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Original Article

Risk and Protective Factors to Depressive Symptoms in School-Going Adolescents

Mohanraj, Rani[1] , Subbhiah, Karunanidhi[2], Watson, Basilea[3]

1. Samarth, Chennai
2. Professor & Head, Department of Psychology, University of Madras
3. Biostatistician, Tuberculosis Research Centre, Chennai

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Corresponding Author: Dr. Rani Mohanraj, New No 100, Warren Road, Mylapore, Chennai-6000004. Phone numbers: 044 45010070/09941258373

E-mail address: ranimohanraj@samarthngo.org
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Abstract

Aim: The study aimed to explore the risk and protective factors for depressive symptoms in adolescents aged 14-18, studying in schools.

Method: A cross-sectional school based survey was carried out in a metropolitan city in Southern India. A total of 964 boys and girls studying in 21 schools completed a battery of questionnaires. Beck Depression Inventory (BDI) was used to measure depressive symptoms. The psychosocial variables measured were self-esteem, family relationships, social support, school environment, life events and daily hassles. Odds ratio were calculated for risk and protective factors using logistic regression.

Results: Mild depression was reported by 37% adolescents, moderate depression by 19.4% and severe depression by 4.3%. Adjusted odds ratio calculated using multiple

logistic regression analysis suggested that adolescents who perceived stressful life events and daily hassles were at increased risk for depression. High self-esteem, good family relationships and peer acceptance acted as protective buffers against depression. Boys and girls differed in some of the psycho-social variables, and girls had more protective factors like 'better family relationships' and 'better peer acceptance'.

Conclusions: The findings provide some evidence of risk and protective factors of depressive symptoms in urban adolescents. Adolescents who experience such risk factors must be monitored as they make their transition into adulthood; we also must focus on prevention and gender sensitive early intervention strategies to prevent mortality and morbidity in this population.

Key words: risk factors, protective factors, depressive symptoms, adolescents

Introduction

Depression among adolescents has emerged as a major mental health problem in the last two decades. Many prevalence studies document a substantial number of adolescents in the general population to suffer from depression with rates ranging from 8% to 20% [1, 2, 3]. Psychosocial factors associated with adult depression like stressful life events, low self-esteem, low social support, poor coping skills were also related to adolescent depression [4, 5, 6,] In India, adolescent depression is an under researched area. There is limited knowledge in factors associated with depression among adolescents in India. . Perception of relationship with father, perception of mother's love and self-perception of their appearance were the factors associated with depression and anxiety in a study on psychiatric morbidity [7]. In another study, adolescents who showed psychiatric morbidity were from larger families, with both parents working, perceived high conflict

in families, showed less adjustment with peers and teachers and perceived higher stressful life events [8]. It is important that adolescents with depression need to be identified as there is an increasing evidence of suicidal behavior among the young in India [9, 10]. Unfortunately, many a times, only a few adolescents with depression are diagnosed and only a few get treated [11]. Due to this, factors that can pose as risks and factors that can build resilience in adolescents need to be identified. Identification of these factors is an effective strategy to that can guide the development of prevention and early intervention strategies. Bronfenbrenner [12], in his theory of ecological theory proposed that adolescent development occurs in realms of family, peer support and the school. It is important that we include variables that reflect adolescents' experience in these realms to measure mental health. In line with this theory, the present study aimed to examine the association of family relationships, social support, school environment, self esteem, life events and daily hassles to depressive symptoms in adolescents.

Methodology

Design and Settings

This school based cross-sectional survey was carried out in Chennai, one of the metropolitan cities of southern India. A total of 964 adolescents studying in 21 private schools from different geographical zones of Chennai completed questionnaires measuring depression, self-esteem, family relationship, social support, school environment, life events and daily hassles. The sample comprised of 509 (52.8%) boys and 455 (47.2%) girls. Sample age ranged from 14 - 18 yrs with a mean age of 15.6 (s.d . 97). Greater proportion of adolescents were aged 16 years (38.6%), 28.7% were 15

years old and 17.6% were 17 years old. 34% of the adolescents were studying in class X, 38.7% in class XI and 27% in class XII. 93% of them came from intact middle and upper middle class families. The medium of instruction in most schools in urban cities in India is English and hence all questionnaires were administered in English.

Measures

Depression: Beck's Depression Invent0ory (BDI) evaluates 21 symptoms of depression that assesses cognitive, behavioral, affective and somatic component of depression. The cut-offs for the various categories of depression were 0-9- no depression, 10-19-mlid depression, 20-29- moderate depression, above 30-severe depression [13]. The test-re-test reliability and internal consistency in the present study was found to be .82 and .79 respectively

Self-Esteem: Rosenberg Self Esteem scale [14] is a ten-item uni-dimentional scale designed to measure an individual's level of self-esteem. Scores range from 10 to 40, higher scores indicating higher level of self-esteem. Construct validity was reported by Rosenberg (1979). The two-week test-retest reliability in the present sample showed a correlation of .63 and internal consistency of 0.60.

