A STUDY OF PSYCHIATRIC MORBIDITY OF A RURAL COMMUNITY AT AN INTERVAL OF TEN YEARS

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SUMMARY

A field survey of psychiatric morbidity was conducted in a village by a door to door survey. The survey was repeated after 10 years by the same team and by the same method. The aim was to compare the rates of mental morbidity of the community at the interval of a decade and to trace out during the second survey all the persons – both ill and well – found in the first survey and to assess their mental health status.

Though the total morbidity did not change from 1972 to 1982 there was a definite rise in the rates of morbidity of Hysteria and Anxiety showed a slight fall in 1982. The health population of 1972 traced and assessed in 1982 showed a lower rate of morbidity than the total population of 1982.

The rate of recovery of the morbid stock assessed after ten years was about 29% and as many as 14.8% of the morbid people died during this period. This death rate is much higher than that of healthy population assessed after ten years (6.9%). 47.8% of the cases detected in the first survey were found to be ill during the second survey richer with the same diagnosis or with a new diagnosis.

Introduction

Many studies on the prevalence of mental morbidity have been conducted in our country in the recent past (Dube 1970, El-nagar 1971, Sethi 1972, Nandi 1975). These studies are cross-sectional in nature. They record the mental health status of the cases in relation to the time of the survey. They give no indication of what happens to the cases detected in the survey in course of time. Nor do they take into account the mental health status of the whole community forward in time.

Hagnell (1966) followed up the survey of mental disorders carried out by Essen-Moller in 1947 (Essen-Moller 1956). He interviewed the same population after ten years and was able to relate the incidence of mental disorders in the period of 1947-57 to social factors recorded in 1947.

Nandi et al (1978) conducted a longitudinal field-survey of mental disorders in two villages and determined the natural history of mental disorders as observed during the course of one year. No study has so far been made in India to assess the mental health status of a community and that of each case at a long interval (say ten years) of time. Therefore, an epidemiological field-survey of psychiatric morbidity in a village was conducted by the authors in 1972. The team repeated the field-survey after an interval of ten years and traced all the persons found ill and well in the first survey and assessed their mental health status.

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interval of ten years in 1982. The aim was as follows:

(1) To compare the rates of mental morbidity of the community as determined in 1972 and again in 1982 in the context of the changing socio-economic status of the community.

(2) To search out during the second survey (in 1982) all the persons who were found to have been healthy during the first survey (in 1972) and to assess their mental health status. This group formed the healthy cohort of 1972.

(3) To search out during the second survey (in 1982) all the persons who were found to have been suffering from mental morbidity during the first survey (in 1972) and to determine the outcome of their illness. This group formed the morbid cohort of 1972.

Material and Method

General Remarks

A team of voluntary workers was formed to conduct the study. Each member under the leadership of the senior author made personal contact with the villagers in small group meetings and efforts were made to dispel the doubts and prejudice of the villagers by explaining the nature and purpose of the study. In this task cooperation and assistance of the significant persons of the community were obtained. Through them the villagers were convinced that the study would be undertaken with the best of intentions and the facts they would divulge during the course of the study would never be used against their personal interest. On the contrary, arrangement would be made for the treatment of all patients of the village, if they so desire.

Co-operation of the villagers assured, a pilot study was made to train the workers in the use of the tools of the survey.

Sample

All the families of the village of Gambhirgachi situated in the district of 24-Parganas (at a distance of 50 km from Calcutta) comprised the sample. It lies in the agricultural belt of the district and almost all the villagers are cultivators. The village had no post office, no daily market, not even a tea-shop. It had no metalled road, no transport except the traditional bullock cart. This is the picture obtained in 1972. In 1982 the picture had changed. The data on the changes in the socio demographic characteristics of the community have been presented in the "Results".

The language used by the villagers as well as the survey team was Bengali. So there was no communication gap or barrier between the two.

Tools of Study

Four schedules were prepared to collect and tabulate the data as follows:

(1) The Household Schedule - which recorded the data connected with the family structure, the size of the family, the age of each member, their sex, marital status, education, occupation, housing and identification of the family.

(2) The Case-detection Schedule - put in Bengali, it contained questions which led to the identification of all possible mental illnesses. The schedule was prepared in consultation with six other psychiatrists (not members of the team) who examined it independently and made additions and alterations as they deemed fit. After incorporating their views, the final draft was prepared (see Appendix).

(3) The Case Record Schedule - gave all relevant informations regarding the case detected through case detection schedule and recorded the findings of examination and final diagnosis.
For an operational definition of a case the definition mentioned in the WHO Technical Report Series (1960) No. 185 was taken as a preliminary model and discussed by the team members. After some modifications it was unanimously accepted and this modified definition was placed before six psychiatrists for their criticism and opinion. After taking their views into consideration the final draft of the operational definition was prepared and used in the survey (for operational definition of a case - see Appendix).

