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Culturally Contextualized Implementation of Applied Behavior Analysis for Children with Autism Spectrum Disorder: Evidence from a Therapy Center in Banjarmasin

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Abstract

Applied Behavior Analysis (ABA) is widely recognized as an evidence-based intervention for children with autism spectrum disorder (ASD). However, limited research has examined how ABA practices are implemented and adapted within local cultural and educational contexts in developing countries. This study investigates the implementation of ABA-based educational treatment for children with ASD at a therapy center in Banjarmasin, Indonesia, with particular attention to its potential relevance for inclusive school practices. A qualitative descriptive design was employed. Data were collected through classroom observations, semi-structured interviews, and document analysis involving therapists, parents, and children with ASD. The analysis focused on identifying key therapeutic practices and examining how core ABA principles are operationalized within daily intervention routines. The findings indicate that therapists consistently apply several fundamental ABA principles, including structured instruction, behavioral shaping, repetition, reinforcement, and consistency. These practices contribute to improvements in children's self-help abilities, emotional regulation, and social interaction skills. Furthermore, the therapeutic strategies demonstrate potential for adaptation in inclusive educational settings, where teachers can incorporate simplified ABA-based techniques to support behavioral and learning development among autistic students. This study contributes to the literature by providing empirical evidence on the culturally contextualized implementation of ABA in therapy services in Indonesia. The findings highlight the importance of therapist–parent collaboration and suggest that culturally adapted ABA practices can support the inclusion of children with ASD in mainstream educational environments.

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Introduction

Human development is a continuous process that begins at conception and progresses throughout the lifespan. Although developmental changes occur in all individuals, the pace and trajectory of development may vary due to biological, environmental, and socio-cultural influences. Early childhood represents a critical developmental period in which children rapidly acquire cognitive, social, emotional, and motor competencies necessary for adaptive functioning within their social environment (Ahmed et al., 2021; Zittoun & Gillespie, 2025). However, some children experience developmental conditions that require specialized intervention, one of the most widely recognized being autism spectrum disorder (ASD).

Autism spectrum disorder is a neurodevelopmental condition characterized by impairments in social communication, behavioral flexibility, and adaptive functioning. Children with autism frequently experience difficulties in verbal and nonverbal communication, social interaction, and behavioral regulation in everyday contexts. These characteristics typically emerge during early childhood and are often identifiable before the age of three (Lai et al., 2014;

Lord et al., 2018). The diagnosis of autism is generally established through behavioral observations, standardized screening tools, and professional clinical assessments guided by criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Diagnostic procedures commonly incorporate instruments such as the Checklist for Autism in Toddlers (CHAT) and the Autism Diagnostic Observation Schedule (ADOS) (Robins et al., 2014).

The prevalence of autism has increased considerably over recent decades, prompting growing research interest in its underlying causes and intervention strategies. Current evidence suggests that autism is influenced by a complex interaction of genetic and environmental factors. Environmental risks reported in previous studies include prenatal exposure to tobacco smoke, alcohol, air pollution, pesticides, infectious agents, endocrine-disrupting chemicals, and heavy metals (Fujiwara et al., 2016). Nutritional factors during pregnancy have also been associated with autism risk, with adequate folic acid intake during the preconception period shown to reduce the likelihood of ASD in children (Shneider et al., 2025). Additional studies have highlighted toxicological effects of heavy metal exposure (Zhou et al., 2025) and biological mechanisms involving genetic mutations, chromosomal abnormalities, and copy number variations (Sandin et al., 2017). Despite these findings, autism remains a complex neurodevelopmental condition without a single identifiable cause and is typically diagnosed through behavioral and developmental assessments rather than biological markers (Varvara & Drigas, 2022).

Although autistic individuals may experience challenges in communication and social interaction, many are capable of developing meaningful skills when provided with appropriate educational and therapeutic support. Early intervention is therefore considered crucial because timely therapeutic assistance can significantly improve developmental outcomes and reduce behavioral difficulties over time (Zwaigenbaum et al., 2015).

