

Research Paper

Prevalence of Specific Learning Disability, Intellectual Disability, Borderline Intelligence, And the Associated Socio-Demographic Profile of Students in 10th Standard

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ABSTRACT

The study was conducted to identify the prevalence of specific conditions, such as Specific Learning Disabilities, Intellectual Disabilities, Scholastic Backwardness, and borderline Intelligence, that lead to academic backwardness. It also explored the associated socio-demographic profile of 10th-standard students in Kozhikode district, Kerala, who follow the State syllabus. A total of 649 students, aged 14 to 17, were selected using multi-stage cluster sampling. The study assessed the prevalence of these conditions and their impact on academic performance, with particular attention to socio-demographic factors, including gender. The findings revealed that intellectual functioning significantly predicts academic backwardness. Gender differences were also evident, with boys showing higher rates of academic backwardness across all domains. The study highlights the critical role of intellectual functioning in academic backwardness and emphasizes the influence of gender, with boys being more affected. These findings suggest the need for targeted interventions to address academic difficulties, particularly among male students.

Keywords: *Specific Learning Disability, Intellectual Disability, Borderline, Intelligence, Scholastic Backwardness*

One of the most critical aspects of human resource development is education. Academic achievements have become a societal competition from the beginning of a child's schooling. Academic achievement has become an index of the child's future (Rajamohanam, 2022). During the period of schooling, a child is likely to face physical, psychological, and psycho-social problems. Academic backwardness is increasingly recognized as a critical problem in children, which concerns parents and teachers (Dorr et al., 1980). Academic backwardness is a general term used to denote a child's below-average performance in educational requirements, whereas scholastic backwardness is a specific diagnostic entity. Scholastic backwardness is defined as having a scholastic performance

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below two standard deviations from what is expected for that age and grade with regular or average Intelligence, intact sensory functions, and adequate learning opportunities (**Neinstein, 2008**). Scholastic backwardness has been a joint educational problem in children (**Sinu, 2006**).

Specific Learning Disorder (SLD) in children and adolescents is a neurodevelopmental disorder produced by the interactions of heritable and environmental factors that influence the brain's ability to perceive or process verbal and nonverbal information efficiently. Specific learning disabilities (SLDs) are defined as a "heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia (**Empowerment, 2018**). Children with specific learning disability (SLD) may have average or above-average levels of intellectual functioning. These children don't need to be backward in all kinds of work. It has been observed that many of these academically backward children show interest in non-academic activities like games, painting, music, etc., which they like better than educational activities (**Quah, 1981**).

Borderline intellectual functioning is another cause of academic backwardness, with an IQ range of 70 to 85, whereas a person has below-average cognitive ability (**Alloway, 2010**). This group of students falls into the educational category of Slow Learners. A mild level of intellectual disability (IQ—50 to 69) also causes significant learning difficulty among children attending regular schools. In the Indian scenario, the educational and training needs of children with moderate to severe intellectual disability are usually met by a particular school set-up.

Academic achievement depends on the relationship and interplay of familial, psychological, educational, social, and economic atmosphere in and around the child (**Rutter, 1985**). It has been seen from various studies that children belonging to poor socioeconomic status families have higher chances of poor academic performance. Studies have defined academic backwardness as repeated failure in grades and poor academic achievement, securing marks <35 (**Nair et al., 2003; Shenoy & Kapur, 1996**). A cross-sectional study conducted among 1535 children in five different schools in Bengaluru proved that the family's basic amenities like water supply, electricity, and drainage had a high risk of academically backward children (**Shenoy & Kapur, 1996**). A study conducted in India shows a 5- 15% prevalence of academic backwardness (**Nair et al., 2003**), and another study estimated it to be 10.38% (**Shenoy & Kapur, 1996**). Viewing academic backwardness in terms of poor academic achievement, several Indian surveys in the past two decades have recorded prevalence rates that range from 20- 50 % (**Rozario, 1988; Sarkar, 1990; Venugopal & Raju, 1988**).

In general, problems children face from home, school, society, or even the current educational system and examination can cause academic backwardness. Poor academic performance has been a common problem for children from more rural areas. Since most of the Indian population lives in rural areas and villages, addressing the problems that cause poor academic performance is paramount. These problems create difficulties among children, like poor self-esteem and poor quality of life, and may raise significant distress among the parents. Multivariate analysis showed the following predictor variables for poor academic performance: low education status of the mother, lack of concentration in studies,

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lower education of the father, and unhappy family (Nair et al., 2003). A study revealed that in providing an environment for studies, the lower education status of parents and poor attitudes toward studies contribute to poor academic performance in children in India (Shenoy & Kapur, 1996).

