Depression and its socio-demographic correlates among urban slum dwellers of North India: A cross-sectional study

Neeraj Pawar¹, Neelam Kumar², Vikram A³, Sembagamutthu Sembiah¹, Gaurav Rajawat⁴

¹Department of Community and Family Medicine AIIMS, Bhopal, Madhya Pradesh, ²Department of Community Medicine, PGIMS Rohtak, Haryana, ³Department of Community Medicine, Tagore Medical College and Hospital, Chennai, Tamil Nadu, ⁴Post-Doctoral Fellow, Preventive and Clinical Cardiology, Medanta, Gurugram, Haryana, India

Abstract

Background: Depression is a common mental health disorder that is characterized by loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration, insomnia or hypersomnia, and occasionally suicidal thoughts. Apart from biological factors, sociocultural factors also play a key role in development of depression **Objectives:** To determine the prevalence of depression in the study population and to study various socio-demographic correlates of depression in the study population. **Methods:** A community based cross-sectional study was carried out in an urban slum area of Rohtak city during 2016-2017. A total of 600 study participants were selected and interviewed by using PHQ-9 depression scale. The collected data were entered in MS Excel spread sheet and analysed using SPSS software version 20.0. **Results:** Mean age of the study participants was 37.91 ± 11.75 years. Almost all (97.5 %) study subjects were Hindu. Majority (52 %) belonged to General category. Overall prevalence of depression was found to be 16.2%. The distribution for factors like gender, marital status, education, occupation, socioeconomic status, type of family, living arrangement, smoking habit and death of close relatives were found to be statistically significant with depression (P<0.05). Logistic regression analysis showed that female gender, divorce/separation, illiteracy, unemployment, lower socioeconomic class nuclear family living alone, smoking habit, presence of chronic morbidity and death of close relative in past one year, as independent predictors of depression. **Conclusions:** The prevalence of depression among adults in an urban slum of north India was found to be 16.2%. Our findings indicate that depression in urban slum is significantly associated with determinants such as gender marital status, education, occupation, SE class, family type, smoking, living arrangement, death of close relative, chronic morbidities like neurological disorders, diabetes and hypertension.

Keywords: Depression, North-India, slum

Introduction

Depression is a common mental health disorder that is characterized by loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration, insomnia or hypersomnia, and occasionally suicidal thoughts.[1]

As per the global burden of disease report more than 264 million people are suffering from depression.[2] In terms of disability,

How to cite this article: Pawar N, Kumar N, Vikram A, Sembiah S, Rajawat G. Depression and its socio-demographic correlates among urban slum dwellers of North India: A cross sectional study. J Family Med Prim Care 2022;11:2369-76.

depression is ranked as the largest contributor of global disability, 7.5% of all years lived with disability in 2015. Every year due to depression, around 8 lakh people die of premature death by committing suicide.[3]

In the South-East Asia region, it is estimated that 5-10% of the population at any given time is suffering from depression.[4] The prevalence of depression in a population-based study conducted in neighbouring countries like urban Pakistan was 45.9% while in rural Bangladesh; it was 29%.[4,5]

Many previous studies in India have focused on depression and depressive symptoms in hospital settings; but, there is a big hidden part of the iceberg for mental health disorders in the community setting.

In a multisite population-based study by Arvind *et al.*,[6] the prevalence of lifetime and current DD was 5.25% and 2.68%, respectively. Prevalence was highest in the 40–59 age groups, among females (3.0%). Age, gender, place of residence, education and household income were found to be significantly associated with current Depressive disorders. While a review article published in 2020, included a total of 11 studies from India, China, Italy Spain and Iran with a pooled population of 113,285 individuals, the prevalence of depression was found to be 20%.[7] The prevalence of depression in India ranges from 1.7%-83%.[6-28]

As quoted above there is a paucity of literature for depression among urban adults living in slum areas in North India. The current study therefore aimed at finding out the true burden and correlates of depression among the slum community where the delivery of primary care services needs more focus and attention.

