

Depression among adolescents in a rural community of north India: A cross-sectional study

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ABSTRACT

Background: There is a paucity of literature on depression among adolescents in the north Indian community. **Objectives:** The aim of this study was to estimate the prevalence of depression among adolescents residing in a rural community of north India, and to determine associated factors, psychiatric comorbidities, and functional impairment. **Methods:** A simple random sample of 630 adolescents aged 10-19 years was drawn. Participants were enrolled in house-to-house visits, and screened for depression using the nine-item version of Patient Health Questionnaire (PHQ-9). Diagnostic confirmation and assessment of psychiatric comorbidities was done using Mini International Neuropsychiatric Interview for Children and Adolescents (MINI Kid) for 10-17-year-old adolescents, and MINI for 18 year olds. Prevalence was reported with 95% confidence interval. Multivariable logistic regression analysis was done to determine the association of depression with socio-demographic and other factors. Children's Global Assessment Scale (CGAS) was used to assess functional impairment. **Results:** The prevalence of depression was 3.7% (95% CI: 2.3-5.2) ($n = 583$), comparable in both sexes. Over half the participants with depression had psychiatric comorbidities; the most common were conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder; nearly two-fifth had suicidal ideas/attempt. About two-third of participants with depression had functional impairment. Depression was associated with perceived frequent conflicts at home [adjusted odds ratio (aOR) = 4.0 (95% CI: 1.0-16.0), $P = 0.049$], and perceived stressful event (s) in past six months [aOR = 7.0 (95% CI: 2.4-20.3), $P < 0.01$], which were predominantly related to academics. **Conclusion:** Study results indicate the need to strengthen diagnostic and therapeutic/rehabilitative mental health services in adolescent age group. Low-stress lifestyle could be a promising approach to sidestep depressive symptoms.

Keywords: Adolescent, children, depression, rural

Introduction

The Global Burden of Disease (1990-2017) report indicated that nearly a third of the Disability Adjusted Life Years (DALYs) attributed to mental disorders could be

accorded to depressive disorders in India.^[1] The World Health Organization (WHO) defines 'adolescents' as individuals in the age group 10-19 years.^[2] With a count of 253 million, adolescents constitute 20.9% of the Indian population.^[3] Most mental disorders start in childhood or adolescence, but often go unnoticed.^[4] Depression in adolescents is associated with decreased school attendance and poor performance at school, binge eating, substance use, violence, and poor reproductive and sexual health.^[5] Adolescent depression has been linked to deliberate self-harm, suicidal ideation, and suicide. It is also associated with health-related problems in adulthood, such

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as psychiatric disorders, non-communicable diseases, nicotine dependence, and alcohol use disorders.^[6]

The literature on depression among adolescents in the north Indian community is limited. Most studies on mental disorders in adolescents have been undertaken in school-based settings. The National Mental Health Survey of India (NMHS) (2015-16) included a pilot study among adolescents aged 13-17 years in four states of India. However, it had inadequate representation from northern India, and it was recommended that the survey be expanded to cover a larger population of adolescents.^[7] The Rashtriya Kishor Swasthya Karyakram (RKSK) of the Government of India, also, places emphasis on curative, promotive, and preventive aspects of mental health of adolescents.^[8] The current study was conducted to estimate the prevalence of depression among adolescents of a rural community in north India, as well as to determine the psychiatric comorbidities, factors associated with depression, and functional impairment in individuals diagnosed with depression.

Materials and Methods

Study setting

This study was conducted for 2 months in mid-2019, in the villages of the rural field practice area of a teaching hospital in north India, harbouring nearly one lakh people. Psychiatry outpatient services are provided in this region in collaboration with the hospital's department of Psychiatry: on a daily basis at the secondary level, and weekly basis at primary level.

