

Preliminary Descriptive Case Series of ABA (Applied Behavior Analysis) Intervention on Expressive Language Development of Autism Spectrum Disorder: A Study on Pediatric Patients of SBHC Salonga Behavioural Health Center

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ABSTRACT

This study examined the efficacy of Applied Behavior Analysis (ABA) intervention on expressive language development among children with Autism Spectrum Disorder (ASD) enrolled at the Salonga Behavioral Health Center (SBHC). Ten pediatric participants, aged 4.1 to 7.4 years, underwent a six-month ABA therapy program conducted three times per week. To ensure objectivity and reduce researcher bias, all pre- and post-intervention assessments using the *Griffiths Developmental Assessment – Language Subscale* were administered by a licensed developmental psychologist, while a licensed psychometrician independently verified the accuracy of scoring and adherence to intervention protocols. Findings revealed notable progressions across all participants, with expressive language age-equivalency gains ranging from 2 to 15 months and an average developmental progression of 47.6% relative to chronological age. These results suggest that consistent ABA-based interventions are associated with measurable gains in expressive language abilities in children with ASD within a structured six-month program. The study underscores the importance of early intervention, treatment consistency, and objective evaluation in promoting language development. However, limitations include the small sample size, single-site design, and lack of a control group, which constrain the generalizability of results. Future research with a control group is needed to attribute these gains directly to the intervention.

Keywords: *Applied Behavior Analysis (ABA); Autism Spectrum Disorder (ASD); Expressive Language Development; Griffiths Developmental Assessment; Early Intervention; Pediatric Behavioral Therapy*

INTRODUCTION

Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental condition characterized by persistent deficits in social interaction and communication, alongside the presence of restricted and repetitive behaviors. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), ASD presents with varying levels of severity, ranging from individuals who are non-verbal and highly dependent to those who can function independently but continue to exhibit social-communication challenges. Over the past two decades, the prevalence of ASD has been steadily increasing worldwide. Data from the Centers for Disease Control and Prevention (CDC, 2023) indicate that approximately 1 in 36 children in the United States is now diagnosed with ASD, compared to earlier estimates of 1 in 150 children in the year 2000 and so on. This rise has drawn significant attention to the urgent need for effective therapeutic and educational interventions.

Among the various developmental domains affected by ASD, communication deficits—specifically in expressive language—are among the most profound. Expressive language refers to the ability of an individual or a person to convey thoughts, emotions, and needs through spoken words, gestures, or alternative communication systems. For typically developing children, expressive language skills emerge gradually and may provide the foundation for academic achievement, social interaction, and regulation of emotions. However, in children with autism spectrum disorder, expressive language development is often delayed or even impaired. Many children usually

demonstrate echolalia, limited vocabulary, limited sentence construction, and sometimes only rely on nonverbal communication, such as gestures and visual supports, and assistance. The absence or delay of functional expressive communication may lead to frustration, behavioral and psychological outbursts, and reduced opportunities for socialization and healthy psychological interactions.

Improving expressive language skills is therefore considered one of the highest priorities in therapeutic programs for children on the autism spectrum. Caregivers, educators, and clinicians consistently identify communication goals as central to intervention, as these skills directly impact the child's independence, ability to form relationships, and quality of life. Given the complex nature of the autism spectrum, being able to target expressive language in interventions must be evidence-based, individualized, and intensive to achieve meaningful and appropriate progress.

Applied Behavior Analysis (ABA) has emerged as one of the most widely accepted and evidence-based interventions for children with ASD. Grounded in the principles of behavioral psychology, ABA utilizes systematic strategies such as reinforcement, prompting, shaping, fading, and task analysis to teach new skills and being able to reduce maladaptive behaviors. Initially developed in the 1960s by researchers such as Ivar Lovaas, ABA has since evolved into a highly structured intervention yet adaptable approach used across diverse contexts, including homes, schools, and clinical settings. Its efficacy has been supported by decades of empirical research, particularly in the areas of

communication, social skills, and adaptive functioning.

In the domain of expressive language development, ABA may have a significant impact. Interventions such as discrete trial training (DTT), natural environment teaching (NET), and verbal behavior therapy (VBT)—all derived from ABA principles—are designed to systematically build language skills. These approaches target essential components of expressive communication, including imitation, manding (requesting), tacting (labeling), and intraverbal skills (conversational abilities). Research consistently demonstrates that children with ASD who undergo intensive and appropriate ABA therapy demonstrate significant progress in expressive language, including increased vocabulary, enhanced sentence formation, and improved ability to initiate and sustain conversations.

Despite its global recognition, the application of ABA may vary depending on cultural, institutional, and resource contexts. In many developing countries, including the Philippines, the integration of ABA into therapeutic practice is still evolving and under development. While ABA services are increasingly offered in specialized centers and private clinics, there remains a lack of comprehensive, localized research examining their efficacy in improving expressive language outcomes among Filipino children under the autism spectrum. Most available literature stems from Western contexts, where healthcare systems, parental and caregiver involvement, and cultural expectations of communication may differ significantly. This gap underscores the importance of conducting context-specific studies that assess not only the general efficacy of ABA but also its applicability in local clinical settings.

The Salonga Behavioral Health Center (SBHC) is one such specialized institution in the Philippines that provides therapeutic interventions for children with developmental and behavioral conditions, including autism spectrum disorder and other developmental conditions. SBHC offers structured ABA and behavioral therapeutic programs tailored to pediatric patients, intending to address core deficits in communication, behavior, and socialization. However, while ABA is actively implemented within the center, there is limited empirical documentation on its specific impact on expressive language development among its pediatric clients. Without systematic and structured evaluation, the effectiveness of these interventions remains largely anecdotal, which may limit opportunities to refine therapeutic practices, advocate for resources, and expand access to effective care.

Studying the efficacy of ABA interventions at SBHC is particularly significant for several reasons. First, it provides an evidence base that can guide clinical decision-making and program development within the institution. Second, it can be an instrument to inform the parents and caregivers about the potential benefits of enrolling their children in structured ABA programs, thereby empowering families to make informed choices about intervention strategies. Third, it contributes to the broader and wider academic discourse on autism intervention in the Philippines, a field where scholarly research remains scarce. Finally, by focusing on expressive language development, the study addresses one of the most pressing concerns of families of children under the autism spectrum—the child's ability to communicate effectively and meaningfully.

The significance of expressive language development extends beyond clinical outcomes. Functional communication enables children to express their needs, wants, share experiences, and build relationships with peers, families, and caregivers. It may help to reduce frustration, manage behavioral challenges, and enhance participation in educational, communal, and community activities. In the absence of effective communication, children on the autism spectrum are often excluded from social interactions, which further exacerbates their developmental and behavioral challenges. By evaluating whether ABA therapy at SBHC effectively promotes expressive language growth and development, this study has the potential to demonstrate how evidence-based interventions can transform the lives of children and families affected by autism spectrum disorders.

