non Organic Psychoses (298). In order to estimate the rate of false negatives (i.e. cases which might have been missed by the field staff) 800 families were selected at random from those already surveyed and were rescreened by the psychiatrists. In this way 16 cases were detected against 15 cases picked up by the staff (the false negative being 6.25%, (1 out of 17).

Analysis: The data collected during the survey was computed. Preliminary statistical analysis for the purpose of this paper was done, using Chi Square and Z tests.

Results

The prevalence of Functional Psychoses and the diagnostic categories included therein are in fig. 1. Of these, the prevalence of Schizophrenia was the highest (P.R. 2.49/1000, n=252). Table 1(a) and 1(b) show the prevalence of Schizophrenia in both sexes and in different age groups.

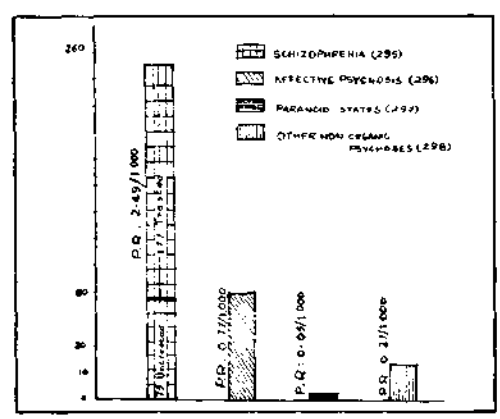

Figure 1 Distribution of functional psychoses

Table 1 (a)
Distribution of Schizophrenia by Sex

Sex	Population	No. of cases	Prevalence Rate/1000
Males	52189	149	2.86
Females	49040	103	2.10
Total	101229	252	2.49

Table 1(b)
Distribution of Schizophrenia by Age

Age	Population	No. of cases	Prevalence Rate/1000
0-15	34948	0	0
15-45	51714	200	3.87
>45	14567	52	3.57
Total	101229	252	2.49

$X^2 = 47.56$ df = 1 $P < 0.001$

Table 2(a)
Age of onset in Males and Females

Sex	Mean ± S.D.
Male	26.5539±8.9048
Feamle	27.4602±9.8154

Table 2(b)
Age of onset by treatment status

Untreated	28.7556±	9.2538
Treated	26.1902±	9.3087

A higher rate is seen in the males and in the age group 15-45 years. The average age of onset in males was 26.55 ± 8.9 and in females 27.4 ± 9.8 (Table 2-a). In the untreated group the average was 28.75 ± 9.25 as against an average of 26.10 ± 9.30 in the treated group (Table 2-b). The prevalence of Schizophrenia in the urban population in the various socio-demographic groups have been shown in tables 3 to 7 respectively. The important observations are a higher prevalence rate in slums; in those living alone; in those with no schooling; in christian communities and in the unemployed group.

Discussion

Most studies of epidemiology of Schizophrenia in various parts of the world have been carried out by (a) field surveys and (b) hospital data. Field surveys have the added advantage of estimating both treated and untreated psychoses in the community. Hospital data however estimates only the treated prevalence of the illness.

In the present study a door to door survey has been conducted on a large, demographically well prepared sample, using stringent criteria for case identification and diagnoses. Standardised instruments, such as the IPSS and the PSE (Wing et al. 1976) were used. Reliability exercises and periodic checks for chance errors and bias in reporting as well as screening for false positive and false negative cases have been done.

The discussion that follows focusses on certain socio-demographic aspects in relation to the epidemiology of Schizophrenia. The variables considered here are age, age of onset, sex, religion, occupation, family type, education and residential characteristics.

The survey estimated an age corrected prevalence rate of Functional Psychoses at 5.56/1,000. The prevalence of schizophrenia corrected for the age of risk, 15-45 years, was 3.87/1,000. The rate compares to the findings in other Indian studies (Sethi et al. 1967, Dube & Kumar 1972, Sethi et al. 1972, Thacore et al. 1975) and international studies (Kato 1963; Jayasundera 1969; Kulcar et al. 1971; Crocetti et al. 1971). The findings are in contrast to those from Labin, Croatia (Kulcar et al. 1971) and Rjika, Croatia (Crocetti et al. 1971). An appaling one third of the cohort have not had treatment even once, despite a psychiatric facility in the vicinity. For the purpose of this study, untreated cases were defined as those persons who had never taken any psychiatric

treatment. These persons, forming 27.07% of the cohort, had taken traditional treatment. Few studies have estimated untreated psychoses in the community (Von Korff et al. 1985).

The number of cases in the age group of 15-45 years (Table 1 b) is significantly different from the number above 45 years. It is clear that there is a higher prevalence in the former group. The prevalence rate is seemingly high in the latter group only because of a smaller population. Kapur et al. (1974) had also shown that case rates decrease after 40.

