

Impact of Adverse Parental Behaviors on the Development of Children with Autism in Bangalore

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Abstract:

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects an individual's interactions in social context, communication, and behavior. A child with autism often faces significant challenges as they find difficult to adjust in the social environment they live in and to connect with others. The environment, behavior and attitude of the parents and caregiver impact the development of an autistic child. Negative or ill behavior like neglect, lack of emotional support or inconsistent discipline, can increase the difficulties faced by children with autism. Unsupportive environments where parents and peers do not understand, bullying in the social environment will slow down the child's emotional and social growth. In contrast, positive reinforcement, patience, and appropriate interventions from parents and the broader community can contribute to more favorable developmental outcomes. This paper explores how the negative behaviors from parents and surrounding environments can slow down the development of autistic children, while highlighting the need for inclusive, nurturing, and understanding settings to foster growth, strength and resilience in these children. Through careful observation and strategic interventions, the impact of negative behaviors can be reduced, enabling children with ASD to reach their fullest potential.

The research design adopts a descriptive approach that combines both qualitative and quantitative methods. It includes a structured questionnaire

distributed to parents, caretakers, and teachers of individuals with special needs and autism spectrum disorder (ASD). A Likert scale is utilized to gather detailed insights. The study employs a simple random sampling method, with a sample size of 53 participants. Primary data was collected through the distribution of structured questionnaires, while secondary data was used to provide a comprehensive understanding of the context. Data analysis was conducted using percentage analysis, accompanied by tables and charts.

Keywords: *Children with ASD, negative behavior of parent, intervention of parents, attitude of parents and caregivers.*

Chapter 1

Introduction:

(Crowell, Keluskar & Gorecki, 2019). Autism Spectrum Disorder (ASD) represents a multifaceted neurodevelopmental disorder characterized by difficulties in social communication and interaction, as well as the presence of restricted and repetitive behavioral patterns, interests, or activities. The capabilities and requirements of people with autism vary widely from person to person and can change throughout their lives. Some people with ASD can live independently, while others require significant, lifelong care and support (American Psychiatric Association, 2013). A combination of genetic and environmental factors is the cause of Autism. However, a child's development with autism is mostly affected by their social and psychological environment, not just their biology. The family, school, and larger community are where a child learns how to deal with people, control their feelings, and build a sense of who they are. As a result, the behaviors and perspectives of parents, caregivers, peers, and teachers have a profound impact

on an Autistic child. These figures can play a crucial role in helping the child build resilience and succeed, or they can worsen the core challenges linked to the disorder.

(Crowell et al., 2019). Historically, the role of parents in the lives of autistic children has often been viewed in a very different way. Psychiatrist Leo Kanner, in 1900s was the first to identify autism among 11 children. But in spite of commendable work, his introduction of the “refrigerator mother” theory brought him lot of criticism. This theory wrongly suggested that autism was caused by a lack of maternal warmth and emotional connection, creating a hurtful stigma that blamed parents for their child's condition.

This theory was later popularized by Bruno Bettelheim. This theory created a lot of intense feelings of guilt and shame for many parents. Later it has been completely disproven by studies that reveal the biological causes of autism. While the 'refrigerator mother' theory is no longer acknowledged in psychiatric circles, it serves as a stark reminder of how parental actions—whether real or perceived—can deeply affect a child's emotional health and the help they receive.

(Karst & Hecke, 2012). Modern research has explored various complex dimensions to study the two-way relationship between parents and children with autism. The studies have confirmed that raising a child with autism can be extremely challenging and stressful, placing a significant emotional burden on parents and families

(Shawler & Sullivan, 2015; Ku, Stinson & MacDonald, 2019). This stress thus becomes an important factor and cause for unintentional negative parenting. Under pressure, parents may become harsher, more controlling, or emotionally distant.

(Hickey, et al., 2020; Osborne & Reed, 2009). The parental stress increases with an autistic child's challenging behavior which then leads to less effective parenting, further worsening the child's development and behavior. This cycle therefore repeats and further creates challenges in the ASD child's emotional and social development.

(Kelly et al., 2008). This suggests that negative parenting is usually a response to the difficulties that come with raising a child with autism, rather than the reason autism develops. However, if these reactions are not handled carefully, they can have unintended consequences. Over time, they may limit the child's growth, heighten their anxiety, and make the existing challenges associated with autism even more pronounced.

