Original Article

Does Child Friendliness of Schools Influence Prevalence of Depressive Disorders among School Going Adolescents? – A Study in Two Southern Districts of Karnataka

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ABSTRACT

Introduction: More than 16% morbidity among adolescent age group is caused by mental health disorders. The early occurrence of psychiatric disorders like anxiety and depression in adolescent age is associated with mental, physical and social squeal in future life. Thus, early detection of mental health disorders and their prompt treatment will help the adolescents to lead a socially and economically productive life. In this background the present study was conducted to assess the influence of child friendliness on prevalence of depressive disorders among adolescents in selected JSS Schools in Mysuru and Chamarajanagara districts of Karnataka. **Methodology:** A cross-sectional study was conducted among 18 randomly selected upper primary and high schools from July to December 2019. A total of 400 students aged between 11 to 16 years were included in the study. The mental health status, demographic details, and child-friendliness of schools were assessed using validated self-administered questionnaires and checklists. **Results:** The prevalence of depressive disorders among adolescent children was 4%. The presence of depressive disorders among respondents was associated with the location of the school, current scholastic year, father's occupation, relationship with siblings and child-friendliness of the respective schools. **Conclusion:** The major modifiable factor associated with the depressive disorder was child-friendliness of the schools according this study. Hence more attention has to be paid and collective efforts have to be made by managements, governments and the community to improve the child-friendliness of schools and thereby mental health status of its students.
Key words: Depressive disorder, School health, School child-friendliness.

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INTRODUCTION

Every one in six people in the world belongs to the adolescent age group between 10 to 19 years. Being a unique and formative period, the health status of adolescent children is an important factor in the formation of a healthy society. Epidemiological data shows that 16% of global morbidity among this age group is contributed by mental health conditions of various kinds. Depression is a leading cause of disability and illness in adolescents.[1] At least half of all mental health disorders in the adult population starts around 14 years of age. However, most of these cases go undetected and untreated.[2] Many sequelae of adolescent depression have been identified by scholars. Anxiety and depressive disorder in adolescent life increase the chance of recurrence of similar conditions in adult life.[3] The consequences of adolescent depression also include increased chances of substance use, more deviant activities during young life, troubles in interpersonal relationships, distance from spouse etc.[3] Many factors including female gender, lower socio-economic status, chronic stress, ethnic and cultural factors, problem families and other comorbidities are associated with the development of adolescent depressive disorder.[4]

School is an important personal and social environment for the children of adolescent age. A friendly atmosphere in schools is therefore important in motivating and developing healthy adolescents. UNICEF has developed a framework for child-friendly schools and suggests that schools should be inclusive of children, effective for learning, healthy and protective of children, gender-sensitive and involved with children, families and communities to be called child friendly.[5] The psychosocial environment of schools has a direct influence on the emotional well-being of students. A positive social environment at school is important in the behaviour of its students.[6,7]

This study attempts to assess the well-being and prevalence of the depressive disorder among adolescent students and its association with

child-friendliness of schools they are attending in Mysuru and Chamarajanagara districts in south Karnataka, India.

METHODOLOGY

This cross-sectional study was conducted among adolescent school children studying in upper primary and high schools at Mysuru and Chamarajanagara districts in the southern part of Karnataka, India, during July-December 2019. Ethical clearance was observed from the Institutional Ethics Committee of the JSS Medical College.

Based on the reported prevalence of depressive disorders among urban adolescents school children in Mysuru to be 4.1% by Pradeep *et al.*[8] with an absolute precision of 2% and confidence level of 95%, the sample size was estimated to 394 and rounded off to 400. Multistage random sampling was used to recruit student for the study. From the list of Schools in Mysuru and Chamagarajanara districts, 18 schools were randomly selected through lottery technique. The total sample size of 400 was divided by 18 to get the number of students to be included in each school. Thus 22 students were included from 16 schools and 24 students were recruited from two schools to balance the sample size.

Students studying in the institution for a minimum period of one year, enrolled in 6th standard to 10th standard and aged between 11 years to 16 years were included in the study and students not assenting to participate were excluded from the study.