Study population and sample selection

Individuals aged 10 to 19 years were considered adolescents. Assuming the prevalence of depression as 14.5%,^[9] relative precision as 20%, and alpha value of 0.05, the sample size turned out to be 567 individuals. Accounting for a non-response rate of 10%, led to estimation of sample size of 630 adolescents. The sampling frame and participant details were obtained from the computerized Health Management Information System (HMIS) maintained at the rural health facility of the institute. A list of 16709 adolescents was obtained from HMIS, from which, a computer-generated simple random sample of 630 individuals was drawn. Participants who were too sick to cooperate, or were unable to comprehend the interview schedule, were excluded from the study.

Study process and tools

A semi-structured interview schedule was prepared after reviewing literature and opinions from experts. Components of the interview schedule included socio-demographic details of the participant, and other personal and family details related to depression. All details were self-reported. Participants were classified as being in early adolescence, if they were aged 10-14 years, and in late adolescence, if the age was 15-19 years. Atmosphere at home, body image, and having experienced a particularly stressful event in the past six months, were

self-perceived. An illness which lasted three or more months, or had recurred, was considered a chronic illness. Physical activity was considered adequate if moderate-to-vigorous activity was done for more than 60 minutes every day.

The nine-item version of Patient Health Questionnaire (PHQ-9) was used as screening tool for depression.^[10] Participants with PHQ-9 score of five or more were considered screen positive for depression. Its sensitivity and specificity for adolescent depression were 87.1% and 79.7%, respectively, when validated in India.^[11] The Mini International Neuropsychiatric Interview for Children and Adolescents (MINI Kid) version 7.0.1 by Sheehan *et al.* (2010),^[12] and Mini International Neuropsychiatric Interview (MINI) version 7.0.2 developed by Sheehan *et al.* (1998),^[13] were used to diagnose depression, and identify psychiatric comorbidities, for 10-17-year-old adolescents, and 18-year-old adolescents, respectively. MINI Kid has modules for the 30 most common psychiatric disorders in children and adolescents in age group 6-17 years, and MINI, 17 modules for adults. The Children's Global Assessment Scale (CGAS) was administered to adolescents diagnosed with depression, to assess functional impairment, indicated by a score of 70 or less (Shaffer *et al.*, 1983).^[14]

The single interviewer, a medical graduate, was trained in the administration of PHQ-9 by the psychiatrist (with an experience of over 15 years), MINI Kid, MINI, and CGAS, in the psychiatry out-patient clinic in the institute. Home visits were made by the interviewer to selected adolescents, accompanied by a volunteer from the local community to facilitate identification and rapport building. If the adolescent could not be contacted on the first visit, the second visit was made according to his/her availability as told by family members/neighbours. If unavailable again, he/she was classified as non-respondent. The interview schedule, and PHQ-9, were administered to all participants. PHQ-9 score of five or more was considered screen positive for depression, and the respective MINI Kid/MINI was administered to those participants. In addition, every 10th participant who was screen negative on PHQ-9, was also administered MINI Kid/MINI, to address the issue of possible false negatives and under-reporting. Participants diagnosed with depression by MINI Kid/MINI were further administered the remaining modules to determine psychiatric comorbidities, and also assessed for functional impairment using CGAS.

Statistical analysis

Statistical analysis was done using 'Stata v. 12' software.^[15] Qualitative variables were expressed as frequency and percentages, while quantitative variables were expressed as mean with standard deviation. Prevalence of depression was reported as a percentage with 95% confidence interval (CI). Bivariable and multivariable logistic regression analyses were undertaken to determine association of depression with the selected variables. Factors with *P* value ≤ 0.25 on bivariable analysis were entered into multivariable regression model; both unadjusted and adjusted

odds ratio was reported with 95% CI; *P* value less than 0.05 was considered statistically significant.

