

Experience with Applied Behavior Analysis for children with autism in Ghana

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Experience with Applied Behavior Analysis for Children with Autism in Ghana

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Abstract

Prevalence rates for autism have been rising across the globe. The rise in autism diagnoses has also increased the need for evidence-based and effective interventions. Behavioral interventions based on applied behavior analysis (ABA) are an effective, evidence-based intervention for individuals with autism. For maximized benefit, ABA interventions have to be accepted by caregivers of children with autism and implemented by trained practitioners. As such, many studies have investigated caregiver and practitioner perspectives regarding ABA interventions. However, there are very few similar studies conducted in Sub-Saharan African countries, such as Ghana. Given Ghana's unique cultural context, where traditional beliefs often attribute autism to spiritual causes, understanding the perceptions of caregivers and practitioners toward ABA interventions is critical for the implementation of ABA interventions. The current qualitative study interviewed six caregivers and 13 practitioners to understand their perspectives on ABA interventions in Ghana, using a phenomenological approach. Results indicated that both caregivers and practitioners trusted ABA interventions to be effective, but both parties also

acknowledged challenges related to the high cost. The findings highlight the need for a support system to alleviate caregiver financial burden, empower practitioners, and address barriers to the widespread dissemination of ABA in Ghana.

Key words

Applied Behavior Analysis, Autism, Caregivers, Practitioners, Ghana

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Experience with Applied Behavior Analysis for Children with Autism in Ghana

Recent global discourse indicates a rise in the prevalence rate of autism (Bougeard et al., 2021). The rise in autism also increases caregivers' need to identify appropriate interventions for their children with autism and practitioners' need to provide effective evidence-based practices for their students with autism. Interventions based on applied behavior analysis (ABA) have been found to be an effective intervention for individuals with autism (Hume et al., 2021; Keenan et al., 2015; Reichow, 2012; Smith, 1999; Yu et al., 2020).

However, many studies have also discussed the importance of acceptance of ABA interventions by caregivers of children with autism (Burkett et al., 2020; McPhilemy & Dillenburger; Rotheram-Fuller et al., 2022; Schauder et al., 2025) and the importance of implementation quality by practitioners (Silbaugh & El Fattal, 2022; Zayac et al., 2023) to ensure ABA interventions garner maximum benefits for individuals with autism. Caregivers of children with autism play a key role in implementing ABA interventions due to their direct responsibility for children's daily care, behavior management, and educational development (Becraft et al., 2024; Musetti et al., 2021; Pan et al., 2024). Fidelity of implementation is important because it ensures practitioners adhere to the intervention protocol and deliver the intervention as designed (Akiba et al., 2022). Interventions are effective when implemented with high fidelity and ensure the sustainability of evidence-based interventions (Akiba et al., 2022).

Previous studies that explored caregivers' experiences with ABA interventions commonly shared results regarding challenges caregivers experienced in accessing ABA interventions for their children, such as impact on family well-being (Parker & Childs, 2019; Schwichtenberg & Poehlmann, 2007), barriers to access (Littman et al., 2023; Rosales et al., 2021), and financial burden (Littman et al., 2023; Pan et al., 2024; Parker & Childs, 2019; Rosales et al., 2023).

Studies have also explored the experiences of practitioners providing ABA interventions. For example, Plantiveau et al. (2018) found that two out of every three behavior analysts experienced moderate to high burnout levels and little or no job satisfaction. Similarly, Griffith et al. (2014) found that approximately 42% of ABA therapists felt a lack of personal accomplishment in their work, and 13% reported significant emotional exhaustion. Conversely, Gibson et al. (2009) found low levels of burnout among ABA therapists who received high supervisor support.

Although there is evidence supporting the effectiveness of ABA interventions for individuals with autism, there is an apparent lack of literature about how ABA interventions are received and implemented in Sub-Saharan African (SSA) countries. Similarly, there are very few studies that investigated the experiences of caregivers of children with autism receiving ABA interventions and practitioners implementing ABA interventions in SSA countries. One reason for the lack of literature could be that ABA intervention is relatively new in SSA countries compared to Western countries such as the United States. Autism is diagnosed based on direct and indirect behavioral observation (Al-Hendawi et al., 2025; Carr, 2021; Fombonne, 2023). Learning goals and interventions are decided based on these behavioral observations (Cooper et al., 2020).

In addition, ABA is a science of behavior analysis where practitioners identify functional relationships between behaviors and environmental variables that influence these behaviors and design interventions based on these relationships to produce behaviors of social significance (Cooper et al., 2020). The behavioral emphasis of ABA makes it well-suited for autism intervention because it relies on objective observation and measurement of behavior, uses positive reinforcement strategies, and bases intervention decisions on systematic data analysis rather than subjective judgments (Cooper et al., 2020). Human behavior is highly impacted by

environment, society, and culture (Chwialkowska et al., 2020; Burakgazi, 2025). To establish acceptance of ABA intervention in countries where it is relatively new (i.e., SSA countries), it is necessary to investigate ABA intervention across multiple cultural settings (Bailey et al., 1998; Čolić et al., 2022; Jimenez-Gomez & Beaulieu, 2022).

In Ghana, autism awareness and recognition have historically been limited, with the first diagnostic services only becoming available in the early 2000s (Anthony, 2018; Orfson-Offei, 2021). Many Ghanaians view disability through a cultural lens, with explanations ranging from maternal negligence to supernatural factors (Acheampong, 2024; Kpobi & Swartz, 2019). Stakeholders emphasize the need for community education to dispel myths and promote autism acceptance (Akrofi et al., 2023). While Ghana has made progress with the establishment of a few special schools in urban areas, the vast majority of Ghanaian children with autism, particularly those in rural areas, remain undiagnosed and without access to appropriate services (Senoo et al., 2024).

The introduction of ABA interventions in Ghana has been relatively recent, with most ABA services emerging within the last decade through the efforts of non-governmental organizations (Ahorsu-Walker et al., 2025; Knochel et al., 2021). However, the shortage of trained ABA practitioners nationwide remains a critical challenge. Ghana faces a significant gap in service provision, with fewer than 10 certified international behavior analysts serving in the country, and those few practitioners are concentrated in the capital city, making ABA service inaccessible for parents in rural Ghana.

