Prevalence and severity of self-reported depression in urban population of Uttar Pradesh

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Abstract

Background: Depression is a usual mental health disturbance that exhibits depressed frame of mind, absence of attention, or happiness. Today, depression is estimated to affect 350 million people. There is lack of data on the rates and risk factors of depression in the community; so, it was decided to conduct a study to assess the prevalence of depression and its severity in urban population of Aligarh.

Objective: To estimate the prevalence of depression in the study population and determine its severity in the study population.

Materials and Methods: This study is a part of larger cross-sectional, community-based study carried out in the field practice areas under Urban Health Training Center of the Department of Community Medicine, JN Medical College, Aligarh, Uttar Pradesh, India. A sample size of 360 adults was chosen using systematic random sampling. Face-to-face interviews were then conducted with the study subjects using a semistructured proforma for collecting the data for sociodemographic factors. Assessment of depression and its severity was done using the Hindi version of structured and prevalidated scale, patient health questionnaire-9 (PHQ-9).

Result: The prevalence of depression was 9.7% in the study area, with majority of subjects showing moderate grades of depression. The prevalence of depression was more in female subjects.

Conclusion: This study concluded that there is a clear need to increase mental health services and to integrate this with general health services in our community.

KEY WORDS: Adult, depression, prevalence, sociodemographic, risk factors

Introduction

The WHO defines depression as a common mental health disorder that presents with depressed mood, lack of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration.[1] According to the WHO, sixty-fifth world health assembly, today, depression is estimated to affect 350 million people. The World Mental Health Survey conducted in 17 countries found that, on average, about 1 in 20 people reported showing an episode of depression in the previous year.[2] At its most severe, depression can lead to suicide. A number of risk factors contributing to the occurrence of this disorder have been found. In terms of sociodemographic variables, studies have shown that depression is more common in women, in subjects from poor economic background and subjects with poor nutritional status, those who are divorced or widowed, and those residing in nuclear families and urban areas. It is also seen that prevalence of depression increases with increasing age. Depression is a preventable and curable disease. Many

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prevention programs implemented across the lifespan have provided evidence on the reduction of elevated levels of depressive symptoms. Effective community methods to avert depression concentrate on numerous actions adjoining the firming of shielding aspects and the lessening of risk factors. Examples of strengthening protective factors include programs targeting cognitive, problem-solving and social skills of the adults and adolescents and exercise programs for the elderly persons.[3]

The current data available on the prevalence of depression in the Indian community is inadequate when compared with that available for western countries. Furthermore, research on mental illnesses has been carried out in primary health centers, clinics, outpatient departments, and hospitals of Uttar Pradesh and other parts of the country, but very few community-based studies are done in and around Aligarh. Despite the presence of many government health facilities in Aligarh, there is a lack of data on the rates and severity of mental disorders in the community; so, it was decided to conduct this study to assess the prevalence of depression and its severity in urban population of our registered field practice areas as local studies are needed to collect area-specific data and modify program approach accordingly. The objectives of the study were to determine the prevalence of depression in the study population and assess the severity of depression in the study population.

Materials and Methods

This community-based, cross-sectional study was conducted in the field practice area of urban health training center (UHTC) of the Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh, India. The study period was 6 months (i.e., from July 2013 to Dec 2013).

Inclusion and Exclusion Criteria

All adults (aged ≥19 years) in the registered area (which consisted of six urban localities) under UHTC who gave consent were included in the study, whereas the exclusion criteria constituted of adults (aged ≥19 years) who do not give consent to participate, moribund and severely ill individuals, individuals who are deaf or dumb, household found to be locked, or eligible subjects not present.

Study Tools

A semistructured proforma was used for data collection and consisted of questions based on personal information and data on sociodemographic correlates of depression. Presence of depression was assessed using the Hindi version of pretested, prevalidated, structured, and globally recognized tool, patient health questionnaire-9 (PHQ-9), and a score of five or more was documented as depression. The Hindi version has shown a Kappa coefficient of 0.917. The sensitivity and specificity of the Hindi version was found to be 0.995% and

0.905%, respectively, and the overall accuracy was 0.9753%.[4] A 1-month training period in the Department of Psychiatry was taken under a senior consultant for diagnosing depression using the above questionnaire.