(Locke et al., 2010). Beyond the family, a child's experiences with peers and within the school environment also play a crucial role in shaping their development. For children with autism, who often struggle with social communication, the classroom can be especially demanding. Simply placing them in mainstream settings does not automatically lead to genuine friendships or a sense of belonging. In many cases, research has found that adolescents with high-functioning autism continue to feel isolated. They may have fewer close friendships, experience lower-quality social connections, and often find themselves on the margins of peer groups compared to other students.

(Humphrey & Symes, 2011). Furthermore, they are more likely to engage in solitary play, participate less in group activities, and may exhibit elevated levels of reactive aggression.

(Humphrey & Hebron, 2015). This social vulnerability puts children with ASD at a much higher risk of being bullied, with some studies reporting victimization rates as high as 94%.

(Kelly et al., 2008). Negative experiences such as bullying, exclusion, or simply not being understood can take a real toll on a child. When the school environment lacks support, it often leads to increased anxiety and stress. Over time, this can slow down social development and gradually affect the child's confidence and sense of self-worth.

(Krieger et al., 2018). The environment plays a crucial role in a child's life. Whether it is the classroom, the playground, or the wider community, these spaces can either help a child feel safe, accepted, and connected, or leave them feeling anxious, excluded, and isolated.

(Siller & Sigman, 2002). Consistent encouragement, patience, and the right kind of support from parents and the wider community can make a meaningful difference in a child's development. Research suggests that when parents are responsive and emotionally in tune with their child during play, it can have lasting benefits, particularly for communication and shared attention, even many years later. A nurturing and understanding environment, in this sense, works as a protective buffer, helping the child navigate challenges more confidently.

(Siller, Hutman & Sigman, 2013). Parent-led programs, like the Focused Playtime Intervention (FPI), have been shown to improve parental responsiveness and boost language development in children with limited speech.

(EE McCurdy, 2014). Similarly, peer-mediated interventions in schools have proven effective in increasing academic engagement and reducing challenging behaviors in students with ASD.

Chapter 2

Aim:

The primary goal of the study is to understand and comprehend how adverse behaviors displayed by parents affect the growth of a child with autism. This comprehension will enable us to create a robust intervention plan that directly addresses the issues leading to authoritarian and lenient parenting styles. Our strategy must prioritize reducing parental stress, as this is essential for fostering positive interactions and strengthening the parent-child bond. Furthermore, it is crucial to educate parents about the detrimental effects of aggressive, manipulative, or disengaged parenting approaches.

Review of Literature

1. Historical Perspectives and Foundational Theories

- (Crowell, et al., 2019) described that very little research exists on how the parenting effects of children with autism; however, historical concepts such as the "refrigerator parent" have greatly influenced how people understand of parenting children with autism. This theory, which suggested that a lack of parental warmth causes autism, has contributed to feelings of guilt among parents. Many parents felt responsible for their children's condition. Additionally, the lack of emotional stimulation in the parent-child relationship was also linked to developmental deficiencies in children with autism.

2. Reciprocal Nature of Parent-Child Interactions

- (Hickey, et al., 2020) This theory helped in understanding of parent-child relationships in families with ASD. It demonstrating the complexity and bidirectional nature of these interactions over time. It highlights that the parent -child relationship is reciprocal and both parent behavior influences child outcomes and child characteristics influence parental response and behavior overtime. The proposed model addresses and acknowledges reciprocal relationship and the mutual impact the child and the parent have on each other.
- (Kasari & Sigman, 1997) indicates a reciprocal and mutual influence between parents' understanding and child interactions. Children with autism were less receptive and less participating during play, especially when their parents express them as having challenging temperaments. This connection was stronger in children with autism than in typically developing children or those with intellectual disabilities.

3. Parental Stress, Discipline, and Well-being

- Raising a child with ASD can be stressful, overwhelming and often causes significant stress and challenges for parents and family members. These effects on the family can impact the child and have a negative influence on the child and may even reduce intervention effectiveness. (Osborne & Reed, 2009). suggest that parenting stress comes first and it then potentially led to behavioral problems rather than being a caused by them. Studies involving 137 participants found that both behavior problems and ASD severity contribute to parenting stress, but behavior problems have a profound effect over time. In younger children, severity of autism is more stressful, whereas as the children grow older, behavioral issues become the primary source of stress.
- (Rezendes & Scarpa, 2011) found that parenting stress plays a important link between child behavioral problems and lower confidence in parenting abilities. In turn, this lower confidence partly explains how parenting stress leads to higher levels of anxiety and depression among mothers of children with autism spectrum disorders.

