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EARLY DETECTION OF AUTISM SPECTRUM DISORDER AMONG PRESCHOOLERS: THE CASE OF EARLY CHILD EDUCATORS IN GREATER ACCRA REGION, GHANA

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THIS THESIS REPORT WAS SUBMITTED IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE AWARD OF MASTERS DEGREE OF PUBLIC HEALTH

SEPTEMBER, 2023

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DECLARATION

I affirm that this thesis, titled "Early Detection of Autism Spectrum Disorder among Preschoolers: The Case of Early Child Educators in Greater Accra Region, Ghana," is entirely my original work. It has not been previously published, nor has it been submitted for another degree. Any materials sourced from external references are appropriately acknowledged in this thesis. I submit this work to Ensign Global College as a requirement for the Master's degree in Public Health.

Patience Agbate

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(Certified by)

Dr. Stephen Manortey	_____	_____
(Ag. Head of Academic Programme)	Signature	Date

DEDICATION

I dedicate this work to my dear parents, Mr. Agbate-Mawuli Mishiso and Mad. Agbotome Happy, along with my entire family, for their unwavering support throughout my study. May the blessings of the Almighty God be upon you all.

ACKNOWLEDGMENT

I extend my gratitude to the Association of Accredited Public Health Programs (AAPHP) for generously funding this project, and enabling the completion of this thesis.

My heartfelt appreciation goes to Dr. Millicent Ofori-Boateng, my academic advisor and supervisor, whose expertise was indispensable in shaping the research questions and methodology. Your insightful feedback spurred my thinking and propelled my work to its current state.

Acknowledgment also goes to Dr. Sutherland Kofi Edward and the faculty members for their guidance in research methodology, and to the dedicated data collection team whose diligence ensured timely progress.

My sincere thanks go to the schools, teachers, and participants who contributed to this study. Your willingness and thoughtful responses enriched the findings.

I express deep gratitude to my parents for their unwavering support and encouragement. Lastly, I owe a debt of gratitude to my friend, Martha Akosua Nsiah, whose loan of her laptop at the inception of this thesis was instrumental. Thank you.

DEFINITION OF TERMS

Autism Spectrum Disorder (ASD): Refers to a group of pervasive neurodevelopmental disorders that involve moderately to severely disrupted functioning in regard to social skills and socialization, expressive and receptive communication, and repetitive or stereotyped behaviors and interests

Knowledge of ASD: The overall information of ASD among preschool children which affects their identification of the disorder

Experience on ASD: Refers to the perceptions, interactions, challenges, and insights that educators have when working with students who have ASD. This encompasses various aspects, including understanding the unique learning styles and communication preferences of students on the autism spectrum, adapting teaching methods to accommodate their needs, managing behavioral challenges, fostering social integration, and collaborating with other professionals and parents to provide comprehensive support.

Health literacy: Refers to an individual's capacity to obtain, comprehend, evaluate, and use health-related information and services to make informed decisions about their health and well-being.

ABBREVIATION/ACRONYMS

ASD: Autism Spectrum Disorder

GES: Ghana Education Service

NGO: Non-Governmental Organization

ABSTRACT

Background: In this modern era, children as young as six months old are increasingly spending significant amounts of time in school, largely due to the demanding schedules of working mothers. Consequently, preschool teachers are expected to have extensive expertise in child development and the ability to identify deviations from the norm. The objective of this research is to delve into the insights and encounters of early childhood educators regarding the timely recognition of autism spectrum disorder in the capital city of Ghana. Furthermore, the study investigates the origins of the knowledge held by preschool teachers and the influence of various aspects of health literacy in this context.

Methodology: The data for this study was collected through in-depth interviews with 21 randomly and purposively selected preschools in the Greater Accra region, Ghana with a focus on their experience in working with children with autism. It was a qualitative study analyzed thematically using Dedoose software.

Findings: The findings showed that preschool teachers possess greater practical familiarity with ASD than theoretical understanding. They demonstrate proficiency in recognizing ASD's clinical signs. The study highlighted individual health literacy, primarily reliant on the internet for autism information. However, challenges arise from information overload and complex medical terms.

Conclusion: The results show that participants have a strong grasp of clinical aspects of ASD beyond its causes and definition, enabling them to recognize autism effectively. However, parental denial delays intervention. They primarily rely on the internet for autism-related information. In light of these findings, we recommend GES to revise the curriculum for teachers, accompanied by in-service training and professional development initiatives. Future research could delve deeper into autism, potentially using mixed methods.

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CHAPTER 1

1 INTRODUCTION

1.1 Background Information

Early detection is paramount in any health-related condition. It is a secondary prevention measure that aims to identify deviations from normal whilst interventions are still relevant. “Autism spectrum disorder (ASD) refers to a group of pervasive neurodevelopmental disorders that involve moderately to severely disrupted functioning in regard to social skills and socialization, expressive and receptive communication, and repetitive or stereotyped behaviors and interests” (Pennington, Cullinan and Southern, 2014). The condition, “autism spectrum disorder encompasses Asperger’s syndrome, childhood disintegrative disorder and an unspecified form of pervasive developmental disorder” which were previously diagnosed separately but had since 2013 been referred to as ASD due to their similarities in manifestation (Kim, 2015). In this developmental disorder, fundamental competencies and roles such as the ability to socialize and to communicate are deferred producing challenges in social functioning. Characteristics of the disorder manifest from childhood and continue across a person’s life (Posar, Resca and Visconti, 2015).

Generally, one out of every hundred children worldwide get confirmed as having autism spectrum disorder (Zeidan *et al.*, 2022). According to Abubakar et al. (2016), ”autism spectrum disorder is one of the most prevalent neurodevelopmental disorders in high-income countries, but little is known about the disorder in low and middle-income regions such as Africa”. Data on autism in Ghana is inadequate and also it is grouped as a mental handicap (Salifu and Mate-Kole, 2014: p. 71). Sulkes (2022) stated that autism spectrum disorder is fourfold extra prevalent and associated with boys, with the contemporary approximation of its pervasiveness being 1/54 in the US with a similar range in other countries. He went further to highlight that though, some of the cases of the

disorder occurred in conjunction with some congenital abnormalities such as congenital rubella syndrome, phenylketonuria and fragile X among others, the precise origin of the bulk of the cases of the disorder lingers incomprehensibly. Genetic factors were implicated (Sulkes, 2022).

Social communication impairments, and restricted, repetitive patterns of behaviors and interests are the two main areas of symptoms in autism spectrum disorder. These include social and emotional reciprocity, impairment of nonverbal behaviors, failure to develop and maintain relationships, stereotyped speech and behaviors, insistence on sameness/resistance to change, restricted, fixated interests, and hyper- or hypo-sensitivity to sensory input (Zwaigenbaum, Brian and Ip, 2019). Evidence reveals that early detection and intervention can significantly enhance long term outcome for children with ASD, improved cognitive performance, reducing family and society cost savings over a person's lifetime. To promote early detection and interventions for individuals with autism, it is imperative for caregivers in the early phase of life to be knowledgeable and this includes preschool teachers.

It was established that the majority of preschool teachers in Karachi, Pakistan obtained knowledge on ASD through the media (Arif *et al.*, 2013). However, there is little known on the sources of knowledge among Ghanaian preschool teachers.

According to a systematic review conducted in university of Valencia on teachers' knowledge regarding autism spectrum disorder (ASD), the universal knowledge of teachers on ASD was poor, and their level of knowledge depends on previous experience, contact and their stage of work (Gómez-Marí, Sanz-Cervera and Tárraga-Mínguez, 2021). Mozolic-Staunton et al., (2020) reveals that around 20% of Australian children have developmental issues that are undetected prior to school age. Evidence reveals that early detection and intervention can significantly enhance long term outcomes for children with ASD, improved cognitive performance, reducing family and

society cost savings over a person's lifetime. The relationship between teachers' competency and teacher's education level has been investigated (Mozolic-Staunton *et al.*, 2020).

A study conducted by Yunus and Mohamed (2019) on the relationship between teachers' competency and education in detecting children with learning disorders proves that the level of teachers' competency in identifying children at risk is relatively low. The majority of general preschool teachers do not have any knowledge or acquired minimal knowledge in identifying children who are at risk of disorders. They concluded that teachers' educational level has a bearing on their competences in determining children at risk of learning disorders but their experiences do not (Md Yunus and Mohamed, 2019).

Pursuant to (Abubakar *et al.*, 2016b) explicit declaration on the non-availability of data from sub-Sahara Africa, and that all attention has been focused on communicable diseases, there is a greater likelihood that non-communicable diseases like neurodevelopmental disorders will become a burden. For this reason, they infer that urgent studies are needed on autism and other neurodevelopmental disorders are needed and this is where this study fits in.

In relation to Twi-Yeboah et al., (2021), teachers' level of knowledge on autism in Ghana was woefully inadequate. It is in this quest that this study explored the knowledge and experiences of ASD among preschool teachers in the Greater Accra region of Ghana

1.2 Problem Statement

Every child especially those under-five, needs periodic physical assessment to detect deviations from normal. This will help in early detection of developmental disorders such as autism spectrum disorder. Care givers like preschool teachers spend enormous and quality time with pre-schoolers and should be well vested and knowledgeable in detecting, reporting and managing children with autism. In contrast to the above, Liu *et al.*, (2016) revealed in the study titled ''Knowledge, attitudes, and perceptions of autism spectrum disorder in a stratified sampling of preschool teachers in China'' that the mass of preschool teachers in China had dearth knowledge on ASD. Further study on the condition revealed that the greater number of teachers interviewed on the disorder construed a feeling of ambivalence in managing autistic child behaviour and were pessimistic and nervous at the likelihood of teaching an autistic child (Anglim, Prendeville and Kinsella, 2018). In addition, preschool teachers in a study conducted by Twi-Yeboah et al., (2021) in the Ledzokuku- Krowor municipal assembly in Ghana reveals about 80% of the participants had low level of knowledge of autism. The main barrier to early detection of autism among preschool teachers lies on the paucity of knowledge. This condition if left undetected early (first two years of life), will prevent children from receiving the necessary help to live an independent life which will make them unproductive and vexatious to their families (Begum and Mamin, 2019). There is therefore an urgent need to assess preschool teachers' knowledge of the condition to identify their challenges and propose suitable solutions where necessary. Review of other researches done on the subject matter revealed the following gaps; literature gap- as much is yet to be done on the topic, population group gap- a study on the topic in Ghana (Ledzokuku- Krowor municipal assembly) enrolled only one district (Twi-Yeboah *et al*., (2021) which may not be representative enough and a methodological gap -the literatures reviewed so far utilized

quantitative methods (Liu, et al., 2016; Arif, et al., 2013) which may not provide great acumen into the problem. It is in these milieus that this study explored the knowledge and experiences of ASD among preschool teachers in the Greater Accra region of Ghana. In particular, this thesis employed a qualitative research method to understand the experiences of preschool teachers with the disorder and as well evaluated how the elements of health literacy explained the sources of knowledge of ASD among preschool teachers. Of a truth, it is only when we have detected the condition that diagnoses can be made and necessary interventions put in place to buffer the problem.