Following are the objectives:
1. To determine the prevalence of depression in the study population.
2. To study various sociodemographic correlates of depression in the study population.

Material and Methods

It was a community-based cross-sectional study carried out in an urban slum area of Rohtak city. The slum area consisted of 3 urban health posts and 14 AWCs. The sample size was calculated, assuming the prevalence of depression to be 15.1% and with 20% relative precision. After adding 10% of the non-response rate, the final sample size was 600. This study is a part of a postgraduate thesis, and the ethical approval was acquired from the institutional ethical committee before the start of the study. The study duration was one year (the financial year 2016–2017).

Inclusion criteria

1. Adult population (age 18-59 years) residing in the study area for more than 6 months.

Exclusion criteria

1) Those untraced even after two follow-up visits.
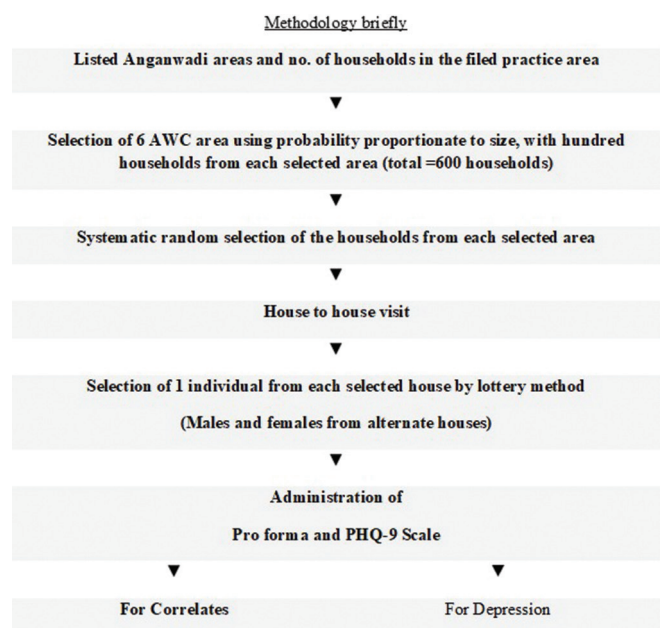2) Subjects having gross hearing impairment, diagnosed organic brain pathology or articulation disorders.

Sampling technique: Multistage cluster sampling was used [Flow chart 1]

Study tool: Patient health questionnaire-9 (PHQ-9) was used for the study. Depression severity is graded based on the PHQ-9 score: 0–4 none 5–9, mild 10–14, moderate 15–19 moderately severe, 20–27 severe. A valid Hindi version of the questionnaire PHQ-9 is available and was used in this study. In Addition to PHQ-9, sociodemographic details were also collected.

Data analysis: Collected data were entered in the MS EXCEL spreadsheet, coded appropriately. Analysis was carried out using SPSS (Statistical Package for Social Sciences) v20.0. Categorical data were presented as percentage (%). Pearson's Chi-square test was used to evaluate differences between groups for categorized variables. Logistic regression analysis was used to evaluate the independent associations of various factors with the prevalence of depression. All tests were performed at 5% level of significance; thus, an association was considered significant if the *P* value was less than 0.05.

Results

The Study methodology ensured equal participation of males and females. The mean age of the study participants was 37.91 ± 11.75 years. Almost all (97.5%) study subjects were Hindu, only 1.3% were Muslims and, 1.2% were Sikhs. About 52% belonged to the General category, 27.5% to OBC, and 20.5% belonged to SC/ST category. The overall prevalence of depression was 16.2% [Figure 1].