- **(Shawler & Sullivan, 2015)** During the pandemic, parents reported facing high levels of stress and various behavioral problems in their children. As their stress increased, they were more likely to use harsh discipline, which led to the rise in disruptive behaviors in children.
- **(Ku, et al., 2019) (Maljaars, et al., 2014)** Parents of children with ASD have act more controlling which may be due to the challenges and stress they face with raising a child with ASD. Increased negative behaviors were seen among parents of children with ASD, potentially as a result of stress and coping difficulties.
- **(Maljaars, et al., 2014) (Lambrechts, et al., 2015)**. Mothers of children with ASD are reported to use less Rules and Discipline, indicating a transition to less traditional disciplinary methods. Conversely, these mothers scored higher in Positive Parenting and Stimulating Development, It suggests that more focus is on positive parenting, nurturing and child development.

4. Impact of Adverse Experiences and Maltreatment

- **(Takeda, et al., 2024)** concluded that individuals with ASD face a higher risk of adverse childhood experiences (ACE), which profoundly effects their mental health and brain development in ways that are different from those of the general population. The study found that children who are placed only in ASD-specific groups have higher risk of physical abuse. Additionally, maltreatment like abuse or neglect increases the likelihood of aggressive behavior, hyperactivity, and tantrums in children with ASD.
- **(Roberts, et al., 2013)** This theory explored a possible link between a mother's experience to childhood abuse and the chances of her offspring having autism.
- **(Im & MD, 2016)**. studied the relation between autism spectrum disorder (ASD) and violent behavior. The study concluded that there is no clear evidence that individuals with ASD are more likely to be violent than the general population.
- Many hypotheses suggests that prenatal period is crucial for the development of the autism.

5. Peer Interactions, Bullying, and School Environment

- **(Humphrey & Hebron, 2015)** the study highlights that the chances of the children and adolescents who are under the autistic spectrum, being bullied is very high, with reported prevalence rates reaching 94%. This demands the need for interventions to engage the entire school system, staff and peers to minimize bullying.
- **(Locke, et al., 2010)** the study indicates that adolescents with high-functioning autism often feel lonelier, have weaker friendships, and reduced social network status than their normally growing peers in inclusive classrooms. This shows that simply placing students with ASD in mainstream schools is insufficient for social inclusion. to ensure meaningful social integration. They need more help and social skill training to foster friendship and help them become more inclusive.
- **(Humphrey & Symes, 2011)** Adolescents with autism spectrum disorders (ASDs) in regular schools were found to spend more time alone in activities and have fewer social interactions than their peers who are dyslexic or no special educational needs required. Adolescents with ASD participated less in the playful physical activities (rough and tumble play) and also showed higher levels of reactive.
- **(Kelly, et al., 2008)** the study emphasized the link between the family conflict and the symptoms of ASD development, thereby increasing anxiety and depression, whereas positive family and peer relationships had a smaller influence. The findings show that implementing conflict management interventions within families, even when conflict levels are low. It helps to reduce ASD-related symptoms and improve a child's overall well-being.
- **(Krieger, et al., 2018)** This scoping review highlights two key themes: providing security and helping to connect with others. The first theme, *providing security*, refers to how various environments—particularly parental, physical, and informational—can either foster a sense of safety or create feelings of intimidation

among students. The second theme, *helping to connect*, explores how different environments either facilitate or obstruct social relationships and activities, thereby influencing the level of participation in the latter.