Autism Spectrum Disorder remains one of the most significant developmental conditions worldwide, with expressive language deficits posing substantial challenges for children who are under this neurodevelopmental condition. Applied Behavior Analysis has consistently been shown to improve communication and language skills, yet localized evidence of its efficacy—particularly in Philippine clinical settings—remains limited. This study seeks to fill that gap by systematically examining the effectiveness of ABA interventions on expressive language development in pediatric patients at the Salonga Behavioral Health Center. The findings are expected to contribute not only to academic knowledge but also to clinical practice, policy development, and family empowerment, ultimately advancing the goal of improving the quality of life for children with ASD.

Review of literature

Autism Spectrum Disorder and Language Development

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by deficits in social communication and restricted, repetitive patterns of behavior (American Psychiatric Association [APA], 2013). One of the most significant developmental challenges faced by children with ASD is delayed or impaired language acquisition. Research indicates that approximately 25–30% of children with autism are minimally verbal by school age (Tager-Flusberg & Kasari, 2013). Language delays manifest in various ways, including limited vocabulary, difficulties with expressive language, echolalia, and impaired pragmatic use of language in social contexts (Boucher, 2012).

Neurobiological studies have suggested that atypical brain connectivity patterns in areas such as Broca's area and Wernicke's area contribute to deficits in expressive and receptive communication (Kjelgaard & Tager-Flusberg, 2001). Moreover, delayed expressive language is closely linked to long-term functional outcomes; children who develop functional speech by age five are more likely to achieve better social and adaptive functioning later in life (Howlin et al., 2004). This underscores the urgency of interventions targeting language development during early childhood.

Language Delays in Children with ASD

Expressive language delays in ASD are among the earliest markers recognized by parents and clinicians (Mitchell et al., 2006). Studies have consistently found that children

with autism often demonstrate a mismatch between receptive and expressive abilities, with expressive skills lagging significantly (Hudry et al., 2010). This impacts not only communication but also social interaction, learning, and adaptive behaviors.

Longitudinal studies show that expressive language growth is a strong predictor of cognitive and adaptive outcomes in children with autism (Mayo et al., 2013). Interventions aimed at addressing language deficits, therefore, hold significant promise in altering developmental trajectories. While some children acquire language naturally, others require structured interventions such as ABA to make measurable progress (Kasari et al., 2012).

Griffiths Developmental Assessment as a Measurement Tool

The Griffiths Mental Development Scales (GMDS) are widely used tools for assessing development across multiple domains, including locomotor, personal-social, hearing and language, eye-hand coordination, and performance (Luiz et al., 2006). The Language Subscale in particular has been applied in clinical and research contexts to measure expressive and receptive language in children with developmental disorders.

The strength of the GMDS lies in its ability to provide age-equivalency scores, allowing clinicians to quantify a child's developmental age relative to their chronological age. This makes it highly valuable in studies evaluating intervention efficacy, such as ABA-based programs. Griffiths has been validated in cross-cultural contexts and is often used in pediatric neuropsychology to assess baseline

developmental profiles and monitor progress over time (Fennell et al., 1997).

In the context of autism research, the GMDS has been applied to track changes in communication skills before and after intervention programs (Alyward et al., 2012). Its sensitivity to developmental change renders it appropriate for evaluating incremental gains in expressive language, as used in the present study.

Historical Development of Applied Behavior Analysis (ABA)

Applied Behavior Analysis (ABA) emerged in the 1960s from the broader discipline of behaviorism. Grounded in the principles of operant conditioning as developed by B. F. Skinner (1953), ABA applies systematic reinforcement strategies to shape socially significant behaviors. Early studies by Baer, Wolf, and Risley (1968) formalized ABA as a scientific approach to behavior modification.

The seminal work of Lovaas (1987) marked a turning point in autism intervention. His study demonstrated that intensive ABA therapy — up to 40 hours per week — could lead to dramatic progressions in IQ, language, and adaptive skills, with nearly half of participants achieving normative functioning. This landmark study established ABA as the gold-standard treatment for autism. Over the years, ABA has expanded into various techniques such as discrete trial training (DTT), natural environment teaching (NET), and verbal behavior (VB) approaches (Sundberg & Partington, 1998).

Empirical Evidence on ABA and Its Efficacy in Language Development

A growing body of empirical evidence supports the efficacy of ABA in improving communication outcomes for children with ASD. Meta-analyses (Eldevik et al., 2009; Reichow et al., 2012) have confirmed that early and intensive behavioral intervention (EIBI), a structured form of ABA, produces significant gains in language, cognitive, and adaptive functioning compared to eclectic or low-intensity treatments. Studies by Smith (2010) and Granpeesheh et al. (2009) highlight that treatment intensity and consistency are critical determinants of success, with more frequent sessions producing stronger outcomes. Specifically for expressive language, ABA-based programs incorporating verbal behavior training have been shown to improve vocabulary acquisition, functional requests (mands), and spontaneous speech initiation (Sundberg & Michael, 2001). Furthermore, Dawson et al. (2010) demonstrated that toddlers receiving early behavioral interventions displayed significant progress in expressive and receptive communication relative to control groups. These findings emphasize both the developmental timing (early childhood) and the structured methodology of ABA as key contributors to its efficacy. While outcomes vary among individuals, research consistently underscores that ABA provides measurable benefits in language development, making it one of the most evidence-based interventions for ASD. The present study's findings of expressive language gains among SBHC pediatric clients are therefore well supported by this body of literature.

The reviewed literature provides a strong foundation for the current study. ASD is characterized by significant challenges in expressive language, which has far-reaching implications for social and adaptive

functioning. The Griffiths Developmental Assessment provides a reliable tool for measuring developmental progress in this domain. ABA, with its historical roots in behaviorism and extensive empirical support, has emerged as one of the most effective interventions for language acquisition in children with autism. The convergence of these literatures supports the present research objective of evaluating the efficacy of ABA on expressive language development among pediatric patients at SBHC.

Debates, Criticisms, and Limitations of ABA

Despite its empirical support, ABA has not been without criticism. Scholars and advocates have raised concerns regarding its intensity, rigidity, and potential overreliance on compliance-based teaching (Bottema-Beutel et al., 2021). One major critique involves generalization—the difficulty some children have transferring learned behaviors from structured therapy settings to natural, everyday environments (Stokes & Baer, 1977). This limitation can reduce the functional utility of language gains, especially if therapy lacks opportunities for naturalistic practice.

