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Study of psychosocial problems among adolescent students in Pune, India

Shankar Bhosale[1*], Samir A.Singru[2] and Deepak Khismatrao[2]

[1]Department of Community Medicine, KMCT Medical College Hospital, Manassery P.O. Mukkam, Kozhikode-673602 Kerala, India and [2]Department of Community Medicine, Smt. Kashibai Navale Medical College, Narhe, Pune-411041, Maharashtra, India

Abstract: *Context:* Psychosocial health problems are highly prevalent and one of the hidden public health problems amongst the children and adolescents. Early diagnosis by primary care physicians and prompt referral to the specialist is very important for controlling it. *Objectives:* To screen all school going children for the risk of psychosocial problems, identify risk factors and refer at risk children to the psychiatrist for counseling. *Material and Methods:* A Cross sectional study in urban and rural field practice area of a teaching hospital in Pune. A screening tool-the youth report of pediatric symptom checklist (Y-PSC) was used .Statistical analysis by Chi square test and Multivariate logistic regression was used as the test for significance. *Results:* Out of the total 2154 children, 328 (15.2%) were found to be at risk of psychosocial problems. Statistically significant difference was observed as per type of management, medium of education, location of the school, age group, class of the student, total members in the family and socioeconomic status. No significant difference was observed as per gender or the type of the family. However after the application of multinomial logistic regression, significant statistical difference was observed only for the type of management running the schools with significantly more number of proportions of psychological disorders seen in students studying in government run schools. *Conclusions:* Our study clearly brings out the role of management in psychosocial impairment. The psychosocial impairment is about 15.2% with more impairment seen amongst government schools.

Keywords: Psychosocial problems, Adolescents, School children, Y- PSC check list

Introduction

Childhood psychosocial disorders exhibit as iceberg phenomenon and are one of the hidden public health problems. Diagnosis of childhood psychosocial disorders are delayed and first seen by family physician or paediatrician. Early diagnosis by teachers, parents and primary care physicians with prompt referral to the concerned specialist is vital for controlling them. Adolescents suffer from psychosocial problems at one time or the other during their development.

These problems are of transient nature and are often not noticed. Furthermore, children may exhibit these problems in one setting and not in other (e.g. home, school). Several key transitional periods (moving from early elementary to middle school, moving from middle school to high school or moving from high school to college) can present new challenges for these adolescents and symptoms or dysfunction may occur [1]. The term psychosocial reflects both the under controlled, externalizing or behavioral problems such as conduct disorders, educational difficulties, substance abuse, hyperactivity etc., and the over controlled, internalizing or emotional problems like anxiety, depression etc. The emotional problems have been relatively neglected compared with behavioral problems because these are not easy to be detected by parents or teachers [1].

Many epidemiological surveys on school going children and adolescents have reported a wide variation (20-33%) in the prevalence of psychosocial problems [2]. Individual studies illustrated the prevalence of psychosocial problems ranging between 10-40% [3-5]. In India, where a psychological problem and visit to the psychiatrist is considered a stigma, it becomes even more necessary to create awareness amongst parents and health care providers about the extent of these

psychological problems as many common chronic and mental health conditions arise during childhood. These ensuing psychosocial problems are known to lead to various learning and emotional difficulties in children which then have an impact on their psychological wellbeing [6].

The objective of present study was to screen school going children at risk of psychosocial problems and identify selected socio-demographic factors associated with them. The study also had a service component of appropriate referral of children at risk to qualified psychiatrists and counselors.

Material and Methods

The study approval was taken from institutional ethics committee and written consent was obtained from both students and their parents. It is a cross-sectional study carried out in the urban and rural field practice area of a tertiary care teaching hospital in Pune, India. The duration of the study was 2 years from 1st November 2009 to 31st Oct 2011. All students from 5th to 12th standards present during data collection and gave their consent were included in the study. Government and private and both Marathi and English medium representation was sought while selecting the schools as a purposive sample.

Census sample of students was taken in the selected three schools. A Y-PSC screening tool (Annexure I) was used to identify at risk children. The tool was translated into Marathi and validated by the faculty members of the department by cross translating it again to English and checking for misinterpretation if any. The tool also collected socio-demographic data of the student viz. age, gender, socioeconomic status, medium of education, type of management, type of family etc. Socio economic status was calculated as per modified BG Prasad's classification.

The sensitivity/specificity of Y-PSC screening tool is 95%/68% in middle socio economic class samples, 80%/100% in lower SE class samples and is a valid, reliable tool for screening psychosocial problems in adolescents. The Y-PSC tool consists of 35 items on behavior pattern of the child that are rated as "never," "sometimes", "often" present & scored 0, 1, & 2 respectively. The total score is calculated by adding together the score for each of the 35 items.

The cut off score is 28 and thus all the students scoring above 28 were considered at risk for psychosocial problems with the risk increasing as the score increased. The tool was filled by the parents and teachers were requested to ensure parents compliance on the same. The tool had the mobile number of the principal investigator for clearing doubts, if any, related to the questionnaire and study.

