

DEPRESSION AND ASSOCIATED FACTORS AMONG STUDENTS STUDYING IN HIGHER SECONDARY SCHOOLS IN NORTH KERALA

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ABSTRACT

BACKGROUND

The academic performance of higher secondary school students plays a crucial role in deciding about next stage of education and career. They belong to middle and late adolescence. Depression is the number one cause of illness and disability in this age group. The adolescents those who are affected with depression early in life often suffer from depression throughout their lives. Adolescents who are depressed have an increase in suicidal tendency and are at higher risk of anxiety, conduct disorders, substance abuse and poor academic achievement. The study intends to identify the prevalence of depression and associated factors.

The aim of this study is to estimate the prevalence of depression among higher secondary school students and to identify the factors associated with depression.

MATERIALS AND METHODS

A cross-sectional study was conducted among 640 adolescents studying in classes XI and XII in higher secondary schools in Taliparamba Taluk, Kannur District, Kerala. In the first stage, students were administered a pretested semi-structured questionnaire (for associated factors) and Patient Health Questionnaire PHQ-9 (for screening). Those students who were found positive were interviewed using the Hamilton's Rating Scale for Depression (HAM-D). Statistical measures like Chi-square test and Fisher's exact test were analysed using SPSS version 16.

RESULTS

The prevalence of depression was found to be 20.6%. Majority of the students had mild depression (12.8%). Depression was found to be more among males (21.5%) compared to females (19.4%). Factors like age, class of study, father's educational status, neglect, physical abuse, failure in exams, death of parents/ relatives, conflict in the family, poor communication, parental rejection, peer rejection, family history of depression, having someone to discuss worries with, career and university disagreement between the student and the parent were significantly associated with depression.

CONCLUSION

This study highlights the common but ignored problem of depression in adolescence. Early screening should be instituted in schools by adequately trained counsellors. Teachers, parents, healthcare workers and primary care providers should be trained to identify depression at early stage.

KEY WORDS

Prevalence; Adolescent; Depression; Higher Secondary School Students.

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BACKGROUND

WHO defines 'Adolescents' as individuals in the age group of 10 - 19 years that occurs after childhood and before adulthood.¹ Adolescents are classified into early adolescents (10 - 14 years), middle adolescents (15 - 17 years) and late adolescents (18 - 19 years).² There are a spectrum of health issues affecting adolescents which include nutrition, injuries, mental health, tobacco, alcohol and drug use, sexual and reproductive health and violence. The transition period from childhood to adulthood is a stage marked by emotional instability that makes adolescents vulnerable to depression.³

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WHO's "Health for the world's adolescents" report reveals that depression is the predominant cause of illness and disability for both boys and girls aged 10 to 19 years. Globally, depression is the number one cause of illness and disability in this age group, and suicide ranks number 3 among causes of death.³ Depressive disorders are identified by WHO as priority mental health disorder of adolescence because of its high prevalence, recurrence, ability to cause significant complications and impairment.⁴ The lifetime prevalence for major depression in adolescence is 15% to 20% globally.⁵ In India out of 1.25 billion people, the estimated number of adolescents is 243 million. About 20% adolescents need mental health services. 20% of adolescents experience depression, mood disturbances, substance abuse, suicidal behaviours and eating disorders.⁶ A study conducted by Russell P et al found the prevalence of adolescent depression to be 13.9%.⁷ The National Mental Health Survey (NMHS) 2015 - 16 reported a prevalence rate of 0.8% for depression among 13 to 17-year-old children.⁸

Higher secondary school students refer to students studying in classes XI and XII.⁹ They belong to middle and late

adolescence.² Higher secondary school education is a very important turning point in the academic life of the individual. The academic performance of the adolescents plays a crucial role in deciding about next higher stage of education and career. Students have to face many academic burdens, competition with other classmates and need to fulfil teacher's and parents' academic expectations. The threat of unemployment and absence of adequate opportunities dishearten the students.¹⁰