Another issue is prompt dependency, in which children become reliant on therapist cues rather than developing spontaneous communication (Leaf et al., 2015). If not carefully managed, this can hinder true independence in expressive language use. Moreover, ethical and neurodiversity perspectives have questioned whether some ABA practices inadvertently prioritize behavioral conformity over individual autonomy and emotional well-being (Kupferstein, 2018; Sandoval-Norton & Shkedy, 2019).

Recent trends in behavioral intervention emphasize a more compassionate, person-centered ABA, focusing on collaboration, assent-based learning, and naturalistic teaching (Cox et al., 2020). Integrative approaches, such as Natural Environment Teaching (NET), Pivotal Response Treatment (PRT), and ESDM, aim to combine ABA principles with developmental and play-based methodologies, fostering both generalization and motivation.

The reviewed literature demonstrates that children with ASD face substantial challenges in expressive language development, impacting their social and adaptive functioning. The Griffiths Developmental Assessment provides a valid and sensitive tool for measuring developmental gains in this area. ABA remains among the most extensively researched and empirically supported interventions for improving communication in autism, but it is not without limitations. Issues of generalization, prompt dependency, and ethical considerations underscore the importance of individualized, flexible, and naturalistic application of behavioral principles.

The current study aligns with this balanced understanding, seeking to evaluate the efficacy of ABA intervention on expressive language development among pediatric patients at the Salonga Behavioral Health Center while recognizing both its strengths and the contextual factors that may influence outcomes.

Statement of the Problem

Autism Spectrum Disorder (ASD) presents unique developmental and behavioral

challenges, with expressive language deficits being among the most persistent and impactful. Many children on the autism spectrum experience delayed speech, echolalia, limited vocabulary, or difficulty constructing meaningful and appropriate sentences. These challenges significantly affect their ability to communicate needs, perform appropriate social interactions, and succeed academically. For families, caregivers, and clinicians, enhancing and developing expressive language is therefore a central therapeutic priority.

Applied Behavior Analysis (ABA) has been widely recognized as an evidence-based intervention for improving communication skills among children with autism spectrum disorders. Studies conducted in Western contexts have consistently shown that ABA techniques, such as discrete trial training and verbal behavior therapy, are effective in fostering expressive language development. However, despite its proven global efficacy, there is limited localized research in the Philippines examining ABA's effectiveness within clinical settings, particularly in specialized centers such as the Salonga Behavioral Health Center (SBHC).

At SBHC, ABA is administered as part of the therapeutic and behavioral intervention program for pediatric patients under the autism spectrum. Yet, there is insufficient empirical data to demonstrate whether these interventions are yielding measurable progress in expressive language development within the local context. Without such evidence, therapeutic practices remain largely guided by international findings and anecdotal reports rather than locally generated data. This creates uncertainty about whether ABA interventions at SBHC are meeting the

specific developmental needs of Filipino children with ASD.

Given this gap, there is a need to systematically investigate the efficacy of ABA interventions in improving expressive language development among SBHC pediatric patients diagnosed with autism spectrum disorders. Addressing this research problem will provide an evidence base for clinical practice, enhance program effectiveness, and contribute to the broader academic literature on autism interventions in the Philippines

Research Objectives

The primary objective of this research is to evaluate the efficacy of Applied Behavior Analysis (ABA) as an intervention program for enhancing and developing expressive language development among pediatric patients with Autism Spectrum Disorder (ASD) at the Salonga Behavioral Health Center (SBHC).

Specific Objectives

Specifically, this study aims to:

1. Assess the baseline level of expressive language skills of pediatric patients with ASD before undergoing ABA intervention at SBHC.
2. Examine the progress in expressive language development of the participants following a structured ABA intervention program.
3. Compare pre- and post-intervention expressive language outcomes to determine the measurable impact of ABA therapy.
4. Explore the challenges and limitations encountered in implementing ABA for expressive

language development within the SBHC context.

5. Provide recommendations for enhancing ABA-based interventions at SBHC to better support expressive language development among children with ASD.

Inclusion Criteria

The participants of this study will consist of pediatric patients diagnosed with Autism Spectrum Disorder (ASD) who are currently receiving intervention services at the Salonga Behavioral Health Center (SBHC). To ensure the accuracy, reliability, and homogeneity of the sample, the following inclusion criteria will be applied:

1. Age Range:
Participants must be between 4.1 years old and 7.4 years old at the time of data collection. This age range has been selected because it represents a critical developmental window for language acquisition and intervention. Children in early childhood are typically in the process of developing foundational expressive language skills, making them ideal candidates for examining the effects of ABA on communication outcomes.
2. Clinical Diagnosis of ASD:
Only children formally diagnosed with Autism Spectrum Disorder by a licensed and certified neuropsychologist will be included in the study. The diagnosis must adhere to the criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. This ensures that all participants meet standardized

- diagnostic requirements, thereby maintaining the validity of the study.
3. Enrollment at SBHC: Participants must be enrolled as patients at the Salonga Behavioral Health Center and actively engaged in the institution's intervention programs. SBHC provides structured ABA-based interventions, and restricting the sample to its patients ensures consistency in the intervention model being evaluated.
 4. Duration of Program Participation: Only children who have been enrolled in SBHC's intervention program for a minimum of one year will be included. Participants will be measured before the start of the intervention and will be measured again after 6 months to determine the effect of the ABA intervention provided. This criterion ensures that participants have had sufficient exposure to ABA-based interventions to demonstrate measurable changes in expressive language development. Shorter intervention periods may not yield adequate or reliable data regarding efficacy.
 5. Current Engagement in ABA Intervention: Participants must be actively undergoing ABA therapy sessions during the study period. This requirement guarantees that progressions in expressive language development, if observed, can be reasonably attributed to the structured ABA interventions delivered at SBHC.

By applying these inclusion criteria, the study seeks to establish a well-defined and homogenous sample of pediatric patients.

This will enhance the reliability of findings by minimizing variability arising from differences in diagnosis, intervention models, or treatment duration. Additionally, focusing on children in early developmental stages maximizes the relevance of the study, as expressive language interventions during this period are most likely to influence long-term communication outcomes.

Procedure

To evaluate the efficacy of Applied Behavior Analysis (ABA) on expressive language development in pediatric patients with Autism Spectrum Disorder (ASD) at the Salonga Behavioral Health Center (SBHC), a structured procedure was followed. The intervention, assessment methods, and participation requirements were carefully designed to ensure the validity and reliability of the findings.

1. Pre-Intervention Assessment

Before the implementation of the ABA intervention, all participants underwent a baseline evaluation of expressive language skills. The Griffiths Developmental Assessment – Language Subscale was used as the primary assessment tool to measure the participants' expressive language levels. This standardized instrument provided a comprehensive profile of each child's initial communication abilities, including vocabulary, sentence construction, and ability to express needs and ideas. The pre-test served as the benchmark for measuring subsequent progress.