1.3 Rationale of Study

Although the prevalence of autism spectrum disorder is increasing in Africa, research on the identification and management of this condition is limited. To enhance the identification, diagnosis, management, and community support for autism, a workshop in Africa proposed an approach that involves creating awareness among the public, engaging the community, providing better access to information, and training individuals on autism while considering cultural, linguistic, and socioeconomic factors (Ruparelia *et al.*, 2016). It was in these contexts that the study was conducted and provided answers to the research question and also delivered on the suggested approaches. This study also delivered on the sustainable development goal 3 and 4 which aims to ensure healthy lives and promote well-being for all at all ages and ensure inclusive and equitable quality education and promote lifelong learning opportunities for all respectively. This study has helped to bridge the literature gap in Africa.

The previous study done in Ghana as stated above, examine only a district of the region which may not be representative enough. The reason this study enrolled twenty-one (21) participants

from different preschools in the region. This study is very important as it add to existing knowledge and experiences of preschool teachers thereby improving practice.

1.4 Conceptual Framework

Three factors have been identified as important elements influencing preschool teachers' ability to detect autism spectrum disorder. These factors align with the guidelines set forth by the World Health Organization in 2022 regarding health literacy. They encompass community health literacy, individual health literacy, and health literacy responsiveness.

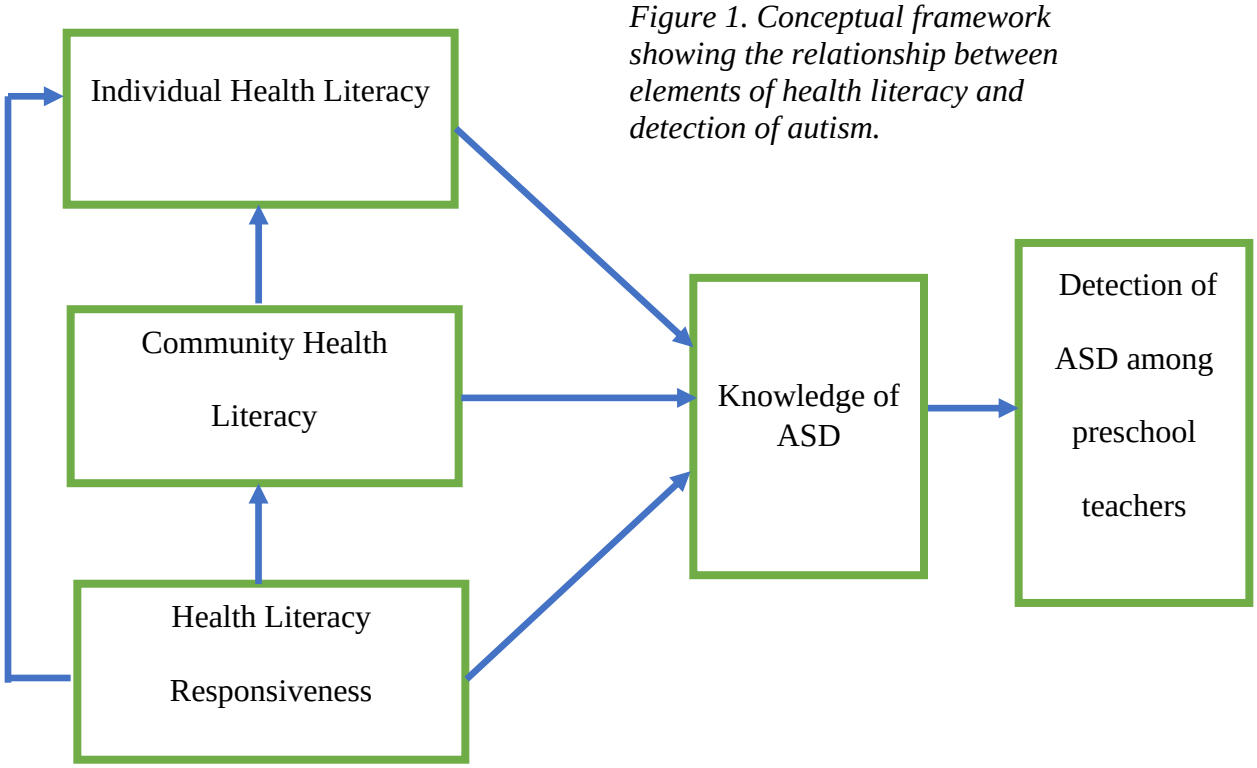


Figure 1. Conceptual framework showing the relationship between elements of health literacy and detection of autism.

A preschool teacher's awareness of autism spectrum disorder (ASD) directly impacts their ability to identify it. This awareness is influenced by three facets of health literacy: individual health literacy, community health, and health literacy responsiveness. Individuals' capacity to access, comprehend, and utilize ASD information affects knowledge, which in turn can be influenced by community health literacy and health literacy responsiveness. Community health literacy shapes individual health literacy due to cultural norms and interactions, while health literacy responsiveness affects individual and community health literacy by influencing the quantity of available ASD information, thereby impacting ASD detection.

1.5 Research Questions

1. What is the perceived knowledge of ASD among preschool teachers?
2. Where do preschool teachers access knowledge on ASD?
3. How do the elements of health literacy explain the perceived knowledge of ASD among preschool teachers?
4. What are the experiences of preschool teachers in managing children with Autism

1.6 General Objective

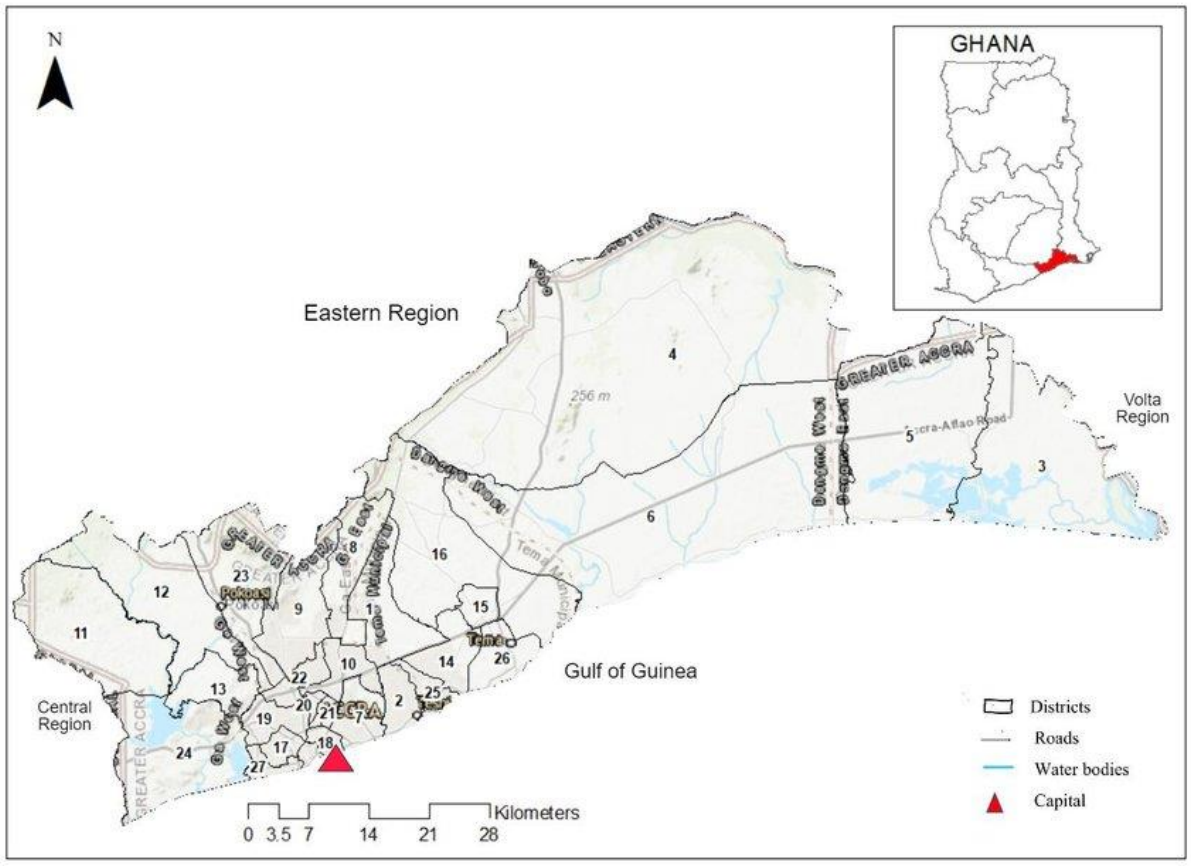
The aim of this study is to explore the knowledge and experiences of ASD among preschool teachers in the Greater Accra Region of Ghana.