Depressed disorders are characterised by the presence of depressed moods along with a set of additional symptoms persisting over time, causing disruption and impairment of function. The individual suffers from depressed mood, loss of interest and enjoyment and reduced energy leading to increased fatigability and diminished activity. Marked tiredness after only slight effort is common. Other common symptoms are reduced concentration and attention, reduced self-esteem and self-confidence, ideas of guilt and unworthiness, bleak and pessimistic views of the future, ideas or acts of self-harm or suicide, disturbed sleep and diminished appetite.¹¹

Depression in adolescents has received little research attention. There is a notion that adolescents are cognitively immature to be depressed and the concept that psychopathological manifestations represent normal development process of adolescence.¹² The adolescents those who are affected with depression early in life often suffer from depression throughout their lives.¹³ Adolescents who are depressed have an increase in suicidal tendency. They are at a higher risk of disorders such as anxiety, conduct disorders and substance abuse and poor academic achievement.¹⁴ Therefore, early screening to identify and treat depression is needed to prevent the development of adulthood depression and other mental disorders. Only few studies have been conducted on depression in Kerala. The study intends to identify the prevalence of depression and associated factors of depression.

Objectives

1. To estimate the prevalence of depression among students attending higher secondary schools in Taliparamba Taluk, Kannur, Kerala.
2. To identify the factors associated with depression among the study population.

MATERIALS AND METHODS

Study Design- A population based cross-sectional study was conducted from August 2016 to August 2017.

Study Setting

Government and private higher secondary schools in Taliparamba Taluk, Kannur district, Kerala. The study was conducted in Taliparamba Taluk. There were 30 government schools and 19 private schools in this Taluk. Out of this, 10 schools were in urban area and 39 schools were in rural area.

Study Population

Students studying in classes XI and XII in government and private higher secondary schools in Taliparamba Taluk, Kannur.

Inclusion Criteria

1. Students studying in classes XI and XII (Higher secondary schools) from selected sections.
2. Providing written informed consent.

Exclusion Criteria

1. Students who were not willing to participate in the study.
2. Prolonged absentees.

Sampling

Stratified random sampling was used. Schools in Taliparamba Taluk was divided into urban and rural schools. Within each strata, one government school and one private school was selected randomly. Thus, four schools were selected. Within each school, two sections were selected randomly from each of the classes XI and XII.

Sample Size

After applying inclusion and exclusion criteria, a total of 640 students were enrolled in the study.

Study Tools

1. A pre-tested semi-structured questionnaire.
2. The Patient Health Questionnaire (PHQ-9) was used as a screening test to identify students with depression. It is a validated test. (79) PHQ-9 consists of 9 items. Next to each item, there is a grading to assess how often these problems affected the students. Based on the response, the score is 0 for 'not at all,' 1 for 'several days,' 2 for 'more than half the days' and 3 for 'nearly every day.' These scores are added to get a total score. Those students with a score of 5 or more were identified as having depression. In addition, those students who scored ≥ 1 for any '2' of the three items "Little interest or pleasure in doing things," "Feeling down, depressed or hopeless" and "Feeling tired or having little energy" will be considered as having depression. This scoring method was adopted based on the fact that these items have been cited as cardinal features of depression in ICD-10 classification.
3. The Hamilton's depression rating scale (HAM-D) consisted of 17 items. It is a validated test to rate the severity of depression. (80) The scores for each item were added to get a total score. This was used to rate the severity of depression.

Data Collection Method

The study was conducted in Taliparamba Taluk of Kannur district, Kerala. Approval for the study was obtained from the Institutional Ethical Committee. Consent was obtained from the Regional Deputy Director of Higher Secondary Education. The list of schools under Taliparamba Taluk was obtained. Schools were divided into urban and rural. From each of these, one government and private school were selected randomly. Consent was obtained from the Principal for each school. Consent forms were given to the students. Those who were willing to participate, the students brought their forms signed by the parents. The study was conducted in two stages: In the first stage, the students were administered the semi-structured questionnaire and PHQ-9. This was self-administered. Information was collected on socio-

demographic characteristics and associated factors using a semi-structured questionnaire. Those students who scored above the cut-off were taken up for the second stage using HAM-D to assess the severity of depression. This scale was investigator administered. Socioeconomic status (SES) was assessed using Revised Modified Kuppuswamy's socioeconomic status scale 2016.

