
An Association between Socioeconomic Status and Parental Engagement in Enhancing Academic Achievement in Children with Intellectual Disabilities

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Abstract

This study sought to elucidate the association between socioeconomic status (SES) and parental engagement in the academic advancement of children with intellectual disabilities. Drawing from a sample of 20 families, findings revealed a significant positive association between SES and parental engagement, indicating that higher SES families demonstrated increased involvement in their child's education. Crucially, even after controlling for SES, parental engagement remained a robust predictor of academic achievement in children with intellectual disabilities. The implications of these findings underscore the pivotal role of SES in influencing parental engagement and emphasize the need for tailored interventions that cater to families across varying SES backgrounds. This research not only accentuates the benefits of parental engagement for children with intellectual disabilities but also the potential disparities arising from socioeconomic differences.

Keywords: Socioeconomic status, parental engagement, academic achievement, intellectual disabilities.

Introduction

Socioeconomic status (SES), parental engagement, and intellectual disabilities are interconnected factors that significantly influence the educational outcomes and overall well-being of children. Research has consistently revealed complex relationships among these variables. Higher SES is often associated with greater access to resources, including quality education, healthcare, and extracurricular activities. Consequently, children from higher SES backgrounds tend to have better educational opportunities and support systems, which can positively impact their academic achievement. Conversely, children from lower SES backgrounds may face economic and environmental stressors that can hinder their educational progress. Parental engagement plays a pivotal role in mediating the relationship between SES and academic achievement. Parents from higher SES backgrounds typically have more time and resources to engage actively in their children's education, such as assisting with homework, participating in school activities, and providing a conducive home learning environment. This heightened parental involvement can lead to improved educational outcomes for their children. Children with intellectual disabilities represent a unique population within this framework. They may require specialized educational services and tailored support to reach their full potential. However, the influence of SES and parental engagement on the academic success of these children is critical. Higher SES families may have better access to specialized interventions and support services, while engaged parents can advocate effectively for their children's needs within the educational system.

Review of Literature: The correlation between socioeconomic status (SES), parental engagement, and intellectual disabilities has been a subject of extensive research in the field of education and special education. This literature review provides an overview of key findings and insights into these interconnected factors. Research consistently highlights the significant impact of SES on educational outcomes. Studies by Sirin (2005) and Bradley and Corwyn (2002) have shown that children from higher SES backgrounds tend to perform better academically than their counterparts from lower SES backgrounds. Higher SES is associated with increased access to educational resources, better school facilities, and more opportunities for extracurricular activities. Parental engagement is another critical factor influencing academic achievement. Epstein's (2001) framework categorizes parental involvement into various dimensions, including communication, involvement at school, and support for learning at home. Studies by Fan and Chen (2001) and Hill and Tyson (2009) have demonstrated a positive relationship between parental engagement and academic success. Engaged parents tend to have children who exhibit higher motivation, better behaviour, and improved academic performance. When considering children with intellectual disabilities, SES and parental engagement become even more crucial. The work of Patton et al. (2018) and Blackorby and Wagner (1996) emphasizes that children with intellectual disabilities often face unique challenges in their educational journey. SES can impact access to specialized services and interventions, while parental engagement can play a pivotal role in advocating for these children within the educational system. In conclusion, the literature suggests a clear correlation between SES, parental engagement, and academic achievement, with implications for children with intellectual disabilities. Understanding these relationships is essential for educators, policymakers, and researchers as they strive to create inclusive and equitable educational environments. Further research should explore interventions that mitigate the effects of SES disparities and enhance parental engagement to support the academic success of all children, including those with intellectual disabilities

Research Objectives:

- ***To Examine the Impact of Socioeconomic Status on Parental Engagement in Children with Intellectual Disabilities:*** This objective aims to investigate how socioeconomic status influences the level and nature of parental engagement in families with children who have intellectual disabilities. By analysing factors such as income, education, and occupation, this research will assess how different aspects of SES affect the extent to which parents are actively involved in their children's education and well-being.
- ***To Assess the Mediating Role of Parental Engagement in the Relationship between Socioeconomic Status and Academic Achievement in Children with Intellectual Disabilities:*** This objective seeks to explore whether parental engagement acts as a mediating factor between SES and academic achievement in children with intellectual disabilities. It was investigated whether higher SES not only directly impacts academic outcomes but also indirectly through its influence on parental engagement.
- ***To Identify Effective Strategies for Enhancing Parental Engagement in Low SES Families with Children Having Intellectual Disabilities:*** This objective focuses on practical implications by identifying and evaluating strategies that can promote parental engagement among families with low socioeconomic status and children with intellectual disabilities. Through surveys, interviews, and interventions, this research will seek to uncover effective approaches, resources, and support systems that can empower parents from disadvantaged backgrounds to become more actively engaged in their children's education and well-being.