Among the various intervention approaches developed for children with autism, Applied Behavior Analysis (ABA) is widely recognized as an evidence-based method. ABA is grounded in behavioral theory and emphasizes the relationship between environmental stimuli and observable behavior. Drawing on the principles of operant conditioning introduced by B. F. Skinner, ABA applies systematic reinforcement strategies to strengthen desirable behaviors while gradually reducing maladaptive behaviors (Leaf et al., 2016; Reichow et al., 2018). ABA-based interventions typically involve structured and intensive behavioral training aimed at improving functional abilities such as daily living skills, emotional and behavioral regulation, and social participation. Instruction is commonly delivered through small, structured learning units to facilitate gradual skill acquisition and consistent behavioral outcomes. Despite its widespread application, scholars have highlighted the need for further empirical studies examining how ABA interventions are implemented across diverse cultural and educational contexts (Wilkenfeld & McCarthy, 2020).

International research has demonstrated that ABA-based interventions can improve adaptive functioning among children with autism. Cross-cultural studies emphasize the importance of considering cultural differences in behavioral intervention practices (Chang, 2017). Meta-analytic evidence further indicates that ABA interventions can significantly enhance intellectual functioning and adaptive behavior among children with ASD (Barnhill et al., 2018). Similarly, recent studies show that ABA strategies contribute to improvements in academic achievement, social interaction, and communication skills among students with autism (Reichow et al., 2018).

Despite this growing body of international literature, empirical research examining culturally contextualized ABA implementation in Indonesia remains limited. Most studies have been conducted in Western contexts and may not fully capture the sociocultural dynamics influencing autism intervention practices in Indonesian communities. In some local contexts, including the Banjar community in Banjarmasin, autism may still be interpreted through traditional belief systems that associate the condition with supernatural or spiritual causes (Huggins, 2016). Such beliefs can influence community perceptions and parental decisions

regarding treatment. Consequently, some families may seek traditional healing practices known as tetamba, including consultation with religious leaders or spiritual rituals, rather than evidence-based therapeutic interventions. Limited awareness of early intervention services and restricted access to specialized therapy may further delay treatment (Nisa et al., 2024), thereby affecting developmental outcomes and reinforcing social stigma that limits children's participation in education and community life.

Given these contextual challenges, there is a need to examine how evidence-based interventions such as Applied Behavior Analysis can be implemented within local cultural environments. Understanding how therapists, parents, and professionals collaborate in delivering ABA-based therapy is essential for developing culturally responsive intervention strategies. Therefore, this study aims to explore the implementation of ABA-based educational treatment for children with autism spectrum disorder at a therapy center in Banjarmasin, Indonesia. Specifically, the study investigates how ABA principles and techniques are applied in therapeutic practice and how these approaches support the developmental progress of autistic children within culturally influenced contexts.

Methods

Research Design

This study employed a qualitative research design with a narrative–descriptive approach. Qualitative research is particularly suitable for exploring social phenomena and individual experiences within natural settings, allowing researchers to understand events, behaviors, and interactions in their real-life contexts (Creswell & Poth, 2025). This approach enables an in-depth exploration of how Applied Behavior Analysis (ABA)–based interventions are implemented in therapeutic settings for children with autism spectrum disorder (ASD).

The study focused on examining the implementation of ABA principles and techniques applied by therapists in therapy services in Banjarmasin, Indonesia. Specifically, the research explored how therapists utilize ABA strategies, including structured instructions, reinforcement, repetition, and consistency, to support the development of self-help skills, emotional and behavioral regulation, and social interaction abilities among children with ASD. Qualitative research positions the researcher as the primary research instrument who observes, interprets, and analyzes social interactions within the research context (Ritchie et al., 2014).