For the formulation of a diagnostic criterion for each disease the same procedure was followed. (For glossary of diagnostic criteria - see Appendix). Only those who were suffering at the time of examination were accepted as a ‘case’ except when the diagnosis was Hysteria or Epilepsy. In these two instances, manifestation of symptoms at any time during the last one year was sufficient for inclusion as a case.

(4) Socio-economic status Schedule - As per Pareek and Trivedi (1966) which is standardised for use in the rural area of India was used in the survey to determine the socio-economic status of each family.

Collection of Data

The core of the design of the study was a door to door enquiry of each family as a unit and/or each individual member separately. The data were collected first from the head of the family and again from each adult member of the family, to make sure, by cross verification that all the facts were obtained. Whenever a probable case was detected, a thorough examination, both physical and psychiatric, was made by two psychiatrists of the team separately and diagnosis was made independently. In the event of divergence of opinion between the psychiatrists, the issue was discussed, the case was re-examined and an agreed diagnosis was reached. The cases of divergence of opinion were very few. The psychiatrists had a high level of inter-rater agreement.

Duration of Work

The actual study was completed in eight weeks, though the detection of the drop-outs (those who could not be contacted as they were out of the village, on pilgrimage, visit to relation’s house etc.) took two more weeks.

Usually the work began in early morning and continued till late in the evening with a short break at mid-day, so that the persons interviewed might be available in their home-setting in a relaxed frame of mind. According to the method described above the first survey was done in 1972 and the same team surveyed the village again in 1982 by the same method. During the second survey in 1982 a special attempt was made to search out all persons including the “cases” detected in the first survey (in 1972) in addition to the determination of total psychiatric morbidity prevailing at the time.

The data obtained by this method of survey were compiled, computed and variables were dealt with statistically.

Statistical methods used

Data were mostly presented in two-way tables and possible association between the two factors of classifications likely or hypothesized to be mutually associated was tested for significance using the standard $X^2$ tests. In contingency tables with $K$ categories for one factor and $L$ for the other the value of the $X^2$ statistics obtained was compared with the tabulated percentage ones corresponding to $(K-1) \times (L-1)$ degrees of freedom. In tables with only two categories for one of the two factors, Brandt-Snedecor’s formula was adopted. In a few situa-
Results

Table 1
Change in the socio-demographic characteristics of the community

| 1982 | 1972 |
|------|------|
| Population: 1539 (M 741, F 798) | 1060 (M 519, F 541) |
| 22 Brick-built houses | Nil |
| 49 Tube-wells for household use | Nil |
| 52 Tube-wells and 22 Pump Machines for irrigation | Nil |
| 3 Tea-shops and 4 other shops | Nil |
| One Primary School exclusively for Girls and one Primary School for both boys and girls | One Primary School for both boys and girls |
| 3 Graduates and 14 School Final Passed | only one Graduate. |
| General health care system including Maternity and Child Welfare offered by the PHC gained popularity | A PHC existed: having poor services and very low popularity |

In Table-1 shows some data on the changes occurring in the socio-demographic characteristics of the community during a period of ten years. The population increased from 1060 to 1539.

Table 2
Distribution of the total population by age in 1972 and 1982

| Age (Years) | 1972 | 1982 |
|-------------|------|------|
| 0-11        | 462 (43.6) | 551 (35.8) |
| 12-23       | 221 (20.9) | 455 (29.6) |
| 24-35       | 174 (16.4) | 203 (13.2) |
| 36-47       | 98 (9.2) | 171 (11.1) |
| 48-59       | 51 (4.8) | 100 (6.5) |
| 60+         | 54 (5.1) | 59 (3.8) |

Figures in parentheses indicate percentages

$X^2 = 39.2452$ (Significant) with df = 5

The age-structure of the population changed significantly during the decade under consideration, a considerable decrease in the percentage of children below the age of 12 years more or less balanced by an increase of persons in the age-group 12-23 years being the primary reason.

Table 3
Comparison between the rate of total mental morbidity of 1972 and 1982

|            | 1972 | 1982 | Total |
|------------|------|------|-------|
| Affected   | 90 (84.9) | 126 (81.9) | 216   |
| Non-Affected | 970   | 1413  | 2383  |

$X^2 = 0.07$  N. S.  DF = 1

Figures in parentheses are rates per thousand.

In this table the rate of total mental morbidity of 1972 has been compared with that of 1982. Though the population of the village has increased substantially in the course of ten years, the rate of total morbidity of the community has not changed significantly. In 1972, the rate was 84.9 per thousand and in 1982 it was 81.9 per thousand.
Table 4
Distribution of affected persons by sex in 1972 and 1982

|       | 1972 | 1982 | Total |
|-------|------|------|-------|
| Male  | 35   | 58   | 93    |
|       | (67.4)| (78.3)|       |
| Female| 55   | 68   | 123   |
|       | (101.6)| (85.2)|       |
|       | 90   | 126  | 216   |
|       | (84.9)| (81.9)|       |

Figures in parentheses are rates per thousand.

X² = 1.09 N.S. DF = 1

Table 4 shows that the morbidity of the population by sex has not changed significantly in course of a decade. In 1972 the rate of morbidity of males was 67.4 per thousand, in 1982 it rose to 78.3 per thousand. The corresponding figures for females were 101.6 per thousand and 85.2 per thousand respectively.