The data collected was computerized and analyzed using SPSS version 14.01. Chi square test and Multivariate logistic regression was used as the test for significance. P value less than 0.05 was considered to be statistically significant. Health education in the form of short lecture including techniques to handle psychosocial problems was given to at risk children identified and referred to the psychiatrist for further management.

Results and Discussion

The total sample size of the children participated in the study was 2154. Out of 2145 students screened 1186 (55.01%) were male and 968 (44.09 %) were females. and Table I shows the distribution of children screened according to socio-demographic profile.

Out of the total 2154 children, 328 (15.2%) were found to be at risk of psychosocial disorders as per the Y-PSC questionnaire. Table II shows the association of selected socio-demographic factors with childhood psychosocial disorders.

Table-1: Distribution of children according to Socio-demographic profile

Socio-demographic risk factors	N (%)
Gender (n=2154)	
Male	1186 (55.1%)
Female	968 (44.9%)
Religion (n=2154)	
Hindu	2048 (95.1%)
Muslim	55 (2.6%)
Buddha	37 (1.7%)
Jain	7 (0.3%)
Christians	7 (0.3%)
Management type(n=2154)	
Government	1430 (66.4%)
Private	724 (33.6%)
Education medium(n=2154)	
Marathi	1430 (66.4%)
English	724 (33.6%)
Location (n=2154)	
Urban	1505 (69.9%)
Rural	649 (30.1%)

Socio-demographic risk factors	N (%)
Age group (n=2154)	
10-14 years	1781 (82.7%)
15-18 years	373 (17.3%)
Education (n=2154)	
5^{th} -7^{th} standard	1053 (48.9%)
8^{th}-10^{th} standard	1101(51.1%)
Family type(n=2123)	
Nuclear	1639 (77.2%)
Joint	484(22.8%)
Socio economic(n=1830)	
Class-I	331 (18.1%)
Class-II	341 (18.6%)
Class-III	360 (19.7%)
Class-IV	505 (27.6%)
Class-V	293 (16.0%)
Family members(n=2154)	
Up to 4 members	1084 (50.3%)
5-8 members	936 (43.5%)
more than 8 members	134 (6.2%)

Table-2: Association of selected socio-demographic risk factors with psychosocial disorders

Socio-demographic risk factors	Impaired	Not impaired	$\chi 2$ value	df	P value
Gender (n=2154)					
Male	177 (14.9%)	1009 (85.1%)	0.188	1	P >0.05 (NS)
Female	151 (15.6%)	817 (84.4%)			
Religion (n=2154)					
Hindu	305 (14.9%)	1743 (85.1%)			
Muslim	9 (16.4%)	46 (83.6%)	8.320	4	P >0.05 (NS)
Buddha	11 (29.7%)	26 (70.3%)			
Jain	2 (28.6%)	5 (71.5%)			
Christians	1 (14.3%)	6 (85.7%)			
Management type (n=2154)					
Government	294 (20.6%)	1136 (79.4%)	93.699	1	P < 0.001***
Private	34 (4.7%)	690 (95.3%)			
Education medium (n=2154)					
Marathi	294 (20.6%)	1136 (79.4%)	93.699	1	P < 0.001***
English	34 (4.7%)	690 (95.3%)			
Location (n=2154)					
Urban	188 (12.5%)	1317 (87.5%)	28.961	1	P < 0.001***
Rural	140 (21.6%)	509 (78.4%)			

Socio-demographic risk factors	Impaired	Not impaired	χ2 value	df	P value
Age group (n=2154)					
10-14 years	236 (13.3%)	1545 (86.7%)	93.699	1	P < 0.001***
15-18 years	92 (24.7%)	281 (75.3%)			
Standard of Education (n=2154)					
5^{th} -7^{th} standard	131 (12.4%)	922 (87.6%)	12.394	1	P < 0.001***
8^{th}-10^{th} standard	197 (17.9%)	904 (82.1%)			
Family type (n=2123)					
Nuclear	252 (15.4%)	1387 (84.6%)	0.144	1	P >0.05 (NS)
Joint	71 (14.7%)	413 (85.3%)			
Socio economic status (n=1830)					
Class-I	31 (9.4%)	300 (90.6%)	30.231	4	P < 0.001***
Class-II	43 (12.6%)	298 (87.4%)			
Class-III	47 (13.1%)	313 (86.9%)			
Class-IV	100 (19.8%)	405 (80.2%)			
Class-V	65 (22.2%)	228 (77.8%)			
Family members (n=2154)					
Up to 4 members	138 (12.7%)	946 (87.3%)	13.084	2	P < 0.001***
5-8 members	160 (17.1%)	776 (82.9%)			
more than 8 members	30 (22.4%)	104 (77.6%)			

Statistically significant difference was observed as per type of management whether government or private school, medium of education whether English or Marathi medium school, location of the school whether urban or rural, age group whether below 15 years or above 15 years, Class (standard) of the student, total members in the family and socioeconomic status. No significant difference was observed as per gender or the type of the family. Our results are comparable with other studies conducted by Ahmad A [1] and Jellinek MS [3] who used the same tool in similar age group.

