ORIGINAL ARTICLE

An Epidemiological study on Depression among Rural & Urban Adolescent of Moradabad District, Uttar Pradesh

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Abstract

Introduction: Adolescence is a stressful period due to physical, psychological, sexual changes, and presence of disorder such as depression is a matter of concern. **Objectives**: To study the prevalence of depression among adolescents in urban and rural areas and its socio-demographic correlates. **Materials and methods**: The PSU consisted all villages (n=29) and mohallas (n=23) in field-practice area. The required number of villages and mohallas, i.e., 10 each, were chosen using the basic random procedure, wherein each village and Mohalla has been assigned a unique serial number. **Results**: Overall, depression was observed in 110 participants (27.5%) with similar distribution in urban and rural areas. Low maternal and paternal education was a significant risk factor. Adolescents from the upper middle socioeconomic class (42.9%) and those from the lower middle socioeconomic class (33.3%) experienced the most depression. Burden was more among adolescents with low physical activity. **Conclusion**: This community based study of 400 adolescents residing in the urban and rural areas of Moradabad observed significant burden of depression in adolescent with poor maternal education, living in nuclear families, leading poor lifestyle and affected by any chronic illness at the time of the interview. Positive family history of mental illness was also an important risk factor.

Keywords

Depression; Rural; Urban; Adolescent; Family; School; Mohalla; Parents

Introduction

In light of physical and psychological changes that occur during adolescence, it is concerning that problems like sadness and anxiety can occur. (1, 2) Depression is defined by prolonged melancholy, loss of interest in once-enjoyed pursuits, and the inability to carry out everyday tasks for at least two weeks.(1) Multiple studies have highlighted that majority of individuals with mental problems reported that their symptoms started during childhood and adolescence.(2) Problems of anxiety and depression have been made worse by the rise of social media. Mental health issues of adolescence impact daily life and social interactions; can linger into adulthood increasing likelihood of suicide thoughts. (3)

Depression is one of the under-diagnosed health issues since it is difficult to identify owing to behavioral changes owing to hormonal changes at this time. Depression is the most prevalent psychiatric condition among adolescents, according to studies conducted in schools and in the community from around the globe.(4) In adolescent, depression was fourth common disease in 1990 and was predicted to move up to second place by the year 2020.(5) National and international research has revealed increasing levels of psychopathology in student populations irrespective of socioeconomic status. (6,7) So

this study was undertaken on mental health aspect of adolescent in Moradabad.

Aims & Objectives

1. To study the prevalence of depression among adolescents in urban and rural areas
2. To study the socio-demographic correlates of depression among adolescents in urban and rural areas.

Material & Methods

Study Type: A cross sectional study

Study population & Area: The participants of the study were adolescents (10-19 years) living in the Field Practice Area of Department of Community Medicine, Teerthanker Mahaveer Medical College and Research Centre, Moradabad.

Sample Size calculation: According to a prior study conducted in India by Chauhan S et al. (8) in 2014, the prevalence of depression was 38%. To calculate the sample size, the formula N = 4PQ/L2 was used, with 38% as the lowest prevalence and Q = (100-p) L for "permissible error". Under the aforementioned supposition, 360 samples are needed to achieve a 95% level of confidence and a 5% allowable error in the estimates. Therefore, we selected a sample of 400 adolescents, with 200 adolescents each from urban and rural field practice areas.

Inclusion Criteria: The study's inclusion criteria were as follows:

1. Adolescents in attendance at the time of the survey
2. Adolescents who provide written assent/consent, as applicable.

Exclusion Criteria: The following criteria led to study exclusion:

1. Adolescents who weren't available when the survey was being conducted
2. Adolescents who are unwilling to provide written assent/consent.
3. Adolescent who were non-resident (Living for <6months) of the field practice area

Strategy for collection: In our investigation, a multistage sampling method with a random technique was implemented.

