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Research Paper

The Relationship between Home Environment and Academic Achievement among Secondary School Students in Jashore District, Bangladesh

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Abstract: This study examined the association between the home environment and academic achievement among secondary school students in the Jashore district of Bangladesh. Data were collected from 750 students across twelve secondary schools using convenience sampling and a structured self-reported questionnaire. Pearson's chi-square (χ^2) test and correlation analysis (r) were employed to examine the associations between the study variables, while ordinary least squares (OLS) regression was conducted to assess the relationship between the home environment and academic achievement. The bivariate analyses revealed significant and positive associations between the home environment and students' academic achievement. The OLS regression model accounted for 12% of the variance in academic performance, indicating that aspects of the home environment are significantly associated with students' educational outcomes. The study concludes that a supportive home environment, including parental encouragement and positive family conditions, is related to improved academic achievement among secondary students in Bangladesh.

Keywords: Home Environment, Academic Achievement, Secondary Students, Parental Monitoring, Parental Modeling

Introduction

The first step towards the development of a strong and a future oriented nation relies on a developed and educated populace at every educational level. Bangladesh has endorsed Education for All (EFA) agenda and Millennium Development Goals (MDGs) and other global commitments. The country has done well over the past 20 years in promoting access to education, particularly for primary children and girls. In 2021, gross enrolment rate in primary schools was 105.72%, and the net enrolment rate was 97.42%. Gross enrolment in secondary education increased to 75.52% and net enrolment to 70.25%. Now, access is equal between male and female children at primary and secondary level (Bangladesh Education Statistics, 2022). Challenges nonetheless persist. Many students are held back, there is a high drop-out rate, and only 50% of students who enter first grade attend until they reach 10 years of age. Further, about five million children aged 6-13 are missing from school, many of whom come from low-income families, slums and remote areas. Moreover, enrollment rates decrease further among poor students as they progress from primary to secondary education (World Bank, 2016).

Education is extremely important for development of children's minds and its impact falls upon students' entire lives. Several key factors plague the education of children; home environment is one of the influential factors of them Student's academic achievement has a positive relation with high aspirations and strong moral support of parents, educational and occupational (job

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circumstances) factors, social networks, parental educational background. Moreover, there is a relation between intelligence and academic achievement scores at different levels of socio-economic status and family environment (Dong & Chow, 2022). Similarly, the home and family and relative school success and failure are not only relevant to educators and educational administrators and planners, they are also relevant to parents and home environment (Tan, 2024). It is also found that home environment is related to a wide array of developmental outcomes intelligence, language, health and growth, social competence, locus of control, behavior at home and school and school achievement (Daucourt et al., 2021).

Home environment appears to be both a cause and an effect of academic achievement of the students. It is found that opportunities provided for learning in home environment is related with academic achievement of the students (Vadivel et al., 2023). It is also evident that parental involvement has positive influence on students' academic achievement. It is revealed in their study that parental expectation for children's education achievement has the strongest relationship, whereas parental home supervision has the weakest relationship (Jiang et al., 2023). There is a positive relation between intelligence, motivation, achievement with parent stimulation of the student and academic achievement (Tan, 2024).

The aforementioned information show that home environment has a very influential role in students' academic achievement, which however remained unexplored in the context of Bangladesh. This study, therefore, examines the relation between home environment and students' academic achievement with a particular emphasis on Jashore district.

This is aimed at examining the influence of home environment on academic achievement of secondary students in Jashore district of Bangladesh. To achieve the aforesaid objective, the specific objectives were (i) to measure the perception of home environment of secondary school students; (ii) to assess the academic achievement of secondary school students; and (iii) to examine the impact of home environment on academic achievements of secondary school students.

Literature Review

The parenting-styles literature suggests that children of authoritative parents who set clear limits and support their children to learn self-regulation, but also offer much warmth and care, tend to perform better academically than children of authoritarian parents, who are warm and affectionate but have strict discipline, or permissive parents (Fute et al., 2024).

In recent years, several studies have shown that children who have authoritative parents tend to do better academically than children who have either authoritarian or permissive parents (Claudia & Paun, 2024). When these two core dimensions of parenting style are examined separately, responsiveness and demandingness (parental authority) are related to better achievement outcomes (Kilday & Ryan, 2022). Children's learning is greatly influenced by the parents' involvement, such as when they demonstrate interest in school activities, encourage children to read, and supervise homework (Giallo et al., 2013). Parents' fostering of their children's ambitions, drive, and academic achievement by engaging in conversations, reading books aloud, providing access to books, and maintaining regular schedules is known as shaping the 'intellectual climate' of the home, and it transforms family resources into human capital (Dong & Chow, 2022).