6. Intervention Outcomes and Strategies

- **(Siller & Sigman, 2002).** found that children with autism showed better development of communication and joint attention skills over the following 1, 10, and even 16 years, whose parents were more in sync with them during early play. Parents of children with autism were just as effective at aligning their behavior with their child's focus as parents of children with other developmental delays.
- **(Siller, et al., 2013)** showed that the Focused Playtime Intervention (FPI) helped parents become more responsive while interactions and playing with their children. Children with very limited language showed significant improvement in speech after 12 months, though there was no change in children with stronger language skill. This program helped only improving language but did not improve behavior or overall development.
- **(Tarver, et al., 2019)** described that behavioral parent interventions are beneficial in minimizing disruptive behavior and hyperactivity in children with ASD, and they also positively impact parental stress by lowering the stress.
- **(EE McCurdy, 2014)** investigated the effects of peer intervention and showed how the peer support can help students with severe autism. It also helps in reducing minor disruptive and off-task behaviors in students with severe autism spectrum disorder (ASD). The findings highlight the positive role of peer support in enhancing academic engagement, increasing focus and decreasing problematic behaviors.
- **(Trembath, et al., 2019)** the report studied the parent led interventions and how impacted the autistic child in a positive way. The review explored various factors that may affect the feasibility, suitability, effectiveness, and wider applicability of parent-mediated interventions.
- **(Estes, et al., 2019)** Parents play an important role in supporting early interventions for young children with ASD and are directly affected by their interactions with medical and educational providers. The indirect effects are also experienced, based on their children's developmental progress or behavioral challenges. Parental stress and mental health are important areas for intervention and research. As parents influence and are influenced by ASD interventions, evaluating these effects is important for interventions that support the well-being of both parents and children. This review summarizes existing research on the impact of early ASD interventions on parents
- **(Cacho & Soler, 2023)** During the early years the brain's neuroplasticity is at its peak. This helps in early detection of intensive intervention for ASD. The aim is to improve child's development by early screening but at the same time understanding and responding to the families' emotional needs.
- **(Torres & Esteban, 2023)** looks at different programs that will train the parents of the autistic child. It includes videos, self-guided materials. It highlights the growing use of internet, web-based platforms and the disconnect between clinical trial outcomes and how effectively it is applied in real-life community settings.
- **(Vismara & Rogers, 2010)** stated that Applied Behavior Analysis (ABA) are the widely accepted interventions. These intervention programs are based on the scientific teaching principles of are widely regarded as the preferred approach.
- **(Breider, et al., 2022)** study reveals that the disruptive behavior in the children with autistic traits is due to the early childhood and life experiences.

Research Gap: Research Gap:

This paper explores how different environmental factors can shape the development of children with autism. In particular, it looks at how negative parenting behaviours, often linked to stress and a lack of adequate support may affect

the developmental progress of children with autism in Bangalore. At the same time, it also considers lack of awareness and the environmental factors, that further intensify these challenges.

By looking closely at these interconnected factors, the study aims to better understand how they influence both the child and the family. The goal is to identify practical ways to support parents, reduce stress, and address unhelpful parenting patterns, while also encouraging more inclusive and understanding social environments for children with ASD. Ultimately, the study aims to highlight approaches that can create a more supportive setting, one that reduces negative influences, strengthens resilience, and allows children with autism to grow and reach their full potential.

Despite growing research and the development of various intervention tools for identifying behaviors in children with ASD, significant gaps remain in understanding the impact of negative parental and peer behaviors on their overall development. There is still a lack of longitudinal and observational studies examining parenting influences and developmental outcomes, as well as insufficient evaluation of how real-world peer interactions, bullying, and school inclusion affect both behavioral and developmental aspects in children with ASD.

Chapter 3

Research Methodology:

Statement of the Problem

Children with Autism Spectrum Disorder (ASD) face significant challenges in social communication and emotional and social development. Their development graph is significantly molded by their immediate environment that includes the behavior and attitude of the parents and peers. A positive environment and behavior often develop resilience and compassion while negative behaviors such as parental neglect, emotional unavailability, inconsistent discipline, peer bullying, and social exclusion can lead to adverse effect on the developmental process.

Despite a growing awareness of ASD, there still remains a lot of gaps in understanding how the parental negative behaviors impact the developmental pathways of the Autistic children. The persistent stigma associated with outdated theories like the "refrigerator mother" hypothesis, coupled with the high stress levels experienced by caregivers, often exacerbates these adverse interactions. In the context of Bangalore, where the societal awareness prevails and the support from parents may vary, the compounded impact of these negative influences on a child's social, emotional, and behavioral outcomes is not sufficiently documented. This study aims to address this problem by studying the relationship between adverse parental behaviors and the developmental challenges faced by children with ASD.

Need of the Study

This research is inspired by few factors. Firstly, many studies have been done on the clinical interventions for children with ASD, but there is a research gap on the role of negative environmental factors such as adverse parenting styles that impedes the development of the ASD children. The existing literature has shown the relationship between the autistic children's behavior and the parental stress, but how the parents negative behavior causes stress and impedes the development in the ASD children have not been studied.

As the current education system emphasizes on the inclusive and holistic education, it is important to understand the real-world impact of peer interactions and school environments on children with ASD. This study is needed to help develop practical interventions for parents, teachers, peers to create a inclusive and supportive ecosystem for the development of the children.