Because of these unaddressed issues, the child may be unable to concentrate on his/her studies right from the beginning of their schooling. Under these circumstances, it may lead to several other difficulties like poor self-concept, lack of involvement in academics, peer pressure, cultural deprivation, emotional problems, and even psychosomatic conditions. In some children, being unattended, unrecognized, and lacking remediation towards such academic backwardness will impact their completing school and higher education and may lead to various interpersonal problems. Providing early identification, early intervention, and adequate remediation is essential to make a big difference towards a fruitful future. In Indian society, academic performance is given prime importance as it is concerned with the holistic improvement of an individual and a better status in one's life.

Despite governmental efforts, huge investments, and many innovative programs, academic problems, which ultimately lead to children dropping out of school, remain alarmingly high in many states of India (Tiwari & Galundia, 2017). Academic backwardness can be due to poor ability, lack of practice, improper guidance in junior classes, and a non-congenial family atmosphere. A study reported a high prevalence—59.4%—of academic backwardness among third-standard students (Kamble & Takpere, 2013).

Rationale of the Study

The dearth of the literature shows the importance of identifying the impact of socio-demographic variables related to academic backwardness in Kerala. It is essential to understand and identify the causes and risk factors that lead to academic backwardness among children to help recognize and identify the children and provide them with correct and appropriate remedial measures at various levels in school, family, and society. There is a dire need to systematically analyze poor school performance so proper interventions can be given in this direction. If not worked on, it will eventually lead to children dropping out. In this background, the present study focuses on understanding the prevalence of academic backwardness of the students from Kerala and studying it concerning socio-demographical variables.

Objectives

- Studying the prevalence of Intellectual Disability, Specific Learning Disability, Borderline Intelligence, and Scholastic Backwardness in students
- To study the academic backwardness and associated socio-demographic variables.

METHOD

Sample

The study was done on 10th-standard students of both government and aided schools belonging to Kozhikode district in Kerala, where they follow the state syllabus. A total of 649 students aged 14 to 17 (134 girls and 515 boys) were selected through multistage cluster sampling. Students with various neurological conditions, mental illness, or any disability and significant medical illness were excluded from the study.

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Measures

- Specially Designed Screening Tool for Learning Difficulty (prepared by District Level SLD Assessment Team)
- Socio-demographic data sheet (constructed by the researcher)
- Malian's Intelligence Scale for Indian Children (MISIC)
- NIMHANS Specific Learning Disability battery (NIMHAS SLD battery)

Procedure

The study population consists of 10th-standard students of both Government and Aided schools in the Kozhikode district of Kerala, where they pursue state syllabi. The State Education Department referred them for issuing a Medical Board Certificate for educational benefit, specifically for availing the assistance of a scribe or interpreter in their Secondary School Leaving Certificate (SSLC) Examination. A multistage cluster sampling method was used for this study. Referral centers of this study included two state governments and one central government institution in Kerala.

To reduce the workload during the study, the clinical psychology departments from the centers mentioned above developed a specially designed screening tool for learning difficulties. This screening tool comprised socio-demographic details, developmental history, social maturity, and academic performance history. The same team conducted an intensive training program on this newly developed screening tool for IED resource teachers from Block Resource Centres (BRC) and Urban Resource Centres (URC) in the Kozhikode district under Samagra Shiksha Kerala (SSK). At the initial stage, 5,678 students were identified as academically backward by their respective class teachers. These students underwent screening with the specially designed screening tool for learning difficulties by trained IED resource teachers. Out of 5,678 students, 1,947 were identified through this screening process as having some specific academic issue, and they were randomly distributed to referral centers. From these 1,947 samples, the students who attended the central government institute were drawn as final samples, which included 649 students. The final samples were assigned specific dates for evaluation, and they reported at the Centre for Intelligence Test and Specific Learning Disability evaluation. Each sample underwent three stages of assessment by Clinical psychologists. Initially, a socio-demographic data sheet was administered. After that, Malian's Intelligence Scale for Indian Children (MISIC) was administered to determine the Intelligence Quotient (IQ). Finally, the NIMHANS SLD battery was administered to participants who scored 85 and above in the IQ assessment. All research procedures followed ethical norms.

RESULT

Table 1 shows the descriptive statistics of age and IQ score.

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Age	649	4.0	14.0	18.0	14.857	.7111
IQ	649	53.0	52.0	105.0	78.549	7.1380

The table shows the descriptive statistics of age and IQ score. The total number of the sample is 649. From the table, it is clear that the mean age of the sample is 14.857, and the mean IQ score obtained is 78.549.

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Table 2: Shows the Prevalence of Intellectual Disability, Specific Learning Disability, Borderline Intelligence, and Scholastic backwardness.

Specific Learning Disability		Intellectual Disability		Borderline Intelligence		Scholastic Backward	
F	%	F	%	F	%	F	%
46	7.08	35	5.39	520	80.12	47	7.24

Table 2 Shows the Prevalence of Intellectual Disability, Specific Learning Disability, Borderline Intelligence, and Scholastic backwardness. In this sample, most students belong to borderline Intelligence (80.12%). 7.08% of Students have a Specific Learning Disability (SLD), 5.39% of students have an intellectual Disability (ID), and 7.24 of students have Scholastic Backwardness (SB).

Table 3: Comparison of the academic backwardness and socio-demographic data

		Specific Learning Disability		Intellectual Disability		Borderline Intelligence		Scholastic Backwardness		df	Chi-square
		F	%	F	%	F	%	F	%		
Gender	Male	42	91.3	20	57.1	407	78.3	45	95.7	4	22.889***
	Female	4	8.7	15	42.9	113	21.7	2	4.3		
Type of School	Govt School	28	60.9	20	57.1	269	51.7	24	51.1	4	3.575
	Aided School	18	39.1	15	42.9	251	48.3	23	48.9		
Domicile	Urban	0	0	0	0	0	0	0	0	8	1.686
	Sub-Urban	24	52.2	17	48.6	251	48.3	23	48.9		
	Rural	22	47.8	18	51.4	267	51.3	24	51.1		
Socio Economic Status	Lower	37	80.4	31	88.6	426	81.9	42	89.4	8	4.006
	Middle	9	19.6	4	11.4	88	16.9	5	9		
	Upper	0	0	0	0	0	0	0	0		
Education of mother	Up to Matriculation	44	95.7	33	94.3	474.3	89.3	47	100	12	14.975
	+2/PDC	2	4.3	3	5.7	28	6	0	0		
	UG	0	0	0	0	16	12.8	0	0		
	Professional	0	0	0	0	2	1.6	0	0		
	PG	0	0	0	0	0	0	0	0		
Education of father	Up to Matriculation	40	87	35	100	464	89.2	41	87.2	12	14.975
	+2/PDC	6	13	3	6	31	6	6	12.8		
	UG	0	0	0	0	21	4	0	0		
	Professional	0	0	0	0	4	0.8	0	0		
	PG and above	0	0	0	0	0	0	0	0		
Occupation of mother	Housewife	41	89.1	35	100	466	90.01	40	85.1	12	11.604
	Government Employees	0	0	0	0	5	1	0	0		
	Private employees	0	0	0	0	11	2.1	1	2.1		
	Daily wages	2	4.3	0	0	35	6.1	6	12.8		
Occupation of Father	Government Employees	0	0	0	0	29	5.56	0	0	6	9.002
	Private employees	9	19.5	4	11.42	94	18.4	10	21.3		
	Daily wages	37	8.04	31	88.57	398	76.3	37	78.7		

≥0.01 ***

In this study, gender significantly influences academic performance with the chi-square value of 22.889, which is highly significant at 0.001 level. Boys were more in number in all

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domains of academic backwardness - 91 % of Specific Learning Disability (SLD), 57.1% of Intellectual disability, 78.3 % of Borderline Intelligence (BI), and 95.7 % of Scholastic backwardness (SB). The present study found that type of school was not a significant factor in academic backwardness. However, compared to the aided school, students from government schools were higher in number in all domains of poor academic performance (60.9 % of Specific Learning Disability, 57.1% of intellectual disability, 51.7 % of Borderline intelligence, and 51% of scholastic backwardness). Students from urban areas were not a part of the study. The result shows that a high number of students reported specific learning disability (52.2%) are from the suburban area, and a higher number of students reported Intellectual disability (51.4%), Borderline Intelligence (51.3%), and scholastic backwardness (51.1%) are from a rural area. In socioeconomic status, none of the students belonged to the upper socioeconomic status, and most students with academic backwardness were reported from low socioeconomic status (80.4% of Specific Learning Disability, 88.6% of Intellectual disability, 81.9% of Borderline Intelligence and 89.4% of scholastic backwardness).

The education of most mothers of students with academic backwardness was up to matriculation (95.7% of Specific Learning Disability, 94.3% of Intellectual disability, 87.3 % of Borderline intelligence, and 100% of scholastic backwardness), and no mothers have completed any professional graduation. Similar conditions were found in the case of educational qualification among fathers of children with scholastic backwardness - 87% of Specific Learning Disabilities, 100% of intellectual disability, 89.2% of Borderline intelligence, and 87.2% of those with scholastic backwardness were educated up to matriculation except for a single father who had a post-graduation and above. The study found that most mothers of students with academic backwardness are housewives (89.1.% of Specific Learning Disability, 100 % of Intellectual Disability, 90.01% of Borderline Intelligence, 85.1% of Scholastic Backwardness). Considering the occupation of fathers, most of them are working in daily wage jobs - 80.4 % with Specific Learning Disability, 88.57 % with Intellectual disability, 76.3% with Borderline intelligence, and 78.7 % with Scholastic Backwardness.

DISCUSSION

The study was conducted to identify the prevalence of Specific Learning Disabilities, Intellectual Disabilities, Borderline Intelligence, and Scholastic Backwardness and the associated socio-demographic profile of the students in the 10th standard of the Kozhikode district of Kerala.

It is observed that various factors influenced academic backwardness. Intellectual function is one of the major factors affecting academic backwardness. It was found that 80.12 % of students had borderline levels of intellectual functioning. Academically slow learners are usually identified based on their scores on intelligence tests with IQs between 70 and 85, which falls in the borderline IQ group. Low general cognitive ability is a common cause of learning and academic difficulties (Deary et al., 2007; Rohde & Thompson, 2007). Brain systems important for stimulus discrimination and using cognitive representation to guide cognition and behavior are impaired in children with borderline Intelligence (Vijayalaxmi & Natesan, 1992).

The present study found that gender is a significant indicator of academic backwardness. Compared to girls, boys have a higher incidence of academic backwardness in all domains.

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A study assessed the academic achievement of the subjects among 11th-class students and found that girls had a higher mean score in academic achievement than boys. Cognitive reflection and visual and verbal reasoning are intimately related and predict academic achievements (Vaney et al., 2015) A meta-analysis found that females outperform males in overall verbal ability. Girls' high verbal ability may contribute to their academic performance (Hyde & Linn, 1988).

The study found that type of school was not a significant factor in academic backwardness. However, it was found that Government school students are slightly higher in number in academic backwardness than aided schools. Students from urban areas were not a part of the study because there is no urban area in Kozhikode Revenue District where the study was conducted.

Previous studies have found that academic achievement is significantly related to parental and family involvement in academic activities (Topor et al., 2010). The present study shows that the lower education status of mothers and fathers could be a predictor of academic backwardness. A study shows that a low level of education may lead to poor stimulation and decreased motivation in children towards academics and school activities (Nair et al., 2003) An Indian study has observed that factors, including a lack of support from family members in providing an environment for studying, lower education status of parents, and poor attitudes towards studies, contribute to academic performance in children (Shenoy & Kapur, 1996).

Socioeconomic factors also have a significant influence on a child's academic performance. Occupation of the parents can be an important factor in defining socioeconomic status. The present study shows that the maximum number of children falls in the category of lower socioeconomic status. Previous studies have shown that socioeconomic status significantly influences academic backwardness (Haneesh et al., 2013; Nair et al., 2003). From the study, it has been found that more fathers are daily wage workers, and mothers are homemakers. This could be a reason for low socioeconomic status in the family. It has been observed from previous studies that parents with formal education and formal occupation had the assurance of helping children at home in their academic activities. This will help the parent to provide basic amenities for the child in academic and school activities (Usaini et al., 2015). Previous studies have shown that parents with formal occupations earn fair salaries, and they can give better social and financial support and family basic amenities like water supply, electricity, and safe and proper shelter to their families (Shenoy & Kapur, 1996). Therefore, parents with informal education and occupation may fail to provide the child with the amenities for schooling. This will have a significant influence on the academic achievements of children. All the 649 tenth-standard students referred for evaluation had specific conditions leading to academic backwardness. A systematic procedure by the education department for the early identification of academic backwardness and its causes, preferably from the third standard itself, provides an opportunity for effective remedial interventions at a younger age. This will help reduce the number of students diagnosed with academic backwardness at a very later stage.

CONCLUSION

Various factors influence academic backwardness. The study observed that intellectual functioning is a significant predictive factor for academic backwardness. Most students with poor academic backgrounds were referred to a clinical setting for assessment and belonged

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to the borderline intelligence category. Gender is also a significant factor in academic backwardness, where boys are higher in number in every domain of academic backwardness. Measures for the early identification of academic backwardness and its causes facilitate effective remedial interventions at a younger age.

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Conflict of Interest

The author(s) declared no conflict of interest.

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