The children satisfying the selection criteria were listed in each school and 22 children (24 in two schools) were randomly selected by lottery method. The demographic details including name, age, gender, religion, parent's education and occupation were noted using a questionnaire. The relationship with parents, siblings, teachers and friends and the overall well-being including the presence of depressive disorder was assessed. Adolescent well-being scale, which is a validated, standardized, 18 item questionnaire was used for the assessment.[9] A diagnosis of depressive disorder was made if the total score was above 13 according to the questionnaire.[9]

The child-friendliness of schools was assessed using A child-friendly school survey based on the child-friendly school concept by the UNICEF. The Head Master or Head Mistress of each school filled the 53 Item questionnaire which assesses the school child-friendliness in the domains of student participation, health and well-being, safe and protective spaces, enrolment and completion, academic achievement and success, teacher's morale and motivation and community support for education. The overall scores were recorded and compared with the adolescent well-being in each school.

Statistical analysis

The data collected were entered into Microsoft Excel and analysed using a licensed version of SPPSS 22 software. The descriptive data were presented using percentages. Tables were prepared to show the distribution of study participants across different categories. Chi-square test and Fishers Exact test were used for the association between different grouped data. The mean scores of child-friendliness were compared with the presence of depressive disorder using the Unpaired '*t*' test.

RESULTS

Among the 400 respondents, 46% were boys and 54% were girls. The majority of the respondents were Hindus by religion (92.3%) while 7.8% were Muslims of the participants, 46% belonged to urban and 56% to rural schools. Only 2 students were residing in hostels and the remaining students were day scholars. Majority of the respondents were high school students (72.5%) and the remaining were studying in upper primary schools. The majority were studying in 9th standard (29.3%) followed by 10th standard (23.5%), 8th standard (19.5%), 6th standard (18.3%) and 7th standard (9.5%). (Table 1) The respondents were also asked about the educational level of their parents. Among the 400 respondents, 7% of fathers and 1.3% of mothers were graduates or postgraduates while 22.8% had fathers and 16% had mothers with no formal education. The highest proportion of parents were high school educated (28.3% of

Table 1: Distribution of respondents across various demographic categories and their association with the presence of depressive disorders.

Demographic Characters		Depressive Disorders		Frequency (Percentage)	*p* Value
		Present (Percentage)	Absent (Percentage)		
Gender	Male	4 (2.2)	180 (97.8)	184 (46)	0.085#
	Female	12 (5.6)	204 (94.4)	216 (54)	
Religion	Hindu	15 (4.1)	354 (95.9)	369 (92.3)	1.0$
	Muslim	1 (3.2)	30 (96.8)	31 (7.8)	
Location of the School	Urban	12 (6.8)	164 (93.2)	176 (44)	0.018#
	Rural	4 (1.8)	220 (98.2)	224 (56)	
Place of Stay	Home	15 (3.8)	383 (96.2)	398 (99.5)	0.078$
	Hostel	1 (50)	1 (50)	2 (0.5)	
Current Education Level	Upper Primary School	5 (4.5)	105 (95.5)	110 (27.5)	0.776$
	High School	11 (3.8)	279 (96.2)	290 (72.5)	
Current Scholastic Year	6th	3 (4.1)	70 (95.9)	73 (18.3)	0.013$
	7th	2 (5.3)	36 (94.7)	38 (9.5)	
	8th	1 (1.3)	77 (98.7)	78 (19.5)	
	9th	1 (0.9)	116 (99.1)	117 (29.3)	
	10th	9 (9.6)	85 (90.4)	94 (23.5)	

#Chi Square Test $Fisher's exact Test

fathers and 45% of mothers) (Table 2). Of the total respondents' parents, 2% of fathers and 0.8% of mothers were semi-professionals while none of them had a professional occupation. Among the mothers, 66.5% were housewives while 1.3% of fathers were unemployed. (Table 2). Among the respondents, 15 (3.8%) students' father had expired and 7 (1.8%) students' mothers had expired (Table 2).

The students were asked about their relationship with their parents, teachers, siblings and friends. Majority of students responded that they keep a good relationship with the above mentioned. Only 3 students reported that their relationship with the father is bad while one student reported a bad relation with the mother. None of the students responded a bad relationship with teachers, siblings or friends. (Table 3). The child-friendliness of the schools also was evaluated in the study. The mean score of child-friendliness of the schools was 208.22 ± 18.54 out of a maximum score of 248. The minimum score among the schools was 179 and the maximum score was 233. The mean score in rural areas (218.79 ± 12.02) was found to be higher than that of schools in urban areas (194.75 ± 16.55).

Table 2: The educational status of the parents of the respondents and its association with the depressive disorders.