Statistical Analysis

The data was entered in Microsoft Excel 2007 and analysed using SPSS version 16.0 software. The descriptive statistical methods like mean, standard deviation, frequencies and proportion were used. Mean inferential statistics like Chi-square test and Fisher's exact test were used to test the significance between associated factors and adolescent depression. A 'p' value of less than 0.05 was taken as significant.

Ethical Considerations

The study was conducted in Taliparamba Taluk of Kannur district, Kerala. Approval for the study was obtained from the Institutional Ethical Committee. Consent was obtained from the Regional Deputy Director of Higher Secondary Education.

RESULTS

Characteristics	Number (n)	Percentage (%)
Age (In Years)		
15	54	8.5
16	300	46.9
17	262	40.9
18	22	3.4
19	2	0.3
Gender		
Male	367	57.3
Female	273	42.7
Class of Study		
X1	326	50.9
XII	314	49.1
Religion		
Hindu	366	57.2
Muslim	259	40.5
Christian	15	2.3
Type of Family		
Nuclear	372	58
Joint	268	42

Table 1. Socio-Demographic Characteristics of Study Population

In the present study, 50% of the students were from urban area and 50% were from rural area. 50% of the students were from government school and 50% were from private school.

Characteristics	Number (n)	Percentage (%)
No. of Family Members		
≤ 4	295	46.1
More than 4	345	53.9
Father's Educational Status*		
Upto high school	451	71.6
More than high school	179	28.4
Mother's Educational Status**		
Upto high school	411	64.4

More than high school	227	35.6
Father's Occupational Status*		
Professional	2	0.32
Semi-professional	18	2.86
Clerical, shop owner, farmer	219	34.76
Skilled worker	161	25.56
Semi-skilled worker	53	8.4
Unskilled worker	177	28.1
Mother's Occupational Status**		
Employed	122	19.1
Unemployed	516	80.9
SES		
Upper	2	0.3
Upper middle	40	6.3
Lower middle	373	58.3
Upper lower	223	34.8
Lower	2	0.3

Table 2. Distribution of Subjects according to Socio-Economic Characteristics

*10 fathers had passed away.

**2 mothers had passed away.

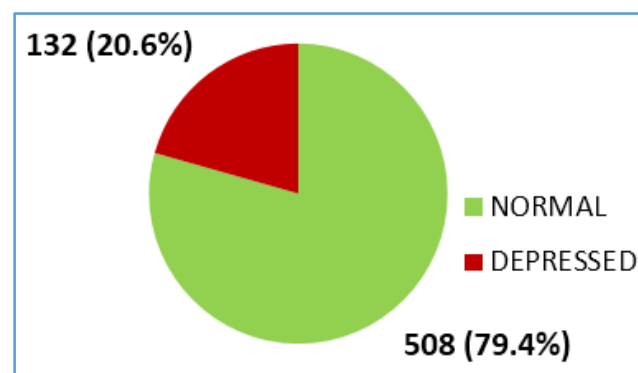


Figure 1. Prevalence of Depression (n= 640)

Figure No. 1 shows that the prevalence of adolescent depression was 20.6% (CI= 20.6 ± 2.56%).

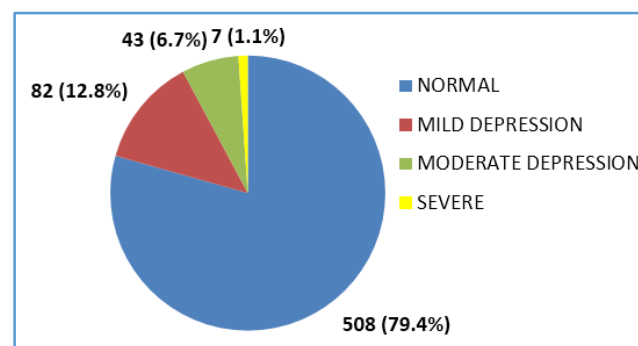


Figure 2. Level of Depression based on Hamilton Depression Rating Scale Score (n= 640)

According to Figure No. 2, majority of the students had mild depression (12.8%) followed by moderated depression (6.7%) and severe depression (1.1%). None of the students had very severe depression.