First stage: Selection of primary sampling units (PSUs)

The PSU in the field practice area incorporates of all villages and mohallas. There were 29 villages in the rural PSU and 23 mohallas with in urban PSU. Teerthanker Mahaveer Medical College and Research Centre, Moradabad's Community Medicine Department annually conducts a census to determine the population of all the PSUs. The required number of villages and mohallas, i.e., 10 each, were chosen using the basic random procedure, wherein each village and Mohalla has been assigned a unique serial number.

Second stage: Selection of families

All families in the field practice area are listed by the department on a regular basis as per mohallas and villages. Adolescent-containing families had been chosen and assigned a serial number. After that, online-generated random numbers were assigned to each of the chosen households. The desired sample size from each PSU was then obtained by selecting these random numbers at random intervals. In the event that more than one such adolescent was found, one of them was chosen at random.

A brief overview of the study was given to the selected adolescent and a receipt of informed assent/consent, as applicable was obtained from the participant. When an investigator visited a predetermined family, they moved on to the next if the adolescent was not present at their household. Until the necessary sample size was reached, this procedure was continued.

Ethical Considerations: Teerthanker Mahaveer University's Institutional Review Board and Ethical Committee reviewed and approved the study.

Scales: The socio-demographic parameters of adolescents, including their age, religion, education, type of household, and socioeconomic level, were obtained using a predesigned questionnaire by investigator on 1-on-1 interview basis. Modified B.G. Prasad scale (2018) (9) was used to assess the socio-economic status. Adolescent depression was assessed using the Patient Health Questionnaire (PHQ)-9(10) scale. This is a self-administered tool and the Hindi version is available freely on the official website of Patient Health Questionnaire screener which was used in our study. The tool was self-administered to each participant individually under supervision of the investigator towards the end of the interview. Doubts, if any, were resolved before the sheet was collected back.

Data Management and Analysis: Daily updates to a Microsoft Excel Word Spreadsheet were performed with the collected data. Tables with the data were presented. Applying Epi Info statistical software package Version 7.1.5, data was evaluated. Chi-square test was used as a measure of significance. Statistical significance for the difference was set at P <0.05.

Results

In this study, out of the total 400 participants; 119 of the male participants were from rural areas and 113 from urban areas, while 81 of the female participants lived in rural areas and 87 in urban areas. The distribution of adolescents by age group is shown in Table 1.

The majority of adolescent (165) belonged to the late adolescent (16-19 years) age group, followed by the early (119) and mid adolescent (116) age groups. The majority of the participants in our survey (224) practiced Islam, and the rest 176 were Hindus. Overall nuclear families were 54.5 percent and joint families were 45.5 percent. More nuclear families were seen in urban area (56.9%) and

more joint families were in rural areas (58.2%). The majority of participants (63%) revealed that they enjoyed playing, followed by walking (19.2%) and running (8.1%). Only 2.3 percent of adolescents participated in gym activities. While 14 percent of participants reported sleep of < 6 hrs. 21.5 percent slept for > 8 hrs. and 64.5 percent reported sleep between 6-8 hrs. A total of 71 adolescents were abusing any kind of substance. Two third of addiction was attributed to tobacco followed by alcohol (21%). None of the participants reported multiple addictions. Adolescents reporting any chronic illness were 16 percent. About 33.25 percent of the study population had a family history of any mental disease, while the remaining 76.7 percent of samples had no such history. Overall, depression was observed in 110 participants (27.5%) with similar distribution in urban (28 %) and rural areas (27 %). (Table 2)

Table 3 shows that participant whose mother had primary education reported maximum burden (70%) and this was statistically significant. Adolescent having father who completed primary and high school were observed to be depressed in 33.3%. Occupation of parent was not found to be statistically significant in occurrence of depression in the study participants. Adolescents from the upper middle socioeconomic class (42.9%) and those from the lower middle socioeconomic class (33.3%) experienced the most depression. Depression was more common (32.6%) among adolescents who did not engage in enough physical activity. However, it was discovered that there was no statistically significant correlation between the duration of physical activity and the prevalence of depression.

