Original Article

Factors Affecting Scholastic Performances of Adolescents

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ABSTRACT

Objective. Recognizing the social influence, study habits and health factors affecting scholastic performances of adolescents and to compare these factors among the adolescents between two categories of school.

Methods. A total of 1230 adolescents (13-18 yrs) were screened. Data was collected by personal interview, using the teenage screening questionnaire (Trivandrum).

Results. A total 615 students from corporation and private schools were studied. 39.76% (489) were high achievers, 13.5% (166) were low achievers with $p < 0.001$. In the low achievers, 12.03% were from the corporation schools and 1.46% from private schools. The incidence of poor study habits and social factors were increased in low achievers of corporation schools. On multivariate analysis, the predictor variables for poor scholastic performance were adolescent having refractory error, not having help for study at home, not doing home work regularly, not solving question bank papers and reading only before examinations.

Conclusion. It is feasible and worthwhile to identify the determinants of scholastic performance and plan intervention strategies at each school. The results highlight the importance of implementing newer strategies, focusing on strict study patterns and creating the conducive school and home environment for study, so as to achive better scholastic performances. **[Indian J Pediatr 2009; 76 (5) : 495-499]** *E-mail: chandrika doc@gmail.com, docrao2000@yahoo.com*

Key words: *Health factors; Social influences; Study habits; Adolescent scholastic performances; High achievers; Low achievers; Study patterns*

Adolescence is a period of considerable physical and mental changes, of which transition to higher levels of study and planning for a future career is significant. Academic achievements assume importance and is a key factor for personal progress and personal worth [1].Scholastic performance is being equated to grades obtained in the examinations.[2,3] Scholastic backwardness is defined as: In presence of normal intelligence, intact sensory functions and adequate opportunity to learn, an adolescent or a kid is performing 2SDs below what is expected for age.[4]

The causes of scholastic backwardness are many and complex.[4,1] Identification of these factors is critical in all adolescents, more so in view of the fact that poor performance may be linked to health risk behavior.[4] School failure and inevitable underemployment are serious problems which ultimately results in high loss to the individual and society.

The objective of this article is to determine the health factors, social influences and study habits affecting scholastic performances of adolescents and to compare the above factors among adolescents of 2 categories of school-corporation and private

MATERIALS AND METHODS

A cross sectional study was done in May 2004 to November 2005. The inclusion criteria were the students studying in english medium of 8th, 9th and 10th standard, with ages from 13 to 18 years. The exclusion criteria were all adolescents below 13 years and above 18 years of age and with known neurological disorders, mental retardation, and behavioral disorders.

Data was collected using the teenage screening questionnaire, Trivandrum. Permission was obtained from the education officer of Bangalore Mahanagar

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Palika (for corporation schools) and Deputy Director of Public Instruction, Bangalore city north (for private schools). Consent for study was obtained from all the school authorities, parents and students. Grades obtained by students in their previous annual examination were recorded. They were rearranged into 3 categories *i.e.,* Grade C (49% and below) was taken as low achievers, Grade B (50 to 74%) was taken as moderate achievers and Grade A (75% and above) was taken as high achievers. Cross sectional analysis was done. The associations between potential risk factors with grades, were studied through univariate analysis. The categorical variables were assessed using Pearson-Chi-square. Odd's ratio was calculated. Logistic regression analysis was done to analyze the effect of factors on grading. Means were compared using the student 't'-test.

RESULTS

Socio-Demographic charecteristics

A total number of 1230 students (691 girls, 539 boys), were studied. Total percentage of girls were 56.18% and boys were 43.82%. More number of girls were found in corporation schools 63.41% (390/615) than private schools 48.94% (301/615). In corporation schools, girls (70.31%) fared better than boys (29.69%) as high achievers. Boys (51.52%) were marginally better than girls (48.48%) as high achievers in private schools (Table 1). Enrolled 615 students were from corporation schools and 615 from private schools. 399 students were in the 8th standard, 263 in the 9th standard and 468 in their 10th standard. The overall mean age of adolescents enrolled for the study was 14.35±1 year. The students were grouped *as per* their grades (Table 2).

High achievers were more in private schools. Significant number of low achievers belonged to corporation schools. Higher educational level of parents resulted in higher achievement in adolescents (Table 3).

