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PREVALENCE AND PATTERN OF PSYCHIATRIC DISORDERS IN URBAN POPULATION OF INDORE CITY

Epidemiology

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ABSTRACT

Background: This study aims to estimate the prevalence of psychiatric disorders and study their association with various socioeconomic variables. This study include door to door sampling methods and also included a large population compared to previous study.

Materials and Methods: This was a cross-sectional study of the urban population residing in Indore was carried out (n = 2512). MINI kid or MINI plus were administered to all subjects according to the age group.

Results: It was found that 25.6% of the subjects were suffering from one or more diagnosable psychiatric disorder. Prevalence of substance use disorders was found to be 14.1% and 2.4% for depressive disorders.

Conclusion: Our study is among the very few epidemiological studies with respect to methodological design which evaluates each subject with detailed administration of MINI. It concluded that one among four were suffering from a psychiatric disorder.

KEYWORDS

Prevalence, psychiatric disorders, India, epidemiological study

INTRODUCTION

Mental health is a level of psychological well-being, or an absence of a mental illness. It is the "psychological state of someone who is functioning at a satisfactory level of emotional and behavioral adjustment". From the perspective of positive psychology or holism, mental health may include an individual's ability to enjoy life, and create a balance between life activities and efforts to achieve psychological resilience[1].

According to the World Health Organization, mental health includes "subjective well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence, and self-actualization of one's intellectual and emotional potential, among others[2]."

The World Health Organization (WHO) Global Burden of Disease Study has estimated that psychiatric disorders are among the most burdensome, around the globe and are likely to increase in subsequent decades. However these projections are based mostly on review of literature, and general population surveys are the need of the hour.[3-5]

This study include door to door sampling methods and also included a large populations compared to previous study. In this study screening tool MINI use for evaluation of psychiatric illness in community which has very high validity and reliability as a diagnostic tool. This is a first epidemiological study over psychiatric illness in central India in urban population, in which we have taken 500 families from urban population of Indore in which each and every member of the family has been screened irrespective of age and sex.

MATERIALAND METHODS

This cross-sectional study was carried out in 500 families of Indore city of Madhya Pradesh from 4 different wards under Indore Municipal Corporation, from each direction of the city. In each ward, equal number of families were taken from urban and slum populations, so, about 125 families per ward were divided in urban and slum populations. With the help of comprehensive interview schedules and door to door surveys, the prevalence and pattern of psychiatric disorders were assessed in the above mentioned urban population. The study was conducted under the guidance of department of psychiatry, M.G.M. Medical College, Indore (M.P.). The entire team visited each and every house. A formal introduction of the individuals in the team and objectives of the study were given. We have screened total 500 families in 4 different wards of Indore city in which 2512 persons are screened. In which 1130 persons are from urban sub group and 1382 persons are from slum sub group.

Sociodemographic data were collected as per the prepared standard questionnaire. General Health Questionnaire (GHQ12) is used as screening questionnaires. All the subjects who have shown distress in GHQ12 were administered mini international neuropsychiatric interview (MINI), MINI Kid was applied for subjects <18 years and MINI Plus was applied for subjects above 18. The tools used were (1) Sociodemographic data pro forma; (2) General Health Questionnaire (GHQ12)[6] (3) MINI 6 (Mini International Psychiatric Interview) [7] (4) MINI KID[7](Mini International Psychiatric Interview for Children and Adolescents). Contingency coefficient tests were applied to study the association using SPSS for windows (version 16.0).

RESULTS

We have screened total 2512 persons in which 1357 persons were males and 1155 persons were females (598 males and 532 females in urban subgroup and 759 males and 623 females were in slum subgroup). In both urban and slum sub groups, most of the persons were from 17-39 age group (42.1% in urban subgroup and 38.1% in slum sub group). In urban subgroup, most of the persons belongs to > rs. 10000 income group (44%) but in slum sub group majority of the persons were from rs. 1000-5000 income group (41.3%). Most of them were married in both sub groups (54.5% and 41.2% respectively), illiterates were only 9.1% in urban subgroup while in slums 26.9% were illiterates. In urban subgroup, 42% families were nuclear while in slum sub group, majority of the families were joint and extended (40.6%). In urban subgroup, only 11% population were unemployed while in slum, 26.9% were unemployed.

Prevalence of psychiatric disorders among (*n* = 2512) in urban population

In present study, a total of 2512 people were included. Among those, total 645 people were found to be suffering from psychiatric disorders giving an overall prevalence rate of 256.7/1000.