Similar to the overall lack of literature regarding individuals with autism and ABA interventions in SSA countries, ABA intervention in the Ghanaian context remains understudied. Given Ghana's unique cultural context, where traditional beliefs often attribute autism to spiritual

causes, understanding the perceptions of caregivers and practitioners toward ABA-based interventions is particularly critical. The severe shortage of trained ABA professionals throughout Ghana, coupled with limited awareness and accessibility issues, creates significant barriers that differ markedly from Western contexts where most autism research has been conducted. Additionally, with fewer than 10 certified behavior analysts serving the entire country, most concentrated in urban centers, investigating how Ghanaian caregivers and practitioners perceive and implement ABA principles is key to developing culturally responsive, sustainable interventions. Therefore, this study investigated how caregivers and practitioners in Ghana experience ABA interventions for children with autism.

Method

Design

To investigate caregivers' experiences with ABA interventions in Ghana, we used a phenomenological qualitative design, conducting interviews with participants. Phenomenology focuses on understanding a specific concept, idea, or experience to understand commonalities within that experience (Creswell & Poth, 2018). The phenomenological design was chosen because we were interested in caregivers' lived experiences of ABA intervention.

Setting

The study was conducted in two schools in Ghana that offered ABA intervention to children with autism. School M was located in the Central region, and School N was located in the Greater Accra region. School M and School N were selected because they were the only two schools that had certified Behavior Analysts in Ghana at the time of the data collection.

Participants

The current study recruited caregivers of children with autism who received ABA interventions for at least 25 hours a week in Ghana for more than a year, and behavior therapists who provided direct ABA interventions to the children, and behavior analysts who provided supervision to the therapists. (The therapists and analysts are henceforth referred to as practitioners. The first author recruited the participants through purposive sampling (see Etikan et al., 2016) from School M and School N. Six caregivers and 13 practitioners participated in the current study. Caregiver participants were predominantly male (67%) and had a mean age of 48.83 years, ranging from basic education to a PhD level.

The caregivers' children with autism were mostly males (90%) with a mean age of 10.67 years and had received ABA interventions for 3–4 years (83%). Practitioner participants were primarily female (69%) with a mean age of 29.15 years and mostly held bachelor's degrees (77%). The majority of practitioner participants (11) worked as behavior therapists (85%) and had 3–4 years of experience implementing ABA interventions (69%), and 2 (15%) of the practitioners were behavior analysts with more than 4 years of experience. The current study was authorized by the Ethical Review Board of the College of Education Studies, University of Cape Coast, and all ethical regulations were duly followed. The first author obtained informed consent from the participants prior to the study. The first author clearly informed participants that they could withdraw from the study at any stage without consequences. Table 1 provides a demographic overview of the participants.

Table 1

Demographic overview of participants

	Practitioners	Caregivers	Children	Percentage
Sex				
Male	4	4	5	52.00

Female	9	2	1	48.00
Age				
25-30	10	0		52.60
31- 35	2	0		10.50
36-40	1	1		10.50
41-45	0	1		5.30
46-50	0	1		5.30
51-55	0	2		10.50
56-60	0	1		5.30
Age of child with autism		Number		Percentage
	7		1	16.67
	9		2	33.33
	10		1	16.67
	12		1	16.67
	17		1	16.66
Years the child received ABA intervention		Number		Percentage
	1-2 years		0	0
	2-3 years		1	16.66
	3-4 years		5	83.34
Educational Level		Practitioners		Caregivers
Percentage				
	Elementary	0	1	5.26
	High school	0	0	0
	College	10	2	63.17
	Master's	3	2	26.31
	PhD	0	1	5.26
ABA certification of Practitioners				
	Behavior therapists	11		84.62
	Behavior analysts	2		15.38
Number of years practitioners have worked in ABA settings				
	1-2 years	0		0
	2-3 years	4		30.77
	3-4 years	9		69.23

Procedure

Recruitment

The first author emailed the school administrators at School M and School N with the study's scope, objectives, and inclusion criteria. The school administrators dispersed the study information to the caregivers of children with autism in their respective schools.



Data collection

After the first author received informed consent from the participant, the first author scheduled individual interviews with the six caregivers and 13 practitioners. The interviews took place at School M and School N in a quiet staff meeting room and at caregivers' homes. The first author interviewed the participants in English and three Ghanaian languages (i.e., Twi, Ewe, and Ga). All authors, except the third author, are Ghanaians and fluent in English and local Ghanaian languages. All practitioners were fluent in English, a requirement for employment at their schools. The authors' positionality statements are provided in Appendix A. Each interview took 40 to 60 minutes. The interview guide is provided in Appendix B. The first author audio-recorded all interviews with participant consent. During the interview, the first author also took paper field notes to capture salient information that may not be fully captured by the audio recording alone. The data collection period lasted approximately three weeks.

Transcription and translation

The fourth author transcribed all interviews from the audio recordings. Interviews that were conducted with Twi, Ewe, and Ga were transcribed and translated into English. Independent reviewers from the English Department at the University of Cape Coast, who were fluent in Twi, Ewe, and Ga, checked the translations from Twi, Ewe, and Ga to English for accuracy. The first and fifth authors reviewed the final transcripts to ensure they accurately represented participants' statements during the interviews.

Data Analysis

The first author imported de-identified transcriptions from the interviews to NVivo 14 Plus (QSR International Pty Ltd., 2023) for data analysis. The first author followed the steps of

thematic analysis outlined by Braun and Clarke (2019). The thematic analysis process involved familiarization with the data, generation of initial codes, identification of themes, assessment of themes, theme definition and labelling, and preparation of the aggregated report. Specifically, the first, fourth, and fifth authors spent time routinely reading and rereading the interview transcripts line by line to familiarize themselves with the data for comprehension and analysis. In addition to the repeated reading of the transcriptions, the first, fourth, and fifth authors also repeatedly listened to the audio recordings while reviewing field notes to increase familiarity with the data. Finally, the first author categorized the codes into themes using both inductive and deductive approaches using NVivo 14 Plus. The fourth and fifth authors independently coded the transcripts into themes, providing triangulation with the first author's codes. Finally, the first, fourth, and fifth authors met to discuss discrepancies and refine the codes and final themes.