A family's home environment is dependent on three 'types' of capital: physical (income and wealth, which indicates socioeconomic status), human (parents' education, knowledge and skills), and social (relationships with the family and ties to the broader community). These combine to form the quality of the home environment which, in turn, affects children's academic performance (Black et al., 2025).

The family systems theory suggests that the relationship between members of a family shifts most when one or more member(s) or the entire family is/are transitioning. When adolescents cognitively mature, they begin to develop self-efficacy and decision-making abilities, and to understand the role of their activities in reaching their goals, thus needing less direct parental

involvement (Özyıldırım, 2024). Parental academic socialization (PAS) theory states that parents influence children's learning by internalizing the goals through psychological processes that involve attending school-related activities (conferences, volunteering) and participating in home activities related to school (discussing school, homework) (Puccioni, 2015).

Research reviewed above aimed to determine the factors of the home environment that affect students' academic performance. Upon careful examination, however, of this literature there are several inconsistencies, gaps, and contradictions in their findings. Few of these studies focus on a small number of factors in the home environment, like parenting style or parental involvement, and fail to account for other key factors that can affect academic achievement.

Furthermore, they were undertaken within educational, cultural and social environments of other nations, and the results may not be entirely reflective of the educational context of students in Bangladesh. For the purpose of this study, the factors that form the home environment were identified and the association between the home environment and the academic achievement of students was examined, to get a comprehensive and locally relevant evidence.

Methodology

This study aimed to explore the relationship between the home environment of secondary school students and their academic achievement. Based on the research objectives, specific criteria were established to identify eligible participants and collect valid and reliable data from secondary school students in both urban and rural areas of Jashore District.

The specific attributes of the participants were (i) the participants must be secondary students; (ii) enrolled in the educational institutions located under Jashore District during data collection; and (iii) having at least a term final (for Class X students) or junior secondary certificate result (for Class IX students). Considering these criteria, a school-based census was carried out in the purposively picked secondary educational institutions with prior permission from the respective authority of these educational institutions to construct an inventory list of students.

In addition, secondary information was collected from the authority, especially, from Zila educational office at Jashore. A total of 2,173 students were identified, enrolled in secondary level of different Upazilas under Jashore district, of which 1,065 were female students and the rest were male. A total of 750 students were picked following convenience sampling. This sampling involved the sample being drawn from that part of the population that was easily accessible and close to hand considering the convenience of the researcher. Despite the use of non-probability sampling, which may have some short comings, this study covers a representative sample {(750×100)/2,173} 34 percent from the said population.

This study was carried out survey research method, and the information from the samples were collected by a structured questionnaire (also known as self-reported questionnaire) developed after reviewing relevant literatures related with various factors of home environment that influence the academic achievement of students and the data were collected from the secondary schools of both urban and rural areas in a three-month period, started from February, 2023 and ended in April, 2023.

In this study, a structured self-reported questionnaire (SRQ) in English, later translated into Bengali to facilitate the data collection, was developed. Through an intensive review of relevant literatures appropriate variables useful to achieve the research objectives were identified and used to develop the self-reported questionnaire. Permission of the authority of respective educational institutions was taken for this study. Data were entered into SPSS for statistical analysis.

This study, explanatory by nature, executed both descriptive and inferential statistics. Through descriptive statistics, the personal attributes, parental attributes as well as household characteristics were described. To measure the association between dependent and independent variables, Pearson's Chi-square ($\chi 2$) as well as Pearson's 'r' were used to test the hypotheses. To strengthen the findings, ordinary least squares (OLS) regression was implemented as well.

Findings and Analysis

Chi-square Test

Table 1. Academic achievement and its covariates (chi-square test)