Ethical clearance

Ethical clearance was taken from Institute Ethics Committee of the teaching hospital [Ref. No. IECPG-23/23.01.2019]. Informed written consent was obtained from participants aged 18 years and above, while written assent from participant, and informed written consent from parent/caregiver was taken for participants aged less than 18 years. If the participant was diagnosed with a psychiatric illness, his/her condition was explained to the parent/caregiver, and the participant was referred for consultation in the Outreach Speciality OPD at the nearest health facility, and urged to follow up.

Results

Descriptive details of study participants

Houses of the 630 selected adolescents were visited. Thirty-five participants were discovered to have migrated to other districts. Three adolescents were unable to comprehend the questions due to intellectual impairment, and were therefore excluded. Of the remaining 592 adolescents, six could not be contacted on two house visits, and three refused to participate in the study, yielding a response rate of 98.5%.

The age-wise and sex-wise distribution of the studied 583 adolescents was similar in the sampling frame and the study population. These consisted of 330 (56.6%) boys and 253 girls (43.4%). Age-wise distribution of participants indicated 313 (53.7%) participants were in early adolescence, while 270 (46.3%) were in late adolescence. The mean (\pm standard deviation) age of participants was 14.6 (\pm 2.5) years. Majority of the participants were unmarried ($n = 580$, 99.5%), except one boy and two girls, who were married. The participants working for pay constituted 2.4% of the sample ($n = 14$; 8 boys, 6 girls). Of the total participants, 97% were living with both parents, 7% with one parent, and 1% with no parent. Socio-demographic details are given in Table 1.

Chronic illnesses, such as acne, tinea, seizure disorder, tuberculosis, haemorrhoids, and hypothyroidism, were reported by 8.4% ($n = 49$) of the participants. Perceived stressful events ($n = 95$, 16.3%) predominantly had an academic-related reason ($n = 55$, 57.9%), including stress due to academic failure/anticipation of results/less marks than expected. Twenty-seven participants (28.4%) had experienced stressful event in the form of death of loved one or illness/injury to loved one/self, while other stressful events, such as legal issues, were faced by 17 (17.9%) participants.

Prevalence of depression

The prevalence of PHQ-9 screen positivity was 20.9% (95% CI: 17.7-24.4) ($n = 122$). A total of 167 participants were administered MINI Kid/MINI, comprising 122 participants

who were positive on PHQ-9 screen, and 45 participants who were 10th negative on the screen. Twenty-three participants out of 583 were positive for depression on MINI Kid/MINI. Hence, the prevalence of depression in adolescents in our study turned was 3.9% (95% CI: 2.5-5.9). Of the 23 participants, 20 and three participants were in their late and early adolescence, respectively, and 13 and 10 participants were boys and girls, respectively. Age-adjusted prevalence of depression was 3.7% (95% CI: 2.3-5.2); it was comparable in both sexes: 3.8% (95% CI: 1.8-5.9) in boys, and 3.6% (95% CI: 1.4-5.8) in girls. Of the participants diagnosed with depression, over half 56.5% ($n = 13$) had current depression, a third 34.8% ($n = 8$) had depression in the past, and a tenth 8.7% ($n = 2$) had recurrent depression, as classified using MINI Kid/MINI. None of the 45 participants screened negative on PHQ-9 turned out to be positive for depression on MINI Kid/MINI.

Psychiatric comorbidities and functional impairment

Of the 23 participants diagnosed with depression, 15 were positive for at least one of the other modules of MINI Kid/MINI. Nine participants (six boys, three girls) were positive on the suicidality module: high suicidality in seven participants, and low in two participants. Twelve participants (nine boys, three girls) had psychiatric comorbidities. The most common psychiatric comorbidities were conduct disorder in the past one year ($n = 5$: childhood-onset = 2, adolescent-onset = 3), oppositional defiant disorder (ODD) in the past six months ($n = 5$), and attention deficit hyperactivity disorder (ADHD) in the past six months ($n = 4$: combined = 2, inattentive = 2) [Table 2].