Flow chart 1: Sampling methodology

Factors	Depression			Significance
	Yes=97 (%)	No=503 (%)	Total=600 (%)	
Gender				
Male	36 (12)	264 (88)	300 (100)	χ^2=7.685,
Female	61 (20.3)	239 (79.7)	300 (100)	P=0.005*, df=1
Age Group				
18-25 years	15 (14.4)	89 (85.6)	104 (100)	χ^2=2.856
26-45 years	48 (14.6)	280 (85.4)	328 (100)	P=0.239
46-59 years	34 (20.2)	134 (79.8)	168 (100)	df=2
Marital status				
Unmarried	13 (31)	29 (69)	42 (100)	χ^2=29.540
Married	68 (13)	452 (87)	520 (100)	P=0.000*
Widow/widower	10 (40)	15 (60)	25 (100)	df=3
Separated/Divorced	6 (46)	7 (54)	13 (100)	
Education				
Graduate and above	3 (8.6)	32 (91.4)	35 (100)	χ^2=16.163
Senior secondary/post high school diploma	7 (9.1)	70 (90.9)	77 (100)	P=0.002*
Secondary	9 (10.3)	78 (89.7)	87 (100)	df=4
Middle & Primary	41 (15.9)	216 (84.1)	257 (100)	
Illiterate	37 (25.7)	107 (74.3)	144 (100)	
Occupation				
Professional	2 (2.1)	16 (3.2)	18 (3)	χ^2=38.976
Semi-professional, shop owner/clerical/farm owner	9 (9.3)	100 (19.9)	109 (18.2)	P=0.000*
Skilled/semi-skilled	14 (14.4)	138 (27.4)	152 (25.3)	df=4
Unskilled	35 (36.1)	181 (36)	216 (36)	
Unemployed	37 (38.1)	68 (13.5)	105 (17.5)	
SE status				
Upper	5 (13.8)	31 (86.2)	36 (100)	χ^2=10.244
Upper middle	10 (10.4)	86 (89.6)	96 (100)	P=0.036*
Lower Middle	26 (13.1)	172 (86.9)	198 (100)	df=4
Upper lower	44 (19.3)	184 (80.7)	228 (100)	
Lower	12 (28.6)	30 (71.4)	42 (100)	
Total	97 (16.2)	503 (83.8)	600 (100)	
Economic dependency				
Independent	44 (14.9)	252 (85.1)	296 (100)	χ^2=0.782
Partially dependent	34 (17.1)	165 (82.9)	199 (100)	P=0.676
Totally dependent	19 (18.1)	86 (81.9)	105 (100)	df=2
Type of family				
Joint Family	14 (9.7)	130 (90.3)	144 (100)	χ^2=8.705
Nuclear Family	46 (21.3)	170 (78.7)	216 (100)	P=0.012*
Three Generation Family	37 (15.1)	203 (84.9)	240 (100)	df=2
Living arrangement				
Live alone	26 (39.4)	40 (60.6)	66 (100)	χ^2=33.008
With Family	56 (12.1)	406 (87.9)	462 (100)	P=0.000*
With friends/relatives	15 (20.8)	57 (79.2)	72 (100)	df=2
Smoking habit				
Current smoker	23 (27.4)	61 (72.6)	84 (100)	χ^2=9.085
Past smoker	4 (15.4)	22 (84.6)	26 (100)	P=0.010*
Non-smoker	70 (14.3)	420 (85.7)	490 (100)	df=2
Alcohol drinking habit				
Habitual Drinker	7 (21.2)	26 (78.8)	33 (100)	χ^2=3.9816,
Social Drinker	8 (14.8)	46 (85.2)	54 (100)	P=0.136, df=2
Non-Drinker	21 (9.8)	192 (90.2)	213 (100)	
Death of any close relative				
Yes	18 (31.6)	39 (68.4)	57 (100)	χ^2=11.038,
No	79 (17)	464 (83)	521 (100)	P=0.000*, df=1

Table 1: Prevalence of depression, by Sociodemographic, correlates

Contd...