Variables	Achieved GPA in Final Examination			
	Low (≤3.99)	**Medium (4.00 to 4.99)**	**High (5 ≥)**	**$\chi^2_{(df)}$ [*p* value]**
Fostering Self Efficacy				
Low (≤ 26)	101 (45.3%)	97 (43.5%)	25 (11.2%)	$74.625_{(4)}$ [0.000*]
Medium (27 to 33)	93 (34.8%)	116 (43.4%)	58 (21.7%)	
High (34 ≥)	47 (18.1%)	105 (40.4%)	108 (41.5%)	
Parental Modeling				
Low (≤ 45)	89 (39.2%)	86 (37.9%)	52 (22.9%)	$31.958_{(4)}$ [0.000*]
Medium (46 to 51)	99 (38.2%)	110 (42.5%)	50 (19.3%)	
High (52 ≥)	53 (20.1%)	122 (46.2%)	89 (33.7%)	
Encouragement and Support				
Low (≤ 38)	120 (47.2%)	86 (40.8%)	25 (118%)	$61.481_{(4)}$ [0.000*]
Medium (39 to 44)	89 (30.2%)	122 (44.7%)	73 (26.7%)	
High (45 ≥)	32 (15.9%)	110 (41.4%)	93 (35.0%)	
Physical Environment				
Low (≤ 18)	100 (47.4%)	51 (20.2%)	73 (23.0%)	$47.776_{(4)}$ [0.070***]
Medium (19 to 21)	78 (28.6%)	80 (31.7%)	125 (39.4%)	
High (22 ≥)	63 (23.7%)	121 (48.0%)	119 (37.5%)	
Parental Monitoring				
Low (≤ 18)	100 (47.4%)	51 (20.2%)	73 (23.0%)	$47.776_{(4)}$ [0.042**]
Medium (19 to 21)	78 (28.6%)	80 (31.7%)	125 (39.4%)	
High (22 ≥)	63 (23.7%)	121 (48.0%)	119 (37.5%)	
Variety of Experience				
Low (≤ 14)	74 (31.4%)	115 (48.7%)	47 (19.9%)	$8.711_{(4)}$ [0.069***]
Medium (19 to 21)	68 (32.4%)	88 (41.9%)	54 (25.7%)	
High (22 ≥)	99(32.6%)	115(37.8%)	90(29.6%)	
Acceptance and Responsive				
Low (≤ 8)	92 (35.7%)	118 (45.7%)	48 (18.6%)	$16.416_{(4)}$ [0.003*]
Medium (9 to 11)	91 (30.1%)	112 (37.1%)	99 (32.8%)	
High (12 ≥)	58 (30.5%)	88 (46.3%)	44 (23.2%)	
Parents Activity				
Low (≤ 8)	92 (35.7%)	118 (45.7%)	48 (18.6%)	$16.416_{(4)}$ [0.002*]
Medium (9 to 11)	91 (30.1%)	112/ (37.1%)	99 (32.8%)	
High (12 ≥)	58 (30.5%)	88 (46.3%)	44(23.2%)	
Rule Bound				
Low (≤ 9)	63 (28.6%)	98 (44.5%)	59 (26.8%)	
Medium (10 to 11)	80 (38.6%)	72 (34.8%)	55 (26.6%)	$8.449_{(4)}$ [0.76***]
High (12 ≥)	98 (30.3%)	148 (45.8%)	77 (23.8%)	
Regulatory Activities				
Low (≤ 10)	93 (35.2%)	113 (42.8%)	58 (22.0%)	
Medium (11 to 12)	94 (36.9%)	102 (40.0%)	59 (23.1%)	$14.415_{(4)}$ [0.06*]
High (13 ≥)	54 (23.4%)	103 (44.6%)	74 (32.0%)	

***** Significant 1% Level, ****** Significant 5% Level, ******* Significant 10% Level

Table 1 represents the association between the independent variable's attributes to the home environment inventory and dependent variable GPA achieved in the final examination by the participants. This table shows that fostering self-efficacy, parents modeling and encouragement and support (p <0.000) of home influenced students' academic achievement. Regulatory activities, acceptance and responsive and parents' activity (p <0.006, p <0.003 and p <0.002) had a significant role in students' academic results. Parents monitoring, physical environment, variety of experience and rule bound (p <0.042, p <0.070, p <0.069m and p <0.76) had statistical relation with students' academic achievement.

Bivariate Correlation

Table 2. Academic achievement and its covariates (bivariate correlation)

	Variables	1	2	3	4	5	6	7	8	9	10	11
1	**Achieved GPA in final exam**											
2	**Fostering Self Efficacy**	.274**										
3	**Parental Modeling**	.158**	.406**									
4	**Encouragement and Support**	.070	.359**	.692**								
5	**Physical Environment**	.270**	.542**	.499**	.466**							
6	**Parental Monitoring**	.226**	.391**	.568**	.516**	.491**						
7	**Variety of Experience**	.029	.336**	.376**	.458**	.290**	.309**					
8	**Acceptance and Responsive**	-.005	.292**	.428**	.493**	.233**	.293**	.325**				
9	**Parents Activity**	.045	.362**	.300**	.370**	.248**	.233**	.385**	.303**			
10	**Rule Bound**	.008	.235**	.458**	.401**	.274**	.425**	.258**	.304**	.319**		
11	**Regulatory Activities**	.100**	.411**	.409**	.362**	.457**	.390**	.293**	.359**	.358**	.292**	

**. Correlation is significant at the 0.01 level (2-tailed).

This table shows the bivariate correlation between dependent variable (academic achievement) and independent variables (all the dimensions of home environment). All the dimensions of home environment were correlated with achieved GPA in the final examination participated by the participants. It shows that fostering self-efficacy, modeling, physical environment, monitoring and regulatory activities were positively and significantly correlated with students' academic performance.