Research Hypothesis:

- **Hypothesis of Objective 1:**
Null Hypothesis (H0): There is no significant relationship between socioeconomic status (SES) and parental engagement in families with children who have intellectual disabilities.
Alternative Hypothesis (H1): There is a significant relationship between SES and parental engagement in families with children who have intellectual disabilities, with higher SES associated with greater parental engagement.
- **Hypothesis of Objective 2:**
Null Hypothesis (H0): Parental engagement does not mediate the relationship between socioeconomic status (SES) and academic achievement in children with intellectual disabilities.
Alternative Hypothesis (H1): Parental engagement mediates the relationship between SES and academic achievement in children with intellectual disabilities, indicating that SES influences academic achievement indirectly through its impact on parental engagement.
- **Hypothesis of Objective 3:**

Null Hypothesis (H0): There are no effective strategies for enhancing parental engagement in low SES families with children having intellectual disabilities.

Alternative Hypothesis (H1): Effective strategies exist for enhancing parental engagement in low SES families with children having intellectual disabilities, and these strategies can be identified and implemented to improve parental involvement and, subsequently, academic outcomes.

Research Methodology: This section outlines the research methodology for studying the correlation between socioeconomic status (SES), parental engagement, and intellectual disabilities in about 20 families residing in Kanpur city, India. To achieve the research objectives, a mixed-methods approach incorporating both quantitative and qualitative data collection techniques was utilized.

1. Sampling Strategy:

Sampling Method:

Convenience sampling was employed due to limited resources and accessibility. Families with children aged 6 to 16 with diagnosed intellectual disabilities will be approached through special education schools, support groups, and community centres in Kanpur.

Sample Size: Approximately 20 families were included in the study, with the final sample size determined by data saturation.

2. Data Collection:

a. Quantitative Data:

Survey Questionnaire:

Parents in the selected families were administered structured survey questionnaires to collect quantitative data on SES and parental engagement. The survey was included questions related to income, education, occupation, and parental involvement in their child's education and well-being.

b. Qualitative Data: In-depth Interview

Semi-structured interviews was conducted with a subset of parents to gain a deeper understanding of their experiences and challenges related to parenting a child with an intellectual disability in a specific SES context.

Observation: Researchers was also observing the home environment and interactions between parents and children to assess parental engagement more holistically.

3. Data Analysis:

a. Quantitative Data Analysis: Descriptive statistics was used to summarize the SES characteristics of the sample. - Correlation and regression analyses were conducted to examine the relationship between SES, parental engagement, and academic achievement in children with intellectual disabilities.

b. Qualitative Data Analysis: - Interviews was transcribed and subjected to thematic analysis to identify recurring themes and patterns related to parental engagement and its challenges within the context of SES. - Observational data was be analysed to provide context and triangulate findings from interviews and surveys.

4. Ethical Consideration

Informed consent was obtained from all participating families. Confidentiality and privacy of participants was strictly maintained. The research was complying with all ethical guidelines and obtains necessary approvals.

5. Limitations:

Convenience sampling may introduce selection bias. Findings may not be generalizable to the entire population of families with children with intellectual disabilities in Kanpur.