Table 1. Gender wise Analysis

Grade	Corporation		Private	
	Girls	Boys	Girls	Boys
Low % p < 0.01	63.51	36.49	33.33	66.67
Moderate % p < 0.05	60.77	39.23	50.85	49.15
High % p < 0.001	70.31	29.69	48.48	51.52

Table 2. Scholastic Achievement (Grade) Analysis: High Achievers were More in Private Schools

Grade	Corporation	Private	Total	
Low achievers	148 (24.07%)	18 (2.93%)	166(13.5%)	p<0.001
Mod achievers	339(55.12%)	236(38.37%)	575(46.75%)	NS
High achievers	128 (20.81%)	361 (58.7%)	489 (39.76%)	p<0.001

Health problems

Table 3. Education of the Parents: Adolescents Who were High Achievers had Increased Percentage of Parents with Higher Education

Grade	Father		Mother	
	<10th std	>10th std	<10th std	>10th std
Low achievers	24.24%	3.46%	21.33%	2.36%
Moderate achievers	52.19%	41.67%	52.22%	38.98%
High achievers	23.57%	54.87%	26.45%	58.66%
(Between low and high)	P<0.001		P<0.001	

Health problems recorded in these adolescents were asthma, joint pains, migraine, acne, dandruff, refractory errors, heart diseases, menstrual and dental problems Fig. 1.

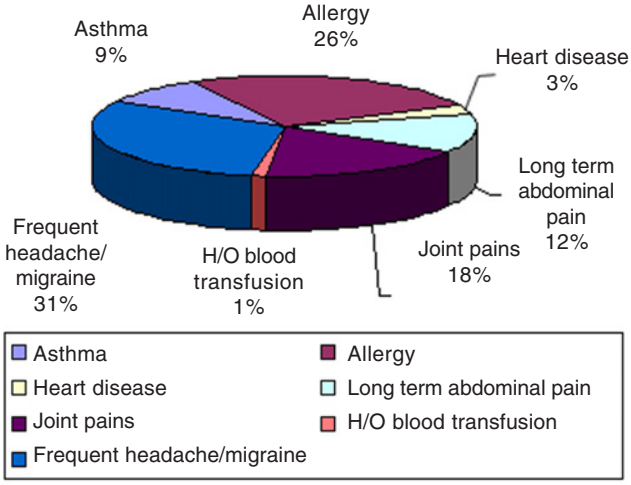

Fig .1. Adolescents with medical problems

Social influences

Adolescents having disturbing factors at home in the form of quarrels between parents and siblings, broken homes, substance abuse in parents and having responsibilities at home were 12.93% (159/1230) of which 17.07% (105) were from corporation school and 8.78% (54) were from private schools. 18.07% of the low achievers and 9.07% of high achievers had the above disturbing factors. 17.89% (220/1230) had adjustment problems with parents (13%), friends (37%), siblings (13%) and friends or neighbors (37%). Private school students (20.33%) had statistically significant (p<0.05) more adjustment problems than corporation school adolescents (15.45%), especially when compared in the low achiever group (44.44% in private to 16.89% in corporation). However multivariate analysis did not show any significant association. Time spent on television watching did not affect grades in the present study. 51% of adolescents watched television for 1 hour

followed by 32% of them watching for 2 hours. Total hours of television watching was around 11 hr/week in adolescents studying in private schools to <10 hr/week in those studying in corporation schools.

Study Habits

Factors as regular attendance, having help for study at home, attending tuitions, completing homework daily, solving question bank, studying regularly or studying just before examinations were studied. Adolescents with regular attendance numbered 95.69% (1177/1230), and were more from the private schools 98.21% (604/615) and was significant. (p<0.01).

A total of 60.24% (741/1230) of the adolescents had help for study at home, 27% of adolescents have help from both parents and siblings followed by 22% from mother. Adolescents attending tuition was 42.52% (523/1230), of which 33.01% (203/615) were from corporation and 52.03% (320/615) were from private schools. In the present study, statistically significant association was found between high achievers and low achievers (p<0.01) attending tution, in both schools. 49.51% of adolescents did not study daily, of which 36.42% were from corporation schools. 31% of adolescents gave postponing habit as the reason for not studying regularly on day-to-day basis followed by not getting enough time by 22%.

Adolescents doing homework regularly was 83.50% (1027/1230), of which 80.65% (496/615) were from corporation and 86.34% (531/615) were from private schools. Univariate analysis showed no difference in low achievers. There was significant difference (p<0.01) among the high.

Achievers doing homework regularly in both categories of schools (82.81% corpration and 94.46% private). Adolescents did not clear doubts with teachers (56.26%), 83% of adolescents were afraid of asking teachers their doubts. 89% of adolescents perceive their teachers as encouraging and 6% of them perceive their teacher as partial. 40.57% (499/1230) of adolescents had solved question bank. There was significant difference (p<0.01) in the adolescents who solved question bank among the high achievers (38.65%), 53.91% being from corporation schools and 33.24% being from private schools. 36.75% (452/1230) of adolescents studied just before the examinations 59.04% of low achievers studied just before exams, whereas 25.77% of high achievers did the same (Table 4).