Factors	Depression			Significance
	Yes=97 (%)	No=503 (%)	Total=600 (%)	
Total	97 (16.2)	503 (83.8)	600 (100)	

*Significant (*P*<0.05); **alcoholism history is only for males
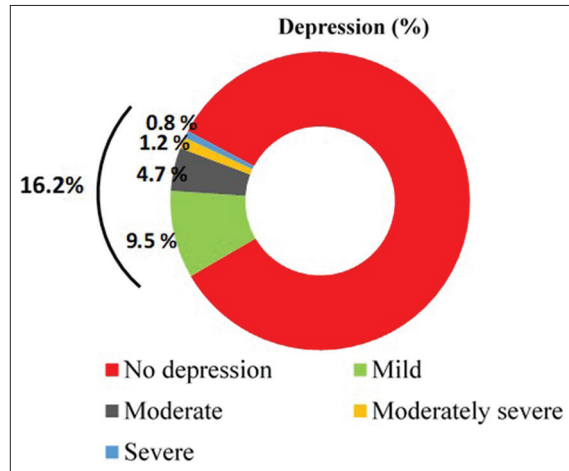
Figure 1: Distribution of study subjects by prevalence and severity of Depression (*n* = 600)

The distribution for factors like gender, marital status, education, occupation, socioeconomic status, type of family, living arrangement, smoking habit, and death of close relatives was statistically significant with depression (*P* ≤ 0.05) [Table 1].

Logistic regression analysis was performed to find out the association of variables with Depression. Depression (0 = non-depressed and 1 = depressed) was used as the dependent variable and variables found to have with significant distribution in the Chi-square test (viz. gender, marital status, education status, occupation, socioeconomic status, chronic morbidities, family type, living arrangement, smoking and death of close relatives in the past,) were taken as predictor variables [Table 2].

When the educational status was the independent variable with the Graduate and above category as the reference group, an inverse relationship was seen. The odds of having depression were 25 times (*P* < 0.05) more among those who were illiterate. A similar trend was reflected with occupation, keeping the professionals were in the reference category, the odds of having depression were highest among unemployed (aOR = 83.42, *P* < 0.05) [Table 2].

With lower class as a reference, depression was significantly more common among upper-lower class (aOR = 23.9) and lower-middle (aOR = 5.6) socio-economic classes. Though depression was less common among the higher class, this association was not statistically significant (*P* > 0.05) [Table 2].

When family type was taken as an independent predictor with joint family as a reference, depression was more common among those living in a nuclear and three-generation family with aOR of 1.51 (*P* = 0.343) and 1.56 (*P* = 0.295), respectively [Table 2].

Living arrangement was an important predictor of depression in this study with the living alone category as a reference, the chances of having depression were 83% less when living with family and 68% less when living with friends/relatives [Table 2].

Chances of depression were 75% less among non-smokers and 80% less among past smokers compared to current smokers with a *P* < 0.05. With the death of any close relative as a predictor variable, the chances of having depression among those with deaths of relatives in the past 1 year were 2.14 times more than those with no deaths of close relatives. (aOR = 2.14, *P* = 0.066) [Table 2].

Discussion

Prevalence of depression

This study shows the prevalence of depression to be 16.2% in the urban population of Haryana, India. The prevalence of depression in India, as observed in previous studies done in community settings, varied from 1.7% to 47%.[8,11-22,28]

In a study done in Uttarakhand by Mathias *et al.*[17] using PHQ-9, the prevalence of depression was 6%, which is lower than the prevalence observed in this study (16.2%) despite using the same study tool. This difference can be because of Mathias *et al.*[17] used a higher cut-off for labelling depression (>10 points on PHQ-9) compared to this study that includes mild depression (≥5 points on PHQ-9).

In a study by Verma and Mishra (2020), depression was found to be 25%. They used DASS-21 scale, and the reason for high prevalence can be because of COVID 19 pandemic and prolonged lockdown.[28]

Poongothai *et al.*[14] screened more than 24,000 subjects in Chennai using same tool (PHQ-9) as this study and reported overall prevalence of depression to be 15.1%. This similarity may be attributed to the similarity in the population type and the study tool used for the assessment of depression.