Demographic Characters		Depressive Disorders		Frequency (Percentage)	p Value
		Present (Percentage)	Absent (Percentage)		
Father's Education	Professional	0	0	0	0.503$
	Graduate/ Post Graduate	1 (3.6)	27 (96.4)	28 (7)	
	Diploma/ Post High School	4 (8.3)	44 (91.7)	48 (12)	
	High School	4 (3.5)	109 (96.5)	113 (28.3)	
	Upper Primary	2 (3.3)	59 (96.7)	61 (15.3)	
	Lower Primary	0	44	44 (11)	
	No Formal Education	4 (4.4)	87 (95.6)	91 (22.8)	
	Parent Expired	1 (6.7)	14 (93.3)	15 (3.8)	
Mother's Education	Professional	0	1	1 (0.3)	0.502$
	Graduate/ Post Graduate	0	5	5 (1.3)	
	Diploma/ Post High School	0	29	29 (7.3)	
	High School	8 (4.4)	172 (95.6)	180 (45)	
	Upper Primary	4 (5.3)	71 (94.7)	75 (18.8)	
	Lower Primary	2 (5.1)	37 (94.9)	39 (9.8)	
	No Formal Education	1 (1.6)	63 (98.4)	64 (16)	
	Parent Expired	1 (14.3)	6 (85.7)	7 (1.8)	
Father's Occupation	Professional	0	0	0	0.012$
	Semi-Professional	0	8	8 (2)	
	Clerical/ shop Owner/ Farmer	4 ()	114 ()	118 (29.5)	
	Skilled Labor	4 ()	26 ()	30 (7.5)	
	Semi- Skilled Labor	6 ()	69 ()	75 (18.8)	
	Unskilled Labor	1	148	149 (37.3)	
	Unemployed	0 ()	5 ()	5 (1.3)	
	Parent Expired	1 ()	14 ()	15 (3.8)	
Mother's Occupation	Professional	0	0	0	0.566$
	Semi-Professional	0	3	3 (0.8)	
	Clerical/ shop Owner/ Farmer	0	12	12 (3)	
	Skilled Labor	0	2	2 (0.5)	
	Semi- Skilled Labor	1 (3.6)	27 (96.4)	28 (7)	
	Unskilled Labor	2 (2.4)	80 (97.6)	82 (20.5)	
	Unemployed	12 (4.5)	254 (95.5)	266 (66.5)	
	Parent Expired	1 (14.3)	6 (85.7)	7 (1.8)	

$Fisher's exact Test

A total of 16 students among the 400 study subjects expressed the symptoms suggestive of depressive disorder. Thus the prevalence of depressive disorders study subjects was found to be 4%. The prevalence of depressive disorders was higher adolescent among school children attending schools in urban localities. The prevalence was 6.8% in urban schools and 1.8% among rural schools. The difference was statistically significant with a *p* value of 0.018.

The presence of depressive disorders among respondents was compared among various categories of socio-demographic characteristics and schools' child-friendliness status showed in Tables 1-4. Only the location of the school, current scholastic year, father's occupation, relationship with siblings and child-friendliness of the respective schools showed a statistically significant association with the presence of depressive disorders among the respondents. The maximum prevalence of depressive disorders was seen in 10th standard (9.6%) followed by 7th standard (5.3%) and 6th standard (4.1%). Relatively low prevalence was in 8th (1.3%) and 9th (0.9%) standards. Fisher's exact test showed a statistically significant association with a *p* value of 0.013. (Table 1). Father's occupation also showed an association with the presence of depressive disorders among children. However, no socially significant pattern or relation was observed in the distribution of depressive disorders among children of men in different occupational groups. (Table 2).

The mean child-friendliness score 194.38 ± 15.06 was significantly lower in the schools having students with the depressive disorder compared to the students without depressive disorder, 208.79 ± 18.46. This difference was statistically significant with a *p* value of 0.002. The trend was visible in both rural and urban area schools where a statistically significant association was observed between child-friendliness score and presence of depressive disorders (Table 4).

DISCUSSION

The prevalence of depressive disorders among the respondents was 4% with a higher prevalence in urban areas compared to rural areas. This observation was comparable to a few similar studies done within the country. Findings of our study correspond to the prevalence of depression observed in urban areas of Mysuru in a previous cross-sectional study which was 4.1%.[7] A similar prevalence of 3% was observed in a study conducted by M. K. C. Nair *et al.* in the southern part of India.[10] A much lesser prevalence of 0.5% was observed among adolescents in Goa using DSM-IV diagnosis.[11] However, A major share of studies from India shows a higher prevalence of depressive disorders among school-going adolescents. A higher prevalence with 28.3% mild depression, 7.2% moderate depression and 3.5% moderately severe depression was identified in Ramanagara district in the southern Karnataka.[12] The coastal district of Udupi also shows a higher prevalence

Table 3: The perceived relationships of respondents with their parents, teachers, siblings and friends and its association with the presence of depressive disorders.