Ethical Issues

A prior permission for conducting the study was taken from the Institutional Ethics Committee Informed consent was taken from each subject before interview. The nature and purpose of the study were explained to them. Confidentiality was assured. Interviews were conducted in a nonhostile and nonjudgemental manner. Local cultural values and ideas were respected. Subjects found to have depression were referred for appropriate management.

Sample Size

Owing to lack of adequate recent literature on prevalence of depression in community-based studies in India, it was decided to conduct a pilot study to obtain an estimated prevalence for calculating the sample.[5,6] A pilot study was conducted on 100 individuals from the study area. Of these 100 individuals, 8 were diagnosed to be showing depression. Therefore, an estimated prevalence of 8.0% was obtained. Sample size for the main study based on the above mentioned pilot prevalence was obtained to be 360, with an allowable error of 3% and including 10% nonresponse.

Sampling

First of all, sample size to be drawn from each urban locality under UHTC was obtained using the probability proportional to size. After that, households were chosen from these areas using systematic random sampling. If the household had more than one adult, then the selection of study subjects was done by simple random sampling by lottery method. If the sampled household had no adult, then the adjacent (immediate next) household was taken for study.

Statistical Analysis

Data entry was done in SPSS software, version 20, and analysis was done as follows: data were presented as frequencies and percentages. The χ^2-test to test the significance of difference between proportions was used wherever required, and value of $p < 0.05$ was taken as significant (95%CI).

Result

Maximum number of respondents belonged to the age group of 45–59 years. Overall, majority of the respondents were female subjects. The study population constituted both Hindus and Muslims (13.1% Hindus and 86.9% Muslims in the study area). Majority of the study subjects were illiterates. About 61.4% families in the urban areas were nuclear. Overcrowding was found in 50% houses. In the study area, majority were from high (45.8%) standard of living index [Table 1].

Table 1: General characteristics of the study subjects

Sociodemographic variables	Urban, *n* (%), *n* = 360
Age group (years)	
19–29	79 (21.9)
30–44	96 (26.7)
45–59	140 (38.9)
≥60	45 (12.5)
Sex	
Male	158 (43.9)
Female	202 (56.1)
Religion	
Hindu	47 (13.1)
Islam	313 (86.9)
Type of family	
Nuclear	221 (61.4)
Joint	129 (35.8)
Living alone	10 (2.8)
Educational status	
Illiterate	141 (39.2)
Primary	78 (21.7)
Junior/high school	78 (21.7)
Intermediate	29 (8.1)
Graduate and above	34 (9.3)
Overcrowding	
Absent	180 (50.0)
Present	180 (50.0)
Dampness	
Absent	69 (19.2)
Present	291 (80.8)
Standard of living index	
Low	47 (13.1)
Medium	148 (41.4)
High	165 (45.8)

The prevalence of depression in this study was found to be 9.7%, that is, 35 of 360 subjects in the study area were depressed. Among the depressed subjects, higher number of subjects were female than male subjects (χ^2 =11.33, *p* = 0.001). Prevalence of depression was found to be 14.3% in female when compared with 4.0% in male subjects. A significant relation was found between age and depression in this study. As the age increases, the rates of depression also increased (χ^2 = 10.378, *p* = 0.016). Highest prevalence of depression was found to be in the >60 years age group (i.e., 22.22%). Marital status showed that widows were the most depressed with a prevalence of 30.0%, followed by divorced/separated subjects (20.0%). Talking about the educational status, among the depressed subjects, majority of subjects were illiterates (χ^2 = 7.96, *p* = 0.047), with the highest prevalence of 14.9%. Depression was also affected by occupational extremes. It was seen in our study that people who
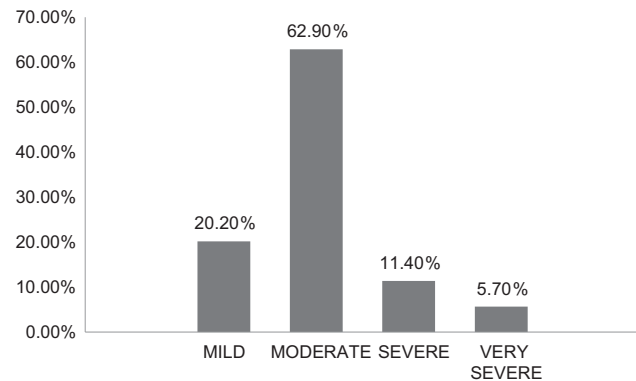
Figure 1: Percentage of grades of severity of depression in the study subjects.