Significance of the Study

This study provides significant insights in both theoretical and practical aspects:

- **Theoretical Significance:**
 - It adds to the existing knowledge by understanding the relationship between the environmental factors (parental and peer behaviors) and developmental outcomes in children with ASD.
- **Practical Significance:**
 - It helps the psychologists, educators and therapists to develop intervention programs.
 - Helps parents to follow a positive parenting practice.
 - Assists schools in creating inclusive and supportive environments

This research outlines a comprehensive framework for study design, aimed at ensuring the validity, reliability, and objectivity of the findings. The primary goal of the study is to understand and comprehend how adverse behaviors displayed by parents affect the growth of a child with autism. The framework encompasses the research design, data collection methods, data analysis techniques, and the overall methodological approach.

The research focuses on the Parental Influences and how Adverse Behaviors Affect the Developmental Pathways of Children with Autism?

Aim:

To examine the impact of adverse parental and peer behaviors on the developmental outcomes of children with autism spectrum disorder (ASD). The study also aims to propose intervention strategies to reduce parental stress and promote positive parent–child and peer interactions.

Objective:

1. To study the effect of negative parental behavior on the developmental pathway of the ASD children.
2. To understand the impact of environmental behavior on the development of the ASD children.
3. To provide strategies and intervention plans to understand and reduce stress in parents and foster a positive interaction among peers to groom a healthy relationship with the ASD children.

Hypothesis 1:

1. H_0 : The adverse behavior of parents has no significant effect on the development pathways of children with Autism.
2. H_1 : The adverse behavior of parents has a significant effect on the development pathways of children with Autism.

Hypothesis 2:

1. H_0 : Unsupportive environment behavior does not significantly affect the developmental outcomes of children with autism.
2. H_1 : Unsupportive environment behavior significantly impede the developmental outcomes of children with autism.

Data collection methods, data analysis techniques, and the overall methodological approach.**a) Research Design:**

This research study will be a combination of descriptive and causal research design. The research will primarily focus on the quantitative methods. The qualitative methods will be more of a support and experience.

b) Sample Design:

1. Sample size: The sample size is 53 respondents that includes parents, teachers and caregiver who are associated with ASD children.
2. Sampling Frame: the sampling frame for the data will include people from Bangalore.
3. Sampling Method: The sampling method adopted will be the probability sampling in which stratified random sampling will be used to collect data.

c) Universe of Study:

The current study includes the target groups:

1. Parents
2. Caregivers

d) Sources and methods of data collection:

1. Primary sources: Proved and tested questionnaires will be used as the major tool, 5 rating Likert scale (strongly disagree- 1 to strongly agree 5) will be incorporated. Observations of the children with ASD will be additional source of qualitative data and will be used as reference only.
2. Secondary data sources: The data is collected from 45 research articles, 15 books and few thesis papers. Of all these the most relevant and related data is incorporated.
3. Pilot study: face validation from 5 professors and psychologists

e) Methods used for Analysis of Data:

1. Descriptive statistics using mean, median and standard deviation.
2. Regression analysis to examine relationships between parental behaviors and child outcomes.
3. Software used-Jamovi and advance excel.

f) Variables in the study:

1. Dependent Variable (DV): Developmental outcomes of the Children with ASD.
2. Independent Variables (IV): Parental and environmental behavior.
3. Mediating Variable (MV): Lack of awareness

Operational Definitions:

Operational definitions specify how each variable is measured or observed in the study, including the tools, instruments, or procedures used to collect data related to that variable.

Operational Definitions Table

Variable Type	Variable Name	Operational Definition	Measurement Tool
Independent Variable	Parental Behaviors	In this study, data is collected based on parents' actions and attitudes toward their autistic child, specifically focusing on aspects such as emotional availability and consistency in discipline.	A Structured questionnaire with Likert-scale is used for data collection. The aspects like evaluating supportiveness, neglect, discipline style, and emotional presence are used.
Independent Variable	Environment Behavior	In this study, data is collected based on Actions and attitudes of peers, teachers, and society toward the child with ASD, including bullying or inclusion.	A Structured questionnaire with Likert-scale is used for data collection. The aspects like assessing bullying frequency, peer support, teacher inclusion, classroom interaction, and community behavior toward the child are used.
Dependent Variable	Developmental Outcomes	The child's social, emotional, and behavioral progress, including communication, adaptability, and emotional regulation.	Composite score from caregiver/teacher responses on Likert-scale items related to social interaction, emotional responses, and adaptive behavior.
Mediator Variable	Lack of Awareness	The extent to which parents, peers, or teachers lack knowledge or understanding of ASD characteristics and needs.	Likert-scale items measuring misconceptions, gaps in knowledge, and confidence in managing or supporting a child with ASD.

g) Tools of Data Collection:

This study uses both the primary and secondary data collection tools.