Depression and gender

Study methodology ensured equal participation of males (300) and females (300) in this study this allows better comparisons

Table 2: Association of variables with Depression (*n*=600)			
Variables	**Categories**	**aOR (95% CI)**	***P***
Gender	Male	Reference	
	Female	1.76 (0.89-3.50)	0.103
Marital status	Unmarried	Reference	
	Married	0.17 (0.06-0.46)	0.000*
	Widow/widower	1.82 (0.44-7.50)	0.405
	Divorced/separated	4 (0.72-22.19)	0.112
Education	Graduate & above	Reference	
	Intermediate/post high school diploma	2.69 (0.42-17.24)	0.297
	Secondary school	2.84 (0.46-17.29)	0.257
	Middle & primary	7.20 (1.31-39.55)	0.023*
	Illiterate	25.78 (4.24-156.69)	0.000*
Occupation	Professional	Reference	
	Semi-prof/Clerical/Shop or farm owner	0.99 (0.11-8.52)	0.995
	Skilled/Semiskilled	4.12 (0.42-39.79)	0.220
	Unskilled	7.72 (0.81-73.35)	0.075
	Unemployed	83.42 (7.92-873.4)	0.000*
SE status	Lower	Reference	
	Upper Lower	23.94 (3.17-180.8)	0.002*
	Lower Middle	5.65 (1.89-16.88)	0.002*
	Upper Middle	0.79 (0.28-2.16)	0.646
	Upper	0.26 (0.08-0.85)	0.026
Family type	Joint family	Reference	
	Nuclear family	1.51 (0.64-3.59)	0.343
	Three generation family	1.56 (0.67-3.62)	0.295
Living arrangement	Living Alone	Reference	
	With Family	0.176 (0.07-0.41)	0.000*
	With friend/relatives	0.325 (0.10-0.97)	0.046*
Smoking Habit	Current smoker	Reference	
	Past smoker	0.20 (0.04-0.95)	0.043*
	Non smoker	0.25 (0.10-0.62)	0.003*
Death of close relative	No	Reference	
	Yes	2.14 (0.95-4.81)	0.066

*Significant (*P*<0.05)

between the two genders. The prevalence of depression was higher among females (20.3%) than males (12%). (aOR = 1.76, CI: 0.89-3.50, *P* = 0.103) [Tables 1 and 2]

Vikramaditya B *et al.*[27] studied depression among the housewives in rural India, using the PHQ-9 found a prevalence of 18%.[27] These results are comparable with this study findings.

Similarly, Poongothai *et al.*[14] and Shidhaye *et al.*[18] used the PHQ-9 as the study tool also reported a higher prevalence of depression among females than males with aOR of 1.2 and 1.4, respectively. Padma *et al.*[20] also showed a higher prevalence of depression among females compared to males.

Depression by age

In this study prevalence of depression was slightly higher in the age group of 46-60 years (20.2%), followed by 14.6% and 14.4% in the age group of 26-45 years and 18-25 years, respectively. This difference was not found statistically significant (*P* > 0.05). [Table 1]

A similar trend was seen in studies done by Poongothai *et al.*,[14] Mathias *et al.*,[17] and Shidhaye *et al.*[18] using the same (PHQ-9) study tool.

Depression and Marital Status

In this study, compared to unmarried participants, married people were 83% less likely to have depression, while the odds of depression were 1.83 and 4 for widow (er) and divorced/separated groups.

Similar trend was observed in studies done by Arvind BA *et al.*,[6] Poongothai *et al.*,[14] and Shidhaye *et al.*[18]

Higher prevalence of depression among unmarried participants can be due to poor social support and the likelihood of living alone. It may also be possible that those with lesser depressive symptoms may be more likely to be married. Being widowed/er and separation/divorce is a tragedy, and people experience a drastic change in lifestyle following the loss of a life partner. Spousal support is pivotal for one's psychological health, and the death of a spouse renders them vulnerable to mental stress and depression.

Depression by Socioeconomic Status

Prevalence of depression in this study was maximum in a lower class (28.6%), followed by 19.3% in the upper-lower, the upper class (13.8%), and the lower-middle class (13.1%), and in the upper-middle class (10.4%). This difference was found statistically significant ($P < 0.05$) [Table 1].