Characteristics		Non-Depressed No. (%)	Depressed No. (%)	Total	P value
Gender	Male	288 (78.5)	79 (21.5)	367(100)	0.514
	Female	220 (80.6)	53 (19.4)	273 (100)	
Class of study	X1	270 (82.8)	56 (17.2)	326 (100)	0.028
	XII	238 (75.8)	76 (24.2)	314 (100)	
Religion	Hindu	289 (79)	77 (21)	366 (100)	0.767
	Muslim	206 (79.5)	53 (20.5)	259 (100)	
	Christian	13 (86.7)	2 (13.3)	15 (100)	
Area of residence	Rural	263 (82.2)	57 (17.8)	320 (100)	0.079
	Urban	245 (76.6)	75 (23.4)	320 (100)	
Type of school	Government	251 (78.4)	69 (21.6)	320 (100)	0.558
	Private	257 (80.3)	63 (19.7)	320 (100)	
Type of family	Nuclear	288 (77.6)	83 (22.4)	371 (100)	0.20
	Joint	220 (81.8)	49 (18.2)	269 (100)	
No. of family members	≤ 4	232 (78.6)	63 (21.4)	295 (100)	0.67
	More than 4	276 (80)	69 (20)	345 (100)	
Father's educational status	Upto high school	348 (77.2)	103 (22.8)	451 (100)	0.013
	More than high school	154 (86)	25 (14)	179 (100)	
Mother's educational status	Upto high school	326 (79.3)	85 (20.7)	411 (100)	0.994
	More than high school	180 (79.3)	47 (20.7)	227 (100)	
Mother's occupational status	Employed	94 (77)	28 (23)	122 (100)	0.493
	Unemployed	412 (79.8)	104 (20.2)	516 (100)	
SES	Upper + Middle*	337 (80.6)	81 (19.4)	418 (100)	0.285
	Lower**	171 (77)	51 (23)	222 (100)	

Table 3. Socio-Demographic and Socio-Economic Characteristics affecting Depression

*Upper includes upper, upper middle, lower middle. **Lower includes upper lower, lower.

Characteristics		Non-Depressed No. (%)	Depressed No. (%)	Total	P-value
Neglect	Present	20 (44.4)	25 (55.6)	45 (100)	< 0.001
	Absent	488 (82)	107 (18)	595 (100)	
Physical abuse	Present	7 (36.8)	12 (63.2)	19 (100)	< 0.001*
	Absent	501 (80.7)	120 (19.3)	621 (100)	
Death of parents/ relatives	Present	193(74.8)	65 (25.2)	258 (100)	0.019
	Absent	315 (82.5)	67 (17.5)	382 (100)	
High level of conflict in the family	Present	14 (45.2)	17 (54.8)	31 (100)	< 0.001
	Absent	494 (81.1)	115 (18.9)	609 (100)	
Parental divorce	Present	1 (33.3)	2 (66.7)	3 (100)	0.11*
	Absent	507 (79.6)	130 (20.4)	637 (100)	
Poor communication at home and school	Present	23 (46)	27 (54)	50 (100)	< 0.001
	Absent	485 (82.2)	105 (17.8)	590 (100)	
Parental rejection	Present	58 (58.6)	41 (41.4)	99 (100)	< 0.001
	Absent	450 (83.2)	91 (16.8)	541 (100)	
Peer rejection	Present	57 (67.1)	28 (32.9)	85 (100)	0.003
	Absent	451 (81.3)	104 (18.7)	555 (100)	
Staying in hostel	Present	4 (80)	1 (20)	5 (100)	1.0*
	Absent	504 (79.4)	131 (20.6)	635 (100)	
Parents working abroad	Present	126 (75.4)	41 (24.6)	167 (100)	0.15
	Absent	382 (80.8)	91 (19.2)	473 (100)	
Family history of depression	Present	5 (45.5)	6 (54.5)	11 (100)	0.01*
	Absent	503 (80)	126 (20)	629 (100)	

Table 4. Factors associated with Depression

*Fisher's exact test.