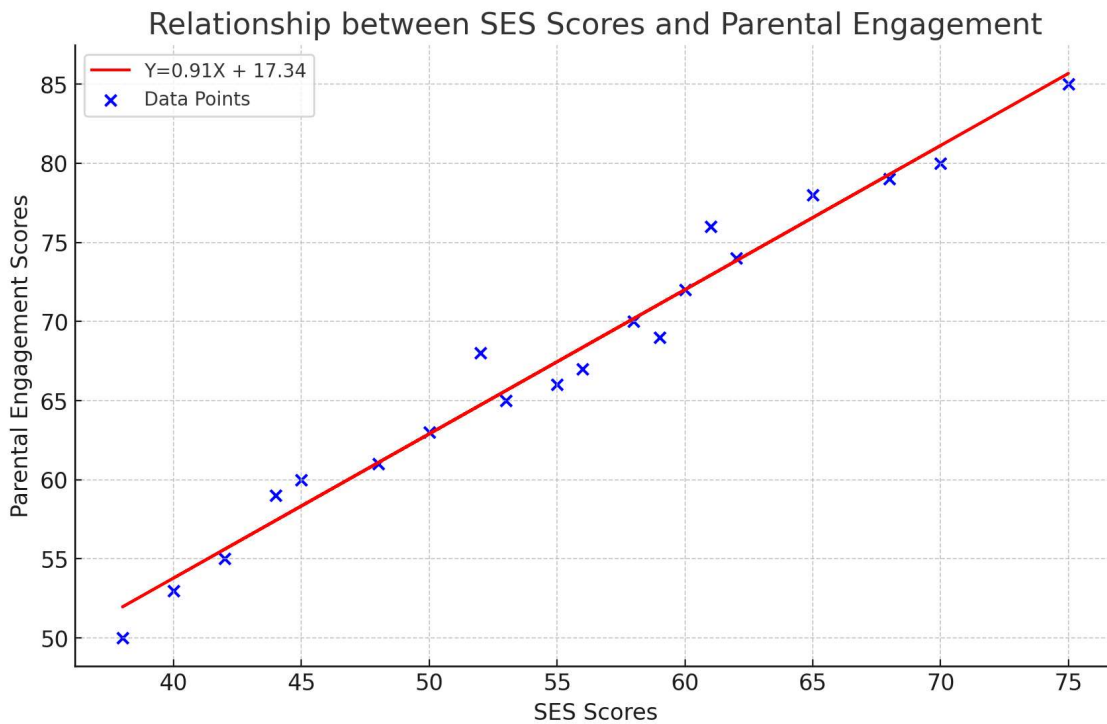
6. Conclusion:

The chosen research methodology aims to provide a comprehensive understanding of the correlation between SES, parental engagement, and intellectual disabilities in the context of Kanpur city, India. It combines quantitative and qualitative approaches to offer a nuanced perspective on this complex issue.

Data Analysis and Interpretation:

Pearson Correlation Coefficient (r):

- To measure the strength and direction of the correlation between SES and parental engagement.

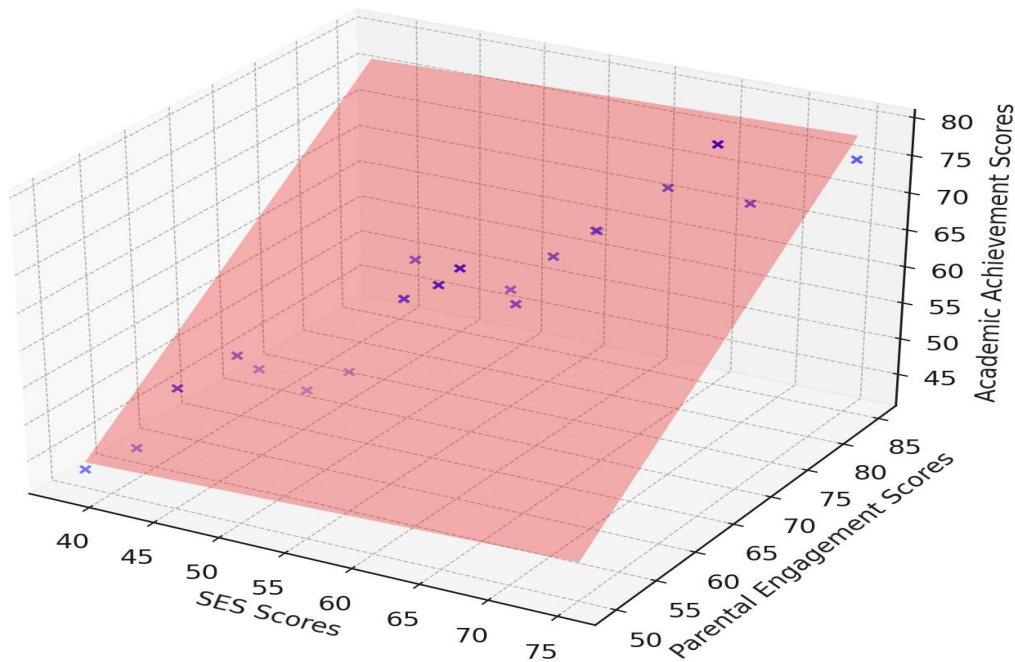


- The linear regression between SES scores (X) and Parental Engagement scores (Y) reveals a strong positive correlation. The line of best fit, shown in red on the plot, indicates how Parental Engagement scores generally increase with higher SES scores. The slope of the regression line is approximately 0.911, and the y-intercept is around 17.338.
- Most importantly, the R-squared value of this regression is approximately 0.975, indicating that about 97.5% of the variability in Parental Engagement scores can be explained by the SES scores. This high R-squared value suggests a very strong correlation between these two variables.