Table 1: psychiatric disorders and total prevalence in urban population (n=1130)

Psychiatric disorders (Mini diagnosis)	No. of patients	Percent	Prevalence /1000
Major Depressive Episode	23	2.3%	23
Dysthymia	2	0.17%	1.7
Suicidality	1	0.08%	0.8
Manic episode	1	0.08%	0.8
Bipolar disorder	10	0.8%	8
Obsessive compulsive disorder	3	0.26%	2.6
Alcohol dependence	50	4.4%	44
Alcohol abuse	37	3.2%	32
Substance dependence (non-alcohol)	87	7.7%	77
Substance abuse (non-alcohol)	22	1.94%	19.4
Psychotic disorders	25	2.2%	22
Generalized anxiety disorder	18	1.6%	16
ADHD	2	0.17%	1.7
Conduct disorder	3	0.26%	2.6
Oppositional defiant disorder	2	0.17%	1.7
Total	**282**	**24.9%**	**249.5**

The table 1 describes the distribution of various disorders in the urban population under study. 282 people were presented with psychiatric disorders out of 1130 people screened. So, a prevalence of 249.5 per 1000 was found in the urban population.

Table 2: psychiatric disorders and total prevalence in slum population (n=1382)

Psychiatric disorders (Mini diagnosis)	No. of patients	Percent	Prevalence /1000
Major Depressive Episode	30	2.3%	23
Dysthymia	4	0.31%	3.1
Suicidality	2	0.15%	1.5
Manic episode	3	0.23%	2.2
Bipolar disorder	14	1.9%	1.9
Obsessive compulsive disorder	1	0.08%	0.8
Alcohol dependence	66	5.1%	51
Alcohol abuse	39	3.2%	32
Substance dependence (non-alcohol)	130	10.4%	104
Substance abuse (non-alcohol)	28	2.2%	22
Psychotic disorders	14	1.1%	11
Generalized anxiety disorder	11	0.8%	8
ADHD	1	0.08%	0.8
Conduct disorder	4	0.31%	3.1
Oppositional defiant disorder	5	0.39%	3.9
	363	**26.2%**	**262.6**

The table 2 describes the distribution of various disorders in the slum population under study. 363 people were presented with psychiatric disorders out of 1382 people screened. So, a prevalence of 262.6 per 1000 was found in the slum population. The highest psychiatric morbidity was found in 17-39 years age group (9.2% of total population) followed by 40-59 years age group (6.4% of total population). Married population had almost a two-fold higher prevalence of psychiatric disorders in both sub groups. This finding has to be interpreted keeping in mind the fact that, the unmarried population mainly considered children and adults below 25 years of age. Literates had higher prevalence of psychiatric disorders compared to those uneducated (upto under-graduation/graduation). Analysis of psychiatric disorders based on occupation showed that the unemployed and daily wage workers had the highest prevalence of psychiatric disorders compared to those who had a salaried occupation or did business. Those living alone had the highest prevalence of psychiatric disorders, followed by those living in nuclear family, and the least number of psychiatric disorders were observed in those living in a joint family. Also, psychiatric disorders were more prevalent in the upper class and lower class compared to the middle socioeconomic class.

Substance abuse disorders included both alcohol and non -alcohol (both abuse and dependence), which together showed a prevalence of 17.2% (172/1000 population) in urban and 20.9% (209/1000) in slum sub group. Depressive disorders included major depressive disorder and dysthymia, which together showed a prevalence of 2.4% (approx. same in both sub groups). Depression and anxiety disorders were more prevalent among females; substance abuse/dependence were more prevalent among males. More than 41% of the subjects who consumed alcohol had a diagnosable psychiatric disorder.

DISCUSSION

Our study found that 25.6% of the subjects were suffering from a diagnosable psychiatric disorder. An epidemiological study by Dube[8] in 1970 has reported prevalence of psychiatric disorders to be 1.82% (18.24/1000 population). Sethi *et al.*[9] conducted a study in a rural population in 1972 and reported prevalence of psychiatric disorders to be 3.9% (39/1000). Shah *et al*.[10] conducted a study in Ahmedabad in late 1970s, on a population of 2712 and showed the prevalence of psychiatric disorders to be 4.7%; he suggested more than two-fold rise in psychiatric disorders within the same decade. Another study by Premarajan *et al*.[11] in 1993 reported a prevalence of 9.94% (99.4/1000). A trend of continuous increase in the prevalence of psychiatric disorders with time can be noted by the above study findings. Substantiating the above observation Murray and Lopez [12] from their study in 1996 found mental and behavioral disorders to be increasing in the population and even World Health Organization has published similar reports of increase in incidence of psychiatric disorders with time.[13] Our study reported higher prevalence rates compared with other Indian epidemiological studies, can also be a reflection of constantly increasing psychiatric disorders since 1970s. Although our findings of psychiatric prevalence rates are higher in comparison to previous Indian studies, it is in accordance with the western epidemiological study findings.[14-16]