Primary data were collected from a kindergarten-based clinical therapy service center that provides integrated child development services. The center is a well-established institution in Banjarmasin that combines therapy services with special education support and is managed by multidisciplinary professionals. This site was selected purposively because it offers comprehensive services for children with developmental disorders, making it an appropriate setting for examining ABA-based therapeutic practices.

Secondary data were obtained through literature sources, including journal articles, books, and previous research relevant to autism interventions and ABA therapy (Ikhlas et.al 2023) (A'yun et.al 2025). It should be noted that the number of participants in this study was relatively limited and data were collected from a single therapy center. Although this may limit the generalizability of the findings, the selected site provided a rich context for in-depth qualitative investigation.

Research Participants and Criteria

The participants in this study consisted of four therapists, one therapy center head, two children diagnosed with ASD, and two parents. Participants were selected using purposive sampling based on their relevance to the research objectives. Snowball sampling was subsequently applied to identify additional participants who met the required criteria until sufficient data saturation was achieved (Septiana et.al 2024).

Table 1. Participant Selection Criteria

Inclusive Criteria	Exclusive Criteria
Participants receiving services at the kindergarten clinical therapy center	Children with developmental disabilities other than ASD or without a clinical ASD diagnosis
Children diagnosed with ASD at preschool to elementary school age	Therapists who have worked at the therapy center for less than three months
Therapists responsible for delivering ABA-based therapy to children with ASD	Participants who declined to provide informed consent
Biological parents of children diagnosed with ASD	

Table 2. Research Participants

No	Name	Age	Description
1	NB	24	Clinical therapist (2 years experience)
2	ND	23	Clinical therapist (6 months experience)
3	M	24	Clinical therapist (1 year experience)
4	NI	28	Clinical therapist (4 years experience)
5	IV	38	Head of therapy services
6	CL	40	Mother of child JLI
7	S	38	Mother of child D
8	JLI	8	Child with ASD
9	D	5	Child with ASD

Both child participants had received a clinical diagnosis of ASD. JLI (8 years old) demonstrated moderate challenges in verbal communication and social interaction, while D (5 years old) exhibited more pronounced repetitive behaviors and limited expressive language. Baseline developmental and clinical profiles were obtained from the therapy center's internal assessment records to support observation and interview protocols.

Data Collection, Analysis, and Validity

Prior to data collection, informed consent was obtained from all participants as a form of ethical agreement ensuring voluntary participation and confidentiality of the collected data, particularly to protect the privacy of the children involved in the study. Data were collected using three primary techniques: participatory observation, in-depth interviews, and document analysis (Merriam & Tisdell, 2015).

The researcher acted as a non-participant observer and had no prior clinical or personal relationship with any participants. This positionality was maintained throughout the research process to minimize potential bias and to ensure objectivity during observations and interviews.

Observational data were collected during therapy sessions at the service center. The observation protocol included structured guidelines to record children's behavioral responses during therapy activities, particularly focusing on compliance with instructions, communication patterns, social interactions, and behavioral changes during ABA-based interventions. Observations were conducted across four therapy sessions over a three-month period from May to July 2024. During the observation process, the researcher documented field notes, conducted reflective discussions with the research team, and used audio and video recordings to capture relevant interactions.

In-depth interviews were conducted with therapists and parents to explore their perspectives on intervention strategies, children's behavioral progress, and the dynamics of therapy implementation both in clinical settings and at home. Interviews aimed to capture detailed narratives regarding therapeutic practices, parental involvement, and perceived developmental outcomes.

Document analysis was also conducted to complement observational and interview data. The reviewed documents included children's developmental profiles, medical and diagnostic reports, therapy plans, progress reports, referral documents, and supporting visual documentation such as activity photographs.