1.7 Specific Objective

1. To examine the perceived knowledge of ASD among preschool teachers.
2. To assess the sources of knowledge of ASD among preschool teachers
3. To evaluate how the elements of health literacy explain the perceived knowledge of ASD among preschool teachers.
4. To describe the experiences of preschool teachers in managing children with Autism

1.8 Profile Of Study Area

The study took place in the Greater Accra Region of Ghana, which has 29 MMDAS. It is the smallest administrative region in Ghana, occupying 1.4% of the country's land area, but the second most populated region, with 5.5 million people. The region is highly urbanized, with 87.4% of the population living in urban areas. The region's capital is Accra, which is also the capital city of Ghana. The Greater Accra Region is bordered by the Eastern Region to the north, the Volta Region to the east, the Gulf of Guinea to the south, and the Central Region to the west. The region's soils have low organic contents, limiting crop production, and the vegetation is mainly coastal savannah shrubs with some trees in certain districts. The region has a dry coastal equatorial climate, with temperatures ranging from 20° to 30° Celsius and annual rainfall ranging from 635 mm to 1,140 mm. The region's economically active population is mostly self-employed, with 51.8% working without employees, while 32.6% are employees. The major ethnic groups are Akan, Ga-Dangme, and Ewe, with Christians being the largest religious group (www.gtarcc.gov.gh).



Map 1. Map of Greater Accra, Ghana

Map of Greater Accra Region with 29 districts and neighbouring regions (Donkor, et al., 2019).

Name of districts: 1 Adenta Municipal, 2-Ledzokuku Municipal, 3-Ada East, 4-Shai Osudoku, 5-Ada West, 6-Ningo/Prampram, 7-La Dade-Kotopon, 8-La-NkwantanangMadina, 9-Ga East, 10-Ayawaso West, 11-Ga South Municipal, 12-Ga West Municipal, 13-Ga Central Municipal, 14-Tema s Municipal, 15-Ashaiman Municipal, 16-Kpone Katamanso, 17-Ablekuma Central Municipal, 18-Korle Klottey Municipal, 19-Ablekuma North Municipal, 20-Ayawaso North Municipal, 21-Ayawaso East Municipal, 22-Okaikwei North Municipal, 23-Ga North Municipal, 24-Weija Gbawe Municipal, 25-Krowor Municipal, 26-Tema Metropolitan, 27-Ablekuma West Municipal, 28-Ayawaso Central Municipal & 29-Accra Metropolis (Donkor *et al.*, 2021).

1.9 Scope of Study

This qualitative descriptive phenomenological study was conducted to investigate how preschool teachers detect autism spectrum disorders in children, and to explore their experiences and knowledge related to this topic. The study involved interviewing 21 preschool teachers in the Greater Accra region of Ghana, using validated interview guides. The researchers purposely selected the participants from 21 preschools in the region, assuming that they would be representative of preschool teachers across Ghana. The study was carried out over a four-month period, from May to September 2023. The participants were chosen based on their previous experience working with children who have autism spectrum disorder in the Greater Accra Region.

1.10 Organization of Report

The paper was structured into six major chapters, starting with an introduction and followed by a literature review, methodology, results, discussions, and conclusions with recommendations. The contents included a list of figures, tables, definitions, and an abstract summarizing the study's scope, objectives, methodology, findings, and conclusion. The first chapter presented background information, including the problem statement, rationale, conceptual framework, research questions, general and specific objectives, and scope. The literature review in chapter two discussed similar studies relevant to the study's objectives. The methodology in chapter three outlined the study area, research methods, data collection techniques, study population, variables, sampling, pre-testing, data handling, analysis, ethical considerations, and limitations. The results section in chapter four summarized the variables and findings based on data analysis. Chapter five compared the results with the literature based on research questions. Finally, chapter six presented the conclusion and recommendations.

CHAPTER 2

2 LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive overview of theoretical frameworks, related literature, and a concise summary on this global concern.

Global epidemiological data shows that Autism affects around 1%–2% of children, leading to an estimated 52 million cases worldwide (Hahler and Elsabbagh, 2015). There has been a growing interest in comparing the symptoms and effects of Autism across different regions of the world. However, raising awareness among the public and policymakers in low- and middle-income countries has become challenging due to the paucity of evidence in these nations (Hahler and Elsabbagh, 2015).

2.2 Underpinning Theoretical Frameworks

2.2.1 Elements of Health Literacy

According to the World Health Organization (2022) in an article titled; Health literacy development for the prevention and control of non-communicable diseases: volume 1: overview, describe health literacy as how personal knowledge and skills are acquired through everyday activities and interactions, spanning multiple generations. It went further to emphasizes that organizational structures and resource availability play a crucial role in shaping personal knowledge and competencies, enabling individuals to access, comprehend, evaluate, and apply information and services for the betterment of their own health and well-being, as well as that of others. Additionally, the article explores four distinct dimensions of health literacy: community health literacy, health literacy development, individual health literacy, and health literacy

responsiveness. It underscores the importance of differentiating these aspects when adopting a global perspective on health literacy, with the aim of improving health and equity in diverse contexts (The WHO, 2022).

2.2.1.1 Health Literacy Development

Health literacy development refers to the process of enhancing the knowledge, confidence, and comfort of individuals, families, groups, and communities in understanding and utilizing health-related information (The WHO, 2022). It involves various stakeholders, including health workers, services, systems, organizations, and policy-makers from different government sectors. The aim is to create enabling environments that facilitate people's access to, comprehension of, evaluation of, retention of, and application of health information. This involves using various communication channels such as verbal, written, digital, and social resources to promote health and well-being in individuals and their communities, considering their daily circumstances and needs (The WHO, 2022).

By ensuring that information related to Autism Spectrum Disorder (ASD) is disseminated through appropriate channels tailored for preschool educators, this specific group of teachers will gain access to valuable resources, thereby enhancing their understanding of ASD and their ability to identify it.

2.2.1.2 Community Health Literacy

World Health Organization (2022) refer to community health literacy as the collective assets and abilities within a community related to health literacy. These assets include the knowledge that community members possess, the trust, dissemination, and adaptability of that knowledge within the community, health-promoting customs rooted in cultural beliefs and norms, and the interactions with external sources of information. The conversations and interactions that occur

within families, peers, and the community play a pivotal role in shaping community health literacy, behaviors, and overall health outcomes (The WHO, 2022).

In a community, individuals frequently acquire knowledge and are shaped by their peers, family members, and community leaders. Communities characterized by strong health literacy often develop infrastructure, such as libraries, community centers, and websites, to facilitate access to health-related information. Residents of such communities can leverage these resources to enhance their own health literacy.

However, communities harboring adverse cultural beliefs, such as the notion that associating with children with Autism Spectrum Disorder (ASD) might lead to the replication of such conditions, can impede the dissemination of knowledge and the early detection of autism.

2.2.1.3 Individual Health Literacy

Individual health literacy refers to the knowledge, confidence, and comfort that people accumulate through their daily activities and social interactions, spanning across generations. It encompasses five action areas which includes the ability to access, understand, evaluate, retain, and apply information about health and healthcare. From a global standpoint, individual health literacy aims to promote the health and well-being of both the individual and those in their immediate surroundings (The WHO, 2022).

Individuals with elevated levels of health literacy possess enhanced capabilities to comprehend and act upon information pertaining to Autism Spectrum Disorder (ASD). They can adeptly identify ASD symptoms, seek trustworthy sources of information, and engage in effective communication with healthcare professionals to acquire knowledge about the condition. Conversely, individuals with lower health literacy may encounter challenges when attempting to

access accurate information about ASD, potentially leading to a limited understanding and delayed detection of the disorder.

2.2.1.4 Health Literacy Responsiveness

Health literacy responsiveness according to the article, refers to the degree to which health workers, services, systems, organizations, and policy-makers acknowledge and adapt to diverse traditions, strengths, needs, and preferences related to health literacy (The WHO, 2022). This responsiveness aims to create inclusive environments that enhance equitable access to and engagement with health information and services. It also provides support for the health and well-being of individuals, families, groups, and communities. Achieving health literacy responsiveness involves considering different sectors of the government and implementing cross-sectoral public policies to ensure optimal outcomes for all individuals and communities (The WHO, 2022).

Tailoring ASD communication and educational materials to align with the literacy levels and cultural backgrounds of individuals and communities in a culturally sensitive and accessible manner, can enhance understanding and knowledge of ASD and detection.

Health literacy development is influenced by various factors, including settings and health determinants such as history, geography, armed conflict, humanitarian and emergency settings, norms and cultures, health care systems, traditional knowledge, ancestral and religious beliefs, regulatory and legal environments, economic and commercial environments, social practices, formal education, conventional and digital media, and communication and interaction with health workers as highlighted in the article (The WHO, 2022). It sated further that health literacy is developed over time through social practices, education, and media, and is influenced by community conversations, printed materials, mass media, digital media, and interactions with health workers (The WHO, 2022).

Moreover, there are barriers to putting health literacy into action, including access barriers, service availability, quality and responsiveness, cultural safety and stigma, gender inequality, language barriers, cost or availability of universal health coverage, racism and discrimination, information and communication technologies, and complexity and comorbidity (The WHO, 2022). Putting the challenges asides, some practical action areas for health literacy development and responsiveness has been outlined including addressing health literacy needs at different levels, incorporating health literacy into public policy and society, fostering health literacy in organizations, promoting community and interpersonal responses, and empowering individuals to access, understand, appraise, remember, and use health information (The WHO, 2022).

Overall, ASD health literacy involves a range of actions, from accessing and understanding ASD information to appraising, remembering, and using it effectively. It can be influenced by various factors and requires efforts at multiple levels to address barriers and promote ASD health literacy development and responsiveness.