Although statistically not significant, it has been observed that males have an earlier onset than females. The age of onset has been reported to be cumulatively equal in males and females (Dohrenwend et al. 1976, Gottesman et al. 1982). Hafner (1986) had reported an earlier age of onset in males, based on his studies of Mannheim case registers. Verghese et al. (1987) had shown no difference in the age of onset of Schizophrenia in the hospital based ICMR multi centred study in Vellore, Madras and Lucknow.

There is a significant difference in the number of cases between sexes. The trend shows an increased prevalence rate in males. This is quite in contrast to studies by Field (1960), Dube (1970) and Nandi (1975). Nandi (1980) observed higher prevalence in feamles and explained the possible cause to be biological rather than

Table 3
Distribution of Schizophrenia by Residential area

Residential Area	Population	No. of cases	Prevalence Rate/1000
Slum	43097	141	3.27
Other areas	58132	111	1.97
Total	101229	252	2.49

Table 4
Distribution of Schizophrenia by Family Types

Family type	Population	No. of cases	Prevalence Rate/1000
Nuclear	67174	124	1.85
Joint	7667	21	2.74
Extended	25896	95	3.67
Living alone	492	12	24.39
Total	101229	252	2.49
	$X^2 = 82.0592$	df = 3	P<0.001

Table 5
Distribution of Schizophrenia by Education

Educational Level	Population	No. of cases	Prevalence Rate/1000
Illiterate	18578	83	4.07
Primary	25093	94	3.75
Secondary	41311	69	1.67
University	7316	5	0.68
Not Known	8931	1	
Total	101229	252	2.49
	$X^2 = 95.153$	df = 2	P < 0.001

culturally based. This finding therefore merits further investigation.

The estimates for extended and joint families is comparable to the studies by Dube (1971) and Thacore (1974). Significant difference was noted between the number of persons living alone and those in extended joint or nuclear families in our study. Those with no schooling or only primary education had a higher prevalence as observed by others (Verghese 1973, Mehta et al. 1977). It would be difficult at this stage, to conclude that illiteracy contributes to increased occurrence of Schizophrenia.

More than 38% of the cohort were unemployed. This is high when compared to the unemployment rate of 4.02% in the population. Goldstorm and Mandercheid (1982) had reported 70% unemployment rate in the sick population. In our country

Table 6
Distribution of Schizophrenia by Religion

Religion	Population	No. of cases	Prevalence Rate/1000
Hindus	92010	223	2.42
Muslims	6762	18	2.66
Christians	2319	11	4.74
Others	138	0	0
Total	101229	252	2.49

Table 8
Distribution by Occupation

Occupation	Population	No. of cases	Prevalence Rate/1000
Unemployed	4075	96	23.56
Housewives & Students	52328	76	1.45
Labourers	19956	72	3.61
Others*	12783	6	0.47
Unknown	12087	2	0.17
Total	101229	252	2.49

$X^2 = 18.3195 df = 1$ $P<0.001$

* Others include clerks, professional, businessmen and self employed persons.

Note: Chi square values have been calculated for the number of cases.

with no financial support such as social security to the unemployed, most of the sick persons find it necessary to take up some jobs.

Surprisingly a study of religious groups showed a high prevalence rate among christians. These findings are difficult to interpret, because the estimate obtained is in relation to a low christian population. It is probably unlikely that the true prevalence rate is higher in Christians.

The slums inclusive of the slum clearance board colonies were typically dilapidated, with poor housing conditions, over crowding, improper sanitation, unemployment and illiteracy. The colonies differed in housing types, all other characteristic being the same. The population had been residents in the area for a number of years. There was higher prevalence rate in these areas as compared to the other areas with middle class houses. This finding is comparable to a number of workers since Faris and Dunham (1953), Hollingshead and Redlich (1958), Ray (1962) and Shah (1980). Our findings cannot be interpreted on the basis of Drift Hypothesis due to fairly non migrant population. It is likely that high degree of stress accompanied by a low socio economic status, would contribute to a higher prevalence rate (Talbot 1988).

Conclusion

Epidemiological indices on Schizophrenia were estimated on a large urban community using standardised instruments. Studies on samples as large of 1,00,000 are known to enhance statistical precision. The age corrected prevalence rate for Schizophrenia was estimated to be 3.80/1,000 which is in keeping with studies in India and abroad.

A higher prevalence rate of Schizophrenia in slums as compared to other areas is not surprising considering the stressful living conditions there. The other sociodemographic factors which were statistically significant were the group 15-45 years; who were living alone; who had no schooling or who were unemployed.

The most significant finding of this survey was that about the third of the identified psychotic patients had had no psychiatric treatment at any point during the course of their illness. This is to some extent, understandable in a rural setting in India where mental health facilities do not exist. However, such a situation in an urban setting, in the vicinity of 3 psychiatric services in intriguing and needs further investigation. This indicates the need for

enhanced mental health awareness in order to better the utilisation of available mental health services.

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