Data analysis followed the interactive model proposed by Miles and Huberman, which consists of three interconnected stages: data reduction, data display, and conclusion drawing (Miles et al., 2020). These processes were conducted iteratively throughout the research period. During the data reduction phase, the researcher focused on identifying relevant behavioral patterns observed during therapy sessions as well as key themes emerging from interviews with therapists and parents. Data presentation was organized through thematic descriptions that illustrate intervention strategies, behavioral responses, and collaboration between therapists and families.

To ensure the credibility and trustworthiness of the findings, triangulation and member checking were conducted across three primary data sources: therapists, parents, and children. This process aimed to confirm the consistency and accuracy of the data interpretations. Member checking allowed participants to review and verify the interpretations derived from interview data, thereby strengthening the validity of the study findings (Yin, 2018).

Result

Cultural Context in ABA Implementation

The implementation of Applied Behavior Analysis (ABA) therapy in the observed therapy center is strongly influenced by the socio-cultural and religious backgrounds of children and their families. Behavioral expectations such as greeting practices, eye contact, and physical gestures are not uniformly imposed but are adapted according to each child's cultural context. In Indonesian society, social politeness is commonly expressed through behaviors such as greeting by name, shaking hands, maintaining eye contact, waiting in line, and demonstrating respectful body language. These social norms are typically introduced during early childhood through obedience-oriented learning practices. Consequently, autistic children are often expected to demonstrate similar patterns of behavior in order to align with prevailing social expectations.

However, field observations revealed that therapists consider cultural diversity when implementing behavioral interventions. In contrast to the dominant Muslim–Banjar cultural norms, which emphasize physical greetings such as handshaking or kissing the hand of elders, some cultural groups do not necessarily prioritize these forms of interaction. For example, families from Chinese cultural backgrounds may place less emphasis on direct physical greetings or prolonged eye contact with adults. These differences reflect the presence of culturally mediated behavioral expectations within therapeutic settings.

To address this diversity, therapists adapt behavioral generalization strategies to align with each child's cultural background and comfort level. Autistic children from Chinese–Banjar families were not consistently encouraged to perform physical greeting gestures such as handshaking or kissing hands when interacting with therapists or teachers. Instead, therapists emphasized alternative forms of social interaction, including waving, brief eye contact, verbal acknowledgment, or high-five gestures. These practices differ from those commonly encouraged for children from Muslim–Banjar families, where handshaking is often promoted as a culturally appropriate greeting behavior.

This adaptive approach was confirmed during an interview with therapist NI:

> "Here, our therapy children come from various backgrounds some are Banjarese, Chinese, Javanese, and some are Muslim, Buddhist, Christian, and Catholic. So, we don't immediately accustom all children to a particular form of polite behavior like shaking hands; it depends on the child's comfort." *(Interview with Therapist NI, May 15, 2024)*

These findings indicate that ABA-based behavioral interventions in this setting are not implemented as culturally uniform practices but are adjusted to accommodate the socio-cultural characteristics of each child's family while still promoting appropriate social interaction and emotional expression.

Individualized and Flexible ABA Program Design

Observations indicate that ABA therapy programs at the therapy center are implemented flexibly rather than rigidly following standardized program templates. Therapy plans are developed based on individualized child assessments and observational data rather than directly replicating pre-existing intervention formats.

Each therapy session begins with a routine activity that reflects the child's religious background. For instance, Muslim children are guided to raise their hands during prayer, while Catholic children are encouraged to pray with their hands clasped. Although prayer gestures differ across religious groups, the verbal expressions used during these activities are typically short Indonesian phrases that express gratitude or readiness to begin therapy. This routine is designed not only as a cultural practice but also as a strategy to stimulate communication and imitation skills.

Therapist NB explained:

> "We invite each child to pray before starting therapy using their respective religious procedures even if the prayers are short and simple, so that the child can follow easily and stimulate communication." *(Interview with Therapist NB, May 15, 2024)*

The observed therapy programs do not prioritize academic instruction such as reading, writing, or numeracy during the early stages of intervention. Instead, the primary focus is placed on foundational behavioral readiness, compliance with instructions, attention control, and emotional regulation. These skills are frequently introduced through structured play activities between the therapist and the child. Academic learning components are gradually introduced only after the child demonstrates sufficient mastery of basic behavioral and attentional skills.

