

## Assessment of Morbidity Profile in a Slum Community in Kolkata

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### Abstract

**Background:** In cities of India, almost one fifth people live in slums. Still these are the neglected portions of the community. Morbidity survey may give an overall picture of the condition of the population under study

**Objective:** To assess the morbidity profile of the study population and to find out the association between socio-demographic characteristics and morbidity profile of the study population

**Methodology:** It was a community based, observational, descriptive study; cross-sectional in design; conducted in Arpuli Lane, a slum area in ward no.40 of Kolkata Municipal Corporation during February to April of 2016. Slum dwellers of all age groups in the study area constituted the study population. Participants were selected applying inclusion and exclusion criteria. Data was collected by house to house visit and face to face interview of the subjects using a pre-designed, pre-tested, semi-structured interview schedule. Analysis was done in Statistical Packages for Social Sciences (SPSS) version 19. Chi-square test was done to examine the statistical significance.

**Result:** Overall 51.7% study subjects were either suffering from or had a history of one or more illness in previous one month. Pallor (16.1%), hypertension (14.4%) and arthritis (12.7%) were the three most common morbidities encountered in the study subjects. Age, education and per-capita monthly income had statistically significant influence on the morbidity profile of the study population.

**Conclusion:** Considering the high morbidity of the slum dwellers, special clinics should be arranged for treatment of common morbidities and health promotional activities should be undertaken to improve their health status

**Keywords:** Morbidity profile, Slum, Urban, Kolkata.

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### I. Introduction

Urban slum is one of the most disadvantaged sections of the society. The slums in India are unsystematically developed and grossly neglected with insufficient civic amenities. Existence of slums is a clear indication of poverty and the population residing in the slums are termed as urban poor. Rural population which migrate to urban areas in search of employment or better living conditions find no place to live in and ultimately settles in unhygienic housing clusters in cities. Overcrowding, lack of hygiene, poor sanitary conditions, high density of insects and rodents, lack of facilities for garbage disposal; these are some of the common characteristics of these clusters. The population of slum dwellers has been continuously increasing and their living conditions are deteriorating day by day. These conditions make the slum dwellers more prone to morbidity. Substance use is another major health issue in the slums. Morbidity survey may give an overall picture of the health condition of the population under study. The present study is an attempt to study morbidity profile in a slum population in Kolkata

### II. Methodology

It was a community based observational, descriptive study; cross-sectional in design; conducted in Arpuli Lane, a slum area in ward no.40 of Kolkata Municipal Corporation during February to April 2016. The area was selected because it is the urban field practice area of the department of Community Medicine, Medical College, Kolkata. Slum dwellers of all age groups residing in the study area during the study period constituted the study population. Subjects were selected to participate in the study applying inclusion and exclusion criteria. Inclusion criteria included inhabitants of the slum giving informed verbal consent to participate in the study whereas inhabitants who were not available for data collection for two consecutive visits were excluded from the study. Total two months were available for data collection. Considering one day per week total eight days were available for collection of data. It was feasible to visit four families per day; total 32 families were visited. These families were selected from a list of 207 families by simple random sampling method and all members of the selected families were considered as study subjects. Data collection was done through house to house visit and face to face interview of the head and/or other members of the family using a pre-designed, pre-tested, semi-structured interview schedule. For morbidity data, clinical examinations were done in addition. Cross-

checking of medical records was undertaken if available. Enquiry was done about history of any morbidity in the previous one month. The respondents were explained regarding the purpose of the study and verbal informed consent were taken. Collected data was compiled and analyzed in SPSS, version19 software. Chi-square test was used to study the association between morbidity profile and different socio-demographic variables. Significance level was considered at p value <0.05

### III. Result

In the present study 118 slum dwellers were studied and among them 58(49.2%) were males and 60 (50.8%) were females. Mean age of the participants was 35.36±18.65 years. Religion and caste-wise 112 (94.9%) were Hindu and 78 (66.1%) participants were from general caste. Among the study subjects 20 (18.19%) were illiterate whereas 28 (25.45%) were educated up to high school level. Joint families were seen among 68 (57.6%) participants and 74 (62.7%) were residents of pucca house. It was found that 29 (50.0%) males and 32 (53.3%) females were either suffering from or had a history of one or more illness in the previous one month. The morbidity for both sexes was 51.7%. Total 19 (16.1%) participants had pallor and all of them were female. Around 17(14.4%) were suffering from hypertension, 15 (12.7%) from arthritis, 10 (8.5%) subjects each from acute respiratory tract infection and dental caries, 6 (5.1%) subjects each from fever and diabetes mellitus, 4 (3.4%) subjects each from acute diarrheal disorder, scabies, COPD, hypo/hyperthyroid disorder and 2 (1.7%) participants each were suffering from conjunctivitis, ear discharge, urinary tract infection and some form of injury. None of the subjects in the below 10 year age group had any history of addiction. Among adolescents 4 (21.1%) were smoker and 6 (31.6%) had history of chewing tobacco. Among adult population 24 (34.3%) were smoker, 16 (22.9%) had history of chewing tobacco and 4 (5.7%) were alcoholic whereas among geriatric population 6 (33.3%) were smoker. Sex, religion, caste, occupation, family type, type of house did not have any statistically significant relationship with morbidity profile among the respondents according to the present study. However, age, education and per capita monthly income of the participants had statistically significant relationship with morbidity profile (p<0.05). Illiteracy, age being more than mean age and higher per capita monthly income were found to be significantly associated with morbidity