On logistic regression analysis, with the lower class as a reference, depression was more common among those belonging to upper-lower and lower-middle-class with aOR of 23.94 ($P = 0.002$) and 5.65 ($P = 0.002$), respectively. Those belonging to the upper-middle (aOR = 0.79, $P = 0.646$) and upper class (aOR = 0.26, $P = 0.026$) had a lesser chance of having depression compared to the lower class [Table 2].

Low socioeconomic status is consistently associated with a higher prevalence of depression in various epidemiological studies.[6,9,29-37] A meta-analysis by Lorant *et al.*[31] on socioeconomic inequalities in depression found that low-SES individuals had higher odds of being depressed (odds ratio = 1.81, $P < 0.001$).

A population-based study from Haryana by Pilania *et al.*[19] using the Udai Parikh scale for assessment of SE class and GDS-30 for depression showed that economically independent had significantly ($P < 0.05$) lower prevalence (5.6%) compared to those who were either, partially, or completely, dependent (16.7% and 17.7%, respectively).

Depression with the Type of Family and Living Arrangement

The prevalence of depression was highest among study participants living in nuclear families (21.3%) than those who were residing in three-generation families (15.1%) and joint families (9.7%). This difference was found statistically significant ($P < 0.05$).

Pilania *et al.*[19] found a higher prevalence among people living in nuclear families (16.9%) than those living in Joint/three-generation families (13.6%) though this was not statistically significant. Grover *et al.*[21] and Munaf *et al.*[38] showed similar trends.

Families can be a force of care, comfort, even cure. They are crucial to proper recognition and treatment of the disorder, not only, at the beginning but throughout. They are the primary caregivers, willingly or not. They contribute to the emotional environment the depressed person inhabits, and so can be agents of recovery. A system of joint families is better in this regard as there can be more members to support a person emotionally, and socio-economically. Problems of death of spouse, accidents, ill-health, or financial burden are better taken care of in joint families than nuclear families.

Depression with Smoking and Drinking Habits

All the female participants in the study were non-drinkers and only 2% were smokers. The prevalence of depression was more among current smokers (27.4%) compared to past smokers (15.4%) and non-smokers (14.3%). This difference was found statistically significant ($P < 0.05$). Results for alcohol drinking were statistically non-significant. These results are in line with findings of studies by Poongothai *et al.*[14] and Boden *et al.*[39]

Depression and Death of Any Close Relative in Last Year

Out of the total 600 study subjects, 9.5% had the deaths of their close relatives in the last year. Prevalence of depression was nearly twice (31.6%) in this group compared to those who did not have any recent deaths in their family (17%). This relation was found statistically significant ($P < 0.05$). The Odds ratio was 2.14 (aOR = 2.14 (0.95–4.81) $P = 0.066$).

Pilania *et al.*[19] found a significantly higher *P* value (0.02) in those participants who had the death of close relatives in the last year (24.7%) than those who did not have such mishap (12%), the odds ratio was 2.57 (CI: 1.26–5.30, $P = 0.01$).

A study by Barua *et al.*[40] also showed a similar trend with the odds of having depression increased up to 5 times among those who lost someone close in the past six months.

The loss of a loved one is one of the most traumatic events in a person's life. It affects the psychological well-being of a person. Death of near and dear one brings emptiness, sadness, pain, anger, bouts of crying, and a depressed mood as a part of a grief response. But if this response is persistent for a long time and constant hopelessness, coupled with suicidal ideation and inability to perform day-to-day activities, this precipitates major depression.

Strength

An internationally used instrument, the Patient Health Questionnaire (PHQ) – 9 item, was used in the study for screening depression. PHQ-9 is also a reliable and valid measure of depression severity. With lower cut-off (≥5 points for mild depression) sensitivity of the test was improved that was ideal for screening.

Scope in primary care

Considering the hidden burden of mental illnesses, particularly depression and the shortage of psychiatrists in the peripheral areas, the role of primary care physicians in the family and community setting to screen for depression becomes crucial. The use of a simple and easy-to-use instrument like PHQ-9 can help find out the true magnitude of the problem. This study successfully shows the use of this instrument at the community level.