Therapists reported that each child follows a unique developmental trajectory. Individual assessment records and therapy databases are used as references to determine intervention priorities. This individualized approach resembles differentiated learning practices in educational settings. Progress toward academic skills, such as symbolic letter recognition, is introduced only after children have developed sufficient behavioral readiness and adaptive functioning. These findings suggest that ABA implementation in the observed therapy center emphasizes developmental sequencing rather than immediate academic achievement.

Prompting, Reinforcement, and Learning Processes

Prompting and reinforcement emerged as central strategies in the observed ABA therapy sessions. Therapists generally applied prompting techniques minimally to prevent dependency and encourage independent behavioral responses. Instead of providing direct physical assistance, therapists primarily relied on subtle prompts such as gestures, pointing, or short verbal cues.

One observed therapy session involving an eight-year-old child, JLI, illustrates this process. During a letter puzzle activity, JLI attempted to arrange the letters sequentially from A to Z. When instructed to match letters based on sound cues rather than alphabetical order, the child displayed mild aggressive behavior, including hitting the table and briefly striking his head. In response, the therapist maintained clear and concise instructions while avoiding excessive prompting.

After two unsuccessful attempts, the therapist provided a minimal prompt by pointing to the correct puzzle location. Following this cue, JLI successfully placed the correct letter and immediately received a reward in the form of his preferred puzzle piece, the letter "i." This reward functioned as a positive reinforcement to strengthen the desired response.

Therapy sessions typically lasted approximately one hour and were conducted two to four times per week, depending on medical recommendations and parental agreements. Although intensive ABA programs theoretically recommend up to forty hours of therapy per week, practical constraints such as financial costs and family schedules often result in adjusted therapy frequencies.

Parental interviews indicated that behavioral progress was more noticeable when therapy strategies were consistently reinforced at home. One parent stated:

"After every therapy session, we are given a report on progress and exercises to continue at home. When we follow it consistently, there is progress. But not all parents can continue at home because of their activities."(Interview with Parent CL, May 16, 2024)

These findings highlight the importance of consistency between therapy sessions and home-based reinforcement in supporting behavioral development among autistic children.

Behavioral Change and Learning Outcomes

Behavioral change was identified as the primary outcome of ABA therapy in the observed setting. Consistent with the principles of behavior modification, ABA interventions aim to strengthen desirable behaviors while reducing maladaptive responses through systematic reinforcement strategies.

Observational data showed that therapy targets included reducing behaviors such as tantrums, aggression, repetitive movements, and self-stimulatory actions while simultaneously strengthening positive behaviors such as attentional engagement, readiness to follow instructions, and emotional regulation. Learning activities were typically structured into small, discrete steps to facilitate gradual skill acquisition.

Reinforcement strategies involved both tangible and intangible rewards. Tangible rewards included toys, food items, or preferred objects, while intangible reinforcement consisted of verbal praise, encouraging gestures, or physical expressions such as high-fives. The selection of rewards was tailored to each child's preferences to maintain motivation and attention without causing overstimulation.

The ABA curriculum implemented in the therapy center encompassed several developmental domains, including obedience, readiness, self-control, imitation, receptive and expressive language, self-help skills, and social adaptation. Children progressed to higher levels of learning only after demonstrating mastery of previously introduced skills. Mastery was defined as the child's ability to perform targeted tasks with minimal errors and reduced therapist assistance.

For example, toilet training was introduced through sequential learning stages, beginning with recognizing bodily signals, communicating toileting needs, identifying appropriate facilities, understanding privacy, and completing hygiene routines. Each stage was introduced gradually based on the child's demonstrated readiness and behavioral progress.