2.3 Empirical Review

2.3.1 Knowledge

A study conducted by Liu et at., (2016) revealed that the general populace has a lack of understanding and awareness concerning autism spectrum disorder. They stated the depth of knowledge among preschool teachers is related to their level of education, experience, geographic area, and school type. According to study, the teachers recognized their lack of knowledge and expressed a desire to improve their abilities. They suggested of the government to be more involved in the services provided to children with autism and that introducing programs and educational curricula that focus on children with special needs into teacher training might boost knowledge and abilities, eventually leading to earlier diagnosis and intervention, enhancing

outcomes for children. It was concluded that teachers in China lack knowledge about ASD, but they are eager and motivated to learn the skills required to improve educational experiences for children with ASD (Liu *et al.*, 2016; Ayub *et al.*, 2017). A systematic review was done in Valencia-Spain on the topic and it was realized that generally, teachers' knowledge of autism spectrum disorder (ASD) is insufficient. However, their level of understanding varies depending on their work stage, previous experience, and contact with ASD students. Pre-service teachers and specialists, such as special education teachers or counselors, tend to have more knowledge than mainstream teachers. To achieve inclusive education and sustainability goals, it is necessary to provide training on ASD to both pre-service and in-service teachers at every level of education (Gómez-Marí, Sanz-Cervera and Tárraga-Mínguez, 2021). Golson et al. (2022) also, revealed from the study: Current state of autism knowledge in the general population of the United States that participants exhibited greater knowledge regarding the symptoms and behaviors associated with autism compared to their understanding of its etiology, prevalence, and assessment procedures. This knowledge gap in the general population highlights the need for additional efforts to enhance public awareness about autism. To address this issue, it is crucial to prioritize initiatives that aim to educate and inform the public regarding the various aspects of autism, including its causes, prevalence rates, and proper assessment procedures (Golson *et al.*, 2022).

Although it is widespread worldwide that there is insufficient investigation in certain fields, particularly education, especially in sub-Saharan Africa, a study conducted in Nigeria aims to fill the void by examining Nigerian teachers' comprehension of ASD. This study corroborates prior research findings that reveal limited expertise and knowledge of ASD among professionals and underscores the necessity for increased professional education and training (Odunsi, Preece and Garner, 2017).

In Ghana, a study examined the knowledge and perceptions of preschool teachers in the Ledzokuku-Krowor Municipality towards child autism. The results showed that despite being the primary caregivers after parents, preschool teachers had low levels of knowledge about autism spectrum disorder and were unable to accurately detect its symptoms. However, the teachers had positive attitudes and perceptions towards providing education for children with autism. Increasing their knowledge about ASD can help in early detection and provide better support for children with autism. The study suggests that improving the knowledge of preschool teachers about ASD can lead to more positive attitudes and perceptions toward the needs of children with autism (Twi-Yeboah *et al.*, 2021).

2.3.2 Identification skills

Holloway et al., (2015) investigated whether preschool teachers are knowledgeable about the signs of autism spectrum disorder (ASD) in young children, comfortable discussing concerns with parents, and aware of services available to children with ASD. The study included 84 preschool teachers, mostly Caucasian, female, and with a college degree. The findings revealed that preschool teachers had a moderate level of knowledge regarding ASD symptoms, regardless of their experience. Teachers with more experience were more comfortable addressing their concerns with parents. Teachers were knowledgeable about services available to families with children with ASD, and their level of experience or education did not affect their familiarity with these services (Holloway *et al.*, 2015). Splett et al., (2019) discusses the importance of identifying youth with mental health concerns and connecting them to appropriate intervention. The study aimed to investigate whether teachers could accurately identify mental health concerns in elementary school children using vignettes depicting children with varying levels of externalizing and internalizing behavior problems. The results showed that teachers could accurately identify severe externalizing

and internalizing problems, but were less accurate in identifying moderate or subclinical symptoms. Moreover, teachers perceived externalizing problems to be more serious and concerning than internalizing problems. The study suggests that teachers' concern for the child's well-being, rather than the perceived seriousness of the problem, is the main predictor of endorsement for referral to school and community-based mental health professionals (Desta *et al.*, 2017; Splett *et al.*, 2019). Early identification and intervention are critical for improving outcomes in autism spectrum disorder (ASD). However, most children with ASD do not receive comprehensive evaluations until after age 36 months, despite the reliability of autism diagnoses by age 24 months. The referral decision process for early evaluations is not clearly defined, and little is known about how perceptions of early childhood symptoms of ASD affect referral decisions. To better understand this process, early childhood clinicians and educators were asked to make referral decisions based on video clips of early comprehensive autism evaluations. The factors considered most often were play, social interactions/engagement, and verbal behaviors, but some important early signs were infrequently mentioned, such as absence of joint attention, social reciprocity, and gestures. Referral decision accuracy was similar across disciplines, indicating the need for broad training on early signs of autism. Such training should emphasize the importance of early signs involving significant absences of behaviors, such as low joint attention, gestures, and social reciprocity, in addition to odd social, verbal, and play behaviors to encourage earlier referrals when autism is suspected in young children (Rosenbaum and Gabrielsen, 2019).

Hanafi Mohd Yasin et al., (2019) focuses on the importance of early intervention for students with special needs to enhance their learning process. It aims to determine teacher strategies and abilities in identifying such students. The study was conducted using mixed methods, with 16 respondents in the qualitative study and 219 respondents in the quantitative study. The findings revealed that

50.2% of respondents achieved mastery level, while 49.8% were below mastery level in identifying students with special needs. The study also indicated that respondents could identify such students based on their appearance and behavior. The qualitative study found that most respondents could identify students with disabilities through their behavior and characteristics, while some identified them based on academic performance, including reading and writing abilities (Hanafi Mohd Yasin *et al.*, 2019).

2.3.3 Sources of Knowledge

The study conducted by Ayub et al., (2017), revealed behavioral classes and media as the main sources of knowledge about autism among teachers. Out of 52 teacher who access information on autism, 20 of them uses the media, 5 uses book, 5 uses workshop and 22 utilizes other sources like friends, family and colleagues. It suggests the need for specialized training for teachers on childhood disorders and using media platforms to raise awareness. However, the study also highlights the risk of misconceptions about autism stemming from media portrayals of exceptionally talented autistic individuals. To address this, professionals should educate the public, teachers, and parents about autism, and media content should undergo verification before dissemination. Overall, the study emphasizes the importance of accurate portrayal and education about autism through behavioral classes and responsible media practices (Ayub *et al.*, 2017). Additionally, a study involving 170 teachers from both private and non-private sectors found that 55% of the participants obtained their knowledge about autism from media sources. Only 10% of the teachers had received formal training on autism, 12% from personal experiences and 8.8% had attended autism-related workshops. The remaining teachers acquired information about autism through personal other sources. In summary, a large portion of the teachers relied on media for their understanding of autism, while a minority had formal training or attended workshops on the

subject (Arif *et al.*, 2013). According to Fusch, Fusch and Ness, (2018), triangulation, a technique for research, involves using multiple data sources to achieve social change, minimize bias, and attain data saturation. By integrating varied sources like methods and perspectives, triangulation counterbalances biases inherent in single sources, leading to a more comprehensive view. It aids in reaching data saturation efficiently by exploring various data avenues. While enhancing research complexity, triangulation requires careful planning to manage potential inconsistencies. In essence, triangulation enhances research quality by weaving together diverse data threads, though challenges should be managed for effective implementation (Fusch, Fusch and Ness, 2018).

2.3.4 Experiences of preschool teachers

Lindsay et al., (2013) a study on Educators' Challenges of Including Children with Autism Spectrum Disorder in Mainstream Classrooms in Canada aimed to explore the challenges faced by teachers in including children with Autism Spectrum Disorder (ASD) as active participants in mainstream classrooms. The study involved 13 educators with experience of teaching children with ASD in Ontario, Canada. Through in-depth interviews, the researchers investigated the teachers' perspectives on creating an inclusive environment in their classrooms. The findings revealed several challenges identified by the teachers, including understanding and managing behavior, socio-structural barriers (such as school policies and lack of training and resources), and creating an inclusive environment (with difficulties stemming from other teachers, students, and parents). The teachers emphasized the need for additional resources, training, and support to improve the education and inclusion of children with ASD (Lindsay *et al.*, 2013).

A study by Cassimos et al., (2015) on Greek teachers titled Views and attitudes of teachers on the educational integration of students with autism spectrum disorders reveals that the majority of participants expressed a positive outlook on integrating students with Autism Spectrum Disorder

(ASD) into educational and vocational settings. However, teachers exhibited skepticism about effectively accommodating these students in their classrooms. Most teachers believed that students with ASD could receive training in technical vocations. Nevertheless, the lack of support services was identified as the most significant obstacle to successful vocational integration. Analysis was done based on previous relevant training; and/or experience and it was concluded that training and experience substantially influenced teachers' views and attitudes in a positive way towards the integration of students with ASD (Cassimos *et al.*, 2015). Additionally, in a study conducted by Losh, Eisenhower and Blacher, (2022) examining the Influence of student-teacher relationship quality on the behavioral engagement of young students with autism, it was found that the strength of the relationships between students and teachers plays a vital role in the engagement levels of young autistic students. The results indicate that these relationships have a significant impact and are crucial for determining success in the classroom. Therefore, it is of utmost importance to prioritize the cultivation of robust student-teacher relationships characterized by closeness and minimal conflict, particularly for students on the autism spectrum during their early years of schooling (Losh, Eisenhower and Blacher, 2022).

In a recent study conducted by Dynia et al., (2022), the primary focus areas for intervention in the education of young children with autism spectrum disorder were identified as communication, social skills, and challenging behavior. The study revealed that nearly all teachers employed at least one evidence-based practice (EBP) in their teaching methods. The most commonly utilized EBPs were visual supports, behavioral strategies, and social narratives. Surprisingly, approximately half of the teachers reported incorporating sensory-related strategies, which are not considered evidence-based. It is noteworthy that the level of teacher confidence and belief in implementing evidence-based practices did not significantly impact their inclination towards

professional development. These findings provide insight into the existing disparity between research and actual practices in educating children with ASD. Moreover, they offer valuable guidance to teacher educators on how to enhance their efforts in bridging this gap (Dynia *et al.*, 2020).

Some of the gaps identified includes literature gap; few studies done on the topic locally and sub-Saharan Africa. Methodological gap as most of the studies done employ quantitative method. It is crucial for more research to be done on ASD.