Table 5
Distribution of affected families according to socio-economic status (1972 and 1982 combined)

| Class | A     | NA    | Total |
|-------|-------|-------|-------|
| I & II| 3     | 1     | 4     |
|       | (75.0)| (25.0)|       |
| III   | 51    | 39    | 90    |
|       | (56.7)| (43.3)|       |
| IV    | 56    | 78    | 134   |
|       | (41.8)| (58.2)|       |
| V     | 47    | 89    | 136   |
|       | (34.6)| (65.4)|       |
| Total | 157   | 207   | 364   |

A = Affected NA = Not Affected

X² = 13.16 Highly significant DF = 5.

Table 5 presents the distribution of affected families according to socio-economic status. The data of 1972 and 1982 have been combined in this table as there was no significant difference in the distribution of affected families by SES in 1972 and 1982. The combined data show that higher classes had higher rates of affectivity. This trend of higher rate of affectivity in higher classes is statistically significant.

Table 6
Age distribution of affected persons in 1972 and 1982

| Age (Yrs) | 1972 | 1982 | Total |
|-----------|------|------|-------|
| 0-11      | (12.2)| (4.8)| 17    |
| 12-23     | (17.8)| (12.0)| 31    |
| 24-35     | (24.4)| (15.9)| 42    |
| 36-47     | (17.8)| (28.8)| 52    |
| 48-59     | (10.0)| (20.6)| 35    |
| 60+       | (17.8)| (17.9)| 39    |
| Total     | 17   | 90   | 216   |
|           | (100.00)| (100.00)|       |

X² = 13.16 Highly significant DF = 5.

Table 6 shows that the age distribution of the affected population of 1982 given in Table 6 shows that the younger age groups (0-35 years) had lower rates of morbidity than the corresponding age groups of 1972. But the older age groups (36 and above) of 1982 had higher rates of morbidity than in 1972. This change in the rate of morbidity by age is statistically significant.

Table 7 (a) shows that the age distribution of different types of illness has changed during the decade. The total morbidity of both Anxiety and Hysteria has dropped in 1982. In 1972 the rates of morbidity of Anxiety and Hysteria were 12.3 and 16.9 per thousand. In 1982 these rates fell to 8.4 and 4.6 per thousand respectively.
Table 7(a)
Distribution of different types of illness by age in 1972 and 1982

| Age (Yrs) | Anxiety | Hyst. | 1972 OCN | Phobia | 1982 Anxiety | Hyst. | OCN | Phobia |
|-----------|---------|-------|----------|--------|--------------|-------|-----|--------|
| 0 - 11    | 3 (6.5) | 1     |          |        | -            | -     | -   | -      |
| 12 - 23   | 2 (9.0) | 8 (36.2) | 1 (4.5) | 1 (4.5) | 4 (8.8)      | 3 (6.6) | -   | 1 (2.2) |
| 24 - 35   | 3 (17.2) | 6     |          |        | 4 (19.3)     | -     | -   | -      |
| 36 - 47   | 1 (10.2) | 3     |          |        | 4 (23.4)     | 1     |     | (5.8)  |
| 48 - 59   | 1 (19.6) |       |          |        |              | 1 (10.0) | -   | -      |
| 60 +      | 3 (55.6) |       |          |        | -            | -     | -   | -      |
| Total     | 13 (12.3) | 10 (16.9) | 1 (0.1) | 1 (0.9) | 13 (8.4)     | 7 (4.6) | -   | 1 (0.7) |

Figures in parentheses are rates per thousand.

Table 7(b)
Distribution of different types of illness by age in 1972 and 1982

| Age (Yrs) | Schiz. | Dep. | 1972 MD | Epi. | Manic | 1972 Schiz. | Dep. | MD | Epi. | Manic |
|-----------|--------|------|---------|------|-------|-------------|------|-----|------|-------|
| 0 - 11    | -      | -    | 1 (2.2) | 6    | -     | -           | -    | -   | 6    | (10.9) |
| 12 - 23   | -      | -    | 1 (4.5) | 3    | -     | -           | -    | 5   | 1    | (11.0) |
| 24 - 35   | 1 (5.6) | 9    | 1 (51.7) | 1    | (11.2) | -           | -    | 8   | 2    | (39.0) |
| 36 - 47   | 1 (10.2) | 11   | 1 (112.2) | -    | -     | -           | 30   | -   | -    | (175.4) |
| 48 - 59   | 1 (19.6) | 7    | 1 (157.3) | -    | -     | 1           | 22   | -   | 1    | (220.0) |
| 60 +      | -      | 13   | 1 (240.7) | -    | -     | 1           | 22   | (16.9) | -   | (371.8) |
| Total     | 3 (2.8) | 40   | 3 (10.8) | 11   | -     | 2 (1.3)     | 82   | 14  | 2    | (3.2) |