Family Relationships (Hudson 1982**):** The Index of Family Relationships (IFR) [15] is a 25 item scale designed to measure the extent of severity, or magnitude of problems that family members have in their relationship with one another. Hudson reported excellent known groups' validity and construct validity. The test-retest reliability in the present sample was 0.7 and internal consistency was 0.9.

School environment: The School Environment Scale (SES) was adapted from a questionnaire developed for a study in Germany [16]. The questionnaire measured five dimensions namely "control by the teacher", "pressure to achieve", "possibility to participate", "competition among pupils", and "peer acceptance". The questionnaire was translated from German to English and back-translated by an independent reviewer for comparability. Pearson correlation ranged from 0.67 to 0.80 and alpha ranged from 0.58 to 0.72 for the five dimensions.

Social Support: The 21 items in the Sense of Social Support (SSS) [17] measure an individual's global perception of the quantity and quality of social support. Items in the scale assess perceptions of the availability of social support rather than the actual receipt of social support. The authors reported good concurrent and convergent validity. The test-retest reliability and internal consistency in the current study were also moderate (0.63 and 0.83).

Life Events and Daily Hassles (LEDH)**:** A scale was developed for the study. There were a total of 14 items indicating life stressor and 11 items indicating daily hassles. Participants rated how "the item negatively affected you" using a 5-point scale: (0 = not at all); to (4 = to a great extent) or indicated the event had not happened to them. Items with response "not applicable" were not taken for scoring. Face and content validity of the scale was established. The two-week test-retest reliability was found be 0.70 for the items in life events and 0.82 for the items in daily hassles. Internal consistency was 0.78 for life events and 0.75 for daily hassles. Based on the scores, adolescents were categorized as perceiving high and low stress.

Analysis

Adolescents were categorized into two groups based on their scores on BDI. Those who scored in the mild, moderate and severe categories were grouped together and labeled as the 'depression' group. Chi-square tests examined associations between categorical variables of age and gender with depression. Univariate ordinal regression with depression as the dependent variable provided Odds Ratio for each of the risk /protective factors for depression. In order to determine how protective and risk factors interacted, multiple ordinal regression method with adjusted odds ratio was performed. Student 't' test was done to find gender differences in correlates.

Results

The overall mean score on the BDI was 13.6. Out of the 964 students surveyed, 378 (39.2%) of adolescents reported 'no depression'. Mild depression was reported by 358 (37%) adolescents. The number of adolescents who reported moderate depression was 187 (19.4%) and severe depression was reported by 41 (4.3%) adolescents. Chi-square tests of association between age and depression was found to be significant ($p < .01$). Though there was a small higher mean score for depression of girls (mean = 14.3 ±8.5) than boys (mean =13±7.6), it was not significant. The univariate ordinal regression showed age, (OR = 1.2, C.I 1.0 -1.3, $p < .008$) self- esteem (OR = 0.8, CI -0.77 - 0.82, $p < .000$), family relationship (OR = 0.94, CI - 0.93- 0.95, $p < .000$), social support (OR = 0.93, CI - 0.92 - 0.95, $p < .000$), life events (OR = 1.1, CI - 1.08 - 1.13, $p < .000$) and daily hassles (OR = 1.1, CI - 1.1-1.6, $p < .000$) and the five factors in school environment namely control by teacher (OR = 1.1, CI - 1.02 - 1.1, $p < .000$), pressure to achieve (OR =

1.1, CI - 1.03 - 1.1, p<.000), possibility to participate (OR = 0.93, CI- 0.90 - 0.95, p<.000) competition (OR = 1.1, CI - 1.05-1.1, p<.000), peer acceptance (OR = 0.88, CI - 0 .85- 0.90, p<.000) to be correlating significantly with depressive symptoms.

In the Multiple Ordinal Regression Analyses with adjusted Odds Ratio, (Table 1) five variables and one factor in the school environment emerged as significant factors. Self-esteem emerged as the strongest protective factor (OR = 0.84; 95% CI - 0.80 - 0.87) closely followed by peer acceptance (OR = 0.95; 95% CI - 0.92 - 0.99), family relationship (OR = 0.97; 95% CI - 0.96 - 0.97) and social support (OR = 0.97; 95% CI - 0.95 - 0.99). Daily hassles appeared to be a stronger risk factor for depression than life events.