Results

A summary of the major themes, subthemes, and codes generated from the participants' responses is presented in Table 2.

Table 2

Summary of coding schemes

Major themes	Subthemes	Codes
Caregivers' experiences with ABA intervention	Positive impact on family-stress	Reduced worry and family burden, hope for the future, improved child independence, relief from initial diagnosis stress.
	Mixed impact on caregiver responsibility	Increased child independence reduces workload, home intervention implementation increases responsibility, balancing work and home intervention is challenging
	Negative impact on family finances	High cost of ABA services, cost of materials and resources, school-based financial support available for some, call for



		government support and insurance coverage, financial challenges affect intervention consistency
Practitioners' experiences with ABA intervention	Practitioner skills	Improved classroom management skills, behavioral management skills, evidence-based intervention planning, increased self-efficacy
	Challenges in providing ABA interventions	Time-consuming preparation and implementation, delayed results require patience, physical demands create stress and burnout, low caregiver involvement in home implementation, and high financial costs of individualized support.
	Cultural resistance	Low awareness of ABA in Ghana, need for culturally sensitive interventions, replacing technical terms with everyday language, incorporating cultural backgrounds in interventions, and community education to increase acceptance

Caregivers’ experience with ABA intervention

We first analyzed Ghanaian caregivers' lived experiences regarding ABA intervention. The following themes emerged from the interviews with six caregiver participants: the positive impact of ABA interventions on family stress, a mixed impact on caregiver responsibilities, and a negative impact on family finances.

Positive impact on family stress

All caregiver participants agreed that the ABA interventions their child received had a positive impact on the family’s stress. Caregivers reported experiencing significant stress and worry when their children were initially diagnosed with autism. They described how attending school and receiving ABA interventions brought relief and hope. For instance, one caregiver



shared how the interventions improved their child's ability to perform self-help tasks such as dressing and eating independently, reducing their reliance on others for daily activities. Another caregiver noted that the progress they have seen in their child's communication and social interactions led to a noticeable decrease in family stress and an optimistic outlook for the future.

...when my son was diagnosed with ASD, it brought much burden and thinking to the family. My wife and I were worried because we were moving from hospital to hospital, trying all sorts of treatments to get our son well. That was stressful, but when he started attending school M a year later, we began to see results, which relieved me. I worry no more because I see hope coming out for my son with the ABA he is receiving (Caregiver 3)

Another caregiver stated that ABA interventions helped their child to be independent.

Moreover, the caregiver feels less stress and worries less about their child's future.

...I used to worry a lot about my son. Especially when I lost my wife. I worry a lot because I do not know how to care for him. My work schedule does not give me time to stay home. It was challenging for his siblings and me until someone told me about school. When he began receiving ABA intervention, he could perform many tasks independently through the self-help skills he was taught. Now I worry no more (Caregiver 2).

Mixed impact on caregiver responsibility

Although all caregivers agreed about the positive effects of ABA interventions on family stress, there were mixed opinions on the perceived impact of ABA interventions on caregiver responsibility. Some caregivers stated that ABA intervention had increased their children's independence, decreasing the time a caregiver needs to spend supporting their child with autism.

...My child can bathe, use the washroom, wear his shirt, brush his teeth, and even prepare tea. So, the things I have to do for him have reduced, and the time I spend on him has also reduced. Some years ago, things were not like this (Caregiver 5).

Conversely, other caregivers stated that ABA interventions increase caregivers' responsibilities because they need to ensure the interventions are implemented in their homes

(i.e., in-home interventions). Caregivers mentioned difficulty balancing tight work schedules with implementing intervention at home.

...They have taught us some stuff to teach the children at home; my work schedule is also very tight, so sometimes I cannot carry them out. It is very stressful to balance work and home intervention (Caregiver 6).

Negative impact on family finances

All caregivers shared that ABA interventions were a financial burden on their families. A caregiver explained that ABA intervention is costly and requires financial resources to support its implementation at school and home. At school, expenses include school fees and the cost of materials such as augmentative and alternative communication (AAC) devices, laminated picture cards for picture exchange systems, and sensory toys. At home, costs include in-home therapy and materials such as choice boards, visual aids, timers, beads, sensory items, logos, and flashcards. Some caregivers stated that those who could not afford the full cost of what was required of them chose to opt out of certain aspects of the interventions, such as home training, even though they knew this would ultimately limit the interventions' effectiveness for their child.

The ABA fees are high. I understand it is high because my child goes for one-on-one therapy at his school, and during holidays, the therapists come to our home. In addition to the high fees, I also pay for transport for the therapist's home therapy sessions. I buy materials such as communication devices, choice boards, visual aids and sensory items. I can afford them, but I know some parents cannot. Due to a lack of resources, some parents may skip daily skills they cannot afford. Meanwhile, consistency helps with improvements (Caregiver 4).

However, a few caregivers reported that their children received financial support for ABA interventions from the school they attended.

... if you analyze how things are done there, you realize you are not paying much. One teacher for one child, and the materials they use make the service very expensive. ABA services are more than what they offer in our regular and special schools in Ghana. Although the service is very expensive, there is no pressure on my finances because the school offers us free service. Otherwise, I would have paid a lot for the service (Caregiver

2).

Caregivers expressed the need for financial support in receiving ABA interventions from the government.

...I am paying a lot because ABA services are very expensive, and I wish the government could include ABA services in health insurance coverage (Caregiver 1).

Practitioners' experiences with ABA interventions

After we analyzed the experiences of caregivers regarding ABA intervention, we analyzed the experiences of the practitioners who provided ABA interventions to the children of the caregiver participants. The following themes emerged from the interviews with 13 practitioners: practitioner skills, challenges in providing ABA interventions, and cultural resistance.

Practitioner skills

Practitioners overwhelmingly expressed positive attitudes toward the effectiveness of ABA interventions and toward how learning to provide ABA interventions has increased their self-efficacy as providers of special education for children with autism.