The score on Children's Global Assessment Scale (CGAS) in the 23 participants diagnosed with depression ranged from 45 to 82. CGAS score was 70 or less in 15 (65.2%) participants, indicating functional impairment. Prevalence of depression with functional impairment on CGAS was 2.6% (95% CI: 1.4-4.2).

Associated socio-demographic and other factors

On multivariable logistic regression, depression was significantly associated with perceived stressful event in past six months [adjusted odds ratio (aOR) with 95% CI: 7.0 (2.4-20.3); $P < 0.01$], and perceived frequent conflicts at home [aOR (95% CI): 4.0 (1.0-16.0); $P = 0.049$]. The association of depression with other variables was statistically insignificant [Tables 3 and 4].

Discussion

In this study, the age-adjusted prevalence of depression among adolescents was 3.7% (95% CI: 2.3-5.2). Prevalence of depression in studies done in the Indian community ranges from 0.5% to 16.2%,^[7,9,16,17] which can be attributed to various factors. One of the reasons for the wide range of prevalence might be varying sampling techniques. We have used simple random sampling technique to ensure that the sample is representative of the population. Furthermore, studies using only a screening instrument for depression tend to over-report

Table 1: Socio-demographic characteristics of participants

Variable	Category	Boys n=330 (%)	Girls n=253 (%)	Total n=583 (%)
Age	10-14 years	183 (55.4)	130 (51.4)	313 (53.7)
	15-19 years	147 (44.6)	123 (48.6)	270 (46.3)
Participant's education	Higher than 8 th standard	130 (39.4)	117 (46.2)	247 (42.4)
	6 th -8 th standard	120 (36.4)	88 (34.8)	208 (35.7)
	Upto 5 th standard	80 (24.2)	48 (19.0)	128 (22.0)
Type of family	Extended	155 (47.0)	112 (44.3)	267 (45.8)
	Nuclear	175 (53.0)	141 (55.7)	316 (54.2)
Marital status of parents	Married	302 (92.6)	239 (94.8)	541 (93.6)
	Others (divorced/widowed/separated/both dead)	24 (7.4)	13 (5.2)	37 (6.4)
Number of parents living with the participant	Two	299 (90.6)	238 (94.1)	537 (92.1)
	One	27 (8.2)	14 (5.5)	41 (7.0)
	Zero	4 (1.2)	1 (0.4)	5 (0.9)
Number of siblings	Upto two	229 (69.4)	139 (54.9)	368 (63.1)
	Three or more	101 (30.6)	114 (45.1)	215 (36.9)
Birth order	Upto three	273 (82.7)	220 (87.0)	493 (84.6)
	Four or more	57 (17.3)	33 (13.0)	90 (15.4)
Father's education	Higher than 10 th standard	102 (30.9)	83 (32.8)	185 (31.7)
	6 th -10 th standard	171 (51.8)	128 (50.6)	299 (51.3)
	Upto 5 th standard	30 (9.1)	19 (7.5)	49 (8.4)
	Illiterate	27 (8.2)	23 (9.1)	50 (8.6)
Mother's education	Higher than 10 th standard	35 (10.6)	28 (11.1)	63 (10.8)
	6 th -10 th standard	123 (37.3)	92 (36.4)	215 (36.9)
	Upto 5 th standard	60 (18.2)	47 (18.6)	107 (18.4)
	Illiterate	112 (33.9)	86 (34.0)	198 (34.0)

Table 2: Psychiatric comorbidities on MINI Kid/MINI in participants diagnosed with depression on the same

Psychiatric comorbidity	Frequency (n=23)
No psychiatric comorbidity	11
Psychiatric comorbidity present*	12
Conduct disorder (past 12 months)	5
Oppositional defiant disorder (ODD) (past six months)	5
Attention deficit hyperactivity disorder (ADHD) (past six months)	4
Social anxiety disorder	3
Separation anxiety disorder (past month)	2
Specific phobia (past month)	2
Generalized anxiety disorder (past six months)	2
Mood disorder with psychotic features (lifetime)	2
Manic episode (current)	1
Panic disorder (past one month)	1
Agoraphobia (past one month)	1
Post-traumatic stress disorder (PTSD) (past one month)	1
Psychotic disorders (lifetime and current)	1