Ordinary Least Square Regression Predicting Academic Achievement

Table 3. Ordinary least square regression predicting academic achievement

Variables	**(CGPA in Average)**
(Home Environment)	**Model 1**
Adjusted R Square	**.119**
(Constant)	2.954(.197)
Fostering Self Efficacy	.021*(.004)
Parental Modeling	.002*(.004)
Encouragement and Support	.019* (.005)
Parental Monitoring	.034*(.009)
Variety of Experience	-.014*(.006)
Parents Activity	-.005**(.011)
Rule Bound	-.034**(.012)
Regulatory Activities	-.019*(.013)

*. Significance at 1% level **. Significance at 5% level

With a view assessing the connection of the ten dimensions with sixty-five variables, we conduct an ordinary least square regression. Table 3 presented the relationship between students' academic achievement and home environment where independent variable was home environment. It is evident that home environment explained 12 percent of the variance of academic performance with R2 = 0.119. Among the significant variables, parents' activity (β = -0.05**), regulations (β = 0.034**), were significantly influencing the academic achievement of the students.

Discussion and Recommendations

Home is a critical environment with an impact on students' educational performance. The level and quality of stimulation, support and physical environment all impact achievement. Further, there are personal characteristics such as parents' occupation and income which are correlated with students' performance. High aspirations, strong moral support from parents, educational and occupational factors, social network and parental educational backgrounds are all positively related to academic success. This research shows that there is a positive relationship between parents and their children's academic achievement. It highlights the strong relationship between parents'

aspirations or expectations for their children's education, and the weak relationship between home supervision. Some of the most important factors are the parents' educational aspirations, the parents' involvement in their children's lives, regular parent-school communication and consistency, and parental involvement in school governance. There is a broad consensus that authoritative parenting styles, as well as involvement, are key to enhancing academic outcomes at different grade levels, across genders and ethnic groups (Crede et al. 2015). Several studies have examined the association between parenting style and academic achievement over the past three decades. Recent studies suggest that children raised by authoritative parents demonstrate better academic performance than those raised by authoritarian or permissive parents, indicating that authoritative parenting is associated with higher levels of academic achievement (Claudia & Paun, 2024, Fute et al., 2024). Parental involvement is expressed in a range of activities such as volunteering at the school, interacting with teachers, supporting children with homework, attending school events and meetings with parents and teachers. Additionally, the role of parents in the education of their children is carried out through values that create expectations, aspirations and attitudes that play a crucial role in the learning process.

The following recommendations are made Based on the findings of study:

a) Parents should provide the children with learning tools such as books, reference materials, art and craft materials in order to succeed academically.
b) Parents should help children to have and maintain schedules and spend quality time together.
c) Parents should avoid negative put downs of children and use respectful and encouraging words to promote a feeling of security and trust.
d) Parents should create an atmosphere where children come to the parents with any problem whether it is complex or simply solvable.
e) Parents should recognize and celebrate children's uniqueness and make time exclusively for them.
f) Parents should keep contact with their children's teachers to identify children's academic progress and problems. That will help the parents to handle it before it affects the students.
g) The government of Bangladesh should provide training centers for the illiterate parents; this will help the illiterate parents to identify the roles to enhance their children's academic performance.
h) More research should conduct on home environment to understand the factors that affect the academic achievement of the students and to identify various strategy for the alleviation of inadequacies in the home-environment.

The problem of poor academic performance of students can be minimized by following the above recommendations strictly.

Conclusion

Various factors of home environment are correlated with the academic achievement of the students in different ways. It is evident that parental modeling, involvements with student's academic activities, monitoring, self-efficacy, rules bound, acceptance and responsive, regulatory activities play a vital role in determining students' academic achievement. The result of this study provides the knowledge for the parents that they should support their children by providing the right and most favorable home environment to enhance better academic achievement by the students.

Various studies regarding home environment are conducted around the world, but in Bangladesh there is no study regarding this issue. This study examined how home environments influence the academic achievement of secondary students in Jashore district, Bangladesh. However, further research is necessary to develop a supportive home setting that not only fosters the child's potential but also enhances interpersonal relationships with parents. The home is crucial for a child's overall growth and development. Hence, the study recommends cultivating a positive home environment to improve students' academic performance.

Conflict of Interest
The authors declare no conflict of interest.

Ethical Responsibility
This study was carried out in the twelve educational institutions of urban and rural areas at Jashore District with a written approval letter from the Zila Educational Officer, Jashore to the Principal/Head of each institution for cooperation, and with their kind verbal consent, data were collected for this study.

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