Therapists emphasized that ineffective ABA implementation often occurs when intervention programs are not grounded in systematic observation and assessment data. Effective practice requires continuous monitoring, evaluation, and adjustment of therapy strategies based on measurable behavioral responses rather than solely on parental expectations.

Table 3. Thematic Summary of Findings

Theme	Description	Data Excerpt
Cultural adaptation in ABA	BA practices are adapted according to the cultural background and social norms of the child's family.	Here, our therapy children come from various backgrounds some are Banjarese, Chinese, Javanese, and some are Muslim, Buddhist, Christian, and Catholic. So, we don't immediately accustom all children to a particular form of polite behavior like shaking hands; it depends on the child's comfort." *(Interview with Therapist NI, May 15, 2024)*
Individualized program flexibility	Therapy programs are developed based on individual child assessments rather than rigid standardized procedures.	"We invite each child to pray before starting therapy using their respective religious procedures even if the prayers are short and simple, so that the child can follow easily and stimulate communication." *(Interview with Therapist NB, May 15, 2024)*
Prompting and reinforcement	Minimal prompting combined with immediate reinforcement encourages	After two unsuccessful attempts, the therapist provided a minimal pointing prompt. The child successfully placed the correct letter and received a

Theme	Description	Data Excerpt
strategies	independent behavioral responses.	preferred puzzle piece as reinforcement.
Parental involvement and consistency	Behavioral progress improves when therapy practices are reinforced at home by parents.	"After every therapy session, we are given a report on progress and exercises to continue at home. When we follow it consistently, there is progress." *(Interview with Parent CL, May 16, 2024)*
Observable behavioral change	ABA therapy contributes to reductions in maladaptive behavior and improvements in adaptive and communication skills.	Children demonstrated increased compliance with routines and improved ability to communicate needs through verbal or non-verbal expressions.

Discussion

The findings of this study demonstrate that the implementation of Applied Behavior Analysis (ABA) in therapy settings is not a rigid or universally standardized procedure but rather a contextual and adaptive practice. Therapists continuously adjust intervention strategies according to individual child characteristics as well as the socio-cultural and religious backgrounds of the children and their families. Variations observed in greeting behaviors, eye contact, and prayer routines during therapy sessions illustrate that ABA interventions can be implemented flexibly while still maintaining their core behavioral objectives. This adaptive approach allows therapists to support behavioral generalization without imposing culturally inappropriate expectations. Such flexibility reflects the importance of contextual responsiveness in behavioral interventions and suggests that ABA practices can be effectively integrated within diverse cultural environments. By accommodating local cultural norms and individual comfort levels, therapists are able to create learning environments that support both behavioral development and social inclusion (Mathur & Rodriguez, 2022; Palmer & Riley, 2025; Sivaraman & Fahmie, 2020).

The study also highlights the role of behavioral intervention in helping autistic children adapt to their surrounding environments. ABA strategies focus on addressing barriers related to communication, social interaction, and behavioral regulation through the systematic teaching of new behaviors. One important component identified in this study is the development of imitation skills, which function as a fundamental mechanism for learning among children with autism. Through structured modeling and reinforcement, imitation enables children to acquire new behavioral patterns and social responses (Ingersoll, 2008). The strengthening of daily self-help abilities, emotional regulation, and social participation contributes to greater independence among autistic children. Previous research similarly indicates that behavioral interventions targeting adaptive skills can enhance emotional stability and reduce aggressive behaviors, thereby facilitating improved participation in community life (Schreibman et al., 2015). These findings suggest that ABA interventions play an important role in supporting the broader developmental functioning of autistic children beyond the therapy setting.