had professional degree were the most depressed, followed by those who were unemployed or retired (prevalence = 31.5%, followed by 13.8%). An inverse relationship between socio-economic status (SES) and depression was found in our study, where subjects with a low standard of living index showed the highest prevalence of depression (29.7%), whereas the lowest rates were found in subjects showing high standard of living index. Among the depressed subjects, majority were living in overcrowded dwellings (χ^2 = 7.1, *p* = 0.008). Higher rates of depression were found in the subjects with over-crowded houses than those with no overcrowding (13.9% vs. 5.55%). Although higher number of the depressed subjects belong to the dwellings having dampness than those without dampness, but this difference was not found to be significant (χ^2 =1.812, *p* = 0.178) [Table 2].

Severity of depression was graded using the standard instrument PHQ-9. Results are shown in Figure 1. Of the total 35 cases of depression, 22 (62.9%) subjects were found to show moderate grade of depression, 7 (20.2%) mild grade depression, 4 (11.4%) severe depression, whereas only 2 (5.7%) were showing very severe depression.

This could be explained as higher number of mild and moderate grade cases are being missed; this may be because mild and moderate cases have very few symptoms, and most of the time do not experience functional impairment or difficulty in carrying daily activities. So, such subjects generally do not go to a physician to seek help.

Discussion

The prevalence of depression was 9.7% in this study. A large epidemiological study (CURES) showed a prevalence of 15.1% in the urban residents of Chennai.[7] The World Health Survey Report, India, also found the prevalence of depression in India to be 16.8% in the urban areas.[9] The high rate of depression in the abovementioned studies could have been owing to very large sample sizes when compared with that of our study and difference in the sociodemographic

Table 2: Prevalence and χ^2 analysis of depression with sociodemographic and other factors

Risk factor	Depression, *N*=360		χ^2	Prevalence of depression (%)
	Present, *n* = 35, *n* (%)	Absent, *n* = 325, *n* (%)		
Sex				
Males (*n* = 158)	6 (17.1)	152 (46.8)	χ^2 = 11.33; *p* = 0.001	4
Females(*n* = 202)	29 (82.9)	173 (53.2)		14.3
Age group (years)				
19–29 (*n* = 79)	5 (14.3)	74 (22.8)	χ^2 = 10.378; *p* = 0.016	6.25
30–44 (*n* = 96)	6 (17.1)	90 (27.7)		6.33
45–59 (*n* = 140)	14 (40.0)	126 (38.7)		10
>60 (*n* = 45)	10 (28.6)	35 (10.8)		22.22
Marital status				
Unmarried (*n* = 26)	3 (8.6)	23 (7.1)	χ^2 = 7.912; *p* = 0.048	11.5
Married (*n* = 51)	24 (68.5)	274 (84.3)		8.1
Divorced/separated (*n* = 25)	5 (14.3)	20 (6.2)		20
Widow (*n* = 11)	3 (8.6)	8 (2.4)		27.3
Educational status				
Illiterate (*n* = 141)	21 (60.1)	120 (36.9)	χ^2 = 7.96; *p* = 0.047	14.9
Primary(*n* = 78)	3 (8.5)	75 (23.0)		3.8
Middle/high school (n=78)	6 (17.1)	72 (22.2)		7.7
Inter and above(*n* = 63)	5 (14.3)	58 (17.9)		7.9
Occupational status				
Homemaker (*n* = 99)	8 (22.8)	91 (28.0)	χ^2 = 13.7; *p* = 0.003	8.08
Unemployed/retired (*n* = 65)	9 (25.8)	56 (17.2)		13.84
Lower occupations (*n* = 177)	12 (34.3)	165 (50.8)		6.8
Professionals (19)	6 (17.1)	13 (4.0)		31.5
Standard of living				
Low (*n* = 47)	14 (40.0)	33 (10.2)	χ^2 = 25.01; *p* = 0.000	29.7
Medium (*n* = 148)	11 (31.4)	137 (42.1)		7.4
High (*n* = 165)	10 (28.6)	155 (47.7)		6.06
Overcrowding				
Absent (*n* = 180)	10 (28.6)	170 (52.3)	χ^2 = 7.12; *p* = 0.008	5.55
Present (*n* = 180)	25 (71.4)	155 (47.7)		13.9
Dampness				
Absent (*n* = 63)	9 (25.7)	54 (16.6)	χ^2 = 1.812; *p* = 0.178	14
Present (*n* = 297)	26 (74.3)	271 (83.4)		9