Conclusion

The prevalence of depression among adults in an urban slum of north India was 16.2%. Study findings indicated depression in an urban slum is significantly associated with determinants such as gender, marital status, education, occupation, SE class, family type, smoking, living arrangement, death of a close relative, chronic morbidities like neurological disorders, diabetes, and hypertension.

Logistic regression analysis showed that female gender, divorce/separation, illiteracy, unemployment, lower socioeconomic class nuclear family living alone, smoking habit, presence of chronic morbidity, and death of a close relative in the past year, as independent predictors of depression.

Ethical approval

Approved by institutional ethical committee as a part of thesis project.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. World Federation for Mental Health. Depression: A Global Crisis [Internet]. World Federation For Mental Health; 2012.; p. 6.

2. GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. Lancet 2018;392:P1789-858.

3. Depression and Other Common Mental Disorders: Global Health Estimates. Geneva: World Health Organization; 2017.

4. Muhammad Gadit AA, Mugford G. Prevalence of depression among households in three capital cities of Pakistan: Need to revise the mental health policy. PLoS One 2007;2:1–5.

5. Asghar S, Hussain A, Ali SMK, Khan AKA, Magnusson A. Prevalence of depression and diabetes: A population-based study from rural Bangladesh. Diabet Med 2007;24:872–7.

6. Arvind BA, Gururaj G, Loganathan S, Amudhan S, Varghese M, Benegal V, *et al*. Prevalence and socioeconomic impact of depressive disorders in India: Multisite population-based cross-sectional study. BMJ Open 2019;9:e027250.

7. Lakhan R, Agrawal A, Sharma M. Prevalence of depression, anxiety, and stress during COVID-19 pandemic. J Neurosci Rural Pract 2020;11:519-25.

8. Kishore J, Reddaiah V, Kapoor V, Gill J. Characteristics of mental morbidity in a rural primary health center of Haryana. Indian J Psychiatry 1996;38:137–42.

9. Amin G, Shah S, Vankar GK. The prevelance and recognition of depression in primary care. Indian J Psychiatry 1998;40:364–9.

10. Pothen M, Kuruvilla A, Philip K, Joseph A, Jacob KS. Common mental disorders among primary care attenders in Vellore, South India: Nature, prevalence and risk factors. Int J Soc Psychiatry 2003;49:119–25.

11. Charlson FJ, Baxter AJ, Cheng HG, Shidhaye R, Whiteford HA. The burden of mental, neurological, and substance use disorders in China and India: A systematic analysis of community representative epidemiological studies. Lancet 2016;388:376–89.

12. Sethi B, Prakash R. Depression in Industrial population. Indian J Psychiatry 1979;21:359–61.

13. Reddy VM, Chandrashekar CR. Prevalence of mental and behavioural disorders in India: A meta-analysis. Indian J Psychiatry 1998;40:149–57.

14. 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:e7185.

15. Ferrari AJ, Charlson FJ, Norman RE, Patten SB, Freedman G, Murray CJL, *et al*. Burden of depressive disorders by country, sex, age, and year: Findings from the Global Burden of Disease Study 2010. PLoS Med 2013;10:e1001547.

16. Rao T, Tandon A, Saraswathi N, Darshan M, Raman R, Karthik K, *et al*. Suttur study: An epidemiological study of psychiatric disorders in south Indian rural population. Indian J Psychiatry 2014;56:238-45.

17. Mathias K, Goicolea I, Kermode M, *et al*. Cross-sectional study of depression and help-seeking in Uttarakhand, North India. BMJ Open 2015;5:e008992.

18. Shidhaye R, Gangale S, Patel V. Prevalence and treatment coverage for depression: A population-based survey in Vidarbha, India. Soc Psychiatry Psychiatr Epidemiol 2016;51:993–1003.

19. Pilania M, Bairwa M, Khurana H, Kumar N. Prevalence and predictors of depression in community-dwelling elderly in rural Haryana, India. Indian J Community Med 2017;42:13–8.

20. Padma K, Kashi R, Rao R, Sita B, Chandra S, Deotale PG. A study on socio demographic and psychological risk factors for depression among adult population of Karimnagar District. Indian J Public Heal Res Dev 2015;6:193–8.