Table 1: Depressive Symptoms and Psychological & Social Factors in Adolescents

Variable	*Adjusted O.R	95%C.I
Age	1.03	.89-1.19
Self-esteem	.84	.81-.87*
Family relationship	.97	.96-.97*
Social support	.97	.95-.99*
School Environment Control by teacher	1.01	.98-1.05
Pressure to achieve	1.02	.96-1.03
Possibility to participate	.96	.93-1.00
Competition	1.02	.98-1.05
Peer acceptance	.95	.92-.99*
Life events	1.04	1.02- 1.07**
Daily hassles	1.06	1.03- 1.08**

*Multiple ordinal logistic regression with adjusted odds ratio

There were significant gender differences in perception of family relationships and in the school environment sub-scales of peer acceptance and pressure to achieve sub-scales. Boys perceived stressful family relationships than girls. They also reported more pressure to achieve and less peer acceptance in the school environment. (Table 2)

Table 2: Gender correlates and Depressive Symptoms

	Gender	Mean	SD	't' value	p	
Self-esteem	Boys(509)	26.97	3.6	-1.30	.19	
	Girls (455)	27.29	3.8			
Family relationship	Boys	77.76	15.0	-2.25	.02*	
	Girls	79.97	15.3			
Social support	Boys	39.44	7.7	-1.19	.23	
	Girls	40.02	7.4			
SES (i)Control by teacher	Boys	15.07	4.5	.961	.33	
	Girls	14.79	4.5			
(ii)Pressure to achieve	Boys	11.52	4.3	2.14	.03*	
	Girls	10.93	4.2			
(iii)Competition	Boys	8.58	4.4	.288	.77	
	Girls	8.50	4.2			
(iv)Possibility to participate	Boys	10.60	3.7	-1.50	.13	
	Girls	10.98	4.0			
(v)Peer acceptance	Boys	12.96	4.4	-2.82	.005**	
	Girls	13.77	4.4			
Life events	Boys	7.06	5.9	1.34	.17	
	Girls	7.60	6.4			
Daily hassles	Boys	9.84	6.3	.464	.64	
	Girls	9.64	6.9			

Discussion

Self-esteem, family relationship, social support, and peer acceptance emerged as protective factors while life events and daily hassles emerged as risk factors for depressive symptoms in this population. This finding demands a closer examination of these factors in the Indian cultural context.

Many earlier studies have reiterated the influence of family relationships contributing to mental health in adolescents [18,19,29,21]. The present study has strengthened these earlier findings of family processes being related to adolescent depressive symptoms. The

study also recognized that adolescent girls had significantly better family relationships than boys ($p < 0.02$) (Table 2). This finding in the Indian context is encouraging because family relationships are stronger in the Indian culture. This strength of relationship can be an important consideration that is amenable to change when working with adolescents with depression especially girls.

The personality characteristic of self-esteem is a much explored factor in developed countries. To our knowledge, there are no studies that have examined self-esteem's relationship or potential influence of self-esteem with depressive symptoms in a non-clinical adolescent population. The present finding was therefore important, because it brought out the need for nurturing self-esteem during childhood and adolescence. Studies have found adolescents with high self-esteem are far less likely to use drugs, get into trouble with the law, involve in inappropriate sexual relations, and unsatisfactory peer relationships [5, 21, 22]. The study also showed that girls scored more in self esteem (though not significant) and this is important while working with them.

Social support too emerged as a protective factor in this sample of adolescents. Adolescents with good social network reported experiencing less depressive symptoms. The quality and support of the social network thus plays a significant role in reducing mental health problems during adolescence [23, 24, 25]. Emotional support from others can help buffer adolescents against the potential negative effects of stress and thereby reduce depression. Social network includes family, peers, elders, and other family members, from whom adolescents could seek support. In this study, though social support emerged as one of the important protective factors against depression, it was

measured globally and not separately for peers and family. Hence, it was not possible to determine if adolescents relied on friends or parents as a source of support.

It was not surprising to find peer acceptance in school environment to emerge as a protective factor Consistent with previous research, being unpopular, having only a few friends and not being accepted by friends has negative consequences on an adolescent's psychological well being [26, 27]. Again as it would be seen later girls had significantly better peer acceptance than boys making them more protected from depression.