Discussion

In the current cross-sectional community-based study, 400 adolescent between the ages of 10 to 19 years participated who lived in urban and rural Moradabad.

The present study population included 232 (58%) male & 168 (42%) female adolescent. Among males 119 (51%) resided in rural area and 113 (49%) resided in urban area, while among females, 81(48.2%) were resident of rural area and 87(52.8%) of urban area. Study by Sandal RK (5) among 470 Adolescents in Chandigarh; 54.68% of adolescents were males and 45.32% of remaining adolescents were females. Another study by Jain V. *et al.* (11) among 210 adolescents in rural Muzaffarnagar, Uttar Pradesh only 37.6 % of adolescents were male & rest 62.4% were females.

In our study, 165 (41.25%) of adolescents belong to late adolescent stage and 119 (29.75%) belong to early adolescent stage while Jain V. *et al.* (11), in their study revealed similar findings that 39% of sample belonged to late adolescent stage and early adolescent stage had 27.6% of participants.

Our result indicated more (54.5%) adolescent living in nuclear families and less (45.5%) living in joint families, p < 0.05 which is statistically significant. While in study conducted by Mishra SK *et al.*(12), 62% of adolescent were residing in nuclear families & rest (38%) belonging to joint families.

In his study, Watode BK (13) found that fathers of maximum number of adolescents (46.2%) were postgraduates, followed by graduate (40.5%) and below graduate (13.3%) fathers; while majority of mothers (42.6%) had educational level below graduation followed by graduate (32.7%) or higher degree holders (24.6%). In our study it was seen that most fathers (40.5%) were graduates followed by studied till high school (25.5%) and 14.25% being illiterate. While in case of mothers nearly a third (32.25%) were illiterate followed by studied till high school (19.25%) and only 18.5% were graduate and above.

In present study, prevalence of depression was found to be 27.5%. The study done by Jain V *et al.* (11) with similar characteristics as ours, have reported depression burden of 28.1 percent. Similar type of finding was observed by Al Bahnasy RA (14) among secondary school students in Egypt, he found that prevalence of depressive symptoms was 28.6%. Chauhan S *et al.* (8) concluded that among 360 students of age 15 and above from a public school in Uttar Pradesh, India, the overall prevalence of depression was observed to be 38%. As per the study conducted among 470 school-going adolescents in Chandigarh by Sandal RK *et al.* (5), prevalence of depression was 47.02%. In the study by Singh M *et al.* (15) among students, the prevalence of depression came out to be 59.2%. Few studies were found in that the prevalence was low as compared with the present study; study reported by Kumar KS *et al.* (2) among higher secondary school adolescent students of Manipur, the prevalence of depression among 830 respondents were 19.5%. Mishra SK *et al.* (12) shown prevalence of depression among children in rural and suburban areas of Eastern Uttar Pradesh of age 11 to 18 years and concluded that the prevalence of depression was 14.5 percent.

In our study, depression was almost similar among urban and rural adolescent population (28% and 27% respectively). Satyanarayana *et al*. (16) found that urban population (4.1%) was more affected by depression than rural (3.5%). In another study conducted by Vashisth A *et al.* (17) prevalence of depression was higher in students of urban area (38.7%) as compared to students of rural area (23.5%). Singhal M *et al.* (18) in their study conducted among urban Indian adolescents and found that 18 percent adolescents were suffering from depression.

In our study, prevalence of depression was found to be more in females (36.9%) than males (20.7%). The study by Kaur and Sharma (19) in Chandigarh also found that the prevalence of depression were higher in females than males. Similar to our study, Urmila KV *et al.* (20) study observed depression was more in girls than boys in study done amongst residential secondary school students of North Kerala. Sandal RK *et al.* (5) also found that

prevalence of depression was more in females. However studies by Jain V *et al.* (11) and Vashisth A *et al.* (17) have recorded that depression was more prevalent in boys than girls.