Primary Data Collection Tools are:

Structured Questionnaire:

- 5- point Likert scale used.
It measures the parental behavior, environment and lack of awareness levels on the developmental outcomes of ASD children.

Observational Method:

- Qualitative insights from 5 case studies where the case history, details of the family members, family history and the support and environments of the family and its impact on the development of the ASD children are studied.

Secondary Data Collection Tools:

Research articles, books, thesis papers related to ASD, parenting and child development are used.

Pilot Study:

Face validation conducted with **5 professors and psychologists** to ensure reliability and validity of the tool.

h) Inclusive Criteria:

- Parents with autistic children
- Caregivers

i) Exclusive criteria:

Parents of non-Autistic children
Caregivers of non-autistic children.

j) Limitations:

Only parents and caregivers of autistic children of Bangalore are included in the study.

CHAPTER 4

DATA ANALYSIS, FINDINGS AND CONCLUSIONS

Presentation of the analysis of data:

1. Environmental and Parent Behavior (E&PB)
2. Developmental Outcomes of Children with ASD (DOCASD)
3. Lack of Awareness (LA)

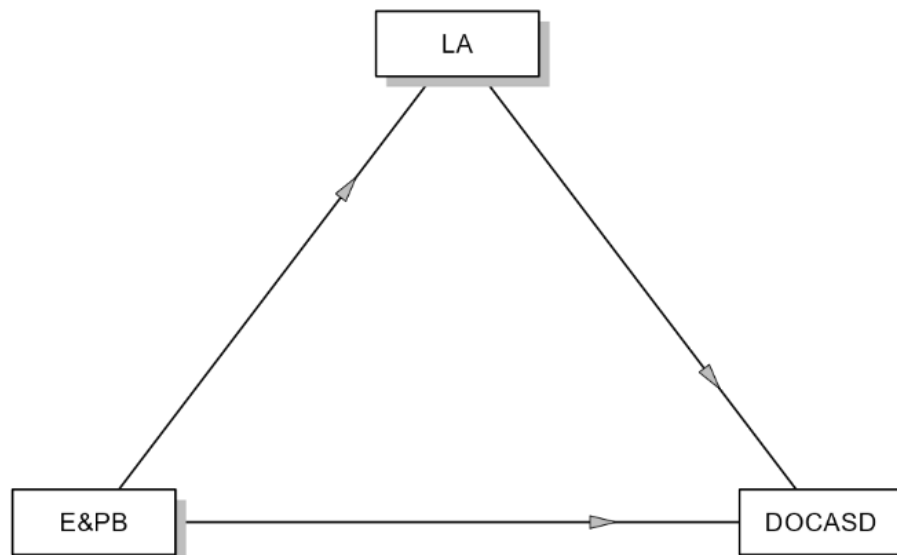
GLM Mediation Model

Models Info					
Mediators Models					
		m1		LA ~ E&PB	
Full Model					
		m2		DOCASD ~ LA + E&PB	

Models Info				
Indirect Effects				
		IE 1	E&PB $\Rightarrow$ LA $\Rightarrow$ DOCASD	
Sample size		N	53	

Path Model

Conceptual Diagram



1. Environmental and Parent Behavior (E&PB)
2. Developmental Outcomes of Children with ASD (DOCASD)
3. Lack of Awareness (LA)

Mediation

Indirect and Total Effects								
				95% C.I. (a)				
Type	Effect	Estimate	SE	Lower	Upper	B	z	P
Indirect	E&PB ⇒ LA ⇒ DOCASD	0.0604	0.1576	-0.249	0.369	0.0557	0.383	0.701
Component	E&PB ⇒ LA	0.9192	0.0958	0.731	1.107	0.7967	9.596	<.001
	LA ⇒ DOCASD	0.0657	0.1713	-0.270	0.402	0.0700	0.384	0.701
Direct	E&PB ⇒ DOCASD	0.5849	0.1977	0.197	0.972	0.5396	2.959	0.003
Total	E&PB ⇒ DOCASD	0.6453	0.1208	0.409	0.882	0.5953	5.343	<.001

The indirect effect of E&PB on DOCASD through LA was positive but statistically non-significant ($B = 0.0604$, $SE = 0.1576$, $\beta = 0.0557$, $z = 0.383$, $p = .701$). In addition, the 95% confidence interval ranged from -0.249 to 0.369 and included zero, providing further evidence that the indirect effect is not statistically significant. Therefore, LA does not significantly mediate the relationship between E&PB and DOCASD.