Practitioners mentioned that learning about ABA equipped them with the skills for classroom management and for individualized behavioral interventions. For example, some practitioners stated that they were able to address challenging behaviors such as aggression and self-injurious behaviors.

...When I worked as a special education teacher, managing children with autism was a very challenging task for me. However, now I can say ABA has equipped me with the knowledge and skills to know what immediate action to take when a child engages in challenging behavior, and I can do that with ease. Achieving results with ABA makes me happy and motivates me to work more. (Practitioner 10)



Practitioners also stated that learning about ABA interventions enabled them to develop systematic, evidence-based behavior intervention plans for their students.

.... Through ABA, I have learned to set specific objectives and develop behavior guidelines. Following these guidelines helps us manage our kids' challenging behaviors (Practitioner 12).

Challenges in providing ABA interventions

Although practitioners agreed on the effectiveness of ABA interventions, they also identified many challenges in implementing them. Practitioners stated that whilst ABA interventions were effective for their students with autism, they agreed that the preparation of the intervention was time-consuming.

...Another challenge is time. ABA needs a lot of time and patience to see results, which could be very frustrating at times, but I realized that with ABA, you need patience to see results. (Practitioner 10)

In addition, the practitioners added that although they had seen many positive effects, when practitioners first started using ABA interventions, they did not see results after several months. The practitioners admitted that they blamed themselves for not implementing the interventions well and that it was ‘frustrating’.

...So, just as growth takes time, so does ABA; we are not magicians to make it happen abruptly. So, it takes time to see results with ABA for special needs. For example, training daily living skills like brushing and toileting can take a month or more to see results; though it takes time, it is worth the wait. Yeah! (Practitioner 11)

Because of the additional work required to ensure consistent implementation over a long period to reach learning goals through ABA intervention, practitioners identified this additional work and dedication as a challenge in implementing ABA interventions. According to practitioners, the physical demands and long work hours caused stress and burnout, making the role of an ABA practitioner a high-stress job.

I would say ABA is a high-stress job. The physical demand of the work is high. You

have to work with high intensity to make the therapy fun for your child (Practitioner 2)

Practitioners also mentioned that providing solutions for and preventing student behaviors such as aggression and self-injury day in and day out was another cause of stress that could sometimes result in burnout. According to the practitioners, high-stress situations, such as de-escalating a student's self-injurious behavior, would also affect them even after the workday and negatively impact their personal lives.

... Sometimes when a child engages in challenging behavior, say, aggression or tantrums with high intensity and long duration, I feel like I am not progressing. Managing challenging behavior in itself is very tiring and stressful. You go home, and you are all worn out (Practitioner 9).

... When a client engages in property destruction or challenging behaviors, their physical weight alone can make the work even more challenging. On some occasions, you return home tired and could hardly do anything else (Practitioner 7).

Practitioners also noted low caregiver involvement as a challenge in implementing effective ABA interventions. The challenge in caregiver participation was also revealed as a challenge for our caregiver participants. Whereas the caregivers stated that this was a cost and resource issue, the practitioners had a slightly different perspective on home implementation of ABA interventions. Although the continuation of intervention between the school and home is very important and directly affects optimal outcomes for ABA interventions, practitioners stated that caregivers did not implement the home interventions that practitioners had taken the time to train them on. The practitioners added that this disconnect between the school and the home was worse during breaks because students would return to school, and the practitioners would have to restart the intervention.

... I have realized that whenever my case child returns from vacation, he forgets some skills. Later, I was told that some parents do not continue the home intervention during school vacations. This is quite disturbing because ABA cannot work effectively when

home intervention is not effective; in ABA, we train the children so that they generalize it in their home environment. For example, when we do toilet training, brush teeth, or eat, we train parents how to do it, so we expect them to carry it out at home (Practitioner 6).

Similar to the caregivers, the practitioners also discussed financial barriers as a challenge to ABA interventions. Practitioners agreed with caregivers that ABA demanded many resources, making the intervention very expensive.

.....The major challenge has been financing. You know ABA is quite expensive, but our school provides its services free of charge, so it relies on donors to raise funds to pay its staff and manage the facility. It is quite difficult and financially very expensive to run ABA programs (Practitioner 10).

Specifically, some practitioners pointed out that the cost of ABA interventions were related to the nature of individualized support.

...You know ABA is individualized; we need more trained staff and resources to run ABA Programs; take a look at the facility we have here; you will understand that this is capital-intensive. Special education is expensive, but ABA is more expensive; not many parents in Ghana can afford ABA. Many parents want to bring their kids to school, but our facility is at capacity. We need more funds to expand our services (Practitioner 11).

Cultural resistance

Practitioners shared that awareness of ABA interventions and their effectiveness for individuals with autism was generally low in Ghana, both for caregivers and the general public.

Practitioners added that the lack of awareness is consistent with Ghanaian culture, where something 'new', such as ABA interventions, is scrutinized and slow to be accepted.

Practitioners mentioned that showing positive effects would be the most effective way to promote evidence-based practices, such as ABA interventions for individuals with autism, and that when the general public sees the results, they will accept ABA interventions. However, the long lag to effectiveness was a challenge in ABA interventions, as mentioned in an earlier theme by practitioners.

...When it comes to acceptance, people do not know about ABA; they think that once a child has Autism, there is no treatment. So, we had to spend a lot of time educating people about ASD and ABA intervention through community outreach programs. When people who brought their children to our school started seeing results, their neighbors started asking questions and believing in ABA (Practitioner 9).

The practitioners also emphasized the importance of culturally sensitive ABA interventions to overcome cultural resistance. Some practitioners mentioned that they make sure to replace technical terms with everyday language.

As a behavior therapist working with Ghanaian families, I aim to make ABA therapy and service delivery culturally relevant and accessible. When commuting with parents, I avoid technical jargon like 'verbal operant,' 'manding,' 'tact,' or 'intraverbal.' Instead, I use common, relatable terms. For instance, I replace 'verbal operant' with 'ways of communicating,' 'manding' with 'asking for things,' 'tact' with 'naming or labeling things,' and 'intraverbal' with 'talking back and forth.' Similarly, I refer to 'echoic' as 'repeating words or sounds,' 'prompting' as 'helping out' or 'giving hints,' 'generalization' as 'using skills everywhere,' and 'shaping' as 'step-by-step learning' (Practitioner 7).

In addition to replacing jargon with lay people's terms, practitioners also emphasized the importance of incorporating the cultural backgrounds of their students. Practitioners agreed that these changes to enhance the cultural relevance of ABA interventions help caregivers feel more engaged and confident in supporting their child's development.

...I think people have not understood the ABA therapy well enough yet. They see it as a foreign thing. However, we have tried to break it down to fit our cultural setting, making it culturally relevant. When running our programs, we use a language the child understands best, such as their local language (Practitioners 5).

Discussion

The current study's objective was to investigate caregivers' and practitioners' experiences with ABA interventions through individual interviews and qualitative analysis. The results of this preliminary study can inform policies and practices for the broader dissemination of ABA interventions in Ghana, drawing on the lived experiences of caregivers of children with autism who receive ABA interventions and practitioners who provide them.

Implications for both caregivers and practitioners

Both caregivers and practitioners mentioned the effectiveness of ABA interventions for students with autism. Caregivers stated that positive developments in their children with autism, such as gaining independence in daily tasks like dressing and eating, significantly reduced family stress and provided hope for their children's future, reinforcing their belief in the effectiveness of ABA interventions. A noteworthy by-product of the developmental growth in children with autism was the reduction of stress in the families of the children with autism. As their child with autism learned new skills, increased independence, and showed autonomy, the amount of time and effort the caregivers spent solely on supporting their child with autism was reduced. This finding is consistent with Liao et al. (2018), in which caregivers of children with autism receiving ABA intervention reported that ABA interventions made their workload more manageable and reduced family stress.

Practitioners indicated that training in ABA interventions had equipped them with the knowledge and skills to support students with autism better. The practitioners pointed out that, unlike other training they received, ABA interventions were systematic and detailed, which made it easier for them to apply what they learned in their classrooms, both in individual interventions and in classroom management. This finding supports previous studies showing that training practitioners in autism-specific or ABA interventions can enhance practitioners' self-efficacy and skills to support students with autism (Siu, 2014). Loiacono and Palumbo (2011) also found that school administrators who understood ABA perceived themselves as better equipped, more skilled, and more confident in supporting practitioners working with students with autism. Both general education teachers and paraprofessionals showed increased knowledge and self-efficacy following autism-focused training, particularly after practical sessions (Bertuccio et al., 2019). Training in evidence-based practices for autism was found to improve school professionals'

self-efficacy when working with students with autism (Corona et al., 2017). Practitioner self-efficacy is important for teaching students with autism because higher self-efficacy is associated with lower stress, increased engagement, and better student outcomes (Love et al., 2019).

Although both caregivers and practitioners agreed that ABA interventions had a positive impact on children with autism, both caregivers and practitioners also agreed that the cost of receiving and providing ABA interventions was high and a burden for caregivers. The high costs stem not only from therapy sessions but also from the accumulation of required materials and resources. Caregivers in our study mentioned purchasing augmentative and alternative communication devices, laminated picture cards for picture exchange systems, sensory toys, choice boards, visual aids, timers, beads, and flashcards. These material expenses accumulate quickly, particularly in Ghana, where many specialized items must be imported at additional cost. Many previous studies also discuss the high cost related to ABA interventions, and because of these financial impacts, the effectiveness may not always outweigh the cost (Daley et al., 2013; Grindle et al., 2009; Pan et al., 2024). As some caregivers noted in the current study, reducing the financial burden of receiving ABA interventions can be achieved through government and other support programs. For example, some caregivers in the current study mentioned that, because their child's school offered ABA intervention for free, even though they perceived the ABA program as expensive, they incurred no direct financial burden. Caregivers emphasized the importance of financial support stemming from policies such as including ABA interventions in the Ghanaian health delivery system so that ABA services could be financially accessible.

This reflects a similar campaign by caregivers of children with autism in Canada (Perry et al., 2008) and the United Kingdom (Kendall et al., 2013) to have ABA interventions covered by health insurance. Similarly, in the United States, the effectiveness and widespread availability of ABA interventions have led several caregivers to advocate for their coverage by health insurance (Simpson et al., 2011; Kirkham, 2017; Makrygianni et al., 2018). The financial difficulties that caregivers of children with autism in Ghana face in accessing ABA interventions may be reduced if relevant parties, such as the Ghanaian Ministries of Health and Education, adopt and implement ABA interventions as part of special education for students with autism and provide funding for implementation and management. Reducing the costs of ABA-related materials to enhance the applicability of the intervention in low resource setting such as Ghana would also demand that stakeholders and explore culturally low-cost alternatives such as locally-produced visual aids using photographs from the community, laminated cards created with locally printed images rather than imported materials, homemade sensory items fashioned from readily available household objects (e.g., rice-filled bottles, textured fabrics), and choice boards constructed with culturally relevant pictures drawn or photographed locally rather than purchased commercial products.

Practitioners also mentioned the high cost of implementing ABA interventions noting that ABA interventions require substantial financial resources due to the need for individualized support, trained staff, and specialized materials. Practitioners emphasized that implementing ABA programs is capital-intensive and beyond the financial capacity of many families in Ghana. However, for practitioners who implemented ABA interventions, the high cost was not only financial but also due to labor and logistical limitations. Practitioners expressed burnout and stress that followed the physical demands of providing individualized ABA interventions. Due to

the heterogeneity of needs and skills of students with autism, teaching children with autism can be a challenging and complex task for many practitioners. Especially if there are other students in the classroom with other disabilities and support needs. Providing individualized support, managing the classroom, and completing the daily educational objectives can be a daunting task for even the most experienced practitioners.

Many studies have found high-stress levels can lead to burnout when practitioners perceive the occupational demands as exceeding their resources and coping abilities (Hakanen et al., 2006; Griffith et al., 2014; Plantiveau et al., 2018). Practitioner burnout can lead to high job turnover and service disruption and the negative effects can consequently harm student progress and the overall quality of interventions provided to students with autism (Boujut, et al., 2017; Cappe et al., 2025; Hurt et al., 2013). Another reason for practitioners' sense of 'high cost' of ABA interventions was the low involvement of caregivers in in-home training, the long wait for results, and cultural barriers in Ghana.