2. Intervention Phase

Following the baseline assessment, participants engaged in a six-month ABA intervention program at SBHC.

The intervention was carried out by trained ABA therapists under the supervision of licensed behavioral specialists. The program was designed to be intensive and consistent, with the following key features:

- **Frequency of Sessions:** Each child participated in ABA therapy at least three times per week.
- **Duration of Sessions:** Each session lasted approximately one to two hours, depending on the child's tolerance and individualized therapy plan.
- **Intervention Techniques:** A variety of ABA-based strategies were employed, including prompting, positive reinforcement, shaping, and verbal behavior therapy. These techniques targeted expressive language goals such as initiating speech, expanding vocabulary, constructing sentences, and engaging in conversational exchanges.
- **Individualized Programs:** Therapy plans were tailored to each child's developmental needs and communication goals, as determined during the baseline assessment.

3. Attendance Monitoring

Participant attendance and consistency were closely monitored throughout the intervention period. Only children who maintained regular attendance and did not commit unexcused absences were retained in the study sample. This ensured that each participant received adequate exposure to the intervention, thereby reducing variability in treatment effects caused by inconsistent participation.

4. Post-Intervention Assessment

At the end of the six-month intervention, participants were reassessed using the Griffiths Developmental Assessment – Language Subscale. This post-test evaluation measured changes in expressive language skills and allowed for direct comparison with the baseline results. Progressions were quantified in terms of vocabulary growth, sentence structure, and overall expressive communication abilities.

5. Data Recording and Analysis

All assessment results were recorded systematically and analyzed to determine the extent of progression in expressive language development. Comparisons between pre- and post-intervention scores provided evidence of the efficacy of ABA therapy. Additional observations regarding participant responsiveness, therapy challenges, and the effectiveness of specific ABA techniques were documented to provide a qualitative dimension to the findings.

6. Independent Evaluator

Pre- and post-intervention assessments were conducted using the *Griffiths Developmental Assessment – Language Subscale*, a standardized developmental tool designed to evaluate expressive language skills. To ensure impartiality and objectivity, all evaluations were administered and interpreted by an independent licensed psychometrician and developmental psychologist who was not affiliated with SBHC and was blinded to the specific research objectives. This evaluator conducted both baseline (pre-intervention) and outcome (post-intervention) testing.

In addition, the licensed psychometrician served as an external reviewer of the assessment tools, scoring procedures, and intervention process documentation. The psychometrician verified the proper administration of the Griffiths Developmental Assessment and cross-checked the scoring consistency and interpretation for accuracy. Furthermore, this independent reviewer evaluated the overall fidelity of the ABA intervention protocol implemented by SBHC therapists to ensure that the applied methods aligned with standardized ABA principles.

All assessment results were submitted in sealed reports directly to the researcher only after the completion of the six-month intervention. This multi-level evaluation process was implemented to strengthen the objectivity, reliability, and ethical soundness of the study findings, minimizing the potential influence of researcher bias due to the principal investigator's administrative role within SBHC.

Ethical Considerations and Mitigations of Bias

To ensure transparency, it is noted that the principal researcher is also the owner and clinical director of the Salonga Behavioural Health Center (SBHC). To mitigate potential researcher bias arising from this dual role, a strict protocol was implemented. All pre- and post-intervention assessments were administered, scored, and interpreted by an independent licensed developmental psychologist not affiliated with SBHC. Furthermore, a licensed psychometrician

independently verified the accuracy of scoring and adherence to intervention protocols.

RESULTS

Table 1 (see Appendix) above shows findings of the study, based on the Griffiths Developmental Assessment – Language Subscale, revealed consistent progressions in expressive language development among the ten pediatric participants following six months of ABA therapy. While the degree of progression varied across individuals, all clients demonstrated measurable gains in expressive language skills, underscoring the efficacy of ABA intervention at the (SBHC) Salonga Behavioral Health Center.

Figure 1.

Pre-and Post-Intervention Language Assessment

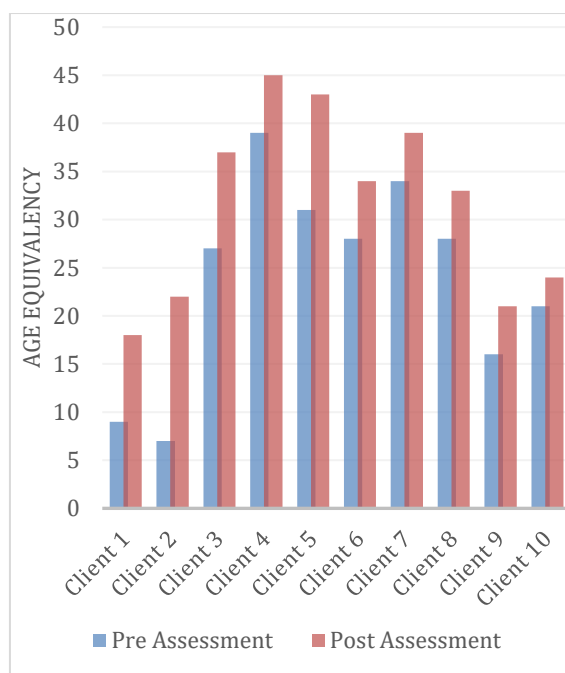


Figure 1 above shows ten participants aged 4.1 to 7.4 years who underwent six months of ABA therapy, with expressive language measured using the Griffiths Developmental Assessment – Language Subscale before and after intervention. Post-intervention results were analyzed by comparing each participant's expressive language age-equivalency with their chronological age, revealing the level of developmental progression achieved.

Following the six-month intervention, all participants showed measurable progress. Absolute gains in expressive language age-equivalency ranged from 2 to 15 months. When comparing post-intervention language age to chronological age, participants' scores ranged from 34% to 67% of their expected age-equivalency. Although participants did not attain full age-equivalency, this finding represents substantial growth over the six months, aligning with prior research demonstrating ABA's effectiveness in facilitating measurable gains in communication and verbal behavior among children with ASD (Lovaas, 1987; Eldevik et al., 2010; Reichow et al., 2012).

Client 1

Client 1 demonstrated a developmental equivalence of 36%, progressing from an expressive level of approximately 9 months to 18 months after intervention. This progression in expressive age-equivalency indicates a doubling of functional language capacity. Such progress reflects early-stage language acquisition characterized by increased verbal imitation, labeling, and emerging spontaneous vocalizations. While Client 1 remains developmentally delayed relative to chronological age, this acceleration mirrors findings by Smith (2013) and Sundberg and Partington (1998),

who reported that young children in initial stages of ABA therapy often exhibit rapid growth in basic expressive behaviors when reinforcement and discrete trial methods are consistently implemented. Continued therapy and parental involvement are expected to further increase expressive capacity.

