



PREVALENCE OF DEPRESSION AMONG SCHOOL-GOING ADOLESCENTS IN MAHARASHTRA AND ITS ASSOCIATION WITH SOCIODEMOGRAPHIC FACTORS

Satishkumar Dhage*

Assistant Professor, Department of Community Medicine, Parbhani Medical College, Parbhani, Maharashtra, India. *Corresponding Author

Prashant Solanke

Professor, Department of Community Medicine, Dr. Ulhas Patil Medical College, Jalgaon, Maharashtra, India.

Chavan Vilas Dattatraya

Assistant Professor, Department of Psychiatry, Dr. Ulhas Patil Medical College, Jalgaon, Maharashtra, India.

ABSTRACT

Background: Mental depression is one of the common and ignorant psychiatric problems amongst adolescents having adverse effects on physical, social and mental health. The objective of this study was to study the prevalence of depression, its severity levels and associated sociodemographic factors among school-going adolescents in Maharashtra. **Methods:** A cross sectional study was conducted on school-going adolescents of classes 9th to 12th from Dec 2023 to Feb 2024 in state of Maharashtra. Multistage sampling was done to enrol the participants. Relevant data on various aspects of mental health was gathered by self-administered questionnaire of Beck's Depression Inventory (BDI) to assess the prevalence of depression and its severity. SPSS 20.0 software was used for statistical analysis. **Results:** Among the 1412 students assessed, the prevalence of depression was found to be 49.2%, wherein the prevalence of severe depression, moderate depression and mild depression was found to be 7.2%, 17.9% and 23.1% respectively. Depression was found to be significantly associated with age, gender, educational standard and lower socioeconomic status ($P < 0.05$). No significant statistical association was observed with religion, type of school, place of school and type of family. **Conclusion:** A significant proportion of school-going adolescents in Maharashtra were suffering from depression, which reflects the need for reinforcement and strengthening of school-based mental health screening programs.

KEYWORDS : Adolescents, Depression, Mental Health, Beck's Depression Inventory.

INTRODUCTION:

Adolescence is a transitional developmental period characterized by pronounced biological as well as social changes.¹ Depression is one of the commonest and ignorant psychiatric problems amongst adolescents having adverse effects on their physical, social and mental health. The state of Maharashtra in India has 21.3 million adolescents, that is 19% of the total state population and 8.4% of the total adolescent population in the country. There is limited data on depression in adolescents from India and especially from the state of Maharashtra. Depressive disorders often start at a young age; they reduce people's functioning and often are recurring.² The present study was undertaken to find the prevalence of depression among school going adolescents in Maharashtra. Studying the prevalence of depression in adolescents will contribute in planning the preventive and control strategies.

Study Objectives:

- To estimate the prevalence of depression among school-going adolescents in Maharashtra.
- To estimate the severity of mental depression among school-going adolescents in Maharashtra.
- To examine the association of sociodemographic variables with depression among school-going adolescents in Maharashtra.

MATERIAL AND METHODS:

Study Design -

A cross-sectional study was conducted in Maharashtra schools over 3 months (Dec 1, 2023 - Feb 25, 2024) involving adolescents aged 14-18 years from classes 9th to 12th.

Selection Of Participants -

Multistage sampling method was used in this study. A complete list of government and private schools and junior colleges providing education from 9th to 12th standard with boys as well as girl students, in all the 6 revenue divisions of Maharashtra was obtained. By lottery method, one school each of urban and rural areas from each revenue division was selected. A total number of 12 selected schools were included

in this study. The second stage of sampling involved randomly selecting one class from each school, with divisions chosen by lottery method. Those students who did not give consent or refused to participate in the study were excluded from the study.

Study Tool -

The study utilized Beck's Depression Inventory (BDI), comprising 21 items graded on a scale of 0 to 3 to assess cognitive, behavioural, affective, and somatic facets of depression among adolescents. Scores categorized depression levels: 1-10 (No Depression), 11-20 (Mild), 21-30 (Moderate), and >30 (Severe).³ The BDI tool was preferred in this study as it is widely used in school-based studies and it was found to be a better screening tool.⁴ Data analysis employed SPSS 20.0, employing Chi-square tests to ascertain associations between prevalence and sociodemographic factors, with statistical significance set at $P < 0.05$.