Increasing caregiver involvement in ABA requires multi-faceted approaches. Effective caregiver involvement in intervention begins with education, accessibility, and cultural responsiveness participation (Heitzman-Powell et al., 2014; Rodriguez & Williams, 2020). When communication between practitioners and families aligns with family cultural values, it enhances participation in intervention (Rodriguez & Williams, 2020). Cultural considerations, such as language, community support, and family dynamics, further enhance active caregiver involvement and caregiver-mediated interventions (Martinez-Torres et al., 2021). Caregiver education delivered via telehealth, especially in remote areas, can also increase caregivers' understanding and implementation of ABA interventions (Heitzman-Powell et al., 2014).

For practitioners, education on the long-term impact of behavioral interventions is important, especially for those with low knowledge or a negative perception about the outcome of behavioral interventions. For example, educational training has positively influenced positive attitudes towards ABA interventions among practitioners who had negative perceptions about ABA (Allen & Bowles, 2014). Also, when practitioners' knowledge of evidence-based practices is deepened, they can better appreciate that meaningful and lasting behavioral changes require persistence, not instantaneously (Dixon et al., 2021; Kincaid, 2023).

To increase awareness for ABA and autism in Ghana, culturally focused staff training can help practitioners deliver more effective praise and support to students with autism (Knochel et al., 2020). Similarly, training community health ambassadors within inner-city communities (e.g., religious centers) has improved autism awareness and confidence in making referrals (Johnson & Van Hecke, 2015). Public education campaigns, including religious institutions, public spaces, and media platforms, can help increase awareness of autism and ABA in Ghana (Alsehem et al., 2017). These integrated approaches can help foster greater understanding and acceptance of ABA interventions and autism, which could improve outcomes for individuals and families in Ghana. It is important to note that Schools M and N represent relatively well-resourced settings with access to certified behavior analysts, a rare advantage given that fewer than 10 such professionals serve the entire country. Many other educational settings in Ghana may attempt to implement behavioral interventions with considerably less specialized training and supervision. If significant challenges exist even in these best-case scenarios with highly qualified practitioners, the barriers facing typical settings with less specialized support are likely even more pronounced. This indicates the urgent need for systemic support, including

increased training opportunities, supervision infrastructure, and policy frameworks to support sustainable ABA implementation across diverse settings in Ghana.

The findings from this study may have implications beyond the two schools and inform ABA implementation in other low-resource settings facing similar contextual challenges. Several lessons emerge that may be transferable to other low-resource settings: First, the financial burden identified by both caregivers and practitioners suggests that sustainable ABA implementation in resource-limited contexts requires innovative funding models beyond out-of-pocket payment, such as public-private partnerships, health insurance coverage, or subsidized services for low-income families. Second, the shortage of certified behavior analysts in Ghana (fewer than 10 nationwide) mirrors workforce challenges in many low-resource settings, highlighting the need for international training collaborations and expanding certification opportunities. Third, the cultural context, including traditional beliefs about autism and disability, indicates the importance of culturally responsive implementation that engages with local belief systems rather than dismissing them. Finally, the concentration of services in urban areas suggests that effective dissemination strategies must address rural-urban disparities through telehealth supervision, or community-based training programs.

Limitations and future recommendations

As a limitation of many qualitative studies, the researchers' views, beliefs, and personal opinions pose a threat to the interpretation and analysis of the results. To compensate, we were very cautious and objective in the analysis and interpretation of the findings to ensure that personal views did not influence the findings presented. Specifically, we incorporated responses from both caregivers and practitioners, which aided the verification of findings and avoided bias and skewness; described the study context and how the participants were sampled in detail; and

took consistent documentation of all decisions made during the research process, including the data collection instrument, data collection coding, and data analysis.

The first author is Ghanaian and has familiarity with the social, educational, and caregiving contexts in which this study was conducted. This insider perspective facilitated rapport-building and cultural understanding during interviews but required conscious effort to bracket assumptions and remain open to unexpected findings. To address potential bias, the first author maintained a reflexive journal throughout data collection and analysis, and the research team held regular debriefing sessions to discuss emerging themes and interpretations of findings.

Another limitation of the study is the small sample size, collected from caregivers and practitioners from two schools. Although the objective of a qualitative study is not to generalize the results but to learn the lived experiences of select communities or groups of individuals, a quantitative approach may add to the results of this study in recommending an efficient and effective way for Ghanaian caregivers of children with autism to receive ABA interventions and for practitioners to provide these interventions. As such, future studies should consider a mixed-method approach that includes a quantitative survey of caregivers and practitioners across multiple regions of Ghana to provide an overview of caregiver and practitioner experiences with ABA interventions for students with autism, followed by focus group interviews with both caregivers and practitioners.

Conclusion

ABA interventions are an evidence-based practice that can help improve the quality of life for individuals with autism and their families (Hume et al., 2021; Keenan et al., 2015; Reichow, 2012; Smith, 1999; Yu et al., 2020). Moreover, ABA's emphasis on positive reinforcement and evidence-based techniques can enhance family dynamics, promoting a more

harmonious and less stressful environment for all members (Sneed & Samelson, 2022). Practitioners trained to provide ABA interventions can create tailored, evidence-based interventions that can enhance the learning experience and outcomes for students with autism (Carmona, 2017). However, the financial burden of ABA intervention can be a challenge for caregivers to afford, potentially delaying access to these important interventions (Paff, 2020). In addition, practitioners perceive ABA interventions as burdensome to maintain, which may discourage them from learning and implementing ABA. However, it is essential to understand that the expenses and burdens of ABA interventions are often compensated by their long-term advantages, such as improved educational outcomes, reduced family stress, and a decreased need for further special education services. There is a strong need in Ghana to advocate for greater accessibility and insurance coverage for ABA interventions to ensure that all students with autism receive timely, practical support, ultimately leading to better educational outcomes and improved quality of life.