*Multiple responses possible

the point prevalence, while those using multi-stage diagnosis tend to under-report the prevalence, since the screen negative participants are not taken up for the diagnostic stage.^[18] In our study, applying the diagnostic test to every 10th negative participant also, has strengthened the methodology. The difference in prevalence might also be attributed to study instrument-related factors, such as different study tools used, their standardization status, single or multi-stage diagnosis, and revisions of the instrument as well as diagnostic criteria

for depression. MINI Kid was used as a single stage diagnostic instrument in NMHS, reporting the prevalence of depressive episode and recurrent depressive disorder as 0.8% (95% CI: 0.3-1.4).^[7] Variability of sociocultural factors in a diverse country like India may also be an important factor for the wide range of prevalence of depression in rural communities of different geographical regions across the country: from 0.5% in a study in western India conducted by Pillai *et al.*, to 16.2% in southern India (Russell *et al.*)^[16,17] The Global Burden of Disease report (1990-2017), also, indicated that depressive disorders were less prevalent in the less developed states of north India, as compared to the more developed states of south India.^[1]

Association of depression/depressive symptoms with conduct disorder, ADHD, and anxiety disorders is in agreement with existing evidence.^[17,19-21] However, the literature on association of depression with oppositional defiant disorder is scarce.

In our study, the prevalence of depression with functional impairment on CGAS was 2.6% (95% CI: 1.4-4.2). The reduction in prevalence of depression on including a criterion for functional impairment, has been studied previously by Roberts, *et al.* (2.03% to 0.87%), and Hackett, *et al.* (9.4% to 5.2%).^[22,23] We further interpret, that the room between overt and negligible functional impairment on the continuum of functional impairment in depressed individuals, indicates the extent of masking of depressive symptoms in high-functioning adolescents, further underscoring the need for screening adolescents for depression to address the other aspects of depression. Furthermore, the degree of impairment as identified on CGAS, rather than a binary

Table 3: Association between socio-demographic variables and depression positivity by MINI Kid/MINI

Variable	Category	Frequency n=583	Depression n=23 (%)	Unadjusted Odds Ratio (95% CI)	Unadjusted P	Adjusted Odds Ratio (95% CI)	Adjusted P
Age group	10-14 years	313	3 (1.0)	1.0	-	-	-
	15-19 years	270	20 (7.4)	8.3 (2.4-28.1)	<0.01	3.0 (0.6-15.3)	0.18
Sex	Male	330	13 (3.9)	1.0	-	-	-
	Female	253	10 (4.0)	1.0 (0.4-2.3)	0.99	-	-
Participant's education	Higher than 8 th standard	247	16 (6.5)	1.0	-	-	-
	6 th -8 th standard	208	6 (2.9)	0.4 (0.2-1.1)	0.08	1.1 (0.3-4.0)	0.87
	Upto 5 th standard	128	1 (0.8)	0.1 (0.2-0.9)	0.04	0.4 (0.0-7.3)	0.57
Father's education	Higher than 10 th standard	185	5 (2.7)	1.0	-	-	-
	6 th -10 th standard	299	14 (4.7)	1.8 (0.6-5.0)	0.28	-	-
	Upto 5 th standard	49	3 (6.1)	2.4 (0.5-10.2)	0.25	-	-
Mother's education	Illiterate	50	1 (2.0)	0.7 (0.1-6.4)	0.78	-	-
	Higher than 10 th standard	63	0 (0.0)	-	-	-	-
	6 th -10 th standard	215	9 (4.2)	-	-	-	-
Type of family	Upto 5 th standard	107	4 (3.7)	-	-	-	-
	Illiterate	198	10 (5.0)	-	-	-	-
	Extended	267	13 (4.9)	1.0	-	-	-
Number of siblings	Nuclear	316	10 (3.2)	0.6 (0.3-1.5)	0.30	-	-
	Upto two	368	14 (3.8)	1.0	-	-	-
Birth order	Three or more	215	9 (4.2)	1.1 (0.5-2.6)	0.82	-	-
	Upto three	493	18 (3.6)	1.0	-	-	-
Marital status of parents	Four or more	90	5 (5.6)	1.6 (0.6-4.3)	0.39	-	-
	Married	541	20 (3.7)	1.0	-	-	-
	Others (widowed/divorced/separated)	37	2 (5.4)	1.5 (0.3-6.6)	0.60	-	-