Characteristics		Non-Depressed No. (%)	Depressed No. (%)	Total	P-value
Failure in exams	Present	200 (71.4)	80 (28.6)	280 (100)	< 0.001
	Absent	308 (85.6)	52 (14.4)	360 (100)	
Having someone to discuss worries with	Present	471(80.5)	114 (19.5)	585 (100)	0.02
	Absent	37 (67.3)	18 (32.7)	55 (100)	
Career disagreement between the student and parent	Present	11 (52.4)	10 (47.6)	21 (100)	0.004*
	Absent	497 (80.3)	122 (19.7)	619 (100)	
University disagreement between the student and the parent	Present	8 (44.4)	10 (55.6)	18 (100)	0.001*
	Absent	500 (80.4)	122 (19.6)	622 (100)	

Table 5. Examination related Stressors associated with Depression

*Fisher's exact test.

DISCUSSION

The prevalence of depression was found to be 20.6% in our study. This was comparable to the study conducted at Imphal, Manipur where the prevalence rate was 19.5%.¹⁵ Indian studies have shown prevalence ranging from 18.4% to 38%.¹⁶⁻¹⁸ A study conducted by Russell P et al found the prevalence of depression to be 13.9%.⁷

In this study, males (21.5%) were more depressed than females (19.4%). Similar findings were seen in the study conducted by Nagendra K et al.¹⁹ A study by Chauhan S et al found females to be significantly more depressed than males.¹⁸ The prevalence of depression among students studying in class XII (24.2%) was significantly more than students studying in class XI (17.2%). This may be because they are in pressure regarding their performance in board examination. This finding was consistent with the study conducted in South India.¹⁷

The prevalence of depression was more among students residing in urban area compared to students residing in rural area. Students studying in government schools were more depressed than students studying in private schools. These findings were consistent with the study conducted by Vashisht A et al.²⁰

Students belonging to joint family (18.2%) were less depressed than students belonging to nuclear family (22.4%). It may be because in joint family system, all the members may work together to solve a problem faced by any one member of the family. Similar findings were seen in a study conducted by Nagendra K et al.¹⁹

Father's educational status was significantly associated with depression. Few studies have reported similar association with father's educational status.^{21,22} Depression was more among students whose mothers were employed. Students belonging to lower SES were more depressed compared to students from higher SES. An observation similar to a study was conducted in Turkey.²³

Neglect and abuse had an effect on the prevalence of adolescent depression, an observation similar to a study conducted by Brown J et al.²⁴

The prevalence of depression was more among those students who had parental divorce, death of parents/ relatives. Similar findings were seen in the study conducted in Turkey.²³

Depression was found to be more among students whose parents were working abroad (24.6%) compared to students whose parents were not working abroad (19.2%). Staying away from parents was found to be a significant risk factor for depression in children. In Kerala due to socio-economic reasons, there are several children who stay in hostels or orphanages or have parents working abroad. These children form a vulnerable group who need more attention.²⁵

Factors like high level of conflict, poor communication at home and school, parental rejection and peer rejection were significantly associated with depression. Few studies showed similar findings.^{16,26-28}

The prevalence of depression among adolescents who had a family history of depression (54.5%) was more than those who did not have a family history of depression (20%). Similar findings were seen in a study conducted by Muhil M.²⁹

The examination related stressors like having anyone to talk to about his/ her worries, poor academic achievement and parents not agreeing with student's choice of university and career were associated with depression. These findings are

consistent with the study conducted in Japan.³⁰ The study conducted by Krishnakumar P and Geeta MG found a significant association between examination failures and depression.²⁵

CONCLUSION

This study highlights the prevalence of depression among higher secondary school students. This finding emphasises the need for screening depression and identifying adolescents who need further intervention. Teachers and parents should be able to identify depression at earlier stage, so that the risk of progression into other serious problems like drug abuse, suicide and violence can be minimised. Health education to parents as well as to community as a whole should be promoted to remove the stigma attached to these disorders. Emphasis should also be on IEC activities to ensure recognition of even mild symptoms of depression and their early treatment. It seems necessary to have a post of counsellor in every school for early identification of adolescents suffering from depression.

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