Multivariate analysis was done through logistic regression analysis, (Table 5). It showed that scholastic performance decreases by 4.219 times if a student has refractory error, by 3.623 times, if no one helps a student in his studies at home, by 5.235 times if a student does not do home work regularly, by 3.394 times if a student does not solve question bank papers, by 3.802 times if a student reads only before examinations. Decreased performance is a result of an interplay of factors in all 3 domains, health, social and school.

Table 5. Showing the Odd's Ratio and Confidence Interval of Different Variables (Risk factors)

Risk Factor	Odds Ratio	Confidence Interval (95%)		p-value
		Lower	Upper	
Refractory error	4.219	1.416	12.500	<0.01
Help at home	3.623	1.433	9.174	<0.01
Home work	5.235	1.081	25.363	<0.05
Q Bank	3.394	1.341	8.592	<0.01
Reads only before exam	3.802	1.533	9.429	<0.01

DISCUSSION

Scholastic backwardness is a universal problem. A significant percentage of students fail to make progress

Table 4. Factors Influencing Low Achievers (L) and High Achievers(H). Social, Scholastic Factors Affected Adolescent's Grades in School

Factors	Low achievers (%)	Moderate achievers (%)	High achievers (%)	p value
SOCIAL				
Disturbances at home	18.07	14.78	9	
TV watching	86.75	87.30	88.55	
Adjustment problems	19.88	19.65	15.31	P<0.01 L
Regular attendance	88.55	95.83	97.96	P<0.01 H
SCHOLASTIC				
Helped at home	67.47	67.28	54.81	P<0.01 H
Tuitions	38.55	46.96	38.65	P<0.01 H
Not studying daily	45.18	53.57	46.22	P<0.01 L
Doing HW daily	73.49	79.65	91.41	P<0.01 H
Not asking doubts	40.96	50.43	69.30	P<0.01 H
Solving QBank	37.35	43.13	38.65	P<0.01 H
Studying just before exams	59.04	39.65	25.77	P<0.01 L, H

with traditional classroom instructions. Today, academic achievement plays an important role in the student's life and in this context, it becomes imperative for pediatricians, psychologists, and educationists, to take steps to help the significant percentage of students who have scholastic problems.[5, 3,6]

Researchers have estimated that 10% to 37% of students have academic problems.[5] In the present study, 13.5% of adolescents were low achievers. Causes of scholastic under achievement are many and complex. Seldom is a single cause unequivocally identified. Combination of health, social factors and school environment is responsible.

In the present study in health factors, refeactory error alone showed significant association with scholastic performance. Studies have reported that children from families with higher parental education do better in their scholastic performance as seen in the present study too.[7,8,2] Studies[9] found that home environment, parent's education, quality of maternal care and relationship between parents play a significant role in the child's academic achievement. In the present study, factors like not having help for study at home, presence of disturbing factors at home and adjustment problems were leading factors. Adjustment problems of the adolescent may be the normal physiological phenomenon of adolescent period and may occasionally be an indicator of underlying mental health problems of the adolescent.[10,4] No overt abnormal behavioral disorders were seen in this study. The results of the present study concurred with other studies done earlier where adjustment problems were found more with low achievers.[11.12] Television viewing 10 hours/week, considered as a vice did not influence scholastic performance in this study and in earlier studies.[13] Factors such as not performing regular home work, not clearing doubts with his teachers, not solving question bank papers, or studying only prior to examinations, contributed to scholastic backwardness. These factors were seen significantly among the adolescents attending the corporation schools as compared to the private schools.

Classroom climate correlates with academic achievement.[14,15] Studies have shown that regular homework, positive student teacher relationship[16-19] boosted scholastic performance of students. Specific use of praise and criticism by teachers for students is also likely to improve student's performance.[16] Perception of the teacher by student as encouraging, indifferent, and partial also affects their performance.

We teach our children a lot of subjects but never teach them how to study. Learning skills are an important factor in developing proper study habits. Much of the individual success in life depends upon the care and confidence with which one acquires knowledge and upon one's ability to perform tasks. School initiated communication takes place when adolescents misbehave or face academic problems. It is critical to expand the communication to include positive news.

This study identifies 3 important areas: health, social and school environment that influences student performance. Decreased school performance is a result of an interplay of factors in all three domains.The findings have important implications for promoting parental involvement and teaching practices to benefit student achievement. Given that in our hierarchically oriented Indian culture, parents and teachers tend to play a more important role than peers in student academic behavior, it is important that parents, teachers, students and adolescent physicians work together to support student's academic endeavors.

CONCLUSION

To conclude, it is feasible to identify the determinants of scholastic performance and plan intervention strategies at each school. The results of this study highlight the importance of implementing newer strategies, focusing on strict study patterns and creating the conducive school and home environment for study, so as to better scholastic performance.

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