Table 4: Association between miscellaneous variables and depression positivity by MINI Kid/MINI

Variable	Category	Frequency n=583	Depression n=23 (%)	Unadjusted odds ratio (95% CI)	Unadjusted P	Adjusted odds ratio (95% CI)	Adjusted P
If family members know how the participant spends time	No	21	4 (19.0)	1.0	-	-	-
	Occasionally	72	2 (2.8)	0.1 (0.2-0.7)	0.02	0.2 (0.0-3.1)	0.25
If family members know with whom the participant spends time	Yes, usually	490	17 (3.5)	0.2 (0.0-0.5)	<0.01	0.3 (0.0-2.4)	0.25
	No	17	2 (11.8)	1.0	-	-	-
Perceived atmosphere at home	Occasionally	82	3 (3.7)	0.3 (0.4-1.8)	0.19	0.5 (0.0-11.6)	0.68
	Yes, usually	484	18 (3.7)	0.3 (0.6-1.4)	0.12	1.0 (0.1-19.7)	0.98
	Calm	34	7 (20.6)	1.0	-	-	-
Family history of psychiatric illness	Occasional conflicts	191	7 (3.7)	1.4 (0.9-2.2)	0.10	0.9 (0.3-3.0)	0.85
	Frequent conflicts	358	9 (2.5)	3.3 (1.6-6.8)	<0.01	4.0 (1.0-16.0)	0.049
Body image	No	557	19 (3.4)	1.0	-	-	-
	Yes	26	4 (15.4)	5.2 (1.6-16.4)	<0.01	4.4 (1.0-20.1)	0.06
Stressful event	About right	371	8 (2.2)	1.0	-	-	-
	Others (thin/fat)	212	15 (7.1)	3.4 (1.4-8.3)	<0.01	2.7 (1.0-7.8)	0.06
Chronic illness	No	488	8 (1.6)	1.0	-	-	-
	Yes	95	15 (15.8)	11.2 (4.6-27.4)	<0.01	7.1 (2.4-20.3)	<0.01
Adequate physical activity per week	No	534	18 (3.4)	1.0	-	-	-
	Yes	49	5 (10.2)	3.3 (1.2-9.2)	0.03	1.9 (0.5-7.1)	0.36
Substance use by parent/ caregiver in past one year	Yes	445	19 (4.3)	1.0	-	-	-
	No	138	4 (2.9)	0.7 (0.2-2.0)	0.47	-	-
Substance use by participant in past one year	No	249	6 (2.4)	1.0	-	-	-
	Yes	334	17 (5.1)	2.2 (0.8-5.6)	0.11	1.9 (0.6-5.9)	0.26
	No	575	21 (3.6)	1.0	-	-	-
	Yes	8	2 (25.0)	8.8 (1.7-46.2)	0.01	4.1 (0.4-42.3)	0.24

response (yes/no), provides substance for deeper reflection on the extent to which depression affects the quality of life of the individual adversely.