background of the study subjects. While another study showed that depression showed a prevalence of 5.16% among the urban population in United States (*p* = 0.0171).[10] The lower rates of prevalence in this study when compared with our study could have been resulted owing to use of a different tool for diagnosis of depression, structured clinical interview DSM-IV (SCID) for assessment of clinical depression. It has been well-documented in studies that one of the problems with the use of SCID is lower than expected rates of depression.[11]

Considering the rates among the two sex groups, Poongothai et al.[7], in their study (CURES study), gave supporting results

for our study. In CURES, depression was found to be more prevalent in female than male subjects (17.4% vs. 14.5%). Another study also showed a higher prevalence rate of 15.3% in women when compared with 9.8% in men, which was corroborating our results. Inflated figures of depression prevalence in male subjects may occur owing to sex differences in rates of help seeking for depression and hormonal influences.[12]

In relation to the age of the study subjects, the result of our study was similar to the CURES, which reported that rates of depression were the highest in the >60 years age group

(25.7% for male and 30.6% for female subjects). This could be because of the physical dysfunction and low personal control, which adds to personal and status losses during old age. Our study also showed that, as age increases, the rates of depression also increased. This finding was also in agreement with the finding of the abovementioned study, which showed a steady increasing trend in depression with age [7]

Certain other studies have shown contrasting results when compared with our study. In a study with 12,376 participants, (5,660 male and 6,716 female subjects of >15 years of age), the results showed that highest percentage (14.3%) of depression was found in the 20–24 years age group, whereas lowest rates of 6.3% were found in the age group of > 65 years. These results were found to be highly significant ($p = < 0.0001$). These differences in the results when compared with our study were contributed by break down of the joint family and the emergence of the nuclear family, which explain the occurrence of depression at younger ages owing to reduced family support. Other reasons for these differences could have been different demographic profile, different age groups used, and the use of composite international diagnostic interview (CIDI) developed by the World Mental Health Project to measure depression instead of a standardized questionnaire. CIDI is a very time-consuming and complicated tool; so, it might have been difficult for the elderly respondents to understand it properly, which would have led to underreporting of depression in >65 years of age group.

Our results were also in line with the results of CURES with regard to the marital status of the subjects. The CURES study also reported that the prevalence of depression was more among the widowed (26.6%) and married (15.9%) individuals when compared with unmarried.[7] Another community-based study conducted in the urban slum of Mumbai concluded that 56.5% of the subjects whose spouses have expired were found to be depressed when compared with 38% of the married cases, and this difference was found to be significant ($p < 0.05$).[13]

Considering the SES, supporting results were obtained from the Chennai study, which concluded that prevalence of depression was higher in the low-income group (income, Rs.5,000/month, $100; 15.7%), when compared with the higher-income group (income ranging between Rs.20,000/month, $400; 7.1%) ($\chi^2 = 70.3$, $p = 0.001$).[7] In a meta-analysis of 51 studies done in the past, the results indicated that low-SES individuals showed higher odds of being depressed [odds ratio = 1.81 (95%CI: 1.57–2.10; $p < 0.001$)] than the highest SES individuals [odds ratio = 1.68 (95% CI: 1.49–1.89; $p < 0.001$).[14]

In terms of housing standards, our findings were supported by the findings of the survey done over 500 overcrowded households in Great Britain, which concluded in the report that 86% of the cases with overcrowded dwellings experienced depression.[15] So, this study added supporting results to the previous researches done on the prevalence of depression in the community.