Ethical Considerations:

Ethical clearance from Institutional Ethics Review Committee and written consent from the principals of selected schools were obtained. In each class, an informed consent from the students and their parents (in case of minors) was obtained after properly explaining the purpose of the study.

RESULTS:

A total of 1503 students studying in Class 9 to Class 12 were enrolled in the study, of which 1412 students (response rate: 93.94%) submitted answers to all the questions. Table 1 shows the socio-demographic characteristics of study subjects. The mean age of selected students was 15.13 ± 1.09 years (range: 14-18 years). A majority of participants in the study were male (63.20%), belonged to Hindu religion (66.28%) and were from a nuclear family (61.47%).

Table 1: Demographic Variables Of Study Population

Sr. No.	Demographic variable	Total Number (n=1412)	Percentage (100%)
1.	Age (in years)		

14	415	29.39
15	411	29.10
16	320	22.66
17	209	14.80
18	57	4.03
2. Gender		
Male	893	63.20
Female	519	36.80
2. Educational Standard		
9th	460	32.58
10th	366	25.92
11th	327	23.15
12th	259	18.35
3. Type of School		
Government	483	34.21
Private	929	65.79
4. Place of School		
Urban	712	50.42
Rural	700	49.58
5. Religion		
Hindu	936	66.28
Muslim	228	16.15
Others	248	17.57
6. Type of Family		
Nuclear	868	61.47
Joint	544	38.53
8. Socioeconomic status		
Upper Class	727	51.49
Upper Middle	325	23.01
Lower Middle	134	9.49
Upper Lower	120	8.49
Lower Class	106	7.50

There was a statistically significant association noted among the depression and sociodemographic variables like age, gender, educational standard and socioeconomic status. No considerable difference was observed in prevalence among students according to their religion, type of school, place of school and type of family.

Table 2: Prevalence Of Depression And Sociodemographic Variables

Sr. No.	Demographic variables	No Depres sion (%)	Depres sion (%)	Total (n)	Chi- squar e	df	p- value
1.	Age (in years)	717(51.8 %)	695(48.2 %)	1412 (100%)	236.35	4	0.000 01
	14	114	301	415			
	15	306	105	411			
	16	206	114	320			
	17	68	141	209			
	18	23	34	57			
2.	Gender	484	409	893	11.37	1	0.000 7
	Male	484	409	893			
	Female	233	286	519			
2.	Educational Standard	153	307	460	193.59	3	0.000 01
	9th	153	307	460			
	10th	268	98	366			
	11th	213	114	327			
	12th	83	176	259			
3.	Type of School	243	240	483	0.064	1	0.799
	Government	243	240	483			
	Private	474	455	929			
4.	Place of School	349	363	712	1.784	1	0.182
	Urban	349	363	712			
	Rural	368	332	700			
5.	Religion	480	456	936	0.356	2	0.836 6
	Hindu	480	456	936			
	Muslim	120	118	228			

Others	117	121	248			
6. Type of Family						
Nuclear	444	424	868	0.125	1	0.723
Joint	273	271	544			
8. Socioeconomic status						
Upper Class	352	375	727	23.606	4	0.000 09
Upper Middle	179	146	325			
Lower Middle	85	49	134			
Upper Lower	64	56	120			
Lower Class	37	69	106			

Overall, the prevalence of depression in the study population was found to be 49.2%, wherein the prevalence of severe depression was 7.2%, moderate depression (17.9%), and mild depression (23.1%) as shown in table 3.

Table 3: Prevalence Of Depression As Per Severity Level

Sr. No.	Level of Depression	Total Number(n)	Percentage(%)
1.	No Depression	717	51.8
2.	Mild Depression	326	23.1
3.	Moderate Depression	253	17.9
4.	Severe Depression	116	7.2

DISCUSSION:

The adolescents and youth with depression are at high risk of mental disorders such as antisocial behaviour and substance abuse disorders.⁵ This makes it essential to assess the prevalence of depression in school-going adolescents.