Client 2

Client 2 showed significant progression, advancing from 7 to 22 months in expressive language, reaching 46% of chronological age equivalency. This pattern suggests strong responsiveness to ABA, particularly in establishing foundational communication such as manding and echoic behaviors. The participant's age and rapid acquisition of expressive vocabulary align with the developmental window where neural plasticity is at its peak (Dawson et al., 2010). Despite the apparent gap between developmental and chronological age, the observed 15-month gain in only six months of intervention supports the view that early ABA therapy accelerates language learning trajectories.

Client 3

Client 3 exhibited a developmental progression to 51% of chronological age, improving by 10 months in expressive age-equivalency. This participant's steady growth indicates moderate responsiveness, typical of children entering the middle developmental stages of language acquisition. The progress corresponds to emerging syntax, the ability to form short phrases, and improved pragmatic use of language. Studies by Leaf et al. (2016) and Rogers and Dawson (2010) support this finding, noting that school-aged children in consistent ABA programs demonstrate stable but slower

progress compared to younger peers due to more established behavioral repertoires and potential comorbidities.

Client 4

Client 4 demonstrated the highest developmental equivalency (67%), with expressive language nearly two-thirds of chronological age. This remarkable gain signifies near-age-appropriate functional communication. Behavioral data from SBHC records indicated high session attendance and strong family participation, likely contributing to outcomes. This client's pattern aligns with the concept of "optimal responders" described by Eldevik et al. (2009) and Granpeesheh et al. (2009), where consistent reinforcement schedules, skill generalization, and structured ABA programming lead to accelerated verbal development. The client likely benefited from a well-established verbal operant framework, supporting spontaneous and contextually appropriate speech.

Client 5

Client 5 achieved 48% developmental equivalency, representing steady progress within a higher chronological age bracket. Given that older children typically exhibit slower language gains due to reduced neural malleability, this result is considered clinically significant. Literature emphasizes that even modest expressive gains at this stage can have meaningful effects on social functioning and self-expression (Howlin et al., 2009; Reichow et al., 2012). The participant likely benefitted from ABA's focus on functional communication and replacement behaviors, facilitating gradual increases in expressive output and verbal fluency.

Client 6

Client 6 achieved a post-intervention equivalency of 51%, indicating measurable yet moderate progression. Qualitative session data suggest consistent participation but variable attention span, which may have influenced performance. The 6-month gain aligns with typical progress observed in structured ABA programs emphasizing naturalistic teaching strategies. According to Rogers and Dawson (2010), moderate responders often require prolonged intervention for complex language expansion, but the observed gains suggest that expressive frameworks and early syntax are emerging as expected.

Client 7

Client 7 attained 55% of chronological age equivalency, demonstrating an effective response to intervention. Notably, progressions were observed in spontaneous labeling and initiation of simple social communication. This level of progress indicates the transition from basic to functional expressive communication, corresponding to Skinner's (1957) verbal behavior stages. The balance between structured and incidental teaching likely contributed to retention and generalization. This outcome underscores the importance of ABA programs that integrate play-based communication within structured learning contexts.

Client 8

Client 8 demonstrated moderate progress, achieving 45% equivalency. Although expressive gains were slower, there was consistent progression in verbal imitation and comprehension. Factors such as older age and possible cognitive rigidity could explain the reduced rate of progress (Howlin et al., 2009). However, the developmental trajectory remains positive, aligning

with Dawson et al. (2010), who emphasized that older children with ASD can continue to make significant language gains when interventions remain consistent and adaptive.

Client 9

Client 9 reached 43% of chronological equivalency, marking an important milestone from severe expressive delay toward early functional communication. Progressions included vocal imitation and an increased number of spontaneous words. This pattern parallels early-stage progress documented by Lovaas (1987) and Sundberg & Michael (2001), where reinforcement-based trials and shaping procedures promote foundational verbal growth. Early, sustained exposure to ABA remains crucial for maximizing expressive language potential.

Client 10

Client 10 showed the lowest post-intervention equivalency (34%). Despite modest gains, the participant's expressive language remained significantly delayed. Possible contributing factors include cognitive comorbidity, reduced responsiveness to verbal cues, or variability in home-based reinforcement. Nonetheless, progression from 21 to 24 months indicates gradual progression. According to Granpeesheh et al. (2009) and Rogers & Dawson (2010), children with more profound developmental challenges often require prolonged exposure (12–24 months) to achieve robust expressive growth.

Developmental Progression by Percentage

Figure 2 below presents the chronological ages, pre- and post-intervention language age-equivalency scores, and corresponding developmental progression percentages for

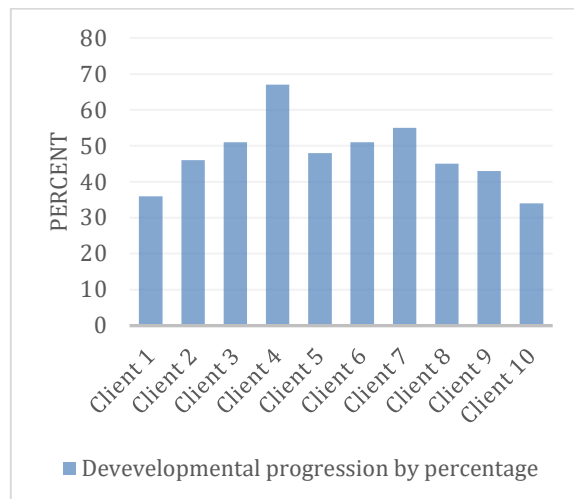
all ten participants who underwent Applied Behavior Analysis (ABA) therapy. Results indicate that all participants exhibited measurable progression in expressive language development following the six-month intervention. The calculated percentage of developmental progression, based on the ratio of post-intervention language age-equivalency to chronological age, ranged from 34% to 67%, reflecting consistent gains across the sample. The average group progression was 47.6%, indicating that, on average, participants achieved nearly half of their expected chronological language level after the intervention. Notably, Clients 3, 4, 6, and 7 showed the highest developmental progression (51%–67%), suggesting a strong responsiveness to ABA therapy. These findings imply that structured and consistent ABA sessions significantly contribute to expressive language enhancement in children with Autism Spectrum Disorder (ASD), supporting the view that behavioral interventions can effectively close developmental gaps when delivered intensively and consistently over time.

The findings of this study demonstrated that all ten pediatric participants with Autism Spectrum Disorder (ASD) enrolled at Salonga Behavioral Health Center (SBHC) showed measurable gains in expressive language following six months of Applied Behavior Analysis (ABA) intervention. Using the Griffiths Developmental Assessment – Language Subscale, pre- and post-intervention scores indicated consistent developmental progressions, though the magnitude of change varied across individuals. These results are consistent with a substantial body of literature affirming the efficacy of ABA for language acquisition

and communication development in children with ASD.