In our study, prevalence of depression was also found to be more in mid adolescent stage than late and early stages of adolescent. Similar to our study, Mishra SK *et al.* (12) also found that depression were more prevalent in mid adolescent stage. Jain V *et al.* (11) observed that depression was maximum in mid adolescent boys (48%) and early adolescent girls (39.5 percent). In a study by Naushad S *et al.* (21) the prevalence of depression was highest 89.5% in 19 years age-group; prevalence of depression and severity of depression was found to significantly increase with age of the participants.

In our study, prevalence of depression was found to be more in adolescents with primary school education followed by high school. Mishra SK *et al.* (12) have reported in their study that depression was more prevalent in the students of the class 9 – 12.

In our study, prevalence of depression was also found to be more in Muslim (41.1%) than Hindu (10.2%), $p < 0.05$. Association between religion and prevalence of depression was statistically significant. Similar results was shown by a study conducted by Jha KK *et al.*(22), he found that the prevalence of depression was found to be higher among students belonging to minorities (Buddhism, Jainism, etc.); depression was found to be statistically significantly associated with religion.

In our study, prevalence of depression was found maximum in adolescents belonging to upper middle socioeconomic class (42.9%). Association between socioeconomic status of adolescents and prevalence of depression was statistically significant. Mishra SK *et al.* (12) has reported that among different socioeconomic groups, maximum burden of depression (51.7%) was seen in lower-middle socioeconomic group. In another study conducted by Vashisth A. *et al.* (17) prevalence of depression was highest in students belonging to class V (56.0%) compared to classes IV, III & II (40.0%), (32.0) & (30.0%) respectively. Least prevalence was present in class I (10.2%). Singh M *et al.* (15) found that adolescents belonging to lower socio economic condition had shown a high prevalence of depression and anxiety disorders.

In our study, 53.3 percent of adolescents consuming alcohol were found to have depression. However association between type of substance used by adolescents and prevalence of depression was not found to be statistically significant. Similarly, depression was reported in 55.6 percent of participants in study by Kumar. A *et al.* (1) and this too was not statistically significant.

In our study, prevalence (46.8%) of depression was seen in the adolescents who were having any chronic disease at the time of interview. Mathias K *et al.* (23) found that 79 percent of adolescents had depression with history of any disease and had attended a general medical practitioner in the past 3 months.

In our study, prevalence of depression in the adolescents who were having family history of any mental illness was 30.8 percent. However we did not found any statistical significance of this factor for depression. In a study conducted by Thapar A *et al.* (24) among adolescents to assess depression they concluded that the strongest risk factors for depression in adolescents are a family history of depression and exposure to psychosocial stress.

Conclusion

A significant burden of depression in adolescent with poor maternal education, living in nuclear families, leading poor lifestyle and were affected by any chronic illness at the time of the interview. A positive family history of any kind of mental illness was also an important risk factor.

Recommendation

It is recommend that the trained counsellor in national mental health Programme should place more focus in adolescent mental health.

Limitation of the study

We were not able to link the majority of depressed participants with active health care. Additionally, these was lack of a female data collector.

Relevance of the study

The mental illness is still a taboo and an under researched aspect in conservative, agrarian community of western Uttar Pradesh. Adolescent form a special focus group to assess mental illness as early identification of mental disorders and active intervention will significantly improve the quality of life.

Authors Contribution

All authors have contributed equally.