In conclusion, the chapter looked at theoretical underpinning of the study: social cognitive theory and health belief model and the relationship between the constructs of the conceptual framework. Related literatures were reviewed based on the research questions of the study. Few literatures were found on the sources of knowledge of preschool teachers and also local literatures were not found on the topic. Therefore, this study is very necessary to add to existing knowledge.

CHAPTER 3

3 METHODOLOGY

3.1 Introduction

The methodology section thoroughly outlines the study process, including the study design, study sites, and study population. It provides detailed information on the inclusion and exclusion criteria, sample size, data collection methods and instruments, pretesting, data handling, data analysis, expected outcome, and ethical consideration. The study's primarily objective was to investigate preschool teachers' knowledge and experiences of Autism Spectrum Disorder (ASD) across districts in Ghana's capital.

3.2 Study design

The chosen design for this study was a descriptive phenomenological approach, a qualitative study design that is particularly useful when researchers need to obtain information directly from individuals who have experienced the phenomenon under investigation (Bradshaw, Atkinson and Doody, 2017). As the study had limited time and resources available, this approach was the most practical choice (Bradshaw, Atkinson and Doody, 2017). Phenomenology aims to describe the essence of a phenomenon from the perspective of those who have experienced it, including both what was experienced and how it was experienced (Neubauer, Witkop and Varpio, 2019). This qualitative study achieved the necessary precision and accuracy to meet its research goal. The philosophical assumption of this study was based on epistemology and anchored on the interpretivism paradigm. "Epistemology is the nature of knowledge. Interpretivist epistemology believes that knowledge is gained through in-depth understanding of phenomena'' (Wambugu, *et al*., 2015). The interpretive paradigm is chosen because it deals with exceptional discernment of the world via eyewitness experience, factual declarations, and quotation of actual conversations from insiders' perspectives and also they employ data gathering methods that are sensitive to

context and which enable rich and detailed descriptions of social phenomena by encouraging participants to speak freely and understand the investigator's quest for insight into a phenomenon that the participant has experienced (Kasim and Antwi, 2015).

Interpretivism paradigm has the strength of generating primary data which is associated with extraordinary validity as loyal and sincere responses are elicited, the subject-researcher relationship is interactive, cooperative, and participative providing a significant degree of depth to the subject being studied, the nature of reality is socially constructed and multiples (Dudovsky, 2022).

This study has applied both deductive and inductive approaches. The deductive approach starts with a general theory and tests it through specific observations and data analysis. The inductive approach, on the other hand, starts with specific observations or patterns and aims to generalize them into broader theories or principles (Bingham and Witkowsky, 2022). By the use of inductive methods, meanings were derived from the data, codes and themes developed, and representative data was selected, and findings explained using theory and literature. Bingham and Witkowsky (2022) argues that a combination of deductive and inductive approaches is valuable. Deductive practices help structure the data and establish the boundaries of the study, while inductive practices allow for findings to emerge from the data. This iterative process enables the researchers to incorporate existing knowledge and experiences of preschool teachers and theory to interpret and clarify the findings. "A data analysis process that draws on both deductive and inductive analysis supports a more organized, rigorous, and analytically sound qualitative study" (Bingham and Witkowsky, 2022).

3.3 Study site

The research took place in the Greater Accra region of Ghana, which encompasses 29 Municipal, Metropolitan, and District Assemblies. This study was carried out across multiple centers.

3.4 Study population

The target population for the study was limited to early childhood educators in the Greater Accra region of Ghana. This distinct type of the teacher's population was sampled due to the major role they play in the life of children and the substantial amount of time they spend with them at this early stage of development.

3.5 Inclusion and exclusion

For the study, one preschool teacher from each school who directly works with at least one child with Autism or cared for a preschooler with Autism was selected. Non-teaching staff and teachers who had never worked directly with the preschoolers with Autism were excluded from the study.

3.6 Sampling and Sample size

The researcher utilized the internet to compile a list of preschools within the selected district of the Greater Accra region. Each school was then contacted by phone and those that met the inclusion criteria were enrolled. Purposive sampling was used to select twenty-one (21) preschool teachers, one from each school in the region. In-depth interviews were conducted both in person on site and online.

3.7 Data collection methods and instruments

The study used a mixed sampling approach, which included both random and purposive sampling. Random sampling was used to ensure that each school in the region had an equal chance of being selected. This process involved initiating a Google search on the internet using the query "list of

preschools in Greater Accra Region". Following this, a subsequent step was to contact these preschools via phone to inform them about the study and inquire about their interest in participating. Purposive sampling was used to select schools that had experience with children diagnosed with autism. Individual teacher enrollment was also purposive, with teachers selected based on their experience working with children on autism spectrum. To gather more information on the teachers' knowledge and experiences with ASD, in-depth interviews were conducted using an adapted interview guide from Lindly *et al.,* (2022) which entails five (5) detailed sections tailored to address the research objectives. The sections include demographic data of participants, their knowledge on autism, elements of health literacy and autism (including access to information, understanding and evaluation of the information, and health literacy on autism treatment and service use), improvement areas of information on autism and the experience of the teachers with autistic children at work (Lindly *et al.*, 2022). Each section of the interview guide answered each research objectives accordingly.

3.8 Pretesting

To validate the interview guide, make revisions, and determine the response pattern of participants, stimulation of the official data collection process was carried out in another preschool, which has practically all features of the selected schools. The result of the pretesting was not included in the main study.

3.9 Data handling

After collecting the participants' responses, transcription and coding, the researchers grouped them based on shared similarities and identified clear themes. The researchers also paid attention to any unexpected themes that emerged. Then, the themes were compared with the existing literature and the conceptual framework. To ensure accuracy, we meticulously organized and labeled all the data,

ensuring that it aligned with the critical aspects of the study. Our detailed description was a true reflection of the participants' experiences. Finally, the researchers thoroughly double-checked the data against the proposal to ensure that it was relevant (Nwosu, 2016).

3.10 Data analysis

This study applies thematic analysis. "Thematic analysis is a method for analyzing qualitative data that involves searching for recurring ideas (referred to as themes) in a data set" (Riger and Sigurvinsdottir, 2016). "It is an approach for extraction of meanings and concepts from data and includes pinpointing, examining, and recording patterns or themes" (Javadi and Zarea, 2016). They added that thematic analysis provides depth to qualitative analysis and establishes its more systematic and explicit form of it. According to Riger and Sigurvinsdottir (2016), thematic analysis is in six stages. This involves immersing oneself in the data, generating initial codes, searching for themes, defining and naming themes, and lastly producing the report. Sundler *et al.,* (2019) summarized thematic analysis into three main steps; achieving familiarity with the data through open-minded reading, searching for meanings and themes, and organizing themes into a meaningful wholeness.

The conducted interviews were recorded, transcribed, and analyzed thematically using the software Dedoose. To analyze the data, participants' responses were transcribed. The transcripts were imported into Dedoose where the data was coded and grouped into themes based on shared similarities. Any unexpected themes that emerged were also taken note of. The data was then exported into a word and excel document for the final analysis. After that, the identified themes were compared with the existing literature and the conceptual framework. To ensure accuracy, all the data was meticulously organized and labeled, ensuring it aligned with critical aspects of the study. The detailed description was a true reflection of the participants' experiences. Finally, a

thorough double-checked was done on the data to ensure that the detailed description was a true reflection of participants' experiences and also against the proposal to ensure its relevance.

3.11 Ethical considerations

The study was thoroughly reviewed and approved by the ethical committee of Ensign Global College prior to conducting the interviews. Furthermore, participants' consent was obtained and approval sought from the selected schools. To preserve confidentiality and anonymity, codes were utilized in lieu of names and other identifying information. Both written and verbal assurances were provided to the participants to ensure their peace of mind.

3.12 Limitations of the study

This study's qualitative nature precludes the establishment of statistical inferences, limiting our capacity to draw conclusive hypotheses. Rooted in the interpretivism paradigm, the study is susceptible to bias due to its inherently subjective approach. Consequently, the primary data generated is contextually bound, influenced by individual perspectives and values, thereby diminishing its potential for broad generalization and exhibiting weakened predictive power, as noted by Dudovskiy (2022). Despite these inherent weaknesses, the adoption of the interpretivism paradigm remains indispensable for this study, affording unparalleled depth of insight into the subject matter.

It is important to note several limitations that may impact the study's scope and findings. The process of school selection inadvertently omitted institutions without online accessibility, potentially introducing a selection bias. Moreover, the online interview sessions encountered network connectivity challenges, leading to occasional disruptions that might have influenced participants' responses.

3.13 Assumptions

It is assumed that the selected sample of preschool teachers in the capital of Ghana possesses a reasonable level of awareness and understanding regarding Autism Spectrum Disorder (ASD), enabling them to provide accurate and insightful information about their knowledge and experiences related to ASD.

CHAPTER 4

4 RESULTS

4.1 Introduction

This study investigates the insights and ASD understanding of preschool teachers in Ghana's capital. The chapter outlines teacher demographics, school-specific data, and interview-derived outcomes grouped into themes, supported by pertinent participant quotes. It addresses research inquiries: 1) Teachers' perceived ASD knowledge, 2) Health literacy components and information sources, and 3) Experiences managing autistic children. The chapter concludes with a summary of major findings.

4.2 Participants Demographics

In the Greater Accra Region, Ghana, 21 preschool teachers from different preschools were interviewed for this study. The age of the teachers ranged from 25 to 65 years, and their teaching experience varied from 1 to 27 years. Most of the participants identified as Christian, were married, and had attained tertiary education. All the teachers interviewed were female, with the majority serving as proprietresses of their respective schools.

The preschools covered a wide age range of children, from crèche to kindergarten 2, with the students' ages ranging from 2 to 12 years. Across all 21 schools, there were a total of 40 children with autism.

4.3 Perceived knowledge of ASD among preschool teachers

The preschool teachers' insights on their knowledge of autism spectrum disorder revolved around four main themes: understanding what autism is, recognizing the clinical manifestations of autism,

being aware of possible interventions, and knowing about the institutions that offer these interventions.