### IV. Tables And Figures

**Table1.** Socio-Demographic Profile of Study Participants (n=118)

Characteristics	No. (%)	
Age (Years)	<5	8(6.8)
	5-10	3(2.5)
	10-20	19(16.1)
	20-60	70(59.3)
	≥60	18(15.3)
Sex	Male	58(49.2)
	Female	60(50.8)
Religion	Hindu	112(94.9)
	Muslim	6(5.1)
Caste	General	78(66.1)
	SC	30(25.4)
	OBC	10(8.5)
Educational status (n=110)*	Illiterate	20(18.19)
	Primary	26(23.65)
	Middle school	18(16.36)
	High school	28(25.45)
	Higher secondary	6(5.45)
	Graduate	12(10.90)
Type of family	Nuclear	50(42.4)
	Joint	68(57.6)
Type of house	Pucca	74(62.7)
	Mixed	44(37.3)

\*Total 110 study participants were aged more than 7 years

**Table 2.** Age wise distribution of study subjects according to addiction. (n=118)

Age group (Yrs)	No. of subjects	Tobacco smoking	Tobacco chewing	Alcohol intake
<10	11	-	-	-
10-20	19	4(21.1)	6(31.6)	-
20-60	70	24(34.3)	16(22.9)	4(5.7)
≥60	18	6(33.3)	-	-
Total	118	34(28.8)	22(18.6)	4(3.4)

**Table 3.** Morbidity profile of the study participants (Multiple responses)

Disease	No. of males suffered (%)	No. of females suffered (%)	Total (%)
Pallor	-	19(31.7)	19(16.1)
Hypertension	8(13.8)	9(15.0)	17(14.4)
Arthritis	4(6.9)	11(18.3)	15(12.7)
ARI	4(6.9)	6(10.0)	10(8.5)
Dental caries	9(15.5)	1(1.7)	10(8.5)
Fever	-	6(10.0)	6(5.1)
Diabetes mellitus	-	6(10.0)	6(5.1)
Acute diarrheal disease	4(6.9)	-	4(3.4)
Scabies	4(6.9)	-	4(3.4)
COPD	4(6.9)	-	4(3.4)
Hypo/hyperthyroid	2(3.4)	2(3.3)	4(3.4)
Conjunctivitis	-	2	2(1.7)
Ear discharge	1(1.7)	1(1.7)	2(1.7)
Urinary tract infection	-	2(3.3)	2(1.7)
Injury	2(3.4)	-	2(1.7)

**Table 4.** Relationship between socio-demographic factors and morbidity profile of study population (n=118)

Characteristics		Morbidity absent (%)	Morbidity present (%)	Total (%)	Odds ratio	Chi-square value	p value	95% CI of OR
Age	<Mean	38(61.3)	24(38.7)	62(100)	3.083	8.822	<0.05	1.452-6.548
	>Mean	19(33.9)	37(66.1)	56(100)				
Sex	Male	29(50.0)	29(50.0)	58(100)	1.143	0.131	0.717	0.555-2.354
	Female	28(46.7)	32(53.3)	60(100)				
Religion	Hindu	55(49.1)	57(50.9)	112(100)	1.930	0.567	0.451	0.340-10.966
	Muslim	2(33.3)	4(66.7)	6(100)				
Education	Literate	52(53.1)	46(46.9)	98(100)	3.391	5.238	<0.05	1.144-10.057
	Illiterate	5(25.0)	15(75.0)	20(100)				
Caste	General	35(44.9)	43(55.1)	78(100)	0.666	1.086	0.297	0.310-1.433
	Reserved	22(55.0)	18(45.0)	40(100)				
Type of family	Nuclear	26(52.0)	24(48.0)	50(100)	1.293	0.474	0.491	0.622-2.688
	Joint	31(45.6)	37(54.4)	68(100)				
PCMI	≥Median	30(39.5)	46(60.5)	76(100)	0.362	6.669	<0.05	0.166-0.791
	<Median	27(64.3)	15(35.7)	42(100)				
Type of house	Pucca	34(45.9)	40(54.1)	74(100)	0.776	0.442	0.506	0.367-1.639
	Mixed	23(52.3)	21(47.7)	44(100)				
Smoking	Non smoker	43(51.2)	41(48.8)	84(100)	1.498	0.972	0.324	0.669-3.354
	Smoker	14(41.2)	20(58.8)	34(100)				
Chewable tobacco	Don't chew	45(46.9)	51(53.1)	96(100)	0.735	0.422	0.516	0.290-1.864
	Chew	12(54.5)	10(45.5)	22(100)				