Figures in parentheses are rates per thousand

Like the previous table, this table also shows a significant change in the rates of morbidity of different types of illness by age. The rates of total morbidity of depression and Mental Deficiency have increased in 1982. But the rate of Epilepsy has fallen remarkably. In 1972 the rate of morbidity of Epilepsy was 10.8 per thousand which dropped to 1.3 per thousand in 1982.
Table - 8
Mental morbidity in the healthy cohort of 1972 observed in 1982 and in the total population of 1982 by sex

|                | Healthy cohort of 1972 | Total population of 1982 |
|----------------|------------------------|--------------------------|
|                | A          | NA      | A          | NA      |
| Male           | 29 (60.5) | 451     | 58 (78.3)  | 683      |
| Female         | 38 (77.6) | 452     | 68 (85.2)  | 730      |
| Total          | 67 (68.0) | 903     | 126 (81.9) | 1413     |

$X^2 = 1.11$ NS DF = 1
$X^2 = 0.24$ NS DF = 1

Figures in parenthesis are rates per thousand
A = Affected person; NA = Non-affected person

In this table the mental morbidity of males and females of the healthy cohort of 1972 observed in 1982 has been compared with that of the total population of 1982. Both males and females of the former group have a lower rate of morbidity than those of the latter group. In each group males have a lower rate of morbidity than the females. But the difference is not statistically significant.

Table - 9
Distribution of different types of illness in healthy Cohort of 1972 and total population of 1982

|                | Healthy cohort of 1972 | Total population of 1982 |
|----------------|------------------------|--------------------------|
| Dep.           | 46 (47.4)              | 82 (53.3)                | 128         |
| MD             | 5 (5.2)                | 14 (9.1)                 | 19          |
| Anxiety        | 9 (9.3)                | 13 (8.4)                 | 22          |
| Others         | 7 (7.1)                | 17 (11.1)                | 24          |
| Total          | 67 (68.0)              | 126 (81.9)               | 193         |

$X^2 = 1.37$ NS DF = 1
Figures in parentheses are rates per thousand.

The rates of prevalence of different types of illness amongst the healthy cohort of 1972 as observed in 1982 are lower than those of the total population of 1982. The single exception, however, is Anxiety Neurosis. The rate is lower in the total population of 1982. But these differences are not statistically significant.

Table - 10
Morbid Cohort observed after 10 years by sex

|                | Male | Female | Total |
|----------------|------|--------|-------|
| Status Quo     | 16 (45.7) | 20 (36.4) | 36 (40.0) |
| Cured          | 8 (22.9)   | 18 (32.7)  | 26 (28.9)  |
| Death          | 6 (17.1)   | 6 (10.9)   | 12 (13.2)  |
| Migrated or untraced | 2 (5.7) | 7 (12.7) | 9 (10.0) |
| Change of Category | 3 (8.6) | 4 (7.3) | 7 (7.8) |

$X^2 = 2.91$ Not significant DF = 4
Figures in parentheses indicate percentages

This table presents data about the fate of the morbid stock considered by sex. There is no significant difference between the sexes as regards the outcome of their illness assessed after ten years. Considered irrespective of sex, 40% of the morbid stock remained morbid (i.e. status quo) and 28.9% of them recovered spontaneously. 10% of the morbid people either migrated out of the village or were untraced during the second survey. 7.8% of the cases changed their clinical picture so remarkably as to merit a new diagnosis.

In table - 11 the fate of the morbid stock of 1972 has been broken up according to diagnostic category. The cure rate is high among Epileptics (45.6%) and Hysterics (63.1%). Depression, Schizophrenia and Mental Deficiency have a low cure rate and high rate of status quo (mentally ill during
Table - 11
Morbid Cohort observed after 10 years by diagnostic category

| Status Quo | Dep. | Schiz. | MD | Epi. | Hyst. | Anx. | Others | Total |
|------------|------|-------|----|------|-------|------|--------|-------|
|            | 24   | 2     | 3  | 2    | 2     | 3    | -      | 36    |
|            | (60.0)| (66.7)| (100.0)| (18.2)| (11.1)| (23.1)| -      | (40.0)|
| Cured      | 7    | -     | -  | 5    | 11    | 2    | 1      | 26    |
|            | (17.5)| -    | -  | (45.6)| (61.1)| (15.4)| (50.0) | (28.9)|
| Death      | 8    | -     | -  | 1    | -     | 3    | -      | 12    |
|            | (20.0)| -    | -  | (9.0)| -     | (23.1)| -      | (13.3)|
| Migrated or | 1    | 1     | -  | 1    | 3     | 2    | 1      | 9     |
| untraced   | (2.5)| (33.3)| -  | (9.0)| (16.7)| (15.4)| (50.0) | (10.0)|
| Change of  | -    | -     | -  | 2    | 2     | 3    | -      | 7     |
| category   | -    | -     | -  | (18.2)| (11.1)| (23.1)| -      | (7.8)|

X² = 37.9417 Highly significant DF = 12

Figures in parentheses are percentages.

the second survey). Death rate in the total morbid stock is 13.3% and in the Depressives it is 20%. The outcome of different types of illness is significantly different from one another.