4.3.1 What Autism Is

This theme explores teachers' perceptions of autism. What their description of autism is. Approximately one-third of the teachers demonstrated a commendable comprehension of autism's nature. Among the descriptions employed to elucidate autism were references to it as a developmental disability (mentioned by 2 teachers), a disorder originating during pregnancy (mentioned by 1 teacher), a condition involving the brain (mentioned by 1 teacher), and an acknowledgment of distinct autism variations, including mild, moderate, and severe forms (mentioned by 3 teachers). The three quotes provided below correspond to these descriptions:

> *"I know it's a developmental disorder caused by differences in the brain. So, its kids or individuals that tend to be diagnosed onto the spectrum have problems with social communication and interaction and they tend to repeat behaviors or interests"* (as said by P21, 37 years old).
>
> *"Their situation is one of those disorders that happened during pregnancy so it can happen to anybody is not their fault"* (affirmed by P1, 27 years old).
>
> *"Those with a mild, or those with the severe. Yes. It's like grades. When you are diagnosed, they have levels in autism, I think. How …there are some people that own a very bad, like, mild, bad, something like that"* (conveyed by P14, 38 years old).

Certain educators associated autism with aggression, while others conveyed their views on the challenges of detection, as evident in the subsequent pair of quotes:

> *"They become quite aggressive because it's been that they find it hard to communicate. So, they become a bit agitated and that tends to spring up some behavioral disorders*" (shared by P21, 37 years old).
>
> "*Autism is very hard to detect unless you know about it"* (stated by P4, 65 years old).

Autism was again described to be a spectrum of conditions as expressed in the quote below:

> *"But like I said, when you meet one autistic person, you've met only one autistic person. They are they can be so different and so varied in the behaviors, they exhibit*" (highlighted by P10, 36 years old).

4.3.2 Clinical Manifestations of ASD

This theme delves into the characteristics, signs, and symptoms observed in autistic children, categorized into four main groups: Behavioral, Developmental, Cognitive, and Sensory.

4.3.2.1 Behavioral manifestations

Behavioral manifestations highlighted by the teachers includes banging their head, aggressiveness, disruptive, does not respond to name, easily provoked, echolalia, mood swing, no eye contact, play alone, poor socialization, repetitive style of doing things, reserved personality, strict adherence to routines, they are hyperactive, they are in their own world, they are rigid, they do things alone, they do things in their own space, and they speak to themselves.

The quote below shows how some respondents articulated these manifestations:

> *"The severest I got was when they are angry, they will be hitting their head, bunging their heads on wall or on the floor"* (P13, 43 years old).

> "*So, they don't give eye contact. You hardly have an autistic child giving you eye contact. With some of them, when you even mention their name, they don't even respond to you. They prefer to be alone; they prefer to play alone, they have repetitive movement or speech patterns and as time goes on, they become quite aggressive because it's been that they find it hard to communicate. So, they become a bit agitated and that tends to spring up some behavioral disorders"* (P21, 37 years old).

> With their repetitive behaviors, *"Because at times he will come and say today I'm not happy. Why are you not happy? So, I got to know that the mother was pregnant and she will tell her husband, today she is not happy. So, he is also copying it. He will come and say, today I am not happy. You are not happy, why? Not knowing is the mother who has*

been saying in the house that today he's not happy. Then he too will come and be telling you today he's not happy" (narrated by P1, 27 years old).

4.3.2.2 Developmental manifestations

This relates to problems in meeting age-appropriate milestones. Responses which included autistic children meet early developmental milestones superfast, observed communication problem, impaired reciprocal communication, impaired social interaction, slurred speech and speech delay.

According to P21, achieving milestones either earlier than expected or later both constitutes red flags in child development;

> "*And the other thing too with autistic kids, they tend to progress extremely fast. At a very young age, they meet all the targets like, like short short milestones, three, three months just sitting, four months, maybe they're crawling... when it hits age, I think between one and a half to two, everything just slows down. Once everything starts to slow down, you need to know that, oh, what is going on? This is not the same child I had that was progressing super-fast"* (P21, 37 years old).

Some also indicated that these children have issues with verbal communication;

> *"They can sing all the rhyme, every like they can sing all the rhyme, their shape but when you ask, they don't communicate it, they don't dialogue. They wouldn't dialogue with you. You ask what shape is it but they wouldn't dialogue but to themselves when they are alone, they can they will say everything or sing all the rhyme but they won't talk. Yes, they won't talk"* (narrated P13, 43 years old).

4.3.2.3 Cognitive manifestation

Delayed potty training, short attention span, they cannot correlate the hand and eye, unable to understand others expressed emotion

Some teachers made known that children with autism have problem with potty training, concentration and have flat or blunt affects;

She prompted on *"Potty training as well; so, we may have an autistic child who may have a delay in being potty trained in these aspects"* (P12, 48 years old).

"They may be unable to read the expressions of other people. Or not really but interpret the facial expressions of other people. So, you know, normally, like my son, if I'm angry with my son and my son looks at me can see I'm angry. So, a child with ASD may not be able to interpret it as anger. Or they will not be able to interpret sad or happy" (P10, 36 years old).

4.3.2.4 Sensory manifestations

These encompass manifestations such as hearing difficulty, sensitive to things in the environment and the heightened reaction to noise.

P4 declared that most of these kids struggle with their sense of hearing,

"But with the autism, a lot of them can't hear. A lot of children that have autism also have hearing difficulty and speech difficulties" (P4, 65 years old).

P12 pointed out that children with autism are sensitive to their immediate environment;

"*Sensitive to certain things in the environment. If it's maybe too much light or a busy room, maybe the walls, the color of the walls, or there's so many things pasted on the walls, or there are too many activities, you know, in the area that the child is. Sound; so, for a child who is maybe, for example, when we having drumming and dancing then, you know, the African drum being beaten, you know, the children singing people dancing under normal circumstances a child may have, okay, I'm okay with this… for children who may be autistic, that sound may be heightened"* (P12, 48 years old).

In summary, given the diverse professional ranks, educational backgrounds, and years of experience, a consistent pattern emerged among the teachers' clinical observations. Notably, developmental disorders took precedence, with a specific focus on communication problems (cited by 15 teachers) and speech delays (cited by 11 teachers) as central clinical manifestations.

4.3.3 Knowledge on Interventions and Responsible Institutions

This theme delves into diverse strategies and approaches aimed at fostering independence in children with autism. According to teachers, these strategies encompass behavioral therapy, noise-cancelling headphone therapy, occupational therapy, social therapy, speech and writing therapy, and weighted blanket therapy. Additionally, the theme explores the institutions providing these interventions. Some notable establishments include special schools and hospitals. Conversely, while some teachers acknowledged limited familiarity with these institutions—mentioning hospitals like Korle-Bu and Ghana Medical Center, along with special schools like SENA Paediatrics and Multikids, among others—others admitted a lack of knowledge concerning the interventions themselves. This is exemplified through the following two quotes:

> "*The intervention. Hmm. In Ghana, okay, I know two... I don't know of any intervention myself. But I've seen …there are now educating ... I don't know any intervention"* (P18, 36 years old admitted).
>
> *"As for that one, I don't know"* (P9, 47 years old).

P10 explicitly stated that behavioral therapies, noise-cancelling headphone therapy, and weighted blanket therapy are beneficial for helping children with autism regulate their behavior and lead a socially acceptable life:

> *"So as far as I know, it's basically behavioral therapy. That's, I mean, it's a behavioral therapy that I know of or I have exposure to. So, you know, helping them normalize in certain routines that make them more socially acceptable. So behavioral therapy, then I also know of regulating their diets. Regulating their diets to, or giving them special diets that will help to, sometimes they can be hyperactive. So that will help them to also regulate a little bit more. Then I also know of noise cancelling device that they wear as headphones for children that are more sensitive to noise. I try to have these fidgety toys. These fidgeting toys that they can play with or they can use to keep their hands engaged. So that they can*

be available for you to communicate in other ways. And there are also weighted blankets. It is a weighted vest in Ghana, it's more like a weighted vest that they need to wear to help them with their sensory issues to keep them regulated. So, these are some of the interventions I know about" (P10, 36 years old).

They stated that children with autism benefit from being in smaller groups, and they find interventions like social therapy, occupational therapy, and speech therapy particularly helpful in addressing their sensory issues:

"For mine, for my daycare, what I do is what we called social therapy and because here I do like so I encourage the parent to let them stay in small groups instead of the big schools. Yea, they are okay in smaller groups" (P13, 43 years old).

"Those ones with challenge of speaking, it will be more appropriate for them to start with a speech therapy because seeing a speech pathologist will help in a huge way as in help them build up their vocabulary" (P17, 43 years old).

"So definitely the speech therapy is important where autistic child is helped in the area of speech. Also having that child, you know, we need to have eye contact. So, we're always on our knees or on low stools talking to children because we need that eye contact. And then for occupational therapy, basically, we also have to do with the senses" (P12, 48 years old).

The institutions discussed by the teachers encompass both schools and hospitals, as indicated in the quotes provided below:

"*Okay. Yes. So, it's like a school. East Legon we have, there's one. There's one, em… Bright Kids, It's an inclusive school for that autism-delayed speech. There's also SENA and there's also Multikids. I think I know of these three. That's the special school. I don't know about the support. There are they are schools for such special children and Korle-Bu"* (P13, 43 years old).

"I know for education, I know Multikids as I mentioned earlier, they are running inclusive school so, it has the regular, it has the children in need as well and they are blending too well and better results are being achieved over there. With institutions, I know Ghana

Medical Center and they have children going in to seek for medical attention in a way" (P17, 43 years old).

"I know about "Awaa waa 2". I think and now I think that's another one called "Cliques". I know one lady who says she works with Dr. Marble" (P8, 45 years old).

In conclusion, the respondents expressed a good level of knowledge about the therapies but relatively limited knowledge about the institutions. Speech and writing therapy emerged as a prominent intervention (mentioned by 13 teachers), while special schools stood out as the predominant type of intervention institution (noted by 8 teachers).

4.4 Health Literacy and Autism Care among Early Educators

This theme presents key findings on how respondents accessed, understood and applied information in managing Autism among their students and recommendation for improved health literacy.

