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## Evaluation of adaptive behaviour in children and adolescents with autism spectrum disorder dimensions and contextual factors

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### Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by challenges in social communication and the presence of restricted, repetitive behaviors. An important aspect of evaluating individuals with ASD is understanding their adaptive behavior, which refers to their ability to perform daily living activities and function effectively within social contexts. This paper aims to examine the dimensions of adaptive behavior in children and adolescents with ASD, with a particular focus on the contextual factors that influence these behaviors. Through a comprehensive review of relevant literature and the use of standardized tools like the Vineland Adaptive Behavior Scales (VABS) and Autism Diagnostic Observation Schedule (ADOS), the paper explores how cognitive abilities, environmental factors, and individual differences impact adaptive functioning. The research emphasizes the importance of considering various contextual factors, such as family environment, educational settings, and cultural influences, when evaluating adaptive behavior in this population. The findings suggest that personalized, context-sensitive interventions are critical for enhancing adaptive functioning in children and adolescents with ASD. Additionally, the paper advocates for a multifaceted approach to assessment to ensure more effective interventions. Finally, it discusses the need for further research to examine the long-term effects of adaptive behavior interventions and their influence on the overall quality of life for individuals with ASD.

**Keywords:** Autism spectrum disorder, adaptive behavior, vineland adaptive behavior scales

### Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition that significantly impacts an individual's ability to engage in typical social interactions, interpret social cues, and exhibit appropriate behavior across various contexts. The prevalence of ASD has risen notably in recent decades, underscoring the urgent need for effective assessment and intervention strategies tailored to the diverse needs of individuals on the spectrum. One key component of ASD evaluation is adaptive behavior, which refers to practical, everyday skills such as communication, self-care, socialization, and academic functioning. These skills are central to determining the quality of life and overall development of children and adolescents with ASD.

Adaptive behavior assessments are routinely used to identify areas of strength and areas in need of intervention, helping to guide individualized strategies for support. However, the dimensions of adaptive behavior are multifaceted and are influenced by a wide range of contextual factors, including family dynamics, educational settings, and cultural influences. Despite the critical importance of adaptive behavior in the functioning of children with ASD, the evaluation process remains complex, and challenges persist in determining the most effective methods for assessing and intervening based on these behaviors. The increasing global prevalence of ASD further emphasizes the need for effective and culturally sensitive interventions that address these complex challenges.

### Materials and Methods

#### Participants

The study involved a sample of 100 children and adolescents diagnosed with Autism Spectrum Disorder (ASD), aged between 6 and 18 years, selected from local ASD clinics and educational institutions. The sample was stratified to ensure a balance of male and female participants and included individuals with a range of cognitive abilities, from non-

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verbal to high-functioning. This stratification was aimed at ensuring the diversity of the sample in terms of cognitive functioning, social skills, and other relevant characteristics. Inclusion criteria consisted of a formal ASD diagnosis, no significant co-morbidities, and active participation in educational or therapeutic programs.

Instruments

- **Vineland Adaptive Behavior Scales (VABS):** The VABS is a standardized tool used to assess the participants’ adaptive behavior across multiple domains, including communication, daily living skills, socialization, and motor skills. The VABS provides a comprehensive view of an individual’s ability to function in daily life and is widely recognized for its reliability and validity in adaptive behavior assessment.
- **Autism Diagnostic Observation Schedule (ADOS):** The ADOS is a semi-structured, standardized assessment used to diagnose ASD and evaluate the severity of symptoms related to social communication and restrictive behaviors. It involves observational tasks and is used to capture the individual’s interaction and behavior across various contexts.
- **Parent and Teacher Surveys:** To gather a broader perspective on adaptive behavior, surveys were distributed to parents and teachers of the participants. These surveys assessed the child’s behavior in both home and school settings, focusing on key areas of adaptive functioning such as social interaction, self-care, and communication.
- **Cognitive Ability Tests:** A battery of cognitive assessments was administered, including standard IQ tests and language proficiency evaluations. These tests were used to assess the cognitive functioning of participants and provide additional context for understanding adaptive behavior outcomes.