References

1. KumarA, YadavG, ChauhanN, BodatS. Prevalence of depression, anxiety and stress among school going adolescents in Delhi: a cross sectional study. Int J Community Med Public Health2019; 6(12):5021-6.
2. Kumar KS, Akoijam BS. Depression, Anxiety and Stress Among Higher Secondary School Students of Imphal, Manipur. Indian J Community Med. 2017;42(2):94-96.
3. Salelkar SS, Borker Prevalence of Depression, Anxiety and Stress among School Going Adolescents and their Relationship to Socioeconomic Status. Ind J Youth Adol Health 2020; 7(4): 8-14.
4. Bharati DR, Kumari S, Prasad N, Choudhary SK, Kumar S, Pal R. Correlates of depression among school going adolescents in the urban area of Patna in eastern India. J Family Med Prim Care. 2022; 11(5):1702-1709.
5. Sandal RK, Goel NK, Sharma MK, Bakshi RK, Singh N, Kumar D. Prevalence of Depression, Anxiety and Stress among school going adolescent in Chandigarh. J Family Med Prim Care. 2017;6(2):405-410.
6. Garg P, Kumar R. Study of depression, anxiety and stress among Class IV workers in a medical college in Delhi Indian J Soc Psychiatry. 2019;35(1):57–63.
7. Dutta U, Maraichelvi K. Stress, Anxiety and Depression among Adolescents. Ethno Med. 2020; 14(1-2): 68-74

8. Chauhan S, Lal P, Nayak H. Prevalence of depression among school children aged 15 years and above in a public school in Noida, Uttar Pradesh. J AcadInd Res. 2014; 3(6):269-73.
9. Pandey VK, Aggarwal P, Kakkar R. Modified BG Prasad's Socio-economic Classification-2018: The need of an update in the present scenario. Indian J Comm Health. 2018; 30(1): 82-84.
10. Patient Health Questionnaire (PHQ) Screeners 2018, Patient Health Questionnaire (PHQ) Screeners website, Pfizer Inc, last accessed 23 Sep 2023 <https://www.phqscreeners.com/select-screener>
11. Jain V, Singh M, Muzammil K, Singh JV. Prevalence of psychosocial problems among adolescents in rural areas of District Muzaffarnagar, Uttar Pradesh. Ind J Comm Health 2014; 26(3):243-248.
12. Mishra SK, Srivastava M, Kumar A. Prevalence of depression and anxiety among children in rural and suburban areas of Eastern Uttar Pradesh: A cross-sectional study J Family Med Prim Care. 2018; 7(1): 21–26.
13. Watode BK, Kishore J, Kohli C. Prevalence of Stress among School Adolescents in Delhi Ind. J. Youth Adol. Health 2015; 2(4):4-9.
14. Al Bahnasy RA, Abdel-Rasoul GM, Mohamed OA, Mohamed NR, Ibrahem RA. Prevalence of depression, anxiety, and obsessive–compulsive disorders among secondary school students in Menoufia Governorate, Egypt. Menoufia Med J 2013; 26(1):44-8.
15. Singh M, Goel NK, Sharma MK, Bakshi RK. Prevalence of Depression, Anxiety and Stress among Student of Punjab University, Chandigarh. Natl J Community Med 2017; 8(11):666-71.
16. Satyanarayana PT, Prakash B, Kulkarni P, Kishor M, Renuka M. A comparative study of prevalence of mental abnormalities among high school children in tribal, rural and urban Mysuru district, Karnataka, India. Int J Community Med Public Health. 2017; 4(3):809–13.
17. Vashisht A, Gadi NA, Singh J, Puryakastha M, Pathak R, Mishra P. Prevalence of depression & assessment of risk factors among school going adolescents. Ind J Comm Health. 2014:26 (2); 196-199.
18. Singhal M, Manjula M, Vijay Sagar KJ. Subclinical depression in Urban Indian adolescents: Prevalence, felt needs, and correlates. Indian J Psychiatry 2016; 58(4):394-402
19. Kaur S, Sharma V. Depression among adolescents in relation to their academic stress. Indian J Appl Res 2014; 4(5):183-185.
20. Urmila KV, Usha K, Mohammed MTP, Pavithran K. Prevalence and risk factors associated with depression among higher secondary school students residing in a boarding school of North Kerala, India. Int J Contemp Pediatr 2017; 4(3):735-40.
21. Naushad S, Farooqui W, Sharma S, Rani M, Singh R, Verma S. Study of proportion and determinants of depression among college students in Mangalore city. Niger Med J. 2014; 55(2): 156–60.
22. Jha KK, Singh SK, Nirala SK, Kumar C, Kumar P, Aggrawal N. Prevalence of Depression among School-going Adolescents in an Urban Area of Bihar, India, Indian J Psychol Med. 2017; 39(3): 287–92.
23. Mathias K, Goicolea I, Kermode M, Singh L, Shidhaye R, Sebastian MS. Cross-sectional study of depression and help-seeking in Uttarakhand, North India. BMJ Open. 2015; 5(11):e008992
24. Thapar A, Collishaw S, Pine DS, Thapar AK. Depression in adolescence. The lancet. 2012; 379(9820):1056-67.