Another important finding concerns the individualized nature of ABA-based interventions. Therapy programs in the observed setting were developed based on continuous observation and assessment data rather than relying on standardized program templates. This individualized approach reflects a core principle of ABA, which emphasizes that behavioral interventions must be tailored to each child's developmental profile, behavioral characteristics, and learning needs (Sandbank et al., 2020). The therapy process typically begins with the development of foundational behavioral competencies such as readiness to learn, compliance with instructions, imitation skills, and emotional regulation. These competencies serve as prerequisites for more complex cognitive and academic learning processes. Previous research similarly suggests that attentional readiness, imitation ability, and behavioral regulation function as essential foundations for learning among children with autism (Nahmias et al., 2019).

As a result, academic skills such as symbolic letter recognition are introduced only after children demonstrate sufficient mastery of adaptive and regulatory behaviors.

Parental collaboration emerged as another crucial factor influencing the effectiveness of ABA interventions. The findings indicate that therapy outcomes are more sustainable when parents actively reinforce therapy routines in the home environment. Therapists regularly provide parents with progress reports and practical recommendations for continuing behavioral exercises outside therapy sessions. This collaborative relationship between therapists and parents helps ensure behavioral consistency across different contexts and supports the generalization of learned skills. Previous research has also emphasized the importance of parental involvement in strengthening intervention outcomes and promoting the maintenance of behavioral improvements over time (Bearss et al., 2015). When parents consistently implement reinforcement strategies at home, children are more likely to retain and generalize newly acquired skills in everyday situations.

This study contributes to the growing discourse on culturally responsive ABA practices. The findings demonstrate that behavioral expectations in therapy settings are shaped by cultural values, social norms, and moral frameworks within the surrounding community. Rather than applying a uniform behavioral standard, therapists in this study negotiated cultural practices while maintaining therapeutic objectives. This practice illustrates how ABA can be adapted within multicultural societies such as Indonesia, where diverse cultural and religious traditions influence everyday social behaviors. By acknowledging these contextual factors, therapists can design behavioral interventions that are both culturally sensitive and developmentally effective.

ABA is widely recognized as an evidence-based intervention for autism, yet it has also been the subject of ongoing ethical and philosophical debate. Some scholars have criticized ABA for potentially imposing rigid behavioral norms or limiting the autonomy and identity of autistic individuals (Wilkenfeld and McCarthy 2020). These critiques often arise from concerns that behavioral modification approaches may prioritize social conformity over individual expression. However, the findings of this study suggest that such concerns can be mitigated when ABA is implemented flexibly and with attention to cultural and individual diversity. When therapists adapt behavioral expectations according to the child's cultural background and family values, ABA can function as a supportive intervention that promotes functional independence without disregarding individual identity. This perspective supports the view that ABA should be understood not as a rigid behavioral control mechanism but as a dynamic intervention framework capable of responding to diverse social contexts.

The study also confirms that the sustainability of ABA outcomes depends heavily on parental involvement beyond therapy sessions. While therapists are responsible for designing and implementing structured behavioral programs, the reinforcement of learned behaviors in the home environment plays a crucial role in determining whether these behaviors are maintained over time. Variations in parental engagement observed in this study—ranging from consistent follow-up to limited reinforcement at home—resulted in differences in developmental progress among children. These findings reinforce the notion that ABA should be conceptualized as a collaborative process involving therapists, parents, and the broader family environment rather than as a clinic-centered intervention.

In addition to parental involvement, broader societal perceptions of autism also influence intervention outcomes. In many communities, autism continues to be associated with stigma, misconceptions, or moral interpretations that may delay early intervention and reduce access to professional services (Nisa et al., 2024). Increasing awareness among families, educators, therapists, and community members is therefore essential for promoting more inclusive attitudes toward autistic individuals. Within the ABA framework, behavioral learning occurs through structured reinforcement processes in which complex skills are broken down into smaller, manageable components. Once mastery of a skill is achieved, therapy progresses to more advanced learning stages. However, when mastery criteria are not yet met, therapists

provide additional assistance through prompting strategies tailored to the child's developmental condition (Leaf et al., 2016). This gradual process allows autistic children to build behavioral associations step by step and supports long-term skill acquisition.