In the present study it was observed that the proportion of psychosocial problems increased with the decrease of the socioeconomic status. Only 1830 parents revealed their socioeconomic status. The proportion ranged from 9.4% in Class I to 22.2% in Class V. This difference was statistically significant (χ^2=30.231, df = 4, p < 0.001). Similar findings were also reported by other investigators [1-2,5,7].

The probable reason could be because of other factors like malnutrition, illiteracy, ignorance and negligence in the childcare are associated with socio-economic status. However after the application of multinomial logistic regression no statistical difference as per socio economic status was observed.

The study reveals that students studying in government schools showed a significantly higher proportion (20.6%) of risk of psychosocial impairment than the proportion of students (4.7%) studying in private schools. We did not find any study which found significant association of the type of school management with psychosocial impairment. Possibly the higher proportion of psychological impairment in the government run school could be associate with a higher teacher student ratio and thus limiting teacher-student rapport.

In the present study students studying in rural area were all Marathi medium students run by government management. Thus to study the role of location on psychosocial problems one Marathi medium school in rural area was compared with Marathi medium school of urban area. The result showed that the proportion of psychosocial problems was 12.5% in urban area and 21.5% in rural area. This difference was statistically significant. (χ2 =28.961, df = 1, p value<0.001). Similarly to study the role of medium of education on

the psycho social problems one school from urban area Marathi medium was compared with English medium school from urban area. The proportion of psychosocial problems was 20.6% among Marathi medium students and 4.7% in English medium schools. This difference is statistically significant. ($\chi 2$ =93.699, df= 1, p value<0.001). However the Marathi medium school is a government run school and the English medium school is run by private management.

The risk increases as the age increases. In the present study the proportion of psychosocial problem was 13.3% in age group of 10-14 years and 24.7% in the age group of 15-18 years. This difference was statistically significant. ($\chi 2$=93.699, df=1, p value< 0.001). Similarly the proportion of psychosocial problems was 12.4% in students studying in 5th to 7th standard and 17.9% in students studying in 8th to 10th standard ($\chi 2$ =12.394, df=1, p value> 0.00001). After the application of multinomial logistic regression, statistical difference as per age was observed. However the odds ratio was 0.680. In the present study the proportion of psychosocial problem was 12.7% in students whose family constituted up to four members, 17.1% among five to eight members and 22.4% among students whose family constituted more than eight members. This difference was statistically significant ($\chi 2$ =13.084, df=2, p value<0.001). However after the application of multinomial logistic regression no statistical difference as per the number of family members was observed.

In the present study it was observed that the proportion of psychosocial problems was highest in Buddha (29.7%) followed by Muslims (16.3%) and Hindus (14.8%).This difference was not statistically significant ($\chi 2$=8.320, df=4, p value > 0.05). However after the application of multinomial logistic regression no statistical difference as per religion was observed.

Table-3: Multinomial Logistic regression analysis with Psychosocial Impairment as Dependent variable

Socio-demographic risk factors	P value	Odds ratio	95% Confidence Interval for Odds ratio	
			Lower Bound	Upper Bound
Age group	0.024***	.680	.487	.950
Educational Class	0.200	.825	.614	1.108
SES*				
SES Class I	0.457	.824	.494	1.373
SES Class II	.773	1.071	.671	1.710
SES Class III	0.178	.739	.475	1.148
SES Class IV	0.608	.908	.626	1.315
Location of school	0.528	.908	.672	1.226
Type of management running the school	0.000***	4.798	3.003	7.666
Family type	0.607	1.101	.763	1.589
Religion				
Hindu	0.154	.567	.259	1.238
Muslim	0.403	.633	.217	1.847
Buddha	.	.	.	.
Gender	0.471	1.102	.846	1.437
Number of Family members				
Family members (1-4)	0.763	1.124	.528	2.392
Family members (5-8)	0.556	1.230	.618	2.448

*SES - Socio economic status, *** Statistically highly significant

Table III shows application of multinomial logistic regression, and statistically significant difference was observed only between children from Government and Private Schools (Odds ratio = 4.798) and also age was identified as a significant variable for psychosocial disorders (Odds ratio = 0.680). Thus students from government schools have higher risk and the risk increases as the age increases. The higher proportion of psychological impairment in the government run school could be possibly due to higher teacher student ratio and thus limiting teacher- student rapport.

All the identified children at risk were brought to the notice of the class teacher and the principal of the school who accordingly also informed their parents to seek psychiatric counseling with the psychiatrists available at the rural and urban health training centers.

Conclusion

Our study clearly brings out the role of management in psychosocial impairment. The psychosocial impairment is about 15.2% with more impairment seen amongst government schools. Thus, National Mental health program should focus more on government schools and especially in secondary class children. Teachers should be educated about the warning signs of psychosocial impairment. There is a strong need for the post of counselor in the schools with periodic screening of children and better parent teacher association.

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*All correspondences to: Dr. Shankar Bhosale, Associate Professor, Department of Community Medicine, KMCT Medical College Hospital, Manassery P.O. Mukkam, Kozhikode-673602 Kerala, India. E-mail: shankarbhosale50@ymail.com