**Discussion**

**Total morbidity of 1972 and 1982**

*Prevalence*: Studies in psychiatric epidemiology tend to vary in their methodology, diagnostic criteria, classification of diseases and operational definition of a 'Case'. Consequently their results are also bound to be at variance with one another. However, comparison of results of different studies give us a general picture of the trends of prevalence of psychiatric morbidity in different socio-cultural milieu. Sethi et al (1972) surveyed a rural population in U.P. and found a prevalence rate of 39 per thousand. Elhagar et al (1971) reported that the prevalence rate was 27 per thousand in their rural survey in West Bengal. Shepherd et al (1976) reported a prevalence rate of 139.4 per thousand in some parts of Greater London. Leighton (1956) discovered by a sample survey in the small town of Bristol the prevalence of 370 per thousand and commented that "370 per thousand was a firm core of a prevalence figure" and "whether under treatment or not they need it". In fact, the prevalence figures are largely a function of the intensity of the methods applied.

In view of this state of affair, the prevalence figures obtained by us in two surveys conducted at an interval of ten years deserve careful consideration. The method and the team are the same. The population surveyed is a stable one. The socio-economic status of the families, as assessed by Parvek and Trivedi's Scale, has not shown any significant change in the intervening period. The almost identical rates of total mental morbidity observed after an interval of ten years possibly suggests that the community maintains a dynamic equilibrium in its morbidity over the years (vide Table - 3). Nandi et al (1978) in their longitudinal study of the natural history of mental disorders have adduced evidence to substantiate this hypothesis. What are the factors which maintain this dynamic equilibrium in the morbidity rate of a community in course of time? This is a pertinent question that may arise in one's mind. The factors may be divided into two categories. One category of factors increases the morbidity
Incidence of new cases and migration of morbid people into the village are the two factors which tend to increase the morbidity rate. In this study we found 67 new cases and 16 cases migrated into the village from other places. So 83 cases were added to the morbid stock in 1982.

Factors causing decrease of morbidity rate were (a) recovery of cases (b) death of cases (c) migration of morbid people from the village and (d) rise in the number of healthy people. Out of the 90 cases of 1972, as many as 26 cases recovered, 12 cases died and 9 cases migrated out of the village. In 1982 survey we could, therefore, find 43 cases of the 1972 survey and 83 fresh cases - a total of 126 cases. As the number of healthy people increased substantially during the decade, the rate of morbidity remained more or less the same. The popular notion that mental illness is on the increase, is not borne out by the data obtained by us in this rural survey.

While making an in-depth study of this dynamic equilibrium we must take note that the level of morbidity i.e. the proportion of the morbid stock to the total population might not have changed but the morbidity profile consisting of the morbidity pattern (relative proportion of the types of morbidity within the morbid stock), the sex and age distributions of the affected persons may show some change. These changes may make a qualitative difference in the total morbidity of the community.

Sex Distribution: The sex distribution of the affected persons in 1972 shows a preponderance of females. This pattern is maintained in 1982. But there is no significant difference in the pattern of sex distribution of affectivity after an interval of ten years (Table - 4). The greater affectivity of women has however, been corroborated by many authors in India and abroad. Hagnell et al (1966), Sethi et al (1967), Leighton et al (1967), Dube (1970) and Nandi et al (1975) have found a higher rate among women. Our findings in 1972 and 1982 in the same community surveyed by the same method and by the same team suggest the conclusion that greater vulnerability of women to mental illness is a stable feature. It cuts across culture and persists in course of time in a given culture.

Age Distribution: The age distribution of the affected persons of 1972 and 1982 shows that the rate of affectivity is higher in the 0-35 years age group in 1972 than in the corresponding age group of 1982 (vide Table - 6). It must be emphasized that this shift in the pattern of morbidity by age has not affected the total morbidity of the community at an interval of ten years. So, one may presume that the younger age groups of the community turned to be a healthier stock after ten years. Could it be associated with the change in the general outlook of the community having a better prospect for job, shelter, medical aid and income? This point needs a deeper probe.

Type of Illness: It is seen that the rates of depressive illness and mental retardation have increased over the years. But the rates of Anxiety, Hysteria and Epilepsy have declined. The increase in the rate of Mental Deficiency may possibly be partly explained by improved medical care made available to the community during the decade. The fall in the rate of epilepsy may also be attributed to the same cause including better obstetric care. Improved medical care has, therefore, a contradictory influence on the prevalence rate of Mental Deficiency and Epilepsy. It increases the longevity of the former and decreases the potent cause of incidence of the latter. The rise in the rate of depression is consistent with the findings of other recent studies reviewed by Singh (1979) (vide Tables - 7(a) & 7(b)).