4.4.1 Access and Sources of Information

On access, majority of respondents mentioned the internet as their source of information. Other highly mentioned sources include training, workshop, and observations. These sources speak about their individual health literacy, which highlights how individual skills and knowledge contribute to access, understanding and application of information for healthy decisions. Thus, most respondents` knowledge on Autism has been through their acquired skills in training, skills in internet search and observation skills. This is presented in the two quotes below:

"The internet. I feel it's quite easy because if you see something and you go into Google and you're able to type it in, it's able to give you a response right away. So, I go on the autism.org.uk. And then there is the autismawareness.com.au. So, I just don't use one thing

and then also with the few psychology books that I read, they were in there" (P21, 37 years old).

"I mean, like I said, it's my training that helps me to even see signs and when I came into contact with a child" (P1, 27 years old).

Although respondents mentioned information from family, friends and experts, they formed the minority of the knowledge base.

The reasons behind choosing information sources were attributed to accessibility, reliability, and the comprehensive coverage of ASD-related information. They also valued sources that were easy to understand, enabling them to access the necessary information on ASD quickly.

"*I just feel like a lot of my professors on my training, people who have worked with not just autism, but various neurodivergent conditions for years. So, I just tend to trust that what they tell me is based on credible knowledge and information" (school)* (P10, 36 years old).

"Because that's the only place I know that has all the information" (internet) (P13, 43 years old).

"The Internet is a quick access for me personally" (P12, 48 years old added).

The challenge with access of information included not knowing the right question to ask, infodemic, and not getting the right information. Mainly, respondents had a major challenge with infodemic as shown in the quote below:

"We do have challenges. Yeah. So, there is so much information on the internet out there and sometimes trying to kill it down is a great challenge" (P12, 48 years old).

"Sometimes you ask the internet this question and then it gives you another answer" (P5, 25 years old).

4.4.2 Understanding and Evaluation

Understanding and evaluation of information: In the process of evaluating information from the sources mentioned, respondents shared that they sometimes compare information from different

sources to make meaning of the knowledge gained. Some respondents gained much clarity from the experts after an internet search, while others confirmed the information from the internet with their observations of the children in their class. Some respondents clearly stated:

> *"Okay. So, with the communication like this, I went to the speech therapist, the speech therapist brought some call boards, but it wasn't helping. So, I went to the internet and then searched, and then there were some communication boards. It's a board that has daily routines on it. So, we do everything in school: the brushing, the bathing, everything. ...So, I also told them, Mother, and she got it, and then we've been using it in school"* (P6, 25 years old).

The challenge with understanding of information was the biases, misinformation and the diverse information given which sometimes do not apply to the ward they are caring for.

> *"Sometimes, some of the materials, when you read them, they are, I think they are, what's it called, technical. Yes. Medical. Yes. The medical terms, you don't understand"* (P20, 40 years old).

4.4.3 Applying information on Autism

Similar to responses on understanding information, respondents could use the information found after comparing it to information from other sources. However, most respondents relied on their observation skills to tailor the information to suit the ward`s needs in their care. Information from different sources sometimes confuses them in the use of information …

> *"Sometimes, you know, sometimes most of Google is from the foreign, maybe e…the other side of the world, and we are in Ghana, we are black. So maybe they what they say, I'll have to now think. Normally, is… I don't even know. I have to compare and see whether from the basis at which they are talking, is this the same as the conditions we have in Ghana. Google is more of the foreign, the white, white, white, white and their settings are different"* (P13, 43 years old).

4.4.4 Recommendation for Improved Health Literacy

The teachers interviewed, suggested areas of information relevant to them and their preferred delivery mode. The teachers emphasized certain key information that they deemed essential for all educators to possess. This critical knowledge includes autism management and care, treatment and medication options, behavior patterns, characteristics of autism, understanding the causes of autism, distinguishing between slow development and autism, gaining an overview of disabilities, and being aware of the prevalence of autism.

> *"Okay, so I think the management and maybe the causes as well. Yes, because when you know how to manage an autistic child, as a teacher, it will help you"* (P6, 25 years old).
> *"so we should know the symptoms, the characteristics. As a teacher, you know the characteristics of children with autism"* (P14, 38 years old).

On the delivery approach, the recommendation was a diversified approach and this was confirmed in most responses but much clearer in the quote below:

> *"Yes, videos, mobile, pamphlets … So, you know we have different learners and the different learners, we have the people who are visual learners and so visual learner would want to have something that he can see. We have the auditory learner, who also is looking at something that he can hear. And then we have the type who also loves to read, they're reading and writing learners, so, for them when they… anything pamphlet, they will read and get information. And then we have the ones that got to do with something like a technical aspect. So, you need to put all these four into consideration as in whatever information you are putting out there, that will serve for each and every one"* (P17, 43 years old).

Others also recommended a shared platform or link where teachers are assured of relevant information on Autism. Most importantly, the teachers strongly advocate for including autism as a fundamental part of their training curriculum and suggest that face-to-face orientation with

specialists in the field would be beneficial. They urge the Ghana Education Service and their school administrators to arrange for resource persons to deliver this essential information.

> *"Yeah, I think every head of a school should take it upon themselves. GES should be able to provide training for not just preschool teachers, but teachers on autism and neurodivergence"* (P10, 36 years old advised).
>
> *"When they are being trained. I think they should now teach us together with our training. It should be part of our training. It should be part of our training so we have the knowledge and the ability to handle them" (P16, 43 years old added).*

4.5 Experiences of Preschool Teachers in Managing Children with Autism

This section delves into teachers' personal views and interactions with autistic children, along with their management strategies. It's structured around four main themes: Shaped Perceptions of Autism through Personal Experience: This theme explores how teachers' understanding of autism is influenced by their direct engagement with these students. Customized Interventions from Educators' Insights: This theme centers on crafting and applying personalized interventions based on teachers' experiential knowledge. Challenges in Handling Autistic Children and Engaging Parents: This theme addresses the difficulties teachers face when working with autistic children and their parents, including the complexities of support and communication.

4.5.1 Formed Perceptions of Children with Autism through Personal Experience

This theme revolves around the idea that individuals develop their opinions and perceptions of children with autism based on their personal interactions and experiences with them. It suggests that direct involvement and engagement with children on the autism spectrum play a significant role in shaping how people perceive and understand this neurodevelopmental condition. Apart from the clinical manifestations mentioned earlier, the teachers caring for children with autism also highlighted some behavioral traits commonly associated with autistic children. These

behaviors include: Autism can make people brilliant, difficulty trusting others is common, autistic children are creative, enochlophobia, or fear of crowds, may be present, they can be faster at certain tasks, autistic children can have specific food preferences, they are often intelligent, they tend to be drawn to certain colors, autistic children display smart behavior, autistic children may enjoy singing, autistic children can be challenging to control at times, making sounds or vocalizations is common, they have a preference for new things, they can be friendly and welcoming, autistic children often have a liking for water, displaying mannerisms is typical for some autistic children, claustrophobia might be observed in some cases and they often seek and enjoy attention.

These observations offer insight into the diverse and unique characteristics that autistic children may exhibit, contributing to a deeper understanding of their individual traits and behaviors. P6 shared that autism has the potential to make children brilliant:

> *"Because Hadassah is equally good. She can read. We are now doing the two and three-letter words that is spelling, but she can spell any word you give her, like the familiar words like four, five, and six letter and she can pronounce everything. And so is David. And we had one too Nana Yaw. He can. So sometimes it makes me believe autism makes them more brilliant than normal children"* (P6, 25 years old).
>
> *"And actually, they are very intelligent. Because sometimes I will intentionally write a number and then turn it upside down, waiting for the normal student to tell me that it's wrong. Auntie, no. you won't even finish. Auntie, no. David, why not? He will come and clean it. And every animal on the tablet he knows their names. Sometimes I even know, it's not sometimes, there are some animals I don't even know their names, but he will mention everything and tell you the sound they make. David, they are serious. Seriously. The ones that I had an encounter with David to be, uh, particularly, David is something else"* (P1, 27 years old).

P8 expressed that autistic children can be challenging to control:

> *"It's difficult to handle them"* (P8, 45 years old).

P4 mentioned that autistic children often have specific food preferences:

> *"They like crunching on food rather than just eating. They don't like wet things. They like biscuits they can break like crackers and stuff like that. If you gave them rice and stew, they'll eat the rice and leave the stew because it's wet"* (P4, 65 years old).

P12 concurred with P4's observation regarding autistic children's specific food preferences:

> *"Diet; So obviously the mouth and different textures of food. Some autistic children may not want to have certain textures of food. If it's chewing, maybe they don't want to chew. They just want to have liquids, things like that. Basically, depends on the texture of the food when, you know, it's in their mouth"* (P12, 48 years old).

It is noted that autistic children can exhibit claustrophobic tendencies:

> *"Even there was one where you closed the door, he becomes hyper. Closing of doors" (P13, 43 years old).*

P10 and P13 made an interesting revelation regarding certain children exhibiting signs of autism, which they believe are induced by excessive screen time rather than being a disability. They pointed out that the era of COVID-19 has had an impact on this observation:

> *"As soon as a child has a speech delay, every child is scared. Everybody is scared that a child might be autistic. But these days, we are talking about screen-induced autism, right? We're talking about children who have been exposed to screens too early, and because of that, they exhibit autistic symptoms"* (P10, 36 years old).
>
> *"I had an example, a child like a little one wouldn't say water, she didn't say anything when she came then I realized she responded to the…the cartoons what they say, she repeats. You know they talk in a slang like what they watch are slangs. The language is kind of foreign. For water, I tried saying water, water, come for water, Water and she responded and came to me" (P13, 43 years old).*
>
> *"And also, what I realized in my daycare was, one senior sibling, a sibling that developed the autism, I would say developed, I realized some of them is from how they were raised.*

The mother unfortunately was the COVID. So, they were just on their laptops and the children are listening to the tablets. They are listening more to the foreign tablets. And their mothers too don't have time. They think ok it is time for food, so they just put the food, they won't say oh come and eat, food time, they just give the food, if it's water, they'll just put it in their mouth. They won't say water, and they don't dialogue with the children, so that's therapy for the speech-autistic one, I think dialoguing with children from the baby time, from infancy will help" (P13, 43 years old).