Positionality Statements

John Ahorsu-Walker

I am a first-generation scholar and a doctoral student in Special Education. My positionality is shaped by my lived experiences growing up in Ghana, where I observed limited access to inclusive education and community-based support for individuals with disabilities. These experiences inform my commitment to advancing equitable, culturally responsive interventions for autistic individuals and their families. My research interests focus on the inclusion, participation, and transition of autistic individuals across school and community settings; the intersection of faith, disability, and evidence-based practices; autism intervention and service delivery innovations; and caregiver training and coaching to support autistic individuals' communication across settings. I am particularly interested in developing and evaluating interventions that promote meaningful engagement, independence, and quality of life beyond the classroom.

My work bridges multiple contexts, including Ghana and the United States, emphasizing culturally responsive and accessible interventions. Drawing on African philosophical traditions of Ubuntu and grounded in socio-cultural and ecological frameworks, I employ participatory action research methodologies that position community members as co-investigators rather than passive participants. My scholarship emphasizes cross-cultural adaptation, community engagement, and the development of interventions that are both effective and contextually relevant. As a Ghanaian researcher conducting this study in Ghana, I recognize both the strengths and potential biases my insider position brings. My familiarity with Ghanaian social, educational, and caregiving contexts facilitated rapport-building and cultural understanding during interviews. However, I remained conscious of the potential subjectivity arising from my

experiences and perspectives. To address this, I made deliberate efforts to bracket my assumptions and focus on the information presented in the interview data rather than imposing my preconceptions. I maintained a reflexive journal throughout data collection and analysis, documenting my reactions and interpretations. Moreover, I actively collaborated with my co-authors, engaging in iterative discussions and triangulation of codes and themes throughout the research process to ensure the findings authentically represented participants' lived experiences rather than my own assumptions.

Edward K. Ntim

I am a faculty member in the Special Education program. My positionality is shaped by my professional experiences as a Ghanaian special education scholar committed to advancing inclusive education within my local context. My research focuses on the inclusion of individuals with disabilities in regular schools and Ghanaian society. As an insider to the Ghanaian educational system, I bring intimate knowledge of the cultural, systemic, and practical challenges facing the implementation of inclusive education in Ghana. This positioning allows me to understand the lived realities of families, educators, and individuals with disabilities navigating a system where traditional beliefs about disability often intersect with emerging evidence-based practices.

In this study, my role centered on methodology development, supervision of data collection processes, and critical review of findings. My familiarity with qualitative research methodologies and the Ghanaian context ensured that our phenomenological approach was culturally appropriate and methodologically rigorous. Through regular supervision meetings with the first author, I provided guidance on interview protocols, participant recruitment, and ethical considerations specific to conducting research in Ghanaian schools. My critical review of

transcripts and themes helped ensure our interpretations authentically represented participants' experiences while maintaining methodological integrity.

Enoch Jr. Mensah

I am a Ghanaian clinical psychology trainee with academic and practical experience in child and adolescent mental health. I hold a Bachelor's degree in Psychology and an MPhil in Clinical Health Psychology with additional training in child and adolescent psychotherapy. My professional background includes working as a psychology assistant at tertiary and psychiatric hospitals in Ghana, where I have been directly involved in assessing and supporting children with neurodevelopmental conditions, including autism spectrum disorder, and in providing interventions for children with autism and their caregivers.

In this study, my role included data collection, analysis, and manuscript drafting. My clinical experience provided insight into the practical realities of caring for children with autism within the Ghanaian context, including systemic constraints, cultural perceptions of autism, and limited availability of specialized services. However, I recognize that my professional training and clinical exposure present potential sources of bias, as I may hold assumptions about ABA's effectiveness and challenges based on observations. To address this, I adopted a reflexive stance throughout the research process, consciously prioritizing participants' narratives over my interpretations. I engaged in careful data analysis, peer discussion, and iterative reflection to ensure findings authentically represent participants' lived experiences rather than my professional preconceptions.


Eric Abodey

I am a Black African male from Ghana with a longstanding commitment to special education that began in 2009, during my Bachelor of Education in Social Science, when I first encountered it as a semester course. This initial interest laid the foundation for my MPhil and PhD in Special Education. My professional experience includes working as a part-time lecturer, teaching courses on inclusive education and educating children with special educational needs, which has provided me with numerous opportunities to interact with autistic children, their parents, and caregivers. Additionally, I have worked as a facilitator at a Center for Child Development Research, deepening my understanding of developmental disabilities within the Ghanaian context.

In this study, my dual positioning as both an academic researcher and a practitioner with direct experience supporting families of autistic children informed my analysis and interpretation of the data. My prior research collaborations examining caregiver perspectives provided valuable methodological insights. However, I remained reflexive about how my accumulated experiences might shape my interpretations, engaging in collaborative analysis with co-authors to ensure our findings reflected participants' authentic voices rather than predetermined assumptions.

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We thank all parents and practitioners who took time off from their busy schedules to participate in this study. Although the American Psychological Association recommends using identity-first language (i.e., autistic individual), this preference can vary between individuals and cultures. The authors use person-first language (i.e., "child with autism") in accordance with the preferences of all participants in the current study.



Conflict of interest

The authors declare no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethical approval

The study was approved by the College of Education Studies Ethical Review Board of the University of Cape Coast (Ref. CES- ERB/ucc edu/85/21-5). All participants in the study gave their informed consent before agreeing to participate in the study

Data availability statement

All recorded interviews are available in audio format. However, due to the right to privacy, anonymity, and confidentiality clause agreed upon with participants during the data collection, only transcribed versions of the interviews shall be made available upon request.

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APPENDIX A: Semi-Structured Interview Protocol

Introduction Script

Thank you for agreeing to participate in this study about experiences with ABA interventions in Ghana. I am interested in learning about your personal experiences; there are no right or wrong answers. This study is primarily for academic work, and you are assured of complete confidentiality and anonymity in all the information you provide. Everything you share will be kept confidential. You may choose not to answer any question or stop the interview at any time without any consequences. Our conversation should take about 40 to 60 minutes.

Thank you once again for your time and participation.

INTERVIEW PROTOCOL FOR CAREGIVERS

Opening/Background Questions

1. Can you tell me a little about your child?
 - i. *Probe: Age, when diagnosed, current school/program*
2. How long has your child been receiving ABA interventions?
 - i. *Probe: Where do they receive services? How many hours per week?*

Experience with ABA Interventions

3. Can you describe your overall experience with ABA interventions for your child?
 - i. *Probe: How did you first learn about ABA?*
 - ii. *Probe: What made you decide to pursue ABA services?*
4. What changes, if any, have you noticed in your child since starting ABA interventions?
 - i. *Probe: Changes in behavior, communication, daily living skills?*
 - ii. *Probe: Can you give me specific examples?*
5. How has your child receiving ABA interventions affected your family?
 - i. *Probe: Impact on daily routines, family relationships?*
 - ii. *Probe: Impact on your stress or worry levels?*

Caregiver Involvement and Responsibilities

6. Have you been asked to implement any ABA strategies at home?
 - i. *Probe: If yes, what kinds of things do you do at home?*
 - ii. *Probe: How do you feel about implementing interventions at home?*
7. How has ABA intervention affected your responsibilities as a caregiver?
 - i. *Probe: Has it increased or decreased your workload?*
 - ii. *Probe: How do you balance home interventions with other responsibilities like work?*

Financial Aspects

8. What has been your experience with the cost of ABA services?
 - i. *Probe: School fees, materials, transportation?*
 - ii. *Probe: How do these costs affect your family?*
9. Are there any supports or resources that help you afford ABA services?
 - i. *Probe: School support, family support, other sources?*
10. What would make ABA services more affordable or accessible for families like yours?
 - i. *Probe: Government support, insurance coverage, other ideas?*

Challenges and Barriers

11. What challenges, if any, have you encountered in accessing or continuing ABA services for your child?
 - i. *Probe: Distance, availability, waiting lists?*
 - ii. *Probe: Understanding the intervention, communication with practitioners?*
12. Is there anything that has made it difficult to maintain consistent ABA services for your child?

Cultural Context

13. In your community, how do people generally view autism or children with autism?
 - i. *Probe: Family members, neighbors, broader community?*
14. Do you feel that ABA interventions fit well with your cultural beliefs and values?
 - i. *Probe: Any conflicts or challenges?*
 - ii. *Probe: Any aspects that align particularly well?*

Closing

15. Is there anything else about your experience with ABA interventions that you would like to share?
16. Do you have any questions for me?

INTERVIEW PROTOCOL FOR PRACTITIONERS

Opening/Background Questions

1. Can you tell me about your background and how you came to work in ABA?
 - i. *Probe: Training, education, certifications*
 - ii. *Probe: How long have you been working with children with autism?*
2. What motivated you to work specifically in ABA interventions for children with autism?

Training and Professional Development

1. Can you describe the training you received in ABA?
 - i. *Probe: Where did you receive training?*
 - ii. *Probe: What type of certification or qualification do you have?*
2. What ongoing professional development or support do you receive?
 - i. *Probe: Supervision, continuing education, workshops?*
 - ii. *Probe: What additional training or support would be helpful?*

Work Experience and Practice

5. Can you walk me through what a typical day or week looks like in your work?
 - i. *Probe: How many children do you work with?*
 - ii. *Probe: What does implementation look like on a day-to-day basis?*
6. What do you find most rewarding or satisfying about your work?
 - i. *Probe: Can you give specific examples?*
 - ii. *Probe: What keeps you motivated?*

Effectiveness and Skills

5. How do you feel ABA interventions have equipped you as a practitioner working with children with autism?
 - i. *Probe: Skills you've gained?*
 - ii. *Probe: Confidence in your work?*
6. What evidence of effectiveness do you see in your work with children?
 - i. *Probe: Types of progress children make?*
 - ii. *Probe: How do you measure or track progress?*

Challenges in Implementation

5. What challenges or barriers have you encountered in implementing ABA interventions in Ghana?
 - i. *Probe: Resources, materials, time?*
 - ii. *Probe: Staffing, support personnel?*
6. Can you tell me about any difficulties related to the time or effort required for ABA?
 - i. *Probe: Preparation time, seeing results?*
 - ii. *Probe: How do these demands affect you?*
7. How does the physical and emotional demand of this work affect you?
 - i. *Probe: Stress, burnout, work-life balance?*
 - ii. *Probe: Managing challenging behaviors?*

Working with Families

5. Can you describe how you work with caregivers?
 - i. *Probe: Training, communication, collaboration?*
 - ii. *Probe: Home intervention implementation?*
6. What has been most successful in your work with families?
7. What challenges, if any, do you encounter in engaging caregivers or supporting home implementation?
 - i. *Probe: How do you address these challenges?*
 - ii. *Probe: What happens during school breaks or vacations?*

Financial and Resource Challenges

15. How do financial constraints affect your work or the services you can provide?
 - i. *Probe: Funding for programs, materials, staff?*
 - ii. *Probe: Impact on families' ability to access services?*
16. What resources would enhance your ability to provide effective ABA services?

Cultural Context



15. How do cultural beliefs about autism in Ghana affect your work?
 - i. *Probe: Family beliefs, community attitudes?*
 - ii. *Probe: How do you navigate these?*
16. How do you make ABA interventions culturally relevant or sensitive for Ghanaian families?
 - i. *Probe: Adaptations you make?*
 - ii. *Probe: Language use, communication strategies?*
 - iii. *Probe: Using local languages versus English?*
17. What is the level of awareness about ABA in Ghana, in your experience?
 - i. *Probe: Among families, in the broader community?*
 - ii. *Probe: How do you address low awareness?*

Sustainability and Support

20. What supports or resources have been most helpful to you in your work?
 - i. *Probe: Supervision, colleagues, materials, institutional support?*
21. What would make it easier or more sustainable for you to continue in this work?
 - i. *Probe: Professional support, working conditions, compensation?*
22. Do you see yourself continuing in this field long-term?
 - i. *Probe: What factors influence this decision?*

Closing

23. What do you wish people understood better about ABA or about your work?
24. Is there anything else about your experience implementing ABA interventions in Ghana that you would like to share?
25. Do you have any questions for me?