Conclusion

This study concluded that the prevalence of depression was 9.7% in the study area. The reasons for such rates of depression in the study area could have been owing to lack of basic amenities in these areas, and people in the study area also possessed certain sociodemographic characteristics that are significantly related to depression, including female gender, being widow and divorced or separated, illiterate, being unemployed and retired or employed in highly competent, stressing professional works, bad housing conditions such as overcrowding, higher number of female respondents, and nuclear families. However, the limitations of this study was that it is a cross-sectional study; so, it cannot establish a causal association between sociodemographic factors and depression. Yet, this study provides further support to the previous related literature. This study also sheds light on the clear need of increasing and integrating mental health services within general health services in our community. The study also recommends that the need for physician education to enhance knowledge and skills in diagnosis and treatment of depression and its risk factors cannot be ignored.

References

1. World Health Organization. *Depression.* Geneva: WHO, 2012. Available at: http://www.who.int/topics/depression/en/
2. World Health Organization. *Mental Health. Suicide prevention (SUPRE).* Geneva: WHO, 2012. Available at: http:// www .who. int/ mental_ health / prevention /suicide/suicideprevent/en/
3. World Health Organization. *Sixty-Fifth World Health Assembly*. Geneva: WHO, 2012. Available at: http://www.who.int/ media-centre/events /2012/wha65/journal/en/index4.html.
4. Kochhar PH, Rajyadhyaksha SS, Suvarna VR. Translation and validation of brief patient health questionnaire against DSM IV as a tool to diagnose depressive disorder in Indian patients. J Postgrad Med 2007;53(2):102–7.
5. Ross-McGill H, Hewison J, Hirst J, Dowswell T, Holt A, Brunskill P, et al. Antenatal home blood pressure monitoring: a pilot randomised controlled trial. Br J Obstet Gynecol 2000;107(2):217–21.
6. Stevinson C, Ernst E. A pilot study of *Hypericum perforatum* for the treatment of premenstrual syndrome. Br J Obstet Gynecol 2000;107(7):870–6.
7. Poongothai S, Pradeepa R, Ganesan A, Mohan V. Prevalence of depression in a large urban South Indian population—the Chennai Urban Rural Epidemiology Study (CURES-70). PloS One 2009; 4(9):e7185.
8. World Health Organization. *Health System Performance Assessment.* Geneva: WHO, 2006.
9. World Health Organization. *World Health Survey, 2003, India*. New Delhi: International Institute for Population Sciences (IIPS), WHO-India-WR Office, 2006. Available at: http: //www.who.int/ healthinfo/survey/ whs_hspa_book.pdf
10. Probst JC, Laditka SB, Moore CG, Harun N, Powell MP, Baxley EG. Rural-urban differences in depression prevalence: implications for family medicine. Fam Med 2006;38(9):653–60.

11. Gjerdingen D, McGovern P, Center B. Problems with a diagnostic depression interview in a postpartum depression trial. J Am Board Fam Med 2011;24(2):187–93.
12. Danesh NA, Landeen J. Relation between depression and socio-demographic factors. Int J Ment Health Syst 2007;1:4.
13. Jain RK, Aras RY. Depression in geriatric population in urban slums of Mumbai. Indian J Public Health 2007;51(2):112–3.
14. Lorant V, Deliege D, Eaton W, Robert A, Philippot P, Ansseau M. Socioeconomic inequalities in depression: a meta-analysis. Am J Epidemiol 2003;157(2):98–112.
15. Reynolds L. *Shelter: Full House? How Overcrowded Housing Affects Families. Report.* Old street, London, 2005. Available at: http: //england.shelter.org.uk/ professional_resources/ policyand_research/policy_library/policy_library_folder/ full_house_how_overcrowded_housing_affects_families