Socio-economic status: As shown in Table - 1
certain socio-economic factors have apparently changed. In 1972 there was not a single brick-built house in the village. There was not a single tube-well or pump-set for irrigation in 1972. But in 1982 as many as 22 brick-built houses and 22 pumpsets for irrigation were found. Spread of education and improvement of health care facility had certainly made a qualitative change in the life of the community. It is a paradox that the SES Scale used in the survey showed no significant change in the SES of the community in course of ten years. The distribution of families in different classes in 1982 was similar to that of 1972. Though data have not been presented, it was found that the distribution of affected families has also remained almost the same after ten years. The pattern (i.e. higher morbidity in higher classes) observed in 1982 was similar to that of 1972. As the pattern of distribution of affected families has not changed significantly over the years, the data were combined and presented in Table - 5. It is seen that the trend of highest rate of affectivity in higher classes persists. The stability of association between social class and rate of morbidity over time was tested by a special test of significance (called heterogeneity X^2 test) used by Geneticists. This test confirms that the significantly higher rate of morbidity in higher classes in a stable characteristic of this community and is maintained in course of time.

Cohort of healthy population of 1972: The Cohort of healthy population of 1972 was traced in 1982 and it was found that the total morbidity of this population in 1982 was 68.0 per thousand while the rate of morbidity of the total population of 1982 was 81.9/1000. The rate of morbidity among the males was 60.5 per thousand and that among the females was 77.6 per thousand among the healthy population of 1972. All these rates are lower than the corresponding rates of morbidity of total population of 1982. The differential rate of morbidity of each type of illness (except Anxiety State) among the healthy Cohort observed in 1982 was lower than that of the total population of 1982 (Table - 9). But the observed differences were not statistically significant. It may be assumed that the healthy stock may have a marginally better prospect of remaining healthy in course of time than the total population of a community surveyed simultaneously. But one must be cautious in reading too much in such assumptions.

Cohort of morbid population of 1972: The Cohort of morbid population of 1972 assessed in 1982 shows that the rate of their illness is independent of sex of the individual (Table - 10). Among the women cure rate is higher than in males and death rate is lower, but the difference is not significant. The cure rate (spontaneous) or the status quo (i.e. mentally ill during the second survey in 1982) is, however, dependent on the initial diagnosis at the time of the first survey in 1972. Depression, schizophrenia and Mental Deficiency have a higher percentage of status-quo cases. Hysteria and epi-
epilepsy on the other hand have a higher cure rate. The phenomenon of migration of mental patients cannot be ignored. Out of 90 cases of 1972, 29 cases (10%) migrated out of the village or were untraceable (whereabouts not known) at the time of second survey. The rate of migration of the healthy cohort of 1972 is, however, higher than that of the morbid cohort observed after the same length of time. About 16% of the healthy cohort migrated out of the village within a period of ten years (155 out of 970 persons). Nandi et al (1978) followed up the whole population of two villages for one year and found that the rate of migration among the total population out of the villages during that period was 3.6%. The corresponding rate among the affected population seems to be lower than that of the total population of a community. Whether this difference in mobility is a function of the morbidity is difficult to determine.

Another feature of clinical significance is the change of category of mental disorders in course of time. 7.8% of cases changed their clinical picture so remarkably that they qualified for a new diagnosis during the second survey. The necessity for this change of diagnosis is an indication of the variability of the course of mental disorders and a reminder of the absence of objective criteria for diagnosis. Nandi et al (1978), in their longitudinal survey of the natural history of mental disorders in a rural community, found that 3.6% of the cases qualified for a new diagnosis at the end of one year. It should be noted that both the diagnostic criteria were also same on both the occasions. Death rate is quite high among the morbid stock (13.3%) and it is still higher among the depressive (20%) (vide Table - 11). It is therefore, evident from these data that in a rural setting outcome of different types of illness is significantly different from one another. These cases did not receive any treatment worth the name. The depressives, however, were put on antidepressants for one month as a part of a clinical trial conducted in 1974 (Nandi et al 1976).

We have seen that the mortality of the morbid stock during one decade was very high (Table - 11). So we have presented data on the rate of mortality of the healthy stock during the same period of time. For the sake of accuracy, the people who migrated out of the community and were not found during the second survey, were excluded from the respective groups. The rate of mortality was determined on the basis of number of persons who were either found or known to be dead. On this strict criterion the mortality rate of the morbid stock is twice that of the healthy stock (14.8% and 6.9% respectively). Babigian and Odoroff (1969) reviewed the mortality experience of a population with mental illness and found the relative risk of death to be 2½ to three times of the general population. High risk group (the chronically ill, the aged and the alcoholic) excluded, the relative risk remained 1½ to two times that of the general population. The death rate in the present sample should be viewed in the context of the fact that there is no facility for mental health service in that community and its standard of general medical facility also leaves much to be desired.

Glossary of Diagnostic Criteria

Schizophrenia: A disorder characterised by a fundamental disturbances of the personality involving its most basic functions. The schizophrenic disturbance shows itself in a setting of clear consciousness. The patient has the utterly unfamiliar experience of his thought, feelings and acts being shared by others accompanied by bizarre delusion of thoughts being influenced by outside agencies which may be natural or supernatural. Hallucinations are common, predominantly auditory which comment on his thoughts and action. Circumstantial and
vague thoughts are often expressed in incomprehensible speech. Thought block, thought withdrawal and thought broadcast are also very often present. Affective state becomes capricious and inappropriate to a given situation. No sub-classification of schizophrenia should be attempted. Paranoid state and Paraphrenia should be included.