Procedure

The study utilized a mixed-methods design, integrating both quantitative assessments and qualitative observations. Each participant underwent an initial assessment using the VABS and ADOS. To capture a comprehensive view of adaptive behavior, parents and teachers completed surveys focusing

on the child’s behavior across home and school settings. Cognitive assessments were conducted in a controlled environment to minimize external variables that might affect performance. In addition, observational data were collected through video recordings of participants engaged in everyday activities, which provided a real-time account of adaptive behavior in natural settings. Data were analyzed using both statistical methods (for quantitative results) and thematic analysis (for qualitative observations).

Results

- **Cognitive Ability and Adaptive Behavior:** Higher cognitive abilities were significantly correlated with improved adaptive functioning, particularly in areas such as communication and academic skills ( $p<0.05$ ). This suggests that individuals with higher cognitive functioning tend to show better adaptive behavior, particularly in domains requiring cognitive effort, such as learning and language use.
- **Family Involvement:** Greater parental involvement was associated with better outcomes in the socialization and daily living skills domains ( $p<0.01$ ). Children whose parents were more actively involved in intervention programs exhibited stronger adaptive behavior, especially in the areas of social interaction and self-care, highlighting the crucial role of family support in promoting adaptive functioning.
- **Educational Support:** Participants who attended specialized education programs demonstrated significantly higher adaptive behavior scores compared to those enrolled in general education settings ( $p<0.05$ ). This finding underscores the positive impact of structured, individualized educational environments in fostering adaptive skills.
- **Environmental Factors:** Children from supportive home environments with consistent, structured interventions exhibited higher levels of adaptive behavior compared to those from less structured or less supportive environments ( $p<0.01$ ). This highlights the importance of a nurturing and organized home setting in supporting the development of adaptive functioning in children with ASD.

Table 1: Adaptive Behavior Scores Across Different Domains

Domain	Higher Cognitive Ability	Moderate Cognitive Ability	Lower Cognitive Ability	Parental Involvement	No Parental Involvement	Specialized Education Support	General Education Support	Supportive Home Environment	Less Structured Environment
Communication	80	65	50	78	55	85	70	82	60
Daily Living Skills	75	60	45	72	50	80	65	78	55
Socialization	70	58	40	74	48	83	60	80	50
Academic Skills	85	70	60	80	60	88	75	85	65

This table summarizes adaptive behavior scores in four domains—communication, daily living skills, socialization, and academic skills—across factors like cognitive ability, parental involvement, educational support, and environmental settings

- **Cognitive Ability:** Higher cognitive abilities correlate with better adaptive behavior in all domains.
- **Parental Involvement:** Greater parental involvement

improves adaptive behavior, especially in socialization and academic skills.

- **Educational Support:** Specialized education programs lead to better adaptive behavior, particularly in socialization and academics.
- **Environmental Factors:** Supportive home environments result in higher scores in all domains compared to less structured environments.

**Table 2:** Relationship Between Environmental Factors and Adaptive Behavior Outcomes

Factors	Communication	Daily Living Skills	Socialization	Academic Skills
Cognitive Ability	80	75	70	85
Parental Involvement	78	72	74	80
Educational Support	85	80	83	88
Home Environment	82	78	80	85

This table presents the impact of environmental factors—such as cognitive ability, parental involvement, educational support, and home environment—on adaptive behavior outcomes

- Cognitive Ability has a strong positive influence across all domains, especially in academic skills (85).
- Parental Involvement supports improved adaptive behavior, notably in socialization (74) and communication (78).
- Educational Support, particularly specialized education, results in higher scores in all domains, especially in academic skills (88).
- Home Environment also plays a critical role, with supportive home settings leading to better outcomes in all domains, particularly in communication (82) and academic skills (85).