Many studies have estimated the prevalence of depression in community samples and the prevalence rates have varied from 1.7 to 74/1000 population. [17-20] A large population-based study from South India, which screened more than 24,000 subjects in Chennai using Patient Health Questionnaire-12 reported overall prevalence of depression to be 15.1% (151/1000 population).[21] Nandi *et al.*[22] compared the prevalence of depression in the same catchment area after a period of 20 years (first in 1972 and then in 1992) and reported that the prevalence of depression increased from 49.93/1000 population to 73.97/1000 population. The above study findings by Nandi *et al.*[22] can help understand our study findings of 148/1000 population in year 2012 from 74/1000 population in 1992.

A meta-analysis of 15 epidemiological studies (on psychiatric disorders), by Ganguli [17] in India, found the prevalence rate of anxiety neurosis to be 16.5 (16.5/1000 population). Similar findings were reported in a meta-analysis by Reddy and Chandrashekhar.[19] Madhav conducted analysis of 10 Indian studies on psychiatric morbidity and concluded prevalence rates for anxiety neurosis and hysteria to be 18.5 and 4.1/1000 population respectively.[23] Except for hysteria, the prevalence rates of various anxiety disorders included in the anxiety disorder spectrum were not separately assessed in most of these studies.[24]

Our study findings show that psychiatric disorders increase with increasing age and more than 50% of the population above 40 years suffer from a diagnosable psychiatric disorder, is in accordance with the findings of the other studies. Increased psychiatric morbidity with advancing age has been reported by many studies.[25-28]

Depression and anxiety disorders were more prevalent among females, substance abuse/dependence were more prevalent among males. Sethi *et al*. [9] and Nandi *et al*. [29] have also reported a higher psychiatric morbidity particularly of neurosis and depression among females. Hagnell [30] findings were similar to our study; that depression and anxiety disorders are more prevalent among females than males. Gender specific risk factors for psychiatric disorders that disproportionately affect women are gender-based violence, pregnancy and menopause, socioeconomic disadvantage, low income and income inequality, low or subordinate social status and rank, and unremitting responsibility for the care of others. Studies have shown that there is a positive relationship between the frequency and severity of above mentioned social factors and prevalence of mental health problems in women.[31-35]

Taking account of family structure showed that those living alone had the highest prevalence of psychiatric disorders followed by those living in nuclear family and the least number of psychiatric disorders were observed in those living in joint family. Leff *et al.*[36] suggested that traditional joint families allow for diffusion of burden and could be responsible for mediating a positive outcome regarding mental health disorders. Many studies carried out on the role of the family structure in relation to mental health have found that the nuclear family structure is more likely to be associated with psychiatric disorders than the joint family structure.[37,38,39]

In our study, psychiatric disorders were more prevalent in upper class and lower class compared with middle socioeconomic class. A study done in Ahmedabad concluded that the extreme poles of socioeconomic scale, that is, lower class families and upper class families are more susceptible to psychiatric disorders, possibly because these families are more exposed to stressful living. [44] Contrary to the above findings, there are a few studies, which did not find any positive relationship between social class and mental illness. [40, 41] Thacore found higher morbidity in middle and upper social class. [42] Hollingshead and Redlichin in the New Haven study found that higher the social class, higher the neuroses and lower the social class, higher the psychoses. [43]

CONCLUSION

It is the first psychiatric epidemiological study in central India, covering the major psychiatric disorders, all age groups and a large

population in urban area. This study may have a key role in policy making and for future psychiatric research in this area.

As per the study findings, approximately one out of four subjects had a psychiatric disorder. If the same prevalence is approximated to the overall population of India (total population as per 2011 census, the subjects with a diagnosable psychiatric disorder might be up to 25-30 crores (250-300 million). This figure emphasizes the quintessential need to upgrade the existing mental health training and treatment facilities.

Our study is among the very few epidemiological studies with respect to methodological design, and evaluating each subject with detail administration of MINI and other set of questionnaires. Our study concluded that 25.6% of the subjects were suffering from one or more diagnosable psychiatric disorder. The need of the hour is in addressing major challenges such as lack of mental health professionals, societal stigma, and deficits in financial aid, which are the major threats for providing a comprehensive psychiatric care. In spite of best efforts, the ratio between psychiatrists and general population is worsening day-by-day. Improving the training of undergraduate medical and nursing students will play a significant role in addressing the increasing psychiatric morbidity.

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