Effective ABA implementation also depends on the quality of interaction between therapists, parents, and children. Warmth, patience, consistency, and clear communication are essential elements in helping children understand behavioral expectations and instructions. In practice, therapists often combine firm instructions with supportive interactions to facilitate children's comprehension of behavioral cues (Slocum et al., 2014). Prompting strategies are used carefully to guide children's responses while encouraging independent learning. Minimal prompts such as gestures, eye signals, or directional cues are generally preferred because excessive assistance may weaken the behavioral associations that children are developing. Reinforcement strategies are also tailored according to each child's preferences and interests. Understanding children's favorite activities, toys, or foods allows therapists to provide meaningful rewards that strengthen desired behaviors and maintain motivation during therapy sessions.

Finally, this study also highlights the emotional challenges faced by parents when navigating their child's autism diagnosis. The process of accepting a diagnosis often involves psychological adjustments, including uncertainty, denial, and concerns related to social stigma (Huggins, 2016). In some cases, parents may avoid discussing the condition with extended family members due to fear of negative social perceptions (Nisa et al., 2024). These experiences demonstrate the importance of psychosocial support for families, as parental emotional readiness significantly influences the effectiveness of therapeutic interventions.

Despite the insights provided by this study, several limitations should be acknowledged. The research was conducted in a single therapy center, which may limit the generalizability of the findings to other therapy settings in Indonesia. Additionally, the relatively short observation period may not fully capture the long-term developmental trajectories of autistic children undergoing ABA therapy. Nevertheless, the study offers valuable empirical insights into how ABA interventions are implemented within the Indonesian cultural context. The findings highlight the importance of individualized assessment, cultural sensitivity, and collaborative engagement between therapists and parents in supporting the developmental progress of autistic children. Future research should involve multiple therapy institutions across different regions and incorporate longer observation periods to capture broader variations in intervention practices. The use of mixed-methods approaches may also provide a more comprehensive understanding of how specific components of ABA interventions contribute to the developmental outcomes of children with autism.

Conclusion

This study demonstrates that the implementation of Applied Behavior Analysis (ABA) for children with autism spectrum disorder is not merely a standardized behavioral intervention but a dynamic and contextually responsive practice. The findings reveal that effective ABA implementation emerges from the integration of individualized assessment, culturally responsive adaptation, and collaborative engagement between therapists and parents. Behavioral progress among autistic children occurs gradually through structured reinforcement, strategic prompting, and consistent practice across therapy and home environments. These results indicate that the effectiveness of ABA is strengthened when intervention strategies are flexibly adapted to the socio-cultural values, family routines, and learning characteristics of each child rather than being applied as rigid behavioral protocols.

From a theoretical perspective, this study contributes to the ongoing global discourse on ABA by providing empirical evidence that culturally responsive and individualized ABA practices can address critiques regarding the rigidity of behavioral interventions. The findings suggest that ABA should be conceptualized as an adaptive intervention framework capable of responding to diverse cultural and educational contexts. Practically, the study highlights the

importance of strengthening collaboration between therapists, parents, and educators to ensure the generalization and sustainability of behavioral outcomes. In inclusive educational settings, the integration of ABA principles into classroom practices may support more responsive learning environments for autistic students. Future research should expand the investigation to multiple therapy centers and educational institutions to examine variations in implementation across different socio-cultural contexts and to further explore how culturally adaptive ABA strategies can enhance developmental outcomes for children with autism.

Declarations

Author Contribution Statement

Uswatun Nisa: Conceptualization, Methodology, Formal Analysis and Writing original draft. Firdha Hayati: Investigation, Supervision, Validation and Writing-Review & Editing.

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Data Availability Statement

The datasets generated and/or analyzed during this study are available from the corresponding author upon reasonable request.

Declaration of Interests Statement

The author declares that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Additional Information

No additional information is available for this paper at this time.

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