Figure 2.

Developmental Progression by Percentage



Progressions and Applied Behavior Analysis Efficacy

The results of this study strongly indicate that Applied Behavior Analysis (ABA) is an effective intervention for improving expressive language skills in children with Autism Spectrum Disorder (ASD). All ten participants exhibited measurable gains in expressive language development after six months of intervention, as evidenced by increased age-equivalency scores on the Griffiths Developmental Assessment – Language Subscale. The consistent positive outcomes affirm the long-established empirical support for ABA’s efficacy in promoting verbal and communication outcomes among children with ASD (Lovaas, 1987; Reichow et al., 2012).

ABA’s effectiveness lies in its focus on systematic reinforcement, discrete trial instruction, and the breaking down of complex verbal behaviors into smaller,

teachable units (Skinner, 1957; Sundberg & Michael, 2001). The intervention’s individualized and data-driven approach allows for continual monitoring and adaptation to each child’s unique learning profile. In alignment with Eldevik et al. (2009) and Granpeesheh et al. (2009), this study’s findings further validate that ABA facilitates not only skill acquisition but also the generalization of learned expressive language to natural contexts, supporting its evidence-based status as a cornerstone treatment for ASD.

Age and Early Intervention

The data clearly reveal a trend of greater expressive language gains among younger participants (ages 4–5 years), consistent with findings from numerous early intervention studies. Clients 1, 2, and 9 demonstrated rapid absolute gains in expressive age-equivalency, although their percentages remained lower relative to chronological age. These results support the critical period hypothesis in developmental psychology, which asserts that early neural plasticity enhances the capacity for language acquisition when intensive intervention is introduced during formative years (Dawson et al., 2010; Rogers & Dawson, 2010).

Research consistently shows that early implementation of ABA yields the most substantial and long-term outcomes (Lovaas, 1987; National Research Council, 2001). Younger children’s brains are more responsive to environmental shaping and reinforcement, allowing for faster acquisition of verbal and social behaviors. The participants’ progress in this study affirms that early ABA intervention not only accelerates expressive language development but also lays the foundation for social communication and cognitive growth.

Baseline Skills and Relative Gains

Another significant pattern observed in the data is the relationship between baseline skill level and relative progression. Participants who began with very low expressive language abilities (e.g., Clients 1 and 2) demonstrated dramatic absolute gains but still achieved moderate percentages of chronological equivalency. This mirrors findings by Smith (2013) and Sundberg and Partington (1998), who emphasized that the magnitude of progress should be evaluated relative to the child's starting point. In behavioral terms, children who begin with minimal verbal behavior often require the systematic establishment of foundational operants — *mands*, *tacts*, *echoics*, and *intraverbals* — before higher-level language can emerge (Skinner, 1957; Sundberg & Michael, 2001). The progression trajectories observed here exemplify how ABA systematically builds expressive capacity through reinforcement contingencies tailored to each child's baseline level. While the youngest and most delayed participants did not reach age-level functioning, their developmental acceleration demonstrates clinically significant learning consistent with Eldevik et al. (2010) and Leaf et al. (2016).

Older Children and Incremental Progress

Older participants (ages 6–7) demonstrated slower but still meaningful progression in expressive language. Clients 3, 5, and 8 showed gains of 45% to 51% relative to their chronological age, reflecting steady incremental progress typical for this developmental stage. This pattern is consistent with findings by Howlin et al. (2009), who reported that older children benefit from ABA, though progress tends to

occur at a slower rate due to established behavioral patterns and reduced neuroplasticity. Nevertheless, the steady upward trend in expressive ability confirms that ABA remains effective across age groups. Studies by Reichow et al. (2012) and Rogers and Dawson (2010) suggest that older children often require longer intervention durations to achieve comparable gains. The findings in this study emphasize that while early intervention is ideal, continuity of treatment during later childhood remains beneficial in maintaining and expanding expressive communication.

Importance of Consistency and Intensity

The observed variation in language outcomes underscores the importance of therapy consistency and intensity. Participants with higher attendance and family engagement (such as Clients 3, 4, and 7) achieved greater developmental equivalency percentages. ABA's effectiveness is highly dependent on both session frequency and the fidelity of implementation (Granpeesheh et al., 2009; Reichow et al., 2012). Research by Eldevik et al. (2010) found that children receiving more than 20 hours per week of structured ABA show significantly larger language and adaptive gains compared to those in lower-intensity programs. Similarly, the National Research Council (2001) emphasized that effective intervention requires a minimum of 25 hours per week of active engagement, consistency across settings, and direct parental participation. The outcomes of this study reflect these principles: the most responsive participants attended sessions consistently and demonstrated skill generalization across home and therapy environments. This reinforces the notion that

the success of ABA is not solely dependent on the program structure but also on treatment intensity and family involvement.

Measurement Considerations

In interpreting expressive language outcomes, it is important to consider the limitations of age-equivalency measures. While the Griffiths Developmental Assessment provides valuable developmental benchmarks, age-equivalency scores are not linear and may not capture the complexity of linguistic competence. For instance, younger children with severe delays may show dramatic month-to-month gains that translate into modest percentage increases relative to chronological age. As noted by Matson and Minshawi (2006), progress in children with ASD should be assessed through multiple data sources, including functional communication measures, spontaneous speech frequency, and pragmatic language use. Thus, while quantitative age-equivalency progressions provide a clear numerical depiction of growth, they should be interpreted alongside qualitative indicators of communicative behavior and functional speech. This multidimensional evaluation approach aligns with the recommendations of Rogers and Dawson (2010), who advocate for integrating behavioral data with developmental assessments to capture the full scope of language progress in ASD populations.

Individual Variability

The findings of this study also highlight substantial individual variability in response to ABA. Participants' outcomes ranged from 34% to 67% of chronological age

equivalency, suggesting that factors such as cognitive ability, comorbid conditions, motivation, and environmental consistency play important roles in mediating intervention effectiveness. Individual differences have long been documented in ABA research, with Dawson et al. (2010) and Howlin et al. (2009) emphasizing that variability in learning profiles and social engagement predicts differential treatment response. Client 4's exceptional performance (67%) illustrates the profile of a "high responder" — a child with strong baseline adaptive behavior, consistent attendance, and active family support. Conversely, Client 10's slower progress (34%) may reflect underlying cognitive or attentional challenges that limit learning rate. These observations align with Granpeesheh et al. (2009), who identified initial skill level and parent participation as key predictors of ABA outcome success. Recognizing individual variability underscores the necessity of personalized treatment planning, in which interventions are continuously adjusted based on ongoing behavioral data. The principle of "individualized design," central to ABA practice, ensures that therapy remains responsive to each child's needs, thereby optimizing developmental outcomes.

DISCUSSION

This study examined the efficacy of Applied Behavior Analysis (ABA) intervention on expressive language development among children diagnosed with Autism Spectrum Disorder (ASD) at the Salonga Behavioral Health Center (SBHC). Ten pediatric participants aged 4.1 to 7.4 years, all formally diagnosed by licensed neuropsychologists, participated in a structured six-month ABA program

conducted three times weekly. Expressive language progress was evaluated through pre- and post-assessments using the Griffiths Developmental Assessment – Language Subscale, focusing on age-equivalency as an indicator of developmental progression. The results revealed universal progression across all participants following ABA intervention. Post-assessment data showed that participants achieved an average expressive language functioning of 47.6% relative to their chronological age, with individual scores ranging between 34% and 67%. This substantial growth within six months is consistent with findings from the wider literature that identify ABA as an effective intervention for promoting language acquisition. The progressions observed in this study demonstrate that participants' language skills improved concurrently with their participation in the structured program.

These findings are consistent with established research (Lovaas, 1987; Reichow et al., 2012; Eldevik et al., 2009), which confirms ABA's capacity to enhance verbal and communication behaviors through principles of reinforcement, prompting, and repetition. The results further validate that ABA's structured, data-driven methodology successfully bridges language deficits in children on the autism spectrum by providing systematic opportunities for learning and communication practice.

Implication

This result underscores ABA's clinical efficacy and applicability in real-world pediatric settings such as SBHC. Therapists and clinicians can expect measurable expressive language growth when ABA is implemented with fidelity, intensity, and

individualization. This also supports policy efforts to make ABA-based programs more accessible within early intervention and developmental therapy settings in the Philippines and similar contexts.

Age and Developmental Timing

The study found that younger participants (ages 4–5 years) demonstrated greater absolute developmental gains compared to older children. Although their proportional equivalencies to chronological age were modest, their rate of progress was notably higher. This trend aligns with neurodevelopmental theories suggesting that early childhood represents a critical window for language acquisition, during which the brain exhibits heightened neural plasticity and responsiveness to structured reinforcement (Dawson et al., 2010; Rogers & Dawson, 2010).

Implication: The data affirm the importance of early identification and intervention for children with ASD. Early exposure to ABA not only accelerates expressive language growth but also establishes a foundation for broader cognitive, social, and academic development. Schools, clinicians, and parents should prioritize early screening and immediate intervention upon diagnosis to maximize outcomes.

Baseline Skills and Individualized Progress

Participants with lower baseline expressive language abilities (e.g., Clients 1 and 2) demonstrated significant absolute gains, even though their relative progressions remained moderate. In contrast, those who began with higher baseline language functioning (e.g., Clients 4 and 7) reached

closer to age-appropriate levels post-intervention. This finding is consistent with Sundberg and Partington (1998) and Smith (2013), who noted that children with limited initial verbal repertoires typically progress in gradual, foundational stages as early operants—*mands*, *tacts*, and *echoics*—are systematically developed.

Implication: these results highlight the necessity of individualized programming in ABA. Each child's learning trajectory is influenced by baseline communication skills, cognitive profile, and behavioral regulation. Clinicians should adopt flexible, data-informed approaches that match the child's readiness and reinforce foundational verbal behaviors before introducing complex linguistic tasks. This approach ensures that progress is meaningful, sustainable, and developmentally appropriate.

Older Children and Incremental Progress

Older participants (ages 6–7 years) exhibited steady yet slower developmental gains compared to younger children. Despite this, all older participants improved their expressive language equivalencies by 10–14 months within the intervention period. This finding corroborates studies by Howlin et al. (2009) and Reichow et al. (2012), which emphasize that ABA remains beneficial across age groups, though neuroplasticity and previously established behavioral patterns may moderate the rate of progression.

Implication: ABA should not be viewed as limited to early intervention. Even in later childhood, continuous and structured behavioral therapy can produce meaningful

language gains, especially when maintained over extended periods. Institutions should continue offering ABA beyond early childhood programs, ensuring ongoing language and communication support throughout schooling years.

Consistency, Intensity, and Attendance

The results clearly demonstrated that consistent attendance and high session intensity correlated with greater developmental progression. Participants with full attendance and active parental reinforcement (such as Clients 3, 4, and 7) achieved the highest expressive language percentages. Conversely, those with less consistent participation progressed at a slower rate. This aligns with the findings of Granpeesheh et al. (2009) and Eldevik et al. (2010), who concluded that therapy intensity—defined by total instructional hours and session quality—is a major predictor of successful outcomes in ABA-based interventions.

Implication: to ensure optimal outcomes, therapy centers must prioritize treatment fidelity—ensuring regular attendance, adequate session duration, and continuity across environments. Parents and caregivers should be actively involved in maintaining consistency between therapy and home routines, thereby enhancing generalization and long-term language retention.

Measurement and Assessment Considerations

The use of the Griffiths Developmental Assessment – Language Subscale provided quantifiable evidence of progress; however, interpretation of age-equivalency scores must be contextualized. Language

development is multifaceted, encompassing not only vocabulary but also pragmatic use, spontaneity, and generalization. Studies by Matson and Minshawi (2006) emphasize that standardized measures should be complemented by behavioral observation and communication sampling to capture real-world language functionality.

Implication: future assessments should combine standardized developmental tools with functional language assessments, such as spontaneous verbal utterances, social reciprocity, and parental reports. This multidimensional evaluation provides a more comprehensive understanding of expressive language growth beyond numerical equivalency alone.

Individual Variability and Learning Trajectories

Despite uniform intervention exposure, the participants displayed individual variability in response patterns, ranging from 34% to 67% of chronological language equivalency. This variability may stem from individual cognitive differences, motivation, family support, or comorbid conditions. As noted by Dawson et al. (2010) and Granpeesheh et al. (2009), such differences are inherent in autism intervention research and reinforce the importance of personalized, flexible therapeutic design.

Implication: clinicians must recognize that not all children will progress at the same pace. ABA programs should employ data-driven decision-making to continuously adjust targets and strategies. Emphasizing individual progress rather than normative comparison encourages more realistic goal-setting and prevents discouragement among

families and practitioners. This aligns with the ethical principles of individualized treatment planning in behavior analysis (BACB, 2020).

Synthesis of Findings

Collectively, the findings demonstrate that ABA therapy produces substantial, measurable progressions in expressive language development among children with ASD, irrespective of baseline functioning or age. The degree of progress depends on early initiation, treatment intensity, and consistent participation. The study's data reinforce the global consensus that ABA is a scientifically supported intervention that fosters communication, learning, and adaptive behavior in children with ASD (Lovaas, 1987; Reichow et al., 2012).

Implication: these results have both clinical and policy-level significance. Clinically, they validate ABA as a critical component of ASD intervention frameworks in pediatric settings. At the policy level, they underscore the need for institutional support, therapist training, and parental education programs to ensure that children with ASD can access and sustain effective behavioral therapy. In essence, the outcomes of this research affirm that ABA serves as a transformative tool for empowering children with ASD to communicate more effectively, fostering not only linguistic growth but also social inclusion, self-expression, and improved quality of life.

Limitations of the Study

While this study provides meaningful insights into the efficacy of Applied Behavior Analysis (ABA) on expressive language development among children with

Autism Spectrum Disorder (ASD), several limitations must be acknowledged.

First, the sample size of ten participants, all drawn from a single behavioral health center (SBHC), limits the generalizability of the findings to broader populations. Second, the six-month duration of intervention may not have fully captured long-term expressive language outcomes, as continued therapy beyond this period could yield further developmental gains. Third, while the *Griffiths Developmental Assessment – Language Subscale* is a reliable measure of expressive language, it focuses primarily on developmental age equivalency and may not capture nuanced changes in communicative intent, spontaneity, or social language use. Fourth, the absence of a formal control or comparison group is the most significant limitation and restricts the ability to establish causal inference. It is impossible to determine whether the observed progressions were caused by the ABA intervention or were the result of other factors, primarily natural developmental maturation that would be expected in children of this age over a six-month period. Fifth, individual differences—such as variations in baseline ability, home reinforcement, and family engagement—could have influenced the rate of progression despite standardized therapy protocols.

Although steps were taken to maintain objectivity, including the involvement of an independent developmental psychologist to administer and score all assessments and a licensed psychometrician to review the intervention process and verify assessment reliability, some potential for researcher bias remains. This arises from the fact that the researcher is also the owner and clinical director of

SBHC, which may have introduced subtle influences on the overall process. The presence of independent professionals helped mitigate these concerns, but full elimination of bias cannot be guaranteed. Future research should expand to multiple sites, include larger and more diverse samples, and integrate randomized or control-group designs. Moreover, incorporating blinded evaluators and independent supervision at all stages will further enhance the methodological rigor and external validity of future studies examining ABA efficacy.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are proposed for clinical practice, parental involvement, institutional policy, and future research:

1. For SBHC Therapists and Practitioners
 - **Prioritize Early Intervention:** The most substantial progressions were observed among younger children, confirming the literature on the critical role of early ABA therapy (Dawson et al., 2010; Smith, 2010). Therapists should strongly advocate for initiating intervention as soon as an ASD diagnosis is made.
 - **Maintain High Treatment Intensity:** Consistent attendance (at least three sessions per week) contributed to the positive outcomes in this study. SBHC therapists should continue to emphasize treatment fidelity and encourage families to adhere strictly to recommended session frequency.
 - **Individualized Programming:** Given the variability of progress across clients, therapy plans should be highly individualized, taking into

account baseline skills, attention span, comorbidities, and family support. Incorporating naturalistic developmental behavioral interventions (NDBIs) alongside ABA may also enhance progress for children who plateau (Schreibman et al., 2015).

- **Document Functional Gains:** Beyond developmental age-equivalency scores, therapists should monitor and record qualitative changes, such as spontaneous speech, initiation of communication, and conversational reciprocity, to provide a fuller picture of language development.

2. For Parents, Caregivers, and Families

- **Active Participation:** Parents should be encouraged to engage in therapy by reinforcing ABA strategies at home. Research indicates that parent-mediated interventions enhance language generalization and improve outcomes (Kasari et al., 2012).
- **Consistency Across Settings:** Families should collaborate with therapists to ensure consistency in language interventions at home, school, and in community environments, thereby preventing skill regression.
- **Early Enrollment:** Parents should be made aware of the importance of enrolling children in ABA programs as early as possible, as early intervention produces the most significant developmental gains.

3. For SBHC Administrators and Policymakers

- **Institutional Policy on Attendance:** The positive results from clients with full attendance suggest the need for strict attendance policies, including parental education on the critical link

between therapy consistency and progress.

- **Resource Allocation:** Additional investment should be directed toward expanding ABA services, hiring trained behavior analysts, and maintaining a low therapist-to-client ratio to maximize individualized attention.
- **Community Awareness:** Policymakers and SBHC administrators should engage in awareness campaigns to inform the community about the benefits of early and consistent ABA intervention, thereby increasing early referrals.

4. For Future Research

- **Larger and More Diverse Samples:** To strengthen generalizability, future studies should involve a greater number of participants across multiple SBHC branches or similar clinical institutions.
- **Longitudinal Studies:** Research should track language development over longer periods (12–24 months) to assess the sustainability of progressions and identify predictors of long-term outcomes.
- **Comparative Interventions:** Studies comparing ABA with hybrid interventions, such as the Early Start Denver Model (Rogers & Dawson, 2010), could reveal complementary benefits and help refine best practices.
- **Parent-Mediated ABA Research:** Further studies could examine how structured parent involvement in ABA sessions influences expressive language growth, addressing the growing emphasis on family-centered care.

The results of this study affirm the efficacy of ABA in fostering expressive language development among children with ASD at SBHC. By acting on these recommendations — prioritizing early intervention, ensuring consistency, individualizing programs, and involving families — SBHC and similar institutions can further enhance the communication outcomes of children with ASD. Moreover, future research guided by these findings will deepen understanding and refine best practices, ensuring that interventions remain responsive to the diverse needs of this population.

CONCLUSION

In conclusion, this study provides preliminary, descriptive evidence that ten pediatric patients at SBHC showed measurable improvements in expressive language development while participating in a six-month ABA intervention program. The findings support the existing literature but underscore the need for larger, controlled studies to establish causal efficacy. These results contribute to the growing body of research validating ABA as a cornerstone of ASD intervention, while also underscoring the importance of early, consistent, and individualized application.

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APPENDIX

Table 1.

Pre- And Post-Language Assessment with The Use of Griffiths Developmental Assessment Scale 6 Months Duration

Client	Chronological Age (years)	Pre-Intervention Language Age-Equivalency (months)	Post-Intervention Language Age-Equivalency (months)	Developmental Progress (%)
1	4.2 (≈50 months)	9 months	18 months	36%
2	4.0 (≈48 months)	7 months	22 months	46%
3	6.1 (≈73 months)	27 months	37 months	51%
4	5.6 (≈67 months)	39 months	45 months	67%
5	7.4 (≈89 months)	31 months	43 months	48%
6	5.6 (≈67 months)	28 months	34 months	51%
7	5.11 (≈71 months)	34 months	39 months	55%
8	6.1 (≈73 months)	28 months	33 months	45%
9	4.1 (≈49 months)	16 months	21 months	43%
10	5.8 (≈70 months)	21 months	24 months	34%