21. Grover S, Dutt A, Avasthi A. An overview of Indian research in anxiety disorders. Indian J Psychiatry 2010;52:178-88.

22. Patel V, Kirkwood BR, Pednekar S, Weiss H, Mabey D. Risk factors for common mental disorders in women: Population-based longitudinal study. Br J Psychiatry 2006;189:547–55.

23. Patel V. Gender disadvantage and reproductive health risk factors for common mental disorders in women. Arch Gen Psychiatry 2006;63:404–13.

24. Patel V, Chisholm D, Kirkwood BR, Mabey D. Prioritizing health problems in women in developing countries: Comparing the financial burden of reproductive tract infections, anaemia and depressive disorders in a community survey in India. Trop Med Int Health 2007;12:130–9.

25. Chandran M, Tharyan P, Muliyil J, Abraham S. Post-partum depression in a cohort of women from a rural area of Tamil Nadu, India: Incidence and risk factors. Br J Psychiatry 2002;181:499–504.

26. Patel V, Rodrigues M, DeSouza N. A Study of Mothers in Goa, India. Am J Psychiatry 2002;159:43–7.

27. Vikramaditya B, Jha AK, Kumar S, Manjeeta, Joshi HS.

Prevalence and associated risk factors of depression among housewives in rural Saharanpur, Uttar Pradesh, India. Public Health Rev Int J Public Health Res 2020;7:7-13.

28. Verma S, Mishra A. Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19. Int J Soc Psychiatry 2020;66:756-62.

29. Aluoja A, Leinsalu M, Shlik J, Vasar V LK. Symptoms of depression in the Estonian population: Prevalence, sociodemographic correlates and social adjustment. J Affect Disord 2004;78:27–35.

30. Unnikrishnan B, Jagannath V, Ramapuram JT, Achappa B, Madi D. Study of depression and its associated factors among women living with HIV/AIDS in Coastal South India. Isrn AIDS 2012;2012:684972.

31. Lorant V, Deliège D, Eaton W, Robert A, Philippot P, Ansseau M. Socioeconomic inequalities in depression: A meta-analysis. Am J Epidemiol 2003;157:98–112.

32. Dohrenwend BP, Levav I, Shrout PE, Schwartz S, Naveh G, Link BG, *et al.* Socioeconomic status and psychiatric disorders: The causation-selection issue. Science 1992;255:946–52.

33. Ritsher JE, Warner V, Johnson JG, Dohrenwend BP. Inter-generational longitudinal study of social class and depression: A test of social causation and social selection models. Br J Psychiatry Suppl 2001;40:84–90.

34. Lynch JW, Kaplan GA, Shema SJ. Cumulative impact of sustained economic hardship on physical, cognitive, psychological, and social functioning. N Engl J Med 1997;337:1889–95.

35. Weich S, Lewis G. Poverty, unemployment, and common mental disorders: Population based cohort study. BMJ 1998;317:115–9.

36. Lorant V, Croux C, Weich S, Deliège D, Mackenbach J, Ansseau M. Depression and socio-economic risk factors: 7-year longitudinal population study. Br J Psychiatry 2007;190:293–8.

37. Freeman A, Tyrovolas S, Koyanagi A, Chatterji S, Leonardi M, Ayuso-Mateos JL, *et al.* The role of socio-economic status in depression: Results from the COURAGE (aging survey in Europe). BMC Public Health 2016;16:1098–106.

38. Munaf S, Siddiqui B. Relationship of post-natal depression with life and marital satisfaction and its comparison in joint and nuclear family system. Procedia Soc Behav Sci 2013;84:733–8.

39. Boden JM, Fergusson DM, Horwood LJ. Cigarette smoking and depression: Tests of causal linkages using a longitudinal birth cohort. Br J Psychiatry 2010;196:440–6.

40. Barua A, Das A, Nagaraj K, Bhat HV, Nair NS. Depression in elderly: a cross-sectional study in rural south India. JIMSA 2007;20:259-61.