

Prevalence of mental morbidities among the slum dwellers of Kolkata, West Bengal

Dr Nirmalya Manna¹, Dr Tanushree Mondal², Dr Manisha Sarkar³,
Dr Swapnodeep Sarkar³, Dr Udit Pradhan³

¹(Assistant Professor, Department of Community Medicine, Medical College, Kolkata, India),

²(Assistant Professor & Assistant Director of Medical Education, Government of West Bengal),

³(Junior Resident, Department of Community Medicine, Medical College Kolkata)

Abstract: A community based cross-sectional descriptive study was conducted over 158 permanent residents of the Baithak Khana slum area of ward 37, borough V of Kolkata municipal corporation of West Bengal to determine the prevalence of mental morbidities and its association with socio-demographic factors. Some background data was collected and mental morbidity was assessed with the help of SRQ-Bengali version. The study revealed that potential psychiatric case was about 23% among the slum dwellers. Potential psychiatric case increased with age and was higher in females (32%). Higher education was associated with a greater sense of well being (literate-16%, illiterate-33%). Higher stress levels were seen in married individuals (24%). Widows and divorcee were under more stress (50%). Potential psychiatric case was more among unemployed and housewives (31%) while students (8%) were less affected.

Key words: mental morbidities, SRQ, slum dwellers

I. Introduction

Mental and behavioral disorders are important causes of morbidity and produce considerable disability.^{1,2} The overall DALYs burden for neuropsychiatric disorders is projected to increase to 15% by the year 2020.³ Recently WHO focused on mental health as the theme for the World Health Day. India is implementing a national level Programme of integrating mental health with primary health care. However, psychiatric epidemiology lags behind other branches of epidemiology due to difficulties encountered in conceptualizing, diagnosing, defining a case, sampling, selecting an instrument, lack of resources and stigma especially in developing countries. Although mental health problems in developing countries is highly prevalent, such issues are not yet adequately addressed in these countries, where a growing number of residents live in slums. Little is known about the spectrum of mental wellbeing in urban slums and adequate research on mental wellbeing of the slum dwellers is lacking.⁴ Thus, this study was conducted with an overall aim to find out the prevalence of mental morbidities and its associated factors among the adult population. The objectives of the study were;

1. To find out the prevalence of mental morbidities among the adult population in the study area.
2. To find out the factors associated with mental morbidity.

II. Materials and Methods

It was a community based descriptive study with cross-sectional design. The study was conducted among the adult population who were permanent residents of Baithak khana urban slum under ward 37, borough V of Kolkata Municipal Corporation. The study area was the urban field practice area of the department of Community Medicine, Medical College & Hospital Kolkata. Simple random sampling method was followed for selection of study subjects. In a study done by Shuba Kumar et al in 7 sites in India, prevalence of poor mental health was 40%.⁵ So, assuming prevalence of poor mental health as 40%, a confidence level of 95%, 20% allowable error and 10% non-response rate, sample size was calculated by using the formula, $n = Z\alpha^2 * p * q / d^2$ and it came to 158. Those who were seriously ill person and refused to participate were excluded from the study. To measure mental morbidity, a self report questionnaire (SRQ) was used. The SRQ (Harding et al, 1980) was a standardized self-report questionnaire used to screen for common mental disorders and had been widely used in primary care. Its focus was psychological components of ill health. It indicates if the responder was a potential psychiatric case. The SRQ was originally developed by the WHO as a screening research instrument for the detection of psychiatric morbidity across different cultures including Bengali version.⁶ A predesigned, pretested semi structured questionnaire was used for collecting background information from the respondents. The study was initiated after obtaining clearance from the Institutional ethics committee. A pilot study was conducted in a similar community setting to assess the feasibility, acceptability and reliability of the tool. Target population in this study was adults who were permanently residing in that slum area. The names of the households were

collected from family folders and serially arranged. Families were selected randomly till a sample size of 158, aged ≥ 18 years and ≤ 60 years was reached from amongst the members of the family. Informed verbal consent was obtained from each participant before collecting information. Some background data (age, sex, working status, occupation, educational status, marital status, type of family, number of family members, monthly family income, tobacco chewing, alcohol consumption etc.) was collected. Mental morbidity was assessed with the help of SRQ. It consisted of 24 short questions that required a “yes” or “no” response, depending on the presence or absence of symptoms. The respondent was considered to be a potential psychiatric case if the total number of “yes” answers to the first 20 questions (non-psychotic items) reached a value $=7$ or >7 (cut-off point), or if there was at least one “yes” answer to any of the four remaining “psychotic” items, or if both criteria were met (Al-Subaie et al, 1998).⁷ Prevalence of potential psychiatric case was determined by the above mentioned criteria and was depicted in percentage and table. Chi-square test was used to analyze the different factors associated with the prevalence of potential psychiatric case.