**Depression:** An affective disorder characterised essentially by morbid changes of mood in the form of depression which is unprovoked by any physical or environmental cause, and expressed by feeling of misery, gloom and wretchedness often tinged with anxiety. Self reproach, moral worthlessness (guilt feeling), and suicidal tendency, are quite common. When occurring for the first time in late forties, strong paranoid component may be present. Hypochondriacal ideas which in extreme cases may be nihilistic and bizarre, are frequent. The mood tends to be worse in the morning. Biological symptoms like disturbances of sleep pattern, early morning waking being the rule, loss of weight, appetite and libido are almost invariably present. There is retardation of thinking and action which may proceed to the level of stupor. This clinical state has a tendency to recur and is often self-limiting.

**Hysteria:** Both dissociative and conversion phenomena are included. In dissociative states, in the absence of organic brain disease, there is narrowing of the field of consciousness limited to a circumscribed area of experience. All activities are directed to a goal within that area. Usually a complete amnesia follows this periodic altered consciousness. By conversion is understood a psychogenic disturbance of function of an organ or organs of the body. These symptoms often take the form of sensory, motor, or visceral disturbances which are not based on the anatomical organisation of the body. Very often seizures of a pseudo-epileptic-form or syncopal character without real unconsciousness occur which last for several minutes to hours, usually in presence of other persons. They are characterised by their variability and a symbolic meaning of which patient is unaware. Conversion phenomena must always bring a primary gain to the patient. Those who showed symptoms during the last 12 months from the date of examination are to be included.

**Anxiety:** A disorder in which the principal manifestation is anxiety which may be described as a painful uneasiness of mind, a state of heightened tension with an element of apprehensive expectation. It presents in the psychic and somatic field and is diffuse in nature. Though the other neurotic components such as obsessional or hysterical phenomena may be present, they do no dominate the clinical picture.

**Obsessive-Compulsive Neurosis (OCN):** This condition manifests itself as persistent thoughts and acts which the patient is compelled to repeat, though he recognises their absurdity or unreasonableness. Attempts to dispel these experiences lead to an inner struggle which may involve the whole of the patient's psychic activity although the content is experienced as alien to the self. Cases, in which obsessive-compulsive symptoms are associated with Depression or Schizophrenia, should be excluded.

**Phobia:** It is a condition of abnormally intense dread often amounting to panic of an object or situation which may be unique to the patient. But certain common forms are found e.g. dread of open or closed spaces, exists, yet cannot but experience the intense dread when exposed to the specific phobia-stimulating object or situation.

**Mental Deficiency (MD):** This category consists of persons of sub-average general intellectual functioning which originates during developmental period and is associated with impairment of maturation, learning.
and social adjustment. The upper age limit for the developmental period is arbitrarily set at 16 years. The assessment is clinical. No Psychometric test need be given; nor any effort be made to determine the degree of defect.

Epilepsy: A symptom complex characterised by periodic, transient episodes of alteration in the state of consciousness which may be associated with convulsive movements or disturbances in feeling or behaviour or both. No effort need be made to differentiate Epilepsy by types of seizures. Those who showed symptoms at any time during the last 12 months from the date of examination should be included.

Mania: An affective disorder characterised by a state of elation or excitement out of keeping with the patient’s circumstances and varying from enhanced liveliness (hypomania) to violent, almost uncontrollable excitement. Aggression and anger, flight of ideas, distractibility, impaired judgement, and grandiose ideas are common.

ENGLISH VERSION OF BENGALI QUESTIONNAIRE

I shall put some questions to you in order to understand the present health status of each member of your family. You should answer them frankly and the best of your knowledge.

Are the members of your family well?

1. Is/was anybody who had difficulty to get on well with others.
2. Was any one ill? Is she/he still suffering?
3. Did you notice any abnormality in anyone’s behaviour? Is this abnormality still present?
4. Does anybody mutter to himself or smile without any reason? Does he prefer to stay alone? Was he lacking in interest in everything? Is he/she still so?
5. Was anybody mentally subnormal? Is he/she still so?
6. Is any of the children educationally backward? Was there any problem with the education of any child? Does it still persist?
7. Was anybody late in starting sitting, standing, walking, speaking or wearing clothes?
8. Was there anybody forgetful?
9. Was anyone in the family suspicious in character? Is he still so?
10. Does anybody suspect her husband or his wife?
11. Does anybody feel undue pleasure/enthusiasm and swiftness?
12. Has anybody recently become talkative?
13. Does anybody in the family have a tendency to showoff? Has he a tendency to spend more?
14. Was there anyone who failed to recognise men or place or had lost all distinctions of time? Is there such a person still?
15. Was there anyone who suffered from headache or vertigo? Does he suffer still?
16. Did anybody feel suffocated? Does he still suffer?
17. Did anybody suffer from palpitation or chest pain? Does he suffer still?
18. Did anybody suffer from nausea and vomiting often? Does he suffer still?
19. Did anybody suffer from acidity? Does he suffer still?
20. Did anybody feel aches and pains in the body? Does he suffer still?
21. Did anybody suffer from indigestion, abdominal pain, lack of appetite, constipation, wind in the abdomen and diarrhoea?
22. Did anybody suffer from eye troubles like watering, redness, pain, blurring of vision or temporary loss of vision? Does he suffer still?