### V. Discussion

In the current study, 50% males, 53.3% females, overall 51.7% subjects were either suffering from or had a history of one or more disease in last one month. Whereas, in a study at Rajasthan conducted by Dilip Kumar L et.al<sup>(1)</sup>, 31.2% males, 34.6% females, overall 33% subjects were either suffering from or had a history of one or more disease in last 15 days. According to an Ahmadabad based study, conducted by Goswami Mihir et.al<sup>(2)</sup>, 28% males, 33.7% females, overall 30.88% subjects were either suffering from or had any history of disease in last 15 days. Morbidity is higher in the present study in comparison to the other studies. In the present study we considered one month recall period, whereas in the other studies the authors went for two weeks recall period. This might be the reason behind the difference in morbidity prevalence. In the current study, morbidity prevalence is higher among females; this finding is similar with other studies. According to the present study, 8.5% study subjects were suffering from ARI, 16.1% participants had pallor and 31.7% females were found to have pallor. However, in a Rajasthan based study<sup>(1)</sup>, 8.8% of the participants were suffering from ARI, 8.4% from anemia and 11.2% of the female subjects were found anaemic. In the current study pallor was detected clinically; whereas, other studies mentioned anaemia; probably they adhered to Hb level; this might be the cause of difference. Prevalence of acute respiratory tract infection corroborates with the other study. In a slum-based study at Chennai, conducted by Viswanathan V et.al<sup>(3)</sup>, 17.2% of the participants were suffering from ARI and 30% female subjects were found to be anaemic. As per the current study, in five years above age group 28.8% study subjects were smoker, 18.6% had history of chewing tobacco and 3.4% were alcoholic. Whereas, according to the Rajasthan based study<sup>(1)</sup>, in five years above age group 18.9% subjects were smoker, 38.3% had history of chewing tobacco and 31.2 % were alcoholic. According to another study conducted in slums of

Ahmadabad <sup>(2)</sup>, in five years above age group 27% study subjects were smoker, 9.7% had h/o chewing tobacco and 7.4% were alcoholic. The present study identified higher age, illiteracy and higher per capita income to be significantly associated with morbidity. Bhatnagar et.al <sup>(4)</sup> identified low educational level and low per capita income as important correlates of morbidity. Whereas, Srivastava K et al <sup>(5)</sup> found increasing age to be significantly associated with increased morbidity. Findings of both these studies <sup>(4,5)</sup> corroborate with the finding of the current study except the issue of per capita income. In the current study higher per capita income was found to be significantly associated with morbidity. This finding may be due to presence of other confounding variables or higher per capita income gives rise to increased access to health facility and higher rate of disease detection and as a result higher prevalence of morbidity. Many non communicable diseases are more common in affluent societies with higher per capita income. According to the present study, 94.4% of elderly participants were suffering from one or more disease. As per the study conducted by Srivastava K et al <sup>(5)</sup> 89.2% of elderly subjects were having morbidity in an urban area of Agra.

## **VI. Conclusion**

Overall 51.7% subjects were either suffering from or had any history of one or more diseases in the previous one month. Pallor (16.1%), hypertension (14.4%) and arthritis (12.7%) are three most common morbidities encountered in the study population. Pallor & arthritis were mainly prevalent among female and dental caries found in higher proportion among male; whereas, hypertension was almost equally prevalent among the both sexes. Age, education and per capita monthly income were significantly associated with morbidity profile of the study population. Considering the high morbidity of the slum dwellers, special efforts are needed to improve their health status. Health promotional activities should be undertaken and facilities should be arranged in slums for treatment of common morbidities. The study was conducted over a period of three months. A longer study period was necessary to reveal the seasonal variation of diseases. Apart from socio-demographic variables there are many other factors influencing the occurrence of diseases; which were not taken into consideration in the present study. For morbidity data respondents were asked to recall health related events; potential for recall bias.

## **Acknowledgement**

The authors would like to thank all the subjects who enthusiastically participated and provided valuable information for the successful completion of the study. Authors are grateful to the Department of Community Medicine, Medical College, Kolkata for guidance, continuous support and valuable suggestions.

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