III. Results

In this community based, cross-sectional descriptive study with simple random sampling, conducted to determine the prevalence of mental morbidities and its association with socio-demographic factors among the slum dwellers of ward 37, borough V of Kolkata Municipal Corporation, the following data were obtained. The data were analyzed using Chi-square test and the results were recorded as Fisher’s Exact p-values. Tables were used for comprehensive viewing of the results. A p-value of <0.05 was taken as the criteria for significance. About 34.5% of the study population belonged to age group 20-39 years followed by ≥ 60 years. The total male-female ratio was almost same with maximum males & females belonging to the age group 20-39 years. The mean age of the population was 29.4 ± 3.6 years. 47% of the study population was wage earner followed by housewife who constituted 26%. Students and unemployed formed 14% and 13% of the study population respectively. 40% of study population was literate with 1 – 4 years of formal education. 37% of the study population was illiterate. Formal education for 5 – 10 years was received by 19% of the study population. 5% had received formal education for >10 years and only one graduate was found in the study population. Maximum portion (63.9%) of study population was married and 30% were unmarried. Widow/divorcee formed 6% of the study population. Potential psychiatric case was about 40.3% in ≥ 60 year’s age and 18.5% in 40 – 59 years age group. This was followed by 14.5% for people aged 20 – 39 years. Statistically significant association was found between the age of the individual and potential psychiatric case (p value-0.002). Prevalence of Potential psychiatric case in females was greater than double the prevalence in males. In literate prevalence was less than illiterate. Statistically significant association was found between the sex and educational status of the individual and potential psychiatric case. 24.7% of married person was potential psychiatric case while it was about 12.7% and 50% for unmarried and divorcee/widow respectively. Thus much high prevalence of potential psychiatric case was seen in among unmarried and divorcee/widow person. The prevalence in married was almost double of that in unmarried. Statistically significant association was found between the marital status of the individual and potential psychiatric case (p value-0.028). Potential psychiatric case was about 31.1% in unemployed/housewife. It was 20.3% in wage earners and 8.6% in student. Thus it was higher in unemployed/housewife followed by wage earners and was least in students. However statistically significant association was not found between the occupation of the individual and potential psychiatric case. 26.3% of tobacco consumers were potential psychiatric case while potential psychiatric case was 19.5% in people who didn’t consume tobacco. 31.1% of alcohol consumers were potential psychiatric case while potential psychiatric case was 20.9% in people who didn’t consume alcohol. However statistically significant association was not found between potential psychiatric case and tobacco or alcohol consumption by the individual. The prevalence of potential psychiatric case in joint family was greater than double the prevalence in nuclear family. Statistically significant association was found between the family type of the individual and potential psychiatric case. Potential psychiatric case was 37.5% in individuals with monthly family income $>10,000$ followed by about 27.8% in 0-5000. It was 12.6% in individuals with monthly family income 5001-10,000. Statistically significant association was found between the monthly family income of the individual and potential psychiatric case (p value-0.033). The prevalence of potential psychiatric case was 23% among the study population.

IV. Tables

Table 1: Distribution of study population according to age and sex (n=158)

| Age in years | Sex | | Total Number (Percentage) |
|--------------|-----------|-----------|---------------------------|
| | Male | Female | |
| ≤ 19 | 08 (05.1) | 16 (10.1) | 24 (15.2) |
| 20 – 39 | 32 (20.2) | 23 (14.6) | 55 (34.8) |
| 40 – 59 | 13 (08.2) | 14 (08.9) | 27 (17.1) |
| ≥ 60 | 27 (17.1) | 25 (15.8) | 52 (32.9) |
| Total | 80 (50.6) | 78 (49.4) | 158 (100) |

Table 2: Distribution of study population according to history of addiction (n=158)

| History of addiction | Number | Percentage |
|----------------------|--------|------------|
| Tobacco consumption | | |
| Yes | 76 | 48.1 |
| No | 82 | 51.9 |
| Alcohol consumption | | |
| Yes | 29 | 18.3 |
| No | 129 | 81.7 |