The individual mediation paths explain why the first component, $E\&PB \rightarrow LA$, was positive and statistically significant ($B = 0.9192$, $SE = 0.0958$, $\beta = 0.7967$, $z = 9.596$, $p < .001$). Thus, E&PB was strongly associated with LA. However, the second component, $LA \rightarrow DOCASD$, was not statistically significant ($B = 0.0657$, $SE = 0.1713$, $\beta = 0.0700$, $z = 0.384$, $p = .701$). Subsequently, although E&PB significantly predicts the mediator, the mediator does not significantly predict developmental outcomes.

In contrast, the direct effect of E&PB on DOCASD remained positive and statistically significant after including LA in the model ($B = 0.5849$, $SE = 0.1977$, $\beta = 0.5396$, $z = 2.959$, $p = .003$, 95% CI $[0.197, 0.972]$). This suggests that E&PB is directly associated with DOCASD rather than operating through LA.

Regressions Results

Total effects

ANOVA Table				
R-squared	F	df1	df2	P
0.354	28.0	1.00	51.0	< .001

Total effects predicting: DOCASD									
Names	Effect	Estimate	SE	Lower	Upper	β	Df	T	p
E&PB	E&PB	0.645	0.122	0.400	0.890	0.595	51	5.29	< .001

The total-effects regression model was statistically significant, $F(1, 51) = 28.0$, $p < .001$, and explained 35.4% of the variance in developmental outcomes of children with ASD ($R^2 = .354$). Environmental and parent behavior had a significant positive effect on developmental outcomes ($B = 0.645$, $SE = 0.122$, $\beta = .595$, $t = 5.29$, $p < .001$, 95% CI [0.400, 0.890]). Therefore, favorable environmental and parental behavior was significantly associated with better developmental outcomes among children with ASD.

Mediator Model

Dependent variable: LA

ANOVA				
R-squared	F	df1	df2	p
0.635	88.6	1.00	51.0	< .001

Regression									
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	P
E&PB	E&PB	0.919	0.0976	0.723	1.12	0.797	51	9.41	<.001

The mediator regression model examining the effect of environmental and parent behavior on lack of awareness was statistically significant, $F(1, 51) = 88.6$, $p < .001$, explaining 63.5% of the variance in lack of awareness ($R^2 = .635$). Environmental and parent behavior significantly and positively predicted lack of awareness ($B = 0.919$, $SE = 0.0976$, $\beta = .797$, $t = 9.41$, $p < .001$, 95% CI [0.723, 1.120]). Thus, environmental and parent behavior was strongly associated with the proposed mediator.

Full model effects

ANOVA Table				
R-squared	F	df1	df2	P
0.356	13.8	2.00	50.0	<.001

Full model predicting DOCASD									
Names	Effect	Estimate	SE	Lower	Upper	β	df	t	P
LA	LA	0.0657	0.176	-0.289	0.420	0.0700	50	0.373	0.711
E&PB	E&PB	0.5849	0.204	0.176	0.994	0.5396	50	2.874	0.006

The full regression model containing environmental and parent behavior and lack of awareness was statistically significant, $F(2, 50) = 13.8$, $p < .001$, explaining 35.6% of the variance in developmental outcomes of children with ASD ($R^2 = .356$). Environmental and parent behavior remained a significant positive predictor of developmental outcomes after controlling for lack of awareness ($B = 0.5849$, $SE = 0.204$, $\beta = .5396$, $t = 2.874$, $p = .006$, 95% CI [0.176, 0.994]). In contrast, lack of awareness did not significantly predict developmental outcomes ($B = 0.0657$, $SE = 0.176$,

$\beta = .070$, $t = 0.373$, $p = .711$, 95% CI [-0.289, 0.420]). Therefore, environmental and parent behavior contributes significantly to developmental outcomes, whereas lack of awareness does not make a statistically significant independent contribution after environmental and parent behavior is controlled.