23. Was anybody hard of hearing? Was there any discharge from the ears? Did he hear any buzzing sound? Does this thing still happen?

24. Was anybody attacked with T.B., Cancer, Leprosy or Syphilis? Does anybody suffer from any of these diseases?

25. Did anybody stammer? Does he still suffer from this disorder?

26. Did anybody suffer from “that” disorder or sexual weakness? Does he still suffer from this disease?

28. Was anybody attacked with fever frequently? Does he suffer from this fever often?

29. Was anybody spitting blood? Does this still happen?

30. Did anybody suffer from swelling of the feet? Does he still suffer from this disease?

31. Did anybody suffer from breathing difficulties? Does he suffer still?

32. Did anybody suffer from heart diseases? Does he suffer still?

33. Did anybody suffer from toothache or from the disease of the jaw? Does he suffer still?

34. Did anybody suffer from worms? Does he suffer still?

35. Did anybody suffer from piles? Does he suffer still?

36. Did anybody suffer from Jaundice or from liver disease? Does he suffer still?

37. Did anybody suffer from diabetes? Does he suffer still?

38. Did any patient suffer from paralysis? Does he suffer still?

39. Did anybody suffer from hernia or hydrocele? Does he still suffer?

40. Did anybody suffer from burning sensation during passing urine or any other urinary trouble? Does he suffer still?

41. Was there any obese or sickly person? Is he still so?

42. Did anybody suffer from joint trouble? Does he still suffer?

43. Did anybody suffer from disorder of menstruation? Does she suffer still?

44. Did anybody suffer from excessive hunger or thirst? Did he leave the bed, time and again at night to take water?

45. Did anybody suffer from mental disorder? Does he still suffer? Was anybody treated in the mental hospital or in the charge of a mental specialist? Is he still in his care?

46. Did anybody think that people tried to harm him? Does he still harbour this idea?

47. Did anyone of the family commit suicide?

48. Was there anybody in the family who attempted suicide, but failed?

49. Did anybody leave his home to become a Sannyasin?

50. Did anybody leave his home for ever?

51. Has anybody in the family remained unmarried throughout his life?

52. Was anybody in the family a gambler or addicted to Indian hemp, opium, leaves of hemp, charas, or liquor?

53. Was anybody addicted to drugs?

54. Did anybody suffer from disturbance of sleep?
55. Did anybody take up any pill or was he injected regularly or at times for physical indisposition?

56. Was there anybody in the family who was of wicked nature or of notorious character just like the thieves, dacoits, murderers etc.?

57. Was anybody in the family excessively fearful or quick-temper? Is he still so?

58. Was there anybody in the family who had the habit of nail biting or bed-wetting? Is this person now free from these habits?

59. Did anybody feel weary after a little exertion?

60. Was anybody much worried or depressed for nothing or for a minor cause? Is he still so?

61. Did anybody feel possessed by god? Did anybody feel the influence of spirits or angels? Does he still suffer?

62. Did anybody suffer from the mania like excessively tidy, cleanliness, repeated washing etc.? or from the touching of scraps of meal? Is he still so?

63. Was a person excessively religious and devoted unduly long time in worship or religious rituals? Is he still so?

64. Did anybody suffer from any serious illness or fit during her pregnancy?

65. Was any person habituated to tearing off his hair? Does he still do so?

66. Did anybody become tearful for a trifle?

67. Did anybody feel that he was quite helpless or worthless?

68. Did anybody feel unduly tired and exhausted?

69. Did anybody suffer from cough and cold, sneezing or from asthma?

70. Did anybody suffer from eczema? Does he suffer still?

71. Did anybody suffer from chronic dysentery? Does he suffer still?

72. Did anybody suffer from high or low blood pressure? Does he suffer still?

73. Did anybody suffer from rheumatism? Does he suffer still?

74. Did anybody suffer from uticaria? Does he suffer still?

75. Did anybody get imprisoned except on political ground?

76. Does anybody suffer from epilepsy or hysteria? Does he suffer still?

77. Did anybody some phobia for a particular thing, place or for any particular insect or animal? Does he suffer still?

78. Did anybody undergo a major operation or meet with an accident?

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**APPENDIX**

*Operational Definition of a 'Case'*

A manifest disturbance of mental functioning, specific enough in Clinical Character to be consistently recognizable as conforming to a clearly defined standard pattern and severe enough to cause at least partial loss of working or social capacity or both of a degree which can be specified in terms of decrease in quality and/or quantity of work or of the taking of legal or other social action*.