### Comparative Study

The findings from this study align with existing research emphasizing the critical role of cognitive functioning in adaptive behavior. Smith *et al.* (2013) <sup>[3]</sup> similarly found a strong correlation between higher cognitive ability and improved adaptive behavior outcomes. However, this study expands upon these findings by highlighting the significant impact of environmental and contextual factors, such as family involvement and educational support.

Landa (2007) <sup>[1]</sup> and Landa *et al.* (2006) <sup>[2]</sup> also emphasized the role of structured environments in promoting adaptive functioning in children with ASD. The current study reinforces this by demonstrating that children receiving specialized educational support and active parental involvement tend to exhibit better adaptive behavior, particularly in socialization and academic skills

### Discussion

The findings of this study highlight the complex and multifaceted nature of adaptive behavior in children and adolescents with Autism Spectrum Disorder (ASD). While cognitive abilities clearly play a significant role in adaptive behavior outcomes, the study also underscores the importance of environmental factors, such as family involvement and educational support, in shaping adaptive functioning.

Cognitive abilities significantly correlate with improved adaptive functioning, particularly in communication and academic skills. This finding supports the conclusions of Smith *et al.* (2013) <sup>[3]</sup>, who suggested that higher intellectual functioning tends to predict better adaptive behavior. However, it is important to note that cognitive ability alone does not guarantee strong adaptive functioning, as many children with high-functioning ASD still face considerable challenges in social and communication domains. This indicates that while cognitive support is crucial, other factors must also be addressed for optimal development.

This study also emphasizes the role of family support in promoting adaptive behavior. The positive association between greater parental involvement and better

socialization and daily living skills suggests that parents who are actively engaged in intervention programs contribute significantly to their child's adaptive development. These findings align with Landa *et al.* (2006) <sup>[2]</sup>, who showed that parental involvement leads to better social and communication skills in children with ASD. The implications of these results are far-reaching, suggesting that intervention programs must incorporate family education and training to maximize their effectiveness.

The finding that specialized education programs lead to improved adaptive behavior, particularly in socialization and academic skills, reinforces previous research by Landa (2007) <sup>[1]</sup>. Children with ASD who have access to structured, supportive educational environments benefit significantly in terms of adaptive behavior. This finding suggests that the educational context is a critical factor in supporting the development of adaptive skills, especially in children with ASD. Future interventions should prioritize specialized educational settings that provide tailored learning experiences for children with ASD.

Environmental factors, particularly the home environment, were found to play a significant role in shaping adaptive behavior outcomes. Children from supportive home environments with consistent, structured interventions exhibited higher levels of adaptive behavior compared to those from less supportive environments. This highlights the importance of a nurturing and organized home setting in supporting the development of adaptive functioning in children with ASD. These results suggest that interventions aimed at improving adaptive behavior must consider both the child's cognitive abilities and the broader environmental context, including home and educational settings.

Finally, the study emphasizes the need to recognize cultural differences in the evaluation and intervention of adaptive behavior. Adaptive behavior may be perceived differently across cultures, and these variations must be considered when developing interventions. Understanding these cultural differences is crucial for ensuring that interventions are both effective and culturally relevant, promoting better outcomes for children with ASD across diverse populations.

### Conclusion

In conclusion, this paper has emphasized the importance of evaluating adaptive behavior in children and adolescents with Autism Spectrum Disorder (ASD) through a multidimensional approach. It is crucial to consider cognitive abilities, family dynamics, educational settings, and cultural influences when assessing adaptive functioning. The findings highlight the necessity for personalized and context-sensitive interventions that address the unique needs of each child.

Looking ahead, future research should focus on examining the long-term effects of adaptive behavior interventions, particularly in terms of their impact on the overall quality of life for individuals with ASD. Additionally, the potential of emerging technologies, such as virtual reality and assistive devices, to enhance adaptive behavior development warrants

further exploration. By advancing research in these areas, we can create more effective, sustainable interventions that improve the lives of children and adolescents with ASD.

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