



A CROSS SECTIONAL STUDY ON PREVALENCE OF DEPRESSION AMONG ADOLESCENTS AND ITS ASSOCIATED FACTORS IN RURAL AREA OF ANDHRA PRADESH

Community Medicine

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ABSTRACT

Background: Adolescents are generally considered healthy people in the community and their health aspects are usually neglected. Adolescent population is nearly 1.3 billion worldwide accounting to 16% of the world population (UNICEF). Suicide is the fourth leading causes of death among 15-29 years old. **Aim:** To assess the prevalence of depression among adolescents in Rural area of AP, to determine factors associated with depression and to assess need for motivational speakers/ school psychologists visit to schools. **Methodology:** This is a cross sectional study done among adolescents in V.kota region of AP, 7 schools and the participants in the school were selected by simple random sampling technique, and after taking written consent, participants were interviewed using questionnaire which consists of sociodemographic details, risk factors assumed to be associated with depression, Beck's Depression Inventory, students opinion on the need for motivational speakers and psychologists visit to schools and statistical analysis was done using SPSS. **Result:** In this study, the prevalence of depression among adolescents was 2.7% and 28.57% (2/7), 57.14% (4/7) and 14.28% (1/7) of the depressed individuals have been found to have Mild, Borderline and Moderate depression. Factors like birth order, family history, family environment, stressful events like interpersonal losses, relationship failure, exposure to suicide, social deprivation/rejection, factors which make individuals feel low and disputes with family/friends/others were found to be statistically associated with depression ($p < 0.05$). About 70.35% of the study participants felt the need for motivational speakers and psychologists visits to schools, around 76.28% of the adolescents were motivated by parents/teachers/friends /relatives/others, and 57.14% of the depressed individuals were not willing to reach out for help. **Conclusion:** Rural adolescents are also exposed to various risk factors which make them equally vulnerable as of their urban counterparts. There is a need for regular psychologists and motivational speakers visit to schools which helps adolescents in coping with stress thereby decreasing the incidence of depression among them.

KEYWORDS

Adolescents, Depression, Prevalence, Rural

INTRODUCTION:

Depression is the disorder of Mood or Affect. The word depression is derived from the latin word Deprimere to Depression which states "Press Down"⁽¹⁾. Also the english meaning of the word depression says same. The nomenclature "Depression" made its way into the medical literature as " Mental Depression" in the 19th century to describe lowering of spirits and came to reconstitute the term 'Melancholy' as diagnosis⁽²⁾

American Psychiatric Association (APA) states depression as a common and serious medical illness that negatively affects thinking, feelings and activities of a person.⁽³⁾

Depression have been described and classified in different ways of which those described by International classification of Diseases (ICD-11) and Diagnostic and Statistic Manual (DSM-V) are considered for all clinical purposes.⁽⁴⁾

An 'Our World in Data' study estimates about 3.4% of the global population has depression, which is 264 million people. The prevalence of depression in India is 4.5% with total population of 1.4 billion population.⁽⁵⁾

There are 1.3 Billion adolescents globally accounting for 16% of the world population.⁽⁶⁾ In the south east asian region about 20% of the total population are adolescents.⁽⁷⁾ India comprises of 253 million adolescents⁽⁸⁾, out of which 9 million are from Andhra Pradesh.⁽⁹⁾

The word "Adolescence" is of latin origin from "Adolescere" meaning to grow up/mature⁽¹⁰⁾. Adolescence is the wonderful, tender and vulnerable period in which one experiences spurt of growth & is a transitional phase of physical, mental, social development and it is during this period every one gets to face the spurt of gonadal steroids for the first time and are in puberty stage of life.

It is estimated that 34% of adolescents in the world are at risk of depression.⁽¹¹⁾

The prevalence of depression among adolescents in India was 3% to

68% in school based studies, 0.1% to 6.94% in community based studies and 1.2% to 21% in clinic based studies.⁽¹²⁾ Prevalence of depression among adolescents in rural areas ranged from 3.5% to 88.3%, pooled prevalence of 27%⁽¹³⁾

Many factors are considered in the etiology of depression like genetic/family history of mental illness, family environment, abuse (physical/mental/emotional), bullying, war, drought, famine, substance abuse-alcohol, cocaine, sleep disturbances, medical illnesses like epilepsy, diabetes, multiple sclerosis, fibromyalgia, other autoimmune disorders, childhood malignancies-ALL, osteosarcoma, etc and other psychiatric illnesses- OCD, PTSD, medications- corticosteroids, benzodiazepines, beta-blockers.^(14,15,16,17)

From all the numbers and description above it is evident that the so believed to be healthy population of the community trespassing into adulthood experience changes in their mood and are prone to depression when they fail to cope up with the internal and external environmental changes, which may affect the productive years of their life, subsequently affecting their adulthood and the major complication being suicide.

According to 2011 census⁽¹⁸⁾, about 71.36% of Indian adolescent population resides in rural areas and the number of privileges they possess and the studies done to assess their health are less compared to those done in Urban areas. Therefore this study was done to find out the prevalence of depression and risk factors associated with depression among adolescents and the need for school psychologists and motivational speakers visit to schools in rural area of Andhra Pradesh.

OBJECTIVES:

- 1) To find out the prevalence of depression among adolescents in rural area of Andhra Pradesh.
- 2) To determine the risk factors associated with depression among them.
- 3) To assess the need for school psychologists & motivational speakers visit to schools among them.

METHODS

This is a school based cross sectional study conducted among the

adolescents studying in the schools situated in the Venkatagiri kota region of Andhra Pradesh. This study was done over a period of 3 months from December 2022 to February 2023. Adolescents aged between 13-16 years were included in the study. Individuals absent to school on the day of data collection and those who did not consent for the study were excluded.

The sample size was estimated based on a study⁽¹⁹⁾ in which depression among adolescents in rural area was 3% to 68% and assuming 50% prevalence, confidence interval of 95% and error 7%, the sample size was calculated to be 196. A total of 253 study subjects participated in the study.

The list of schools in the v.kota region were obtained from PHC & 7 schools were selected by simple random sampling technique. In each school 40 students were selected by simple random sampling technique after obtaining the list of total number of adolescents in schools. The data was collected through personal interview using google forms containing the questionnaire, after explaining the purpose of the study and taking consent from the participants.

The study questionnaire contained sociodemographic details, personal details, risk factors of depression and Beck's Depression Inventory⁽²⁰⁾.

Also the questionnaire asked for the individuals opinion on the need for motivational speakers/school psychologists visit to school. Beck's Depression Inventory had 21 questions with 4 options for each question which had a scoring of 0-3, the total score of 21 questions is summed up for each individual and graded as normal(1-10), mild(11-16), borderline(17-20), moderate(21-30), severe(31-40), extreme depression(>40).

The data was analyzed using SPSS software. The descriptive statistics was done using frequency, mean and standard deviation and inferential statistics was done using chi-square test. A p-value of <0.05 was considered statistically significant.

RESULTS:

There were a total of 253 students participated in the study. The age of the study group ranged between 13-16 years, the mean age being 14.46 +/- 0.76 years; the majority of the participants aged less than/ equal to 14 years & the percentage of girls in the study was 62.85%.

Most of the students had less than/ equal to 2 siblings(82.2%). The birth order of 81% of the participants was less than/equal to 2. Among the study participants 70.75%, 21.74 % and 7.5% lived in nuclear, three generation and joint family respectively. About 16.2% of the study participants had family history of mental health illness.

The care giver/ in charge for 58.5%, 38% and 3% of the study participants were both parents, single parent and guardian respectively. The family environment was harsh for 12.25% of the study group. The percentage of participants belonging to lower & middle and upper class was 94.5% and 5.5% respectively, as shown in Table 1.

Table 1: Sociodemographic details of study participants

Sociodemographic factors	Number (%)
Age (in years)	
≤14	41(55.73)
>14	12(44.27)
Gender	
Boys	94(37.15)
Girls	59(62.85)
Siblings	
<2	208(82.2)
>2	45(17.8)
Birth order	
<2	205(81)
>2	48(19)
Type of family	
Nuclear	79(70.75)
Three Generation	55(21.74)
Joint	9(7.51)

Family History	
Absent	212(83.79)
Present	41(16.21)
Caretaker	
Single parent	97(38.34)
Both parents	48(58.5)
Guardian	8(3.16)
Family environment	
Normal/Happy	206(87.75)
Harsh	47(12.25)
Socioeconomic status	
Lower&Middle class	239(94.5)
Upper class	4(5.5)
Total	253(100%)

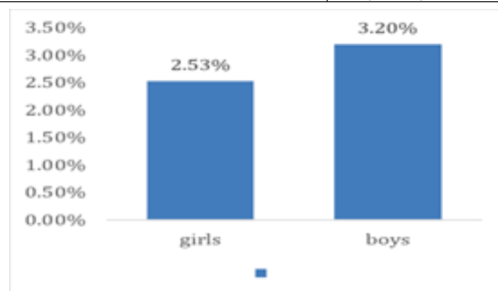


Figure 1: Depression rates among

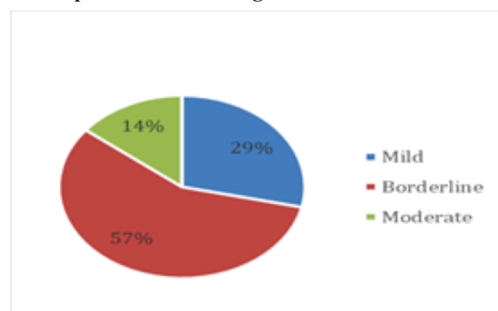


Figure 2 : Grade of Depression among Study participants boys and girls

The prevalence of depression was found to be 2.7%. About 2.53% (4/159) and 3.2% (3/94) of girls and boys suffered from depression respectively as shown in fig1. Among the depressed participants 28.57% (2/7), 57.14% (4/7) and 14.28% (1/7) have been found to have mild, borderline and moderate depression, as shown in fig2.

The rate of depression was found to be more among those aged less than or equal to 14 years (3.5%) than those aged above 14 years (1.7%). There was no much difference in the depression rate among boys and girls, which was 3.2% and 2.53% respectively. Participants with more than 2 siblings had higher rate of depression (4.44%) and the individuals with Birth order more than 2 had higher rate of depression (8.4%). Participants who live in Nuclear (1.68%) and 3 Generation families (7.27%) had comparatively higher depression rates. Depression among participants with family history of mental health illness was 9.76%. The study showed that higher rates of depression were seen in adolescents taken care by both parents (4.05%), living in Harsh/ Difficult family environment (8.5%), and belonging to Lower & Middle Socioeconomic status (2.93%).

Individuals having faced Stressful events like Interpersonal losses, Relationship failure, Social deprivation/rejection, Exposure to suicide had comparatively higher rates of depression (10.8%) than those who did not face them. And children who had factors which make them feel low had 16.22% of depression. About 3.49% of adolescents who were restricted from doing activities of interest had depression. Children who faced Bullying/Abuse had higher depression rates (7.14% of people who faced bullying and 8.33% of those who faced some form of abuse). The rate of depression was high among students with study time more than 3 hours (4.2%). Only one individual among those who had habit of substance abuse had depression. About 10% of the participants who had disputes with family/friends/relatives/others had depression. The factors that were found to be statistically associated

with depression were birth order more than 2, family history of mental health illness, harsh family environment, stressful events, factors that make an individual low and disputes.[p<0.05] as shown in Table2.

Table 2:Distribution of factors associated with depression among study participants

Factors	Normal (%)	Depressed (%)	Total(%)	Chi square value	P-value
Age(in years)					
<14	136(96.5)	5(3.5)	141(100)	0.7190	0.3964
Gender					
Girls	155(97.48)	4(2.52)	159(100)	0.1003	0.7510
Siblings					
>2	43 (95.56)	2(4.44)	45 (100)	0.5726	0.4492
Birth order					
>2	44(91.6)	4(8.4)	205(100)	6.8232	0.0089*
Family type					
Nuclear	176(98.32)	3(1.68)	179(100)	5.4832	0.0640
3 Generation	51(92.73)	4(7.27)	55(100)		
Joint	19(100)	0(0)	19(100)		
Family History					
Present	37(90.24)	4(9.76)	41(100)	8.8847	0.0028*
Caretaker					
Single parent	96(98.97)	1(1.03)	97(100)	3.6944	0.1576
Both Parents	42(95.95)	6(4.05)	48(100)		
Guardian	9(100)	0(0)	9(100)		
Family environment					
Harsh	43(91.5)	4(8.5)	47(100)	7.0789	0.0078*
Socioeconomic status					
Lower&Middle lass	232(97.07)	7(2.93)	239(100)	0.4607	0.4973
Upper class	4(100)	0(0)	4(100)		
Stressful events					
Present	33(89.2)	4(10.8)	37(100)	0.4237	0.0012*
Factors making individuals feel low					
Present	31(83.78)	6(16.22)	37(100)	29.1396	0.0000*
Restriction from doing activities of Interest					
Yes	83(96.51)	3(3.49)	86(100)	0.2522	0.6160
Interest in coming to school					
Present	237(97.13)	7(2.87)	244(100)	0.2655	0.606
Faced Bullying					
Yes	26(92.86)	2(7.14)	28(100)	2.2411	0.134
Faced Abuse					
Yes	22(91.67)	2(8.33)	24(100)	3.0540	0.081
Study time(in hours)					
>3	93(95.8)	4(4.2)	97(100)	1.0767	0.2994
Screen time(in hours)					
<1	203(97.1)	6(2.9)	209(100)	0.0483	0.8259
Play time[Indoor](in hours)					
<1	84(97.87)	4(2.13)	88(100)	1.1111	0.2918
Play time[Outdoor](in hours)					
<1	38(97.87)	3(2.13)	41(100)	0.4836	0.4867
Substance abuse					
Present	5(83.33)	1(16.67)	6(100)	4.40	0.036*
Disputes					
Present	8(90)	2(10)	20(100)	4.2234	0.0398*
Total	246	7	253		

About 70.35% of the study participants felt the need for motivational speakers and psychologists visits to schools, around 76.28% of the adolescents were motivated by parents/teachers/ friends/relatives/ others. Individuals not willing to reach out for help were found to be more depressed(57.14%) than those who did reach out when needed(42.86%) as shown in Table 3.

Table 3:Opinion of participants on the need for motivational speakers & psychologists visit to schools

Factor	Normal (%)	Depressed (%)	Total (%)	Chi Square value	P-value
Need for Motivational speakers/School Psychologist					

Yes	71	7	78	3.0334	0.082
No	75	0	75		
Motivated by					
Parents/teachers /others	88	5	93	0.1793	0.914
Self	56	2	58		
None	2	0	2		
Reaches out for help					
Yes	88	3	91	4.1449	0.042
No	58(93.55)	4(6.45)	62(100)		
Total	246	7	253		

DISCUSSION:

The study included 253 participants from various rural government schools situated in the Venkatagiri kota region of Chittoor district in Andhra Pradesh. All the study participants were in between the age group of 13-16 years. According to WHO adolescents are individuals from 10-19 years of age.⁽²¹⁾ Adolescents in the age group of 13-16 years are more vulnerable, because it is during this period one gets to face the educational/social stressors initially in the Indian community. Therefore this study included participants between 13-16 years of age(high school students). A study done by sandal RK et al found that the rate of depression was directly proportional to age⁽²²⁾, but in this study it was found that adolescents younger than 14 years had higher rate(3.5%) of depression than compared to the age group of 15-16 years(1.7%), this may be because the number of participants were more in the age group of less than/ equal to 14 years than those above 15 years.

There was no much difference in the rates of depression among boys and girls(3.2% and 2.53%) which is in line with studies done by sweta et al in Karnataka⁽²³⁾ and ping tepper et al in china⁽²⁴⁾ This shows that the external milieu effects mental health more than the internal milieu. The participants with more than 2 siblings had higher depression rate than those who had less than/ equal to 2 siblings, which is in contrast to the study done by tabassum et al in which the number of siblings the participants possessed had no effect on depression⁽²⁵⁾ this may be because the care given is more if the number of siblings are less, especially in rural areas where the privileges are less.

Depression rate was found to be more(8.4%) among individuals with birth order more than 2, which correlates with the study done by tabassum et al⁽²⁵⁾,because when the birth order increases the number of individuals to be cared will be more, hence depression rates are more with higher birth order.

Individuals living in nuclear and three generation families have comparatively higher depression rate than those living in joint families, this may be because joint families are likely to have more children of nearby age groups which contributes to better bond among children, and this can be explained by a study done by singh et al stating that stress is more among adolescents living in nuclear families⁽²⁶⁾. In contrast, there are studies that have found that the type of family did not influence depression among adolescents sweta sinha et al⁽²³⁾, and depression rates were higher in joint families in study done by s k mishra⁽²⁷⁾ and chhabra and sodhi.⁽²⁸⁾ Individuals belonging to lower and middle class are more prone to depression in this study which is in line with the study done by rong zou et al⁽²⁹⁾, gallo et al⁽³⁰⁾, bradley and crown⁽³¹⁾ and this may be because the privileges are better to adolescents belonging to higher socioeconomic status including the mental health services.

Participants with family history of mental health illness have higher depression rates than those who did not have family history and this study finding was similar in various other studies like the study done by Douglas E Williamson et al⁽³²⁾, Barbara et al in Canada⁽³³⁾, Anita thapar et al⁽³⁴⁾ stating the same. Family studies done by wickeamaratne et al⁽³⁵⁾ and weissman et al⁽³⁶⁾ stated that earlier onset(less than 20/30 years) depression had higher familial aggregation than later onset depression.

Children living in harsh family environment like conflict, control, less cohesion have higher depression rates than those who live in normal environment, which correlates with study done by aditi mohta et al⁽³⁷⁾. Also study done by Elizabeth B Weller et al suggests that the recurrence rate is more among children facing conflict at home.⁽³⁸⁾

Participants who have faced stressful events are more likely to have

depression, which is also proved by the studies done by Barbara et al in Canada⁽³³⁾, aditi mohta et al in North India⁽³⁷⁾. Children facing bullying and abuse have been found to be associated with depression in this study which correlates with the study done by bansal et al⁽³⁹⁾, study done in Pakistan⁽⁴⁰⁾. A study done by julie beck stated that children who faced bullying are at risk of mental health issues even later in life.⁽⁴¹⁾

Students with study time more than 3 hours are found to have higher depression rate, which is similar to the finding in a Korean study stating that children spending more time in school work have higher depression rates⁽⁴²⁾, this may be because they may have less time for activities of their interest.

In the current study the playtime(Indoor and outdoor) has no statistical relation with depression rate which is in contrast to the study done by kiran et al in Andhra Pradesh⁽⁴³⁾. The discordance in the study could be because this study was done solely in government schools where children will be allowed to have playtime in contrast to that study which was done in 1 government and 2 private schools.

Individuals involved in substance abuse of tobacco, betel nut are found to have higher depression rates which correlates with the study done by eva et al⁽⁴⁴⁾, also the study done by boris birmaheer et al stated that depression increased the risk of substance abuse⁽⁴⁵⁾.

Participants having disputes with either friends/family/relative/others have higher depression rate which is also statistically significant and this correlates with the study done by besi paul et al.⁽⁴⁶⁾ About 70.35% of the study participants felt the need for motivational speakers and psychologists visit to schools and about 76.28% of the adolescents in this study were motivated by parents/teachers/relatives/others, this implies that these people have got to play an important role in shaping young minds and making adolescents mentally fit.

CONCLUSION:

In this study the prevalence of depression among adolescents in rural area of Andhra Pradesh was found to be 2.7% and majority of them were found to have borderline depression(57.14%). Risk factors found to be statistically associated with depression in this study are birth order, family history of mental health illness, family environment, stressful events, factors making individuals feel low, substance abuse, disputes($p < 0.05$). About 70.35% of the study participants felt the need for motivational speakers and psychologists visit to schools. Therefore, there is a need to screen for mental health issues among adolescents with regular psychologists visits. Also the motivational speakers visit to schools can be a prophylactic measure in reducing the depression rates among adolescents, thereby bridging them into healthy adulthood.

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