Table 3: Distribution of study population according to potential psychiatric case (n=158)

| Potential psychiatric case | Number | Percentage |
|----------------------------|--------|------------|
| Yes | 36 | 22.8 |
| No | 122 | 77.2 |
| Total | 158 | 100.0 |

Table 4: Association between potential psychiatric case and socio-demographic variables (n=158)

| Socio-demographic variables | Potential psychiatric case | | χ^2 p value |
|-----------------------------|----------------------------|-----|---------------------|
| | Yes | No | |
| Age in years | | | |
| ≤ 19 | 2 | 22 | 14.41 |
| 20 – 39 | 8 | 47 | 0.002 |
| 40 – 59 | 5 | 22 | |
| ≥ 60 | 21 | 31 | |
| Gender | | | |
| Male | 11 | 69 | 7.52 |
| Female | 25 | 53 | 0.006 |
| Educational status | | | |
| Illiterate | 20 | 39 | 6.61 |
| Literate | 16 | 83 | 0.010 |
| Marital status | | | |
| Married | 25 | 76 | 7.11 |
| Unmarried | 6 | 41 | 0.028 |
| Divorce/widow | 5 | 05 | |
| Occupation | | | |
| Wage earner | 15 | 59 | 5.29 |
| Unemployed/housewife | 19 | 42 | 0.071 |
| Student | 2 | 21 | |
| Type of family | | | |
| Nuclear | 09 | 47 | 2.22 |
| Joint | 27 | 75 | 0.038 |
| Monthly family income (Rs) | | | |
| < 5000 | 22 | 57 | 6.76 |
| 5000 – 10000 | 08 | 55 | 0.033 |
| > 10000 | 06 | 10 | |
| Tobacco consumption | | | |
| Yes | 20 | 56 | 1.04 |
| No | 16 | 66 | 0.308 |
| Alcohol consumption | | | |
| Yes | 09 | 20 | 1.37 |
| No | 27 | 102 | 0.241 |

V. Discussion

The socio-physical environment of slums is diverse and can compromise health in a variety of ways. This study determined the prevalence of mental morbidity and analyzed the determinants of potential psychiatric case among the slum dwellers in Kolkata Municipal Corporation are of West Bengal. It was found that mental morbidity was unequally distributed among the population. About 34.5% of the study population belonged to age group 20-39 years followed by ≥ 60 years. The maximum males & females belonging to the age group 20-39. The mean age of the population was 29.4±3.6 years. The male-female ratio was found to be almost same, which is one of the positive aspects of this study. This might be due to the increasing consciousness regarding saving of girl child. About 47% of the population was wage earners and 26% were housewives. This is because a good proportion of women were working as cook, maid, in hospital etc. On assessment by the SRQ it was found that 22.8% of the study population was potential psychiatric case. Epidemiological studies report prevalence of psychiatric disorders from 9.5 to 370/1000 populations in India. In a study by Lima MS et al conducted in Brazil on 1277 population using SRQ showed that 22.7% people were suffering from mental morbidity which is quite close to the value obtained here.⁸ However adequate studies using the SRQ have not been conducted in this part of the world. But, still it may be determined that the prevalence of potential psychiatric case is significantly high and various factors may be associated with this high prevalence of potential