Among the 1412 participants in the study, 695 (49.2%) showed signs of depression, a proportion consistent with findings from previous research on adolescent depression. Studies by Nagendra et al. and Malik et al.^{6,7} reported a depression prevalence of around 50%, while a study among rural adolescents in Maharashtra,⁸ found a prevalence of 53.9%. Other Indian studies in adolescents have shown depression prevalence ranging from 10% to 27%, notably lower than our results.^{9,10} However, a study in Karnataka using the BDI Scale reported a higher prevalence rate of 71.25% among adolescents compared to our findings¹¹.

Naushad et al. reported a higher prevalence of mild depression (39.8%), while Malik et al. found a similar prevalence of mild depression (26.6%). However, Malik et al. reported a dominant prevalence of moderate depression (41.2%), with higher rates of severe depression (11.4%) compared to our findings. Conversely, Naushad et al. reported a lower prevalence of severe depression (1.8%) compared to both our study and a study by Malik et al.^{7,12}

Our findings of increase in the prevalence of depression with increasing age is comparable with the results of previously reported studies.^{6,12} Higher prevalence of depression in elder students may be attributed to physical, emotional, and lifestyle changes occurred in their life.

Gender-wise prevalence of depression is controversial. Some studies, including the present one^{11,13}, have reported significantly higher rates of depression among girls compared to boys. However, contrasting findings exist, with several studies indicating no significant association between gender and increased depression levels¹⁴. Angold et al. attributed the preponderance of depression in adolescent females to hormonal changes in puberty.¹⁵ On the contrary, Malik et al. and Naushad et al. reported a higher prevalence of depression among males, attributing it to cultural differences, variations in data collection tools, survey settings, and timings^{7,12}.

In our study, we observed a higher prevalence of depression in

classes 9th (66.73%) and 12th (67.95%). These findings of our study are consistent with some other studies wherein students of classes 10th and 12th were found to have more prevalence of depression, anxiety and stress.¹³ Basin et al. has also reported a higher prevalence of depression in 10th and 12th division students, attributing it to academic pressure during board examinations.¹⁶ The higher prevalence of depression in class 9th students may be attributed to impending final exams and the stress associated with academic goals.

No significant statistical association was found between the place of school (urban/rural) as well as type of school (Government/Private schools) with prevalence of depression in adolescents. These findings of our study are in contrast with a study conducted at Chandigarh by Singh et al.¹⁷ wherein higher prevalence rates in rural areas and Government school students were noted.

Our study found a significant link between lower socioeconomic status and higher prevalence of depression in study population, consistent with many studies in Indian and Asian contexts.^{18,19} Socioeconomic status has a high impending impact on cognitive and behavioural domains of adolescents, resulting in depressive symptoms.

Majority of the school-based cross-sectional studies that were based on the use of screening instruments, such as rating scales, have usually reported a point prevalence rate of depression ranging from 3% to 68%, with a majority of the studies reporting the point prevalence of depression to be more than 40%.^{7,15,20} Studies that used structured instruments have reported relatively lower point prevalence rates, ranging from 2.33% to 25%.^{21,22}

CONCLUSION:

The prevalence of depression was high among school going adolescents in Maharashtra. There is a need for early and effective identification of depressive symptoms in adolescents that can prevent many psychiatric disorders at their nascent stage.

Acknowledgement:

I would like to express my sincere gratitude to the students, management, principals, teachers and staff all the people involved in the study for their cooperation.