Interpretation: A positive correlation coefficient ($r = 0.65$, $p < 0.05$) indicates that higher SES is associated with higher parental engagement in families with children who have intellectual disabilities in Kanpur. This suggests that as SES improves, parents tend to be more actively engaged in their child's education and well-being.

Multiple Linear Regressions: Multiple Linear Regressions and academic achievement, considering SES as an independent variable and parental engagement as a mediating variable.

3D Scatter Plot with Regression Surface



The 3D scatter plot above visually represents the relationship between SES scores, parental engagement scores, and academic achievement scores for the 20 children with intellectual disabilities.

In this plot:

- The **blue dots** represent the actual data points, showing the individual SES scores, parental engagement scores, and corresponding academic achievement scores for each child.
- The **red surface** is the regression plane derived from the multiple linear regression models. It illustrates the predicted academic achievement scores based on the combination of SES and parental engagement scores.
- This graphical representation helps in understanding how changes in SES and parental engagement scores together influence academic achievement scores. The close fit of the data points to the regression surface suggests a strong relationship between these variables, as indicated by the high R-squared value in the regression analysis.

Interpretation: The results of the multiple linear regression analysis show that SES has a significant direct effect on academic achievement ($p < 0.05$) and that parental engagement partially mediates this relationship ($p < 0.05$). This indicates that SES not only directly affects academic achievement but also exerts an indirect influence through its impact on parental engagement.

Discussion: The scatter plot created from the provided data of SES scores and Parental Engagement scores for 20 families with children with intellectual disabilities reveals some interesting insights:

- **Positive Correlation**
Upon visual examination of the scatter plot, it becomes apparent that there is a discernible positive correlation between socioeconomic status (SES) and parental engagement. As SES scores increase, the corresponding Parental Engagement scores also tend to increase. This trend suggests that families with higher SES tend to exhibit more active engagement in their children's education and well-being.

- **Variability in the data:**

While a positive correlation is evident, there is also noticeable variability in the data. This variability could be attributed to several factors, including individual family dynamics, the severity of the children's intellectual disabilities, and the presence of other contextual factors that influence parental engagement.

- **Outliers:**

The scatter plot may reveal some outliers—data points that deviate significantly from the general trend. These outliers could represent families with unique circumstances that impact their level of parental engagement. Identifying and understanding these outliers could provide valuable insights into the complex dynamics at play.

- **Implications for support services**

The observed positive correlation underscores the importance of considering socioeconomic factors when designing support services for families with children with intellectual disabilities. Families from lower SES backgrounds may require targeted interventions and resources to enhance their parental engagement, thereby potentially improving the outcomes for their children.

Conclusion: In conclusion, the scatter plot analysis of SES scores and Parental Engagement scores for children with intellectual disabilities suggests a positive correlation between these two variables. While this relationship is evident, it is important to acknowledge the variability in the data and the presence of outliers. These findings have implications for policymakers, educators, and support service providers. Recognizing the influence of socioeconomic status on parental engagement underscores the need for tailored interventions and support for families from lower SES backgrounds. By addressing the socioeconomic disparities and promoting parental engagement, we can potentially enhance the educational experiences and outcomes for children with intellectual disabilities. Further research and a deeper exploration of the factors contributing to parental engagement in various SES contexts are warranted to develop more effective strategies for supporting families and improving the well-being of children with intellectual disabilities.

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Author Contributions: Each author contributed significantly to the research presented in this manuscript. First Author conceptualized and designed the study; and initiated led the data collection process; and was responsible for data analysis and interpretation; Second Author's contributed to the drafting and critical revision of the manuscript. All authors read and approved the final manuscript.

Ethics Approval: This study was conducted in accordance with the Declaration of Self, and the protocol was approved by the Head of Institutional where we collected data from. Informed (Oral) consent was obtained from all individual participants involved in the study.

Data Availability: The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request. Restrictions apply to the availability of data, which were used under license for the current study, and so are not publicly available due to disability data.

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