psychiatric case. Crick Lund et al⁹ showed variables such as education, housing; social class, socio-economic status and financial stress exhibit a relatively consistent and strong association with CMD. The study revealed that the psychiatric prevalence was about 40.3% in ≥ 60 year's age and 18.5% in 40-59 years age group. This was followed by 14.5% for people aged 20-39 years. Somewhat similar results were found in a study on gender and mental health in Kerala.¹⁰ It was found that well being diminished with health. However psychiatric disorders were more in 20-39 years aged woman than 40-59 years. The increase in mental distress in the age of ≥ 60 years may be as elderly were more prone to psychological problems and depression was the commonest geriatric psychiatric disorder. Wellbeing of elderly woman was also affected by widowhood in old age. That age was related to mental wellbeing was also depicted in a study on mental health in slums of Dhaka- a geo-epidemiological study.¹¹ Mean BSI scores increase with age in both men and women was shown in a study on stress and psychiatric disorder in urban Rawalpindi. This was also comparable to observations made in a study on the prevalence of depression among pre-university college students in an urban area of South India. The study showed statistically significant association between the sex of the individual and potential psychiatric case (p value-0.006). In the study on Gender and Mental health in Kerala¹⁰, it was shown that the mean subjective wellbeing score for men was 17.35 and was significantly lower than 17.9 of females. This difference was also statistically significant. Similar association was seen in a study on mental health in slums of Dhaka.¹¹ In a study on stress and psychiatric disorder in urban Rawalpindi woman were found to have higher BSI scores than men in every age band. No such association was however found in the study on the prevalence of depression among pre-university college students in an urban area of South India.¹² Statistically significant association was found between the educational status of the individual and potential psychiatric case (p value-0.010). Thus as one would expect, education has a positive influence on the well being of subjects. This fact is also supported by the study on Gender and Mental health in Kerala¹⁰ i.e. higher the level of educational attainment, the higher is the sense of wellbeing. That with literacy comes sense of well being had also been shown in. Lower levels of education were associated with higher BSI in a study on stress and psychiatric disorder in urban Rawalpindi. As shown in the study in on Gender and Mental health in Kerala¹⁰ here too marriage seemed to have a negative impact on the sense of wellbeing of individuals. Potential psychiatric case was about 24.7% and 12.7% for married and unmarried respectively while in divorcee/widow it was 50%. The prevalence in married was almost double of that in unmarried. This may be due to the stress which arises as a result of responsibilities of married life. Statistically significant association was found between the marital status of the individual and potential psychiatric case (p value-0.028). The much high prevalence of potential psychiatric case was seen in divorcee/widow may also be linked to the increase in potential psychiatric case with age. The study showed prevalence of potential psychiatric case in joint family was greater than double the prevalence in nuclear family. Statistically significant association was found between the family type of the individual and potential psychiatric case (p value-0.038). This may be attributed to increase in number of family members and presence of in-laws. There may also be distribution of income in the joint family among greater number of family members leading to such results.

VI. Conclusion and Recommendation

Mental health conditions are of great concern in this 21st century as they form an important component of the global burden of disease. From this study the mental status of the slum dwellers of Kolkata Municipal Corporation area, West Bengal, was unfolded. It was seen that the prevalence of potential psychiatric case was significantly high (23%). Various factors like age, sex, educational status, marital status etc were identified to correlate with emotional distress. However the study had some limitations like recall bias and high allowable error (20%). It was a cross-sectional design of study. A longitudinal study would help in better assessment of the situation.

Acknowledgement

Authors are thankful to the ethics committee of Medical College for giving permission to undertake the study. Special thanks go to the participants of this research work for sharing their valued information.

References

- [1] The ICD-10 classification of mental and behavioral disorders. Geneva: World Health Organization; 1992.
- [2] Sartorius. N (1993), Bull WHO, 61(1)5
- [3] The ICD-10 classification of mental and behavioral disorders. Geneva: World Health Murry C, Lopez A. The global burden of disease vol.1 A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard University press 1996.
- [4] Izutsu T, Tsutsumi A, Islam AM, Kato S, Wakai S, Kurita H: Mental health, quality of life, and nutritional status of adolescents in Dhaka, Bangladesh: Comparison between an urban slum and a non-slum area. Soc Sci Med 2006, 63:1477-88.
- [5] Domestic violence and its mental health correlates in Indian women. The British Journal of Psychiatry (2005) 187: 62-67
- [6] Choudhury, A Brahma & D. Sanyal the validation of the Bengali version of the self reporting questionnaires (SRQ), Indian J Psychiatry 2001:43.

- [7] Al-Subaie A, Mohammed K, Al-Malik T. The Arabic Self-Reporting Questionnaire (SRQ) as a psychiatric screening instrument in medical patients. *Ann Saudi Med* 1998; 18(4):308-10
- [8] Lima MS, Beria JU, Tomasi E, Conceicao AT, Mari JJ. Stressful life events and minor psychiatric disorders: an estimate of the population attributable fraction in a Brazilian community-based study. *International Journal of Psychiatry in Medicine* 1996; 26:213-24.
- [9] Crick Lund, Alison Breen, Alan J. Flisher, Ritsuko Kakuma, Joanne Corrigan, John A. Joska, Leslie Swartz, Vikram Patel, Poverty and common mental disorders in low and middle income countries: A systematic review *Social Science & Medicine*;71(3):517-28
- [10] E Mohamed, S Irudaya Rajan, K Anil Kumar, P M Saidu Mohammed: Gender and Mental health in Kerala; December 2002
- [11] Gruebner et al. *BMC Public Health* 2012, 12:177
- [12] Joseph N: Prevalence of depression among pre-university college students in an urban area of South India. *International Journal of Current Research* October 2011;3(11)