In our study, depression was strongly associated with experiencing an event in the past six months which was perceived as stressful. In literature, association with depression

has been found not only between having experienced adverse life events in recent past, but also with the number of such events.^[24,25] Academic performance has been a recurring theme of these stressful events, in India and worldwide, as clarified by the association of depression with difficulty in studies, dissatisfaction with own academic performance, and failing a class, and academic pressure in general.^[16,24-28] This association could be due to poor attendance at school, decreased ability to concentrate, low self-confidence, low mood, increased duration of sleep, and lethargy associated with depression. Bhasin, *et al.* (2010) reported an association between studying in board classes and having depression, often seen as a rite of passage in schooling.^[25] The association of depression with other stressors, such as death of loved one and illness in self or family members, is consistent with findings reported by other studies.^[24-26] Frequent conflicts among family members at home was positively associated with depression, in agreement with findings in other studies mentioning the impact of intra-familial discord and parental quarrels.^[16,24-27]

Presence of long-term medical illness, impaired body image, family history of psychiatric illness, working for pay, and respondent's history of substance use, predominantly tobacco, also, have been mentioned in literature as factors associated with depression, and reached statistical significance in our study, also, on bivariable logistic regression. For instance, history of smoking tobacco, and history of undergoing medical treatment for diseases, were identified as risk factors for depressive symptoms in a recent study conducted among adolescents in UAE.^[29] A larger sample size for our study design could attain the statistical significance on multivariable analysis, desired for identification of risk factors for depression.

The strengths of this study include a robust methodology, and high response rate (98.5%). Simple random sampling ensured the sample is representative of adolescent population in that region, and the sample size was adequate. The tools used were validated in adolescents, and had high sensitivity and specificity. Since there was a single interviewer, inter-observer bias was ruled out. Quality was assured by training of the interviewer by an experienced psychiatrist. By applying confirmatory test on every 10th screen negative also, and none of the participants turning out positive for depression, the possibility of false negatives was also low.

However, the authors acknowledge that participants could be hesitant in divulging information about their mental state, especially in the presence of other family members, and social desirability bias may have come into picture in certain questions, such as those about atmosphere at home and substance use. Given that it was a cross-sectional study, temporality could not be established. In addition, the sample size was calculated keeping in mind the primary objective of determining the prevalence of depression, which could have limited the power of this study to explore the association between depression and other factors.

Conclusion

In sum, the prevalence of depression in our study was found to be 4% among adolescents and including functional impairment was observed as 3%. Around two third of these adolescents with depression had a psychiatric co-morbidity. The prevalence of undiagnosed depression, psychiatric comorbidities, and functional impairment observed among adolescents in the course of this study, lucidly indicates the need to strengthen diagnostic and therapeutic/rehabilitative mental healthcare services in this age group. Screening could provide lead time, and improve the prognosis of disease and functionality of the affected adolescents. Early referral and early management of disease, could potentially smoothen the transition of affected adolescents to adulthood, and have far-reaching consequences in the form of better health profile thereafter, as supported by evidence from literature review. The authors believe that a family physician/primary care physician is more accessible to people in general, more frequented, and entrusted by people to provide wholesome healthcare, especially in a scenario when our country lacks psychiatrists in general and specifically in field of child and adolescent psychiatry.^[30] They are well-aware of the family structure and dynamics, and are often the doctors whose opinion is sought for resolution of miscellaneous health issues across all age groups in the family. When trained and sensitized to identify and screen the vulnerable individuals in families, such primary care physicians could be the agents of change in the mental health scenario of that region. Their rapport with their patients could aid in opening up avenues for informal discussions during the process of screening, and help address the stigma attributable to limited knowledge about the disease, improving the perception of mental health disorders in the eyes of the general population, and evade the elusiveness of mental disorders. Training them in identifying and gauging the severity of common mental disorders in this age group could improve the accessibility to mental healthcare services, especially in rural area, which India has been striving to provide to this age group. In addition, low-stress lifestyle could be a promising approach to sidestep depressive symptoms.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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