Tables

TABLE 1: AREA AND AGE WISE DISTRIBUTION OF STUDY POPULATION

Age	Rural	Urban	Total
10-13 years (Early)	53 (44.54%)	66 (55.46%)	119 (29.75%)
14-15 years (Mid)	72 (62.07%)	44 (39.93%)	116 (29%)
16-19 years (Late)	75 (45.45%)	90 (54.54)	165 (41.25%)
Total	200	200	400

TABLE 2: PHYSICAL AND SOCIAL FACTORS ASSOCIATED WITH DEPRESSION

Male (n=232)	Female (n=168)	Total (n=400)	P value
48 (20.7%)	62 (36.9%)	110 (27.5%)	$_{\chi}2$= 2.46, P>0.05
Rural (n=200)	Urban (n=200)	Total (n=400)	
54 (27%)	56 (%)	110 (%)	$_{\chi}2$= 0.50, P>0.05
10-13 Years n=119	14-15 Years n=116	16-19 Years n=165	$_{\chi}2$= 4.12, P>0.05
28 (23.5%)	40 (%)	42 (%)	
Hindu (n= 176)	Muslim (n= 224)	Total (n=400)	$_{\chi}2$= 47, P<0.05
18 (10.2%)	92 (%)	110 (%)	
Nuclear Family (n= 218)	Joint Family (n= 182)	Total (n=400)	$_{\chi}2$= 37, P<0.05
87 (39.9%)	23 (12.6 %)		
Tobacco (n= 47)	Alcohol (n= 15)	Others (n= 9)	$_{\chi}2$= 2.9, P>0.05
14 (29.7%)	8 (53.3%)	4 (44.4%)	
Sleep <6 h (n= 56)	Sleep 6-8 h (n= 258)	Sleep >8 h (n= 86)	$_{\chi}2$= 33.4, P<0.05
33 (58.9%)	48 (18.6%)	32 (37.2%)	
Chronic Disease (n= 64)	Present (n= 64)	Absent (n= 336)	$_{\chi}2$= 14.3, P<0.05
30 (46.8%)	30 (46.8%)	80 (23.8%)	

TABLE 3: PREVALENCE OF DEPRESSION ACCORDING TO EDUCATION OF PARENTS & SES OF FAMILY

EDUCATION	Graduate & above (n= 74)	Intermediate (n= 24)	High school (n= 77)	Primary (n= 30)	Literate (n=66)	Illiterate (n=129)	P value
FATHER	40 (24.7%)	10 (25%)	33 (33.3%)	4 (33.3%)	8 (26.7%)	15 (26.3%)	$_{\chi}2$=2.71,P > 0.05
MOTHER	13(17.6%)	3(12.5%)	29(37.7%)	21(70%)	4(6%)	40(31%)	$_{\chi}2$=53.5,P < 0.05
SOCIOECONOMIC STATUS	Upper class (N=85)	Upper middle class (N= 56)	Middle class (N= 80)	Lower Middle class (N= 87)	Lower class (N= 92)	P value	
FAMILIES	27(31.8%)	24(42.9%)	13(16.2%)	29(33.3%)	17(18.4%)	$_{\chi}2$=17.7, P < 0.05	