4.5.2 Tailored Interventions Based on Educators' Experience

This theme focuses on the development and implementation of personalized interventions for children with autism, drawing from the knowledge and insights gained by educators through their experiences. It highlights the importance of using educators' practical understanding of individual students to create targeted and effective strategies to support and address the unique needs of each child on the autism spectrum. A participant shared a success story of training an autistic child in performing activities of daily living through learning by imitation and routines. They described how the child achieved mastery by consistently practicing morning routines within the school setting:

"Mothers, the extra love and all that is not like I'm not giving him love, but he needs to do things himself. And when he's in the house, the mother might think, oh, boy, yes. And he has this condition, he's too young let me do it for you. We want him to be independent. So, when we go to the washroom. I'll be brushing ooo I'll be brushing and he will also be sitting on the pot, we'll be doing the things together. So, he doesn't bathe in the house, not because they can't do it. They were doing it until like at a point it was making my work difficult. So, when the mother said we should be doing it in school, I said, ok, I wouldn't mind. So, he comes with that everything. So, it has become a routine something when he comes, he knows, that the first thing when I get to school, I put my bag down and then I'll take his brush, give him the toothpaste and then we'll go and sit on the pot. Then we'll start brushing. After that, I'll bathe him for that he hasn't done that himself and then give him

the towel. After that, I'll give him pomade and then we'll all be doing it. So, while practicing, now he can do stuff by himself. He can remove his shirt. First, he won't even do it. If you tell him to do it, he will be looking at you, be crying, holding your hand, taking it to his shirt, telling you that remove it for me. But now what we get there, David removes your shirt. He will start if he can't open the buttons, you start doing it for him and then you continue" (P6, 25 years old).

A participant also shared their experience as a teacher, going above and beyond to teach a child with autism essential skills such as chewing, using a straw, crawling, and climbing stairs, among other tasks. Their dedication and personalized approach were crucial in supporting the child's development in these areas:

"So, with the sipping one, we will leave the child very thirsty, very thirsty so eventually when she was holding, like she tried to drink nothing was coming. Nothing would come. But as she closed her mouth and as she tried to put it that is how it worked eventually. We realized that the kalyppo, they used to pour it in a bottle, everything they pour. So, you never got to use a straw. Yes. So that is how we got to learn to sip from the straw. Or a water bottle that has a straw and the mother was very happy, very very happy. And with the chewing one, I started with soft biscuit a little at the time then eventually. So, with their rice, we made it very soft. Very soft rice. Aha… So, I told their mother that they should move from the Banku and Tz small. So, they should start with omo tuo. So, they incorporated omo tuo, which was rice, not too smooth. Yes. So that is it for the chewing. And for the stairs too. For the stair, for climbing stairs not knowing the child never crawl when she was a baby. Yes, he never crawls on the floor, he crawls on the bed because mummy didn't want his knees to be black. So, I had to help him learn to crawl. Haha…It was not easy. It's a whole thing. That's what we did for one on one. So that was that's what we did. So gradually, we did one step a day, one step a day and he liked counting. So, I'll be doing it holding both hands and lifting him up then we say one, one. And I helped him bend his knee. It was a whole program so…" (P13, 43 years old).

P20 shared their intervention experiences, which included managing the child's tantrums and witnessing the child speak for the first time, among other significant achievements. These effective strategies and support played a pivotal role in these positive developments.

> *"He was four years he could not speak. The beginning wasn't easy so you need to have a lot of patience and love for children like that and that's what we did and when he noticed that he was really being cared for, sometimes if you say stop, he will stop. When he's throwing tantrums, you hug him then he will calm down and when we're teaching him, we will notice that the delay in cognitive skills but he was smart so even though he couldn't speak, we noticed he liked the building blocks he liked to arrange the blocks. So, we decide that you did it from the school and made a mother buy some at home so he would I will use the alphabet to form words yes uh-huh so he could write he could write but weren't too good when we started with the blocks, he will use his fingers around the alphabet and that helped even though when the teacher sounds the alphabet that this is for ball at some point, he will follow. We're seeing that now the words are coming but it wasn't too audible. One day the mom called me one Saturday and said he could say he said mommy the first time and at that point he was five we had done this for a year. He would eat rice and he want to pick the grains one one one but like I said a lot of love you need to be patient with them but at some point, he started eating with a spoon. Then he started speaking and then we involved him in in extra-curricular activities as we involve him in the choreography and amazingly, he remembers all the steps on the D-day"* (P20, 40 years old).

Certain schools implement controlled diets for children to manage hyperactivity and aggression, as they believe that specific foods or ingredients may influence these behaviors:

> "*But some parents are not even aware that the sugar in the diet could just be the issue here. There's juice, there's biscuits, there's ice cream, there's biscuits with cream and so, one example we say in our school, no child is allowed to drink fizzy drinks, no Coke, Fanta, malt. Fries, those fizzy drinks. No biscuits with cream"* (P12, 48 years old).

> *"Yes, spicy food triggers them a lot. Because the severe child that I have, I was having 3, after feeding him certain foods he become so much aggressive. Very very aggressive"* (P14, 38 years old).

According to P4 SC, some of the ways to provide comfort during their aggressive moments include activities like picking leaves and other calming measures:

> *"You have to give them things to comfort them, to soothe them. So, they tend to have something like, like giving a child a dummy, we call it soother, we give them a leaf"* (P4, 65 years old).

The teachers make extra efforts to assist these kids in enhancing their communication skills:

> *"So now when he needs something, when he needs water, he goes drag someone's bottle and bring it, telling me he wants water, when he needs food. Then we have a communication board that helps. So, it's on my table, when he needs something, he points to what he wants"* (P6, 25 years old).

According to P14, the intervention provided in the school system for these kids is geared towards fostering independence rather than solely focusing on academic pursuits:

> *"So, with him, I engage him in a practical life because per the little knowledge, I have on special education for such children, e… Maria Montessori came to help children with disabilities, like special needs. So, they were not focusing so much on books and pencils. They were focusing on how the child can live independent life: dress by himself, eat by himself, and stuff. So, I was doing that with him. I was not giving them pencils and book stuff. I gave him maybe a lace and a card to try to lace it. I will give him two holes with a spoon and then give the spoon to him to try to do something with it. Though I am not expecting perfection but I know gradually he can learn something. If is kalyppo I give it to him sometimes to put the straw in it by himself and take it by himself"* (P14, 38 years old).

They mentioned that gaining the attention of an autistic child requires understanding the child's preferences and interests.

"Knowing the child and what makes the child…what attracts the child. You incorporate that in class, in lessons" (P13, 43 years old).

During lesson time, P2O mentioned that they offer extra lessons to promote inclusiveness rather than providing separate lessons for children with autism:

"Okay, we do it after. I don't know how to put it. We provide extra. We don't do separate lessons. We provide extra. Because like I said, we didn't want to take him out. We wanted inclusiveness. We wanted him to be part of the class, and get involved in everything that's done with the other kids. But we provided extra. So, after that, when the kids are going home, we can take him and be doing other things with him. Okay. Yes, so extra other things we did with him" (P20, 40 years old).

4.5.3 Challenges Faced by Teachers in Managing Children with Autism and Their Parents

This theme focuses on the difficulties and hurdles that teachers encounter when working with children on the autism spectrum and their parents. It likely involves discussions about addressing the unique educational needs of these children, managing behavioral issues, promoting inclusive classroom environments, establishing effective communication with parents, and collaborating with them to provide the best support and educational outcomes for the children with autism.

The child seeks attention by resorting to physically aggressive behavior towards the teacher, such as beating or hitting:

"At a point they would have them want to communicate with you but probably they feel that what they want to express you are not getting it, is either they are pinching you or they are just hitting you just for you to get the understanding or for you to have their attention in a way" (P17, 43 years old).

"So first I didn't know that when he cried, meaning he wants something. And I didn't know what exactly, sometimes you might know that he needs something, but then the exact thing he needs, you might not know. So sometimes he will come. If he drags me and I'm not

getting the thing, he will hold my hand, sometimes try to beat me, like hit me and all that. Yeah, so that was my difficulty" (P6, 25 years old).

P10 mentioned that schools tend to avoid admitting autistic children due to the additional support required, financial implications, and the stigma associated with it. Furthermore, the limited support available in schools means that the few that do accept autistic children become heavily populated with them, which challenges the concept of inclusiveness:

"Well, autistic people would require more support than a typical child. And atypical child definitely would require more support because of communication, they may struggle to tell you about their personal needs. So yes, when you admit an autistic person in your school, it will come with some budget implications or some financial implications. And that's one of the things that any school owner will shy away from. School owners will shy away from admitting an autistic person because they are afraid of the stigma. So, if you admit an autistic person, your school can be easily seen as an autistic school. Like you stop seeing typical children and only autistic children will be coming. And then you'll be defeating the purpose because, for some autistic children, we try to integrate them or mainstream them. So, it's another thing. The stigma too is another" (P10, 36 years old).

Another challenge faced by schools relates to the reactions of other parents towards the presence of autistic children in the school:

"So, we have people who come to us, and then they are worried that their children will contract autism or their children will become autistic because they are in the same class with an autistic child" (P10, 36 years old).

"*Parents do come here and some of them don't like the fact that there are children with disabilities here" (P4, 65 years old).*

"Some are even afraid that, hey, is my child not going to look after this child and copy?" (P6, 25 years old).

Our efforts are often hindered by parents' refusal to accept that their children are on the autism spectrum. Parental denial according to P10, is partly fueled by the belief that there is not enough

evidence of autistic children succeeding in life, which adds to the frustration we face in providing appropriate support and interventions:

> *"You know, autism is still very taboo. It's still... Even with my parents, I have here, it took them time to accept that their child, children may be autistic. It's not easy. It wasn't an easy journey. I've had this child for over a year. It wasn't until last month that they accepted that their child might be autistic and accepