

# Screening for Adolescent Depression among 11-14 Years School Going Children in Semi-Urban Chennai

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## ABSTRACT

### BACKGROUND

Adolescence refers to the transitional stage of physical and psychological development that marks the transformation from childhood to adulthood. They are unique with regards to their physical, mental and social problems. Depression in adolescents can be due to a myriad of reasons unique to the individual. Studies conducted in the past found males and older adolescents to express behaviour reflective of depression and adjustment difficulties when compared to their counterparts namely the females and the younger adolescents. Some studies have shown that depression in young individuals is heritable. Depression has several detrimental effects on an individual's physical and psychosocial development resulting in an incapacitated corollary constituting the society. Introversion and the existing illness behaviour with regards to mental illnesses is not favourable for early diagnosis and counselling. Thus, to counter the epidemic of sub-optimally functioning youth, crippled by mental distress, early diagnosis and interventions have to be made.

### METHODS

This cross-sectional study was conducted with participants selected from a secondary school in Chennai, belonging to the age group of 11 to 14 years. 'Adolescent Well-Being Scale', a pretested questionnaire that screens adolescents for depression was used.

### RESULTS

The results from the study show that 22.1% of female students were depressed and this is higher when compared to the percentage of depressed male students. 33% of 13-year-old adolescents were found to be depressed. It found that 27.7% students without a sibling while 27% of students with sibling (s) had depression.

### CONCLUSIONS

The study also shows a trend of rise in the occurrence of depression with age. Maintaining mental health demands a support system that serves as a mental cushion, aiding in coping and resilience with any stress or strains of life. Thus, timely identification and interventions allows an otherwise unattainable mirage, healthy adulthood.

### KEY WORDS

Adolescents, Well-Being, Depression, Anxiety

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## BACKGROUND

There is no better stage to prepare one for the ordeals of adult life than this quotidian powerful drama, the so-called adolescent life. Adolescence refers to the transitional stage of physical and psychological development that marks the transformation from childhood to adulthood. This period comprises of individuals belonging to the age group of 10 to 19 years who are unique with regards to physical, mental, emotional and social problems. Mental habits such as coping, and resilience are important to equip adolescents to accept changes of any kind around them. Some common problems of this demography include teenage pregnancy, delinquency, substance abuse, depression, sexual identity problems, learning disorders and eating disorders. Depression in adolescents can be due to physical and emotional abuse at home, bullying at school, maladaptation to new environment, diseases, post accidents /trauma, insecurities regarding appearance and that due to their social and economic status in the societal hierarchy, bereavement, peer pressure, academic stress and sexual identity problems. The rise in internet usage and subsequent addiction seals the possibility of social developmental skill by impeding interaction with family and friends.

Twin studies have shown that depression in young individuals is heritable.<sup>(1)</sup> A study conducted at Delhi using Mental Health Continuum Short Form, Depression Anxiety and Stress Scales-21 found girls and younger adolescents to be flourishing more compared to boys and older adolescents. Flourishing youths in turn had lesser prevalence of depression and adjustment difficulties, and exhibited prosocial behaviour.<sup>(2)</sup> A Korean study found that levels of depression and suicide ideation were highest in the Internet-addicts group.<sup>(3)</sup> An Iranian study also looked into social factors such as father's unemployment, mother's job and history of psychiatric hospitalization of either of the parents as possible predisposing factors for depression which revealed that fathers unemployment showed positive causal relation.<sup>(4)</sup>

Depression has several detrimental effects on an individual's psychosocial development. It takes a toll on one's academic results and nutritional status due to binge eating or anorexia nervosa. Depression has also been proven to affect memory and affect the optimal physical, mental and social functioning of an individual. An American study found that prevalence of conduct problems such as skipping school, alcohol use, marijuana use and cigarette smoking decreased while attributes of productive psychosocial functioning such as self-determination, closeness to others, and school integration increased as mental health increased.<sup>(5)</sup> According to Maslow's hierarchy of needs, self-actualisation borne through creativity and spontaneity is possible only when basic needs (Physiological and safety needs) and psychological needs are met with.

Depression in adolescents is often missed and it can be attributed to their irritable nature, mood reactivity, and fickle nature of the symptoms observed in them. Depression can also be missed if the primary presenting problems are unexplained, less specific physical symptoms, eating disorders, anxiety, refusal to attend school, decline in academic performance, substance misuse, or behavioral problems.<sup>(6)</sup> Most importantly illness behaviour with regards to mental illnesses is not favorable for early diagnosis and counselling.<sup>(7)</sup> Thus to

counter the epidemic of sub-optimally functioning youth, crippled by mental distress, early diagnosis and interventions have to be made to avoid irreversible repercussions on their lives. Some commonly used questionnaires for early detection of depression are the Beck Depression Inventory, Mental health continuum short form Depression anxiety stress scale 21, Wang-Self-Assessing Depression Scale and Reynolds Adolescent Depression Scale. Harvard trauma questionnaire was used to assess prevalence of post-traumatic stress among the denizens of Kashmir Valley which was and still is under constant political and military scrutiny. The Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA5) is a 30-item structured interview that assesses trauma exposure as well as PTSD symptoms for children above seven years of age. Questionnaire based studies are simple and effective in screening a large population. It suffers from the drawback of relying on the individual's subjective assessment of symptoms whose conceived threshold cannot be standardized.

## METHODS

This cross-sectional study was conducted from January till March 2019. Participants of the study were selected from a secondary school in semi-urban Chennai, Tamil Nadu. Parental written informed consent and assent from the adolescent students belonging to the age group of 11 to 14 years were taken before including them as participants. The students of 6<sup>th</sup> to 8<sup>th</sup> grade belonging to the age group of 11 to 14 years were included in the study. A sample size of 191 was selected by convenience sampling. The process of acquiring relevant data for the study began after its approval by the IRB, SMCH.

The study tool used was a self-rating scale for detecting depression in children called 'Adolescent Well-being Scale'. The scale was administered to children included in the study and they were asked to read the statements and tick the answer that best described their feelings during past one week. Since the students belonged to English medium school, translation of the scale in local language was not done. This scale was invented by Peter Birlerson in the 1978 to screen for depression among children. It has been modified and validated to evaluate adolescents between 11 to 16 years. The scale has adequate face validity and factorial validity. It has 18 items, each provided with responses most of the time, sometimes, never. The responses to each question are provided with scores 0, 1 or 2 depending on the nature of the question. A score of 0 implies no concern, 1 possible concern and 2 that young person is indicating unhappiness or low self-esteem in the aspect of life enquired through the item. Based on the nature of questions they are broadly categorized into positive and negative items. Responses to each item can help understand privation and consequent need of the adolescent with regards the concerned aspect of life. This questionnaire has allowed for adolescents to gain an overall insight into their prevalent state of mind in a short time. A minimum score of 0 and a maximum of 36 can be obtained. A score above 13 is suggestive of possible depressive disorder. This is not a diagnostic tool and only allows for subjective evaluation or introspection into their feelings toward day to day life. The data collected was entered and quantified in excel

spreadsheet. Statistical analysis was done using standard Chi-square test.

**RESULTS**

	Number	Frequency (%)
Male	96	50.261
Female	95	49.738
<b>Total</b>	<b>191</b>	<b>100</b>

**Table 3.1. Sex Distribution of the Students**

50.2% of the study population are female students and the remaining are male students.

Score	<=13	>13
Male	79	17
Female	74	21
<b>Total</b>	<b>153</b>	<b>38</b>

**Table 3.2. Sex Distribution of Depressed Students**

17.70 % of male students and 22.10% of female students had a score more than 13 which is suggestive of possible depression.

Age (in Years)	11 -12 Yrs.	12-13 Yrs.	13-14 Yrs.	14 Yrs.
Male	30	39	24	3
Female	43	28	22	2
<b>Total</b>	<b>73</b>	<b>67</b>	<b>46</b>	<b>5</b>

**Table 3.3. Age Distribution of the Study Population**

Age (in Years)	Score >13	Frequency (%)
11-12	21	27.27%
12-13	16	23.88%
13-14	14	33.33%
14-15	1	20%

**Table 3.4. Age Distribution of Depressed Students**

Thus, 27.27% of 11 to 12 year olds and 33.33% of 13 to 14 year olds had depression

Presence of Sibling (s)		Score>13	Percentage
Yes	137	37	27%
No	54	15	27.77%

**Table 3.5. Distribution of Depressed Students Having Siblings**

27% of students with siblings and 27.77% of students without siblings have a score greater than 13 which is suggestive of depression.

Score	0 (Most of the Time)	1 (Sometimes)	2 (Never)
Q1 I look forward to things as much as I used to	81(42.40%)	96(50.26%)	14(7.32%)
Q2 I sleep very well	100(52.35%)	77(40.31%)	14(7.32%)
Q4 I like going out	127(66.49%)	58(30.36%)	6(3.14%)
Q7 I have lots of energy	106(55.49%)	74(38.74%)	11(5.75%)
Q8 I enjoy my food	128(67.01%)	57(29.84%)	6(3.14%)
Q9 I can stick up for myself	98(51.3%)	77(40.31%)	16(8.37%)
Q11 I am good at things I do	67(35.07%)	67(35.07%)	57(29.84%)
Q12 I enjoy things as much as I used to	116(60.73%)	68(35.6%)	7(3.66%)
Q13 I like talking to my friends and family	163(85.34%)	25(13.08%)	3(1.57%)
Q16 I am easily cheered up	92(48.16%)	83(43.45%)	16(8.37%)

**Table 3.6. Frequency of Responses to Positive Items**

Questions	0 (Never) in %	1 (Sometimes) in%	2 (Most of the Time) in%
Q3 I feel like crying.	36.64	56.54	6.80
Q5 I feel like leaving home.	60.73	30.36	8.90
Q6 I get stomach aches/cramps	34.03	58.11	7.85
Q10 I think life isn't worth living.	70.68	22.51	6.80
Q14 I have horrible dreams.	36.64	6.80	56.54
Q15 I feel very lonely.	50.78	37.17	12.04
Q17 I feel so sad I can't hardly bear it	39.26	45.02	15.70
Q18 I feel very bored	20.94	58.11	20.94

**Table 3.7. Frequency of Response to Negative Questions**

50% of students looked forward to things in life sometimes while 7.32% never felt that way. It was analysed that 7.32%

adolescents never slept well while the rest either had no issues or had problems sometimes. About 66.49% of the students liked going out and 94.3% of the students had lots of energy most of the times or sometime. Only 5.7% felt that they never had lots of energy. It was seen that 3.14% of students never enjoyed their food while the rest either enjoyed their meal most of the time or sometimes. Half of the students felt that they could stand up for themselves most of the times while 8.37% of the students never felt that way. 29.8% of the adolescents felt they were never good at the things they do while the majority never felt along those line or had such feelings sometimes. Only 3.6% of the students never enjoyed things as much as they used to. Majority of students 85.34% liked talking with friends and family most of the time while 1.5% never felt that way. Most of them 91.6 % could be cheered up easily most of the times or sometimes while 8.3% never get easily cheered up.

In response to the negative questions, it was seen that 6.8% students felt like crying all the time while the majority (56.5%) felt like crying sometimes. The majority that is 60.73% of students have never felt like leaving home while 8.9% of students have felt like leaving home. 58.11% of students get stomachache sometimes and 7.85% of students have stomach aches most of the time. 70.6% of students felt life isn't worth living and 56.54% students had horrible dreams most of the time and 36.64% never had nightmares. 12.04% of the students felt very lonely most of the times and the majority (50.78%) never felt that way. 15.70% of adolescents felt unbearably sad while the majority (45%) felt such intense emotions sometimes. 20.94% of the adolescents felt bored most of the times while the same percentage of the students experience the other end of the spectrum i.e. never feel bored.

**DISCUSSION**

Mental health among adolescents assumes a quintessential role in determining the mental apparatus with which they face life as adults. Efforts taken to achieve it complement the interventions taken to help correct emotional and behavioural problems among the youth.<sup>(8)</sup> Proper nutrition, exercise and at the school level helping students in cultivating hobbies that engages them when bored, mental health counseling, a body within the school that hears and counsels students who have experienced trauma or abuse of any kind are some ways to maintain positive mental health. At the community level, teen centers organized by NGOs can help teens to utilize their spare time to identify and develop their passion in sports, literature, debates etc. which in turn prevents them from getting absorbed into the drug-taking subculture.

The adolescent wellbeing scale was selected as the tool to screen for depression because of the following merits. This self-reporting scale is easy to administer and allows for quick assessment of a large study population. It is easy to understand and does not suffer from the setbacks of cultural or gender differences. It has been validated in the 1980s and serves as reliable screening tool.

The results from this study show that incidence of depression in female adolescents (22.1% of female students were depressed) is higher than that of male students (17.7%

of male students were depressed) by a marginal difference. This is in concordance with the results obtained from other studies such as the one conducted in Iran<sup>(4)</sup> and India, which sought to describe the evolution of adolescent mental health in rapidly changing socioeconomic environment. This Indian study also identified female gender as a risk factor for depression like many other international studies.<sup>(9)</sup>

33% of 13-year-old adolescents were found to be depressed. This percentage is higher than that calculated for students younger than 13 years of age (27.2% and 23.8% among 11- and 12-years old adolescents respectively). This trend of rise in the occurrence of depression with age has been recorded in literature from all over the world. A Norwegian study conducted at Nord- Trøndelag country found the scores of the Hospital Anxiety and Depression Scale (HADS) and prevalence rates of depression to increase with age.<sup>(10)</sup> Indian studies like the one conducted in Chennai with subjects from Chennai Urban Rural Epidemiology Study (CURES) using Patient Health Questionnaire (PHQ) also found an increasing trend in the prevalence of depression with age among both genders ( $p < 0.001$ ).<sup>(11)</sup>

One of the demographic details explored in this study is the presence of siblings in the maintenance of mental health. This is a dynamic entity with no mere dichotomous results on mental health. Presence of a family in life has been widely regarded as the groundwork on which one's personality develops informed by mental strengths or deficits that this biological and social unit of society has cultivated or aggravated. It serves as placenta filtering the unwanted, contributing to effective functioning in society.<sup>(9)</sup> Having siblings of relatable age can help specifically to release undue stress accumulated from age specific tribulations. This study found that 27.7% students without a sibling while 27% of students with sibling (s) had depression. This statistical result supports the role of mental cushioning provided by family. But it cannot be interpreted as simply with statistical superiority, for there are many factors in play that define the effect of family. Existence of social bond that for allows free communication helps to overcome the stress and strains of life and attain a mental equilibrium with insults incurred living life and function with optimal mental health without diminishing social and work life. The existence of this buffer system is supported by a study that sought to understand the role of sibling support in conflict families. It found that self-esteem assessed through questionnaire, from high- conflict family homes with high sibling support was more positive when compared to that of similar families with only- child.<sup>(12)</sup> A study conducted among 14-17 years adolescents in Puducherry also concluded that number of siblings accounted for differences in anxiety and emotional ties.<sup>(13)</sup>

7.32% of students felt that their sleep has been affected on a daily basis. An American study had yielded results which suggests reduced quantity of sleep increases the risk of major depression which in turn sets in a viscous loop by serving as risk factor for decreased sleep.<sup>(14)</sup> 8.3% felt that they could not stand up for themselves and 29.8% students felt that they were not good at what they do, most of the times. This feeling is common among this age group as adolescence is the period of experimentation. This period provides maximum exposure to students morally and intellectually, so it is fairly normal to feel inadequate until one stumbles upon a domain in which he or she finds satisfying aptitude.

56.5% had nightmares most of the times. A study conducted in the UK on college students using the Oxford sleep survey compared the sleep parameters of clusters that arose based on dimensional measures of psychiatric symptoms such as hallucination, paranoia and depression etc. It found that insomnia and nightmare severity increase the risk for symptoms of severe mental illness.<sup>(15)</sup> 12.04 % of the students felt lonely most of the times. Loneliness among adolescents can stem from deprivation of the much-needed care and affection from family or facing rejection by peers which deprives one off any kind of attachment or acceptance. This has been explored by a study, which produced results that suggested that clique (Friendship based groups) isolation resulted in escalation of depressive symptoms through loneliness.<sup>(16)</sup> 58.1% and 7.8% of students felt that they had stomach-ache or abdominal cramps sometimes and most of the times respectively. In adolescent females it may be due to dysmenorrhea. It can also be a somatic manifestation of mental stress as seen in irritable bowel syndrome. A study conducted among children who were between 8-15 years found that those with functional recurrent abdominal pain (RAP) were more likely to be diagnosed with psychiatric disorder such as anxiety and depression. The study concluded that examination and treatment for anxiety and/or depressive disorders can function as a suitable intervention for alleviation of functional RAP.<sup>(17)</sup>

#### Limitations

The problem with such self-reporting tool is that the prevalent transient state of mind of student, informed by the events of the day of issue of the questionnaire, can easily influence the replies and provide a distorted insight into their mental health. Disinterested students do not provide reliable responses. Other demographic details such as nativity, economic status of the family, broken family due to death or divorce of parent and history of physical or sexual abuse that point towards stressors that caused or precipitated depression were not collected. Some other problems faced during the study were the inability to access the students between 14 to 16 years of age, who were due to write their examinations during the week of data collection.

#### CONCLUSIONS

The results from the study show that 22.1% of female students were depressed and this is higher when compared to the percentage of depressed male students. 33% of 13-year-old adolescents were found to be depressed. The study also shows a trend of rise in the occurrence of depression with age. Maintaining mental health does not entail provision of an environment without any stress. It rather demands the need for support in the form of family, friends, teachers (social interaction) that serves as a mental cushion aiding in coping and resilience with any stress or strains of life. Timely identification by periodic screening and therapeutic interventions with the aid from professionals, family and community can help adolescents maintain an equilibrium between oneself and surrounding that forms the cornerstone of healthy adulthood.

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