Summary of all the three paths analysis

Path Analysis	R ²	Main result	Decision
Total effect: E&PB → DOCASD	0.354	$\beta = .595$, $p < .001$	Significant
Mediator model: E&PB → LA	0.635	$\beta = .797$, $p < .001$	Significant
Full model: LA → DOCASD	.356 overall	$\beta = .070$, $p = .711$	Not significant
Full model: E&PB → DOCASD	.356 overall	$\beta = .540$, $p = .006$	Significant

Discussion on the findings:

The data was collected from 53 participants and the mediation analysis was done.

The Lack of awareness (LA) was a mediating variable and the study examined whether the Lack of awareness mediates the relationship between the Environment and Parental Behavior (E&PB) and Developmental Outcomes of Children with ASD (DOCASD).

The indirect effect asks whether Environmental and Parental behavior affect the development outcomes through Lack of Awareness?

E&PB → LA → DOCASD

The findings show that the value of (**B = 0.0604**, **$\beta = 0.0557$** , **$z = 0.383$**) is very small and thus the relationship between E & PB and DOCASD through LA is insignificant.

The value of **p = 0.701** which is much greater than 0.05 and the 95% confidence interval included zero. Therefore, the indirect effect is not statistically significant and there is insufficient evidence to conclude that Lack of Awareness explains the effect of E&PB on developmental outcomes.

Although E&PB significantly predicted LA (**B = 0.9192**, **$p < .001$**), LA did not significantly predict DOCASD (**B = 0.0657**, **$p = .701$**). Because the second part of the mediation pathway was not significant, the overall indirect effect also remained non-significant.

Therefore, the proposed mediation pathway is not significant.

Direct Effect:

E&PB → DOCASD

It examines the relationship between Environmental and parental behavior and developmental outcomes in ASD after taking lack of awareness into account. The results predicted (**B = 0.5849, p = 0.003**). As the p value is less than 0.05 the effect is statistically significant. The interval range of 0.197 – 0.972 does not include zero. This supports the direct effect of E&PB on DOCASD and is significantly positive and satisfied.

This suggests that the relationship between E&PB and DOCASD is mainly **direct**, and rather than through Lack of awareness.

Total Effect:

In a mediation model:

Total Effect = Direct Effect + Indirect Effect

The Total Effect analyses the overall relationship between **Environmental and Parental Behavior (E&PB)** and **Developmental Outcomes of Children with ASD (DOCASD)**, without considering the mediator.

It shows **B = 0.6453, p < .001**. This indicates a **moderately strong positive relationship** between E&PB and developmental outcomes. As the scores for environmental and peer behavior increased, the developmental outcome scores also increased that showed a direct proportionality. the result is statistically significant and the relationship is direct and positive.

Thus:

Total Effect (B = 0.6453) = Direct Effect (B = 0.5849) + Indirect Effect (B = 0.0604)

The results clearly show that **most of the total effect comes from the direct effect**.

Conclusion:

The findings significantly predicted the positive association between the environmental and parental behavior on the developmental outcomes on children with ASD. The study shows that the Lack of Awareness does not significantly predict developmental outcomes and does not mediate the relationship between Environmental and Parental Behavior and developmental outcomes. The significant relationship between Environmental and Parental Behavior and Developmental Outcomes appears to operate predominantly through a direct pathway.

Limitations:

The study was conducted with a sample of 53 participants. This small size limits the generalizability of the findings to the wider population of children with ASD. In the present study, lack of awareness was a mediator. Even though the results showed that this mediator was insignificant, there can possibly be other psychological, family variables that could explain the relation between Environmental and parental behaviors and the developmental outcomes of the Children with ASD. The response from the parents and caregivers may be biased and based on individual interpretation.

Implications:

The findings suggest important implications for parents, teachers, caregivers, counsellors, schools and professionals working with children with ASD. The study shows the direct positive relation between Environmental and parental behaviors and the developmental outcomes of the Children with ASD. Therefore, focusing on the child's social environment can be an important area of focus and intervention. For parents and caregivers, the result emphasizes on creating an understanding and supportive environment. For schools, it will help to create an inclusive environment and promote positive peer relationship. Even though, the mediator lack of awareness is insignificant in the study, but it has shown very little effect on the Environmental and Parental behaviors and the developmental outcomes of the Children

with ASD indirectly. So, to have an awareness program for parents and caregivers would help in maintaining healthy and positive environment for the children with ASD.

Recommendations:

Future studies should use larger samples and longitudinal designs to understand these relationships overtime. Promoting positive environmental and parental behaviors programs with help in positive developmental outcomes among Children with ASD. Conducting regular monitoring and early interventions to support developmental progress.

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