Relationship with parents, siblings, teachers and friends		Depressive disorder		Frequency (Percentage)#	p value
		Present (Percentage)#	Absent (Percentage)#		
Father	Good	15 (93.8)	360 (93.8)	375 (93.8)	
	Neither Good nor Bad	0	7 (1.8)	7 (1.8)	0.151$
	Bad	0	3 (0.8)	3 (0.8)	
	Expired	1 (6.7)	14 (3.6)	15 (3.8)	
Mother	Good	14 (87.5)	373 (97.2)	387 (96.8)	
	Neither Good nor Bad	1 (6.3)	4 (1)	5 (1.3)	0.151$
	Bad	0	1 (0.3)	1 (0.3)	
	Expired	1 (6.3)	6 (1.6)	7 (1.8)	
Siblings	Good	13 (81.3)	374 (97.4)	387 (96.8)	0.012$
	Neither Good nor Bad	3 (18.8)	10 (2.6)	13 (3.3)	
Teachers	Good	15 (93.8)	371 (96.6)	386 (96.5)	0.441$
	Neither Good nor Bad	1 (6.3)	13 (3.4)	14 (3.5)	
Friends	Good	15 (93.8)	376 (97.7)	391 (97.8)	0.338$
	Neither Good nor Bad	1 (6.3)	9 (2.6)	10 (2.2)	

#Column percentage $Fisher's exact Test

Table 4: The association between child friendliness of schools and presence of depressive disorders.

Child Friendliness	Location of the school	Depressive Disorder				t value*	p Value*
		Present		Absent			
		Mean	SD	Mean	SD		
Child Friendliness Score	Urban	187.58	10.37	195.27	12.11	-2.351	0.032
	Rural	214.75	1.50	218.87	12.11	-3.713	0.002
	Total	194.38	15.06	208.79	18.46	-3.713	0.002

*Unpaired Sample *t* Test

of 40%.[13] The difference in scales used could be the reason for this difference in obvservations. The prevalence, however, is comparable with the combined prevalence of moderately severe and severe depression in such studies.[12,14,15] As the mild and moderate depression often may not require medical intervention, this difference may not be significant in the public health operational aspect.

Various factors were found to be associated with depression among adolescents through different studies. Scholastic year, locality of the schools (urban/rural), relationship with family members, age and father's education was found to be associated with depression in various studies.[15,11]

The support network that students receive has a key role in the development of depressive disorders among them. Aravind Pillai *et al.* describes the safety in the neighbourhood and the presence of family as primary social support as protective factors in depression.[11] Man Mohan Singh *et al.* projects that the lack of a supportive environment in schools associated with higher rates of depression among the school-going adolescents.[15] This is comparable to our observation of an association between the child-friendliness of schools and depression. Opportunities for participation, good health and well-being, safe and protective spaces, good enrolment and completion, academic achievement and success, teachers with morale and motivation and community support for education are the features of a child-friendly school. Therefore paying attention to these factors to improve the friendliness in schools will ultimately improve the mental health of adolescent students.

Among the multiple factors found to be significantly associated with the depressive disorders (locality of the school, scholastic year, fathers education, relationship with siblings and child-friendliness of schools), the major feasible intervention can be made at the child-friendliness of schools from a public health viewpoint, as it is a modifiable factor where the health system can intervene. Thus, our study suggests more interventions has to be designed and implemented to improvise the child-friendliness of schools in the area. However, as the sampling area and size was limited more elaborate, multicentric studies have to be considered in the topic and an analysis of each component of child-friendliness has to be performed to shape interventions with maximum efficiency.

CONCLUSION

The prevalence of the depressive disorder among school-going adolescents aged between 11 to 16 years in Mysuru and Chamarajanagara districts was 4%. The major modifiable factor associated with the depressive disorder was child-friendliness of the schools according to the observations in this study. Hence more attention has to be paid and collective efforts have to be made by managements, governments and the community to improve the child-friendliness of schools and thereby mental health status of its students.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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