Conflict Of Interest: None

REFERENCES:

1. Patton GC, Viner R. Pubertal transitions in health. *Lancet*. 2007; 369:1130-9.
2. Williams CA. Empathy and burnout in male and female helping professionals. *Res Nurs Health* 1989;12:169-7.
3. Beck AT, Steer RA, Garbin MG. Psychometric properties of the beck depression inventory. Twenty-five years of evaluation. *Clin Psychol Rev*. 1998;8:77-100.
4. Russell PS, Basker M, Russell S, Moses PD, Nair MKC, Minju KA. Comparison of a self-rated and a clinician-rated measure for identifying depression among adolescents in a primary-care setting. *Indian J Pediatr*. 2012;79(S1):45-51.
5. Centre for Disease Control and Prevention National Centre for Injury Prevention and Control. Web Based Injury Statistics Query and Reporting System (WISQARS) 2016.
6. Nagendra K, Sanjay D, Gouli C, Kalappanavar NK, VinodKumar CS. Prevalence and association of depression and suicidal tendency among adolescent students. *Int J Biomed Adv Res* 2012;3:714-9.
7. Malik M, Khanna P, Rohilla R, Mehta B, Goyal A. Prevalence of depression among school going adolescents in an urban area of Haryana, India. *Int J Community Med Public Health* 2015;2:624-6.
8. Shaikh BM, Doke PP, Gothankar JS. Depression, anxiety, stress, and stressors among rural adolescents studying in Pune and a rural block of Nanded district of Maharashtra, India. *Indian J Public Health* 2018; 62: 311-314. DOI: 10.4103/ijph.IJPH_174_17. Retrieved from <https://www.ijph.in/article.asp?issn=0019-557X; year=2018; volume=62; issue=4; spage=311; epage=314; aulast=Shaikh>
9. Bhatia SK, Bhatia SC. Childhood and adolescent depression. *Am Fam Physician* 2007;75:73-80.
10. Bostanci M, Ozdel O, Oguzhanoglu NK, Ozdel L, Ergin A, Ergin N, et al. Depressive symptomatology among university students in Denizli, Turkey: Prevalence and sociodemographic correlates. *Croat Med J* 2005;46:96-100.
11. Kumar GS, Jain A, Hegde S. Prevalence of depression and its associated

factors using beck depression inventory among students of a medical college in Karnataka. *Indian J Psychiatry* 2012;54:223-6.

12. Naushad S, Farooqui W, Sharma S, Rami M, Singh R, Verma S. Study of proportion and determinants of depression among college students in Mangalore city. *Niger Med J* 2014;55:156-60.
13. Kumar KS, Akoijam BS. Depression, anxiety and stress among higher secondary school students of Imphal, Manipur. *Indian J Community Med* 2017;42:94-6.
14. Watode BK, Kishore J, Kohli C. Prevalence of stress among school adolescents in Delhi. *Indian J Youth Adolesc Health* 2015;2:34-8.
15. Angold A, Costello EJ, Erkanli A, Worthman CM. Pubertal changes in hormone levels and depression in girls. *Psychol Med* 1999;29:1043-53.
16. Bhasin SK, Sharma R, Saini NK. Depression, anxiety and stress among adolescent students belonging to affluent families: A school-based study. *Indian J Pediatr* 2010;77:161-5.
17. Singh MM, Gupta M, Grover S. Prevalence & factors associated with depression among school going adolescents in Chandigarh, north India. *Indian J Med Res* 2017;146:205-15.
18. Shelke U, Kunkulol R, Phalke VD, Narwame SP, Patel P. Study of depression among adolescent students of rural Maharashtra and its association with socio-demographic factors: A cross-sectional study. *Int J Med Res Health Sci* 2015;4:41-5.
19. Mojs E, Warchol BK, Glowacka MD, Marcinkowski JT. Are students prone to depression and suicidal thoughts? Assessment of the risk of depression in university students from rural and urban areas. *Ann Agric Environ Med* 2012;19:770-4.
20. Mishra A, Sharma AK. A clinico-social study of psychiatric morbidity in 12 to 18 years school going girls in urban Delhi. *Indian J Community Med* 2001;26:71-5.
21. 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;4:809-13.
22. Jayanthi P, Thirunavukarasu M. Prevalence of depression among school going adolescents in South India. *Int J Pharm Clin Res* 2015;7:61-3.