Life events and daily hassles was strongly associated to depressive symptoms; adolescents who had experienced many stressful life events in the previous year were at an increased risk for elevated levels of depressive symptoms compared to adolescents who reported fewer events in line with earlier studies [5,28,29]. Sources of stress in adolescents are varied; They include (a) major stressful events like death of a parent, divorce, illness and life transitions like onset of puberty, change of school (b) everyday hassles like arguments with friends and family, failing in tests (c) deprivation due to poor economic status. Surprisingly there was no difference in the life events and daily hassles between the genders. This indicates that generally adolescents who experience traumatic life events and continuous daily hassles are more prone for depression as these events bring out emotional reactions in them. Further, it should be remembered that adolescence is a time described as a period of 'storm and stress' and more liable for emotional upheaval. Hence, it is likely that such events could precipitate depressive symptoms. Adolescents may not be physically and mentally prepared to face crisis and challenges as it is not expected of them. However, certain life events and daily hassles can be managed

by systematic, meticulous planning and seeking information and support from social networks.

There were some gender differences in the correlates. Boys in this study reported poorer family relationships when compared to girls. Previous research has suggested that family relationships are more central to girls [30]. Girls spend more time with family members, help in household chores and participate in family functions and other activities and this has been indicated as a protective factor in this study that is associated with resilience than psychopathology. They place greater value on maintaining a sense of connectedness to their family. Girls gain autonomy from their families-of-origin more slowly than boys [31]. Boys, on the other hand spend less time in family interaction, are less involved in household work, and spend more time outside home.

The absence of gender difference in self-esteem unlike a few studies in the West was very surprising [2, 30, 32]. In this sample of adolescents, girls showed higher scores in the Rosenberg Self-Esteem Questionnaire than boys (not significant). When speculated on this, it is widely acknowledged, that self-esteem is a multidimensional concept (body image, social competence, athletic skills etc) and adolescents generally evaluate themselves along several dimensions [33, 34]. However, in the present study, self-esteem was measured as a uni-dimensional factor that assesses global self worthiness rather than multidimensional abilities. Most studies on self-esteem have focused on body image perceptions of boys and girls and have found that poor self-esteem is mainly related to negative body image and pubertal changes in girls' issues that had not been addressed in this study [29, 33]. It would be interesting and worthwhile to study further on this to find

if self-esteem is conditional on gender among boys and girls in India when body image and other factors are included. It would be also relevant to improve self esteem in adolescents beyond body image to improve mental health.

In the school environment, boys perceived significantly poor peer acceptance when compared to girls in this sample and peer acceptance was a protective factor in this study. Boys and girls differ in their social cognitions, differ in the types of friendships they maintain and feel different criteria is needed to be popular among friends. Girls tend to accommodate more with their friends, whereas boys tend to be more independent in their views and opinions [35]. Moreover as per gender socialization theory, females are particularly attuned to relationships and the ethics of caring and these are promotive factors to develop resilience. Further, there were also significant differences between boys and girls in their perception of "pressure to achieve in the school". This was not very surprising because the trend in the last few years girls have been consistently performing better than boys in the board examinations. Girls are able to cope with the demands better than boys as they place more value on academic performance than boys.

The study revealed that in spite of having protective factors of better family relationship, better peer acceptance and less pressure to achieve, girls scored slightly higher on the depression scores than boys though not significant. One reason could be the gender difference in the expression of psychological distress. Studies have shown that girls show more of an internalizing pattern of symptom expression (e.g., sadness, hopelessness, loneliness, fatigue, worry) whereas boys more of an externalizing pattern (getting into fights, having to be pushed into homework) [36,37]. The Beck Depression Inventory

elicits more of internalizing symptoms than externalizing which may explain the higher depression scores of girls than boys. Also important is to explore if gender stereotyping specific to our culture is a reason for an increase in higher reporting of depression among girls. We strongly recommend that this finding need to be further explored in future studies.

Limitations

There were a few limitations that have to be taken into consideration in the present study. The study could not have an external criterion like a clinical examination of those adolescents who had reported moderate/severe depression against which the validity of the self-report measures could be judged. The data was collected only from the study sample, with adolescents as the sole data source, validation of the results may not be as effective as when compared with responses from multiple sources, like parents and teachers.

Conclusions

The results of the study have helped us to understand the importance of self-esteem, family relationships and peer acceptance as important protective factors against depression in adolescents. Interventions or programs for adolescents should focus on improving self-esteem among children and adolescents. Enhancing relationship of adolescents with parents and family, developing social skills in adolescents to be able to seek social support will help adolescents deal with life stressors and daily hassles in a healthy way. Future studies should aim at developing appropriate interventions focused on the protective factors and describe how these factors can improve the mental health of

adolescents experiencing depressive symptoms. Finally it also indicated the difference in the protective and risk factors between boys and girls. Adolescent girls in the study had more protective factors of better family relationships and peer acceptance. Clinical implication of the gender differences is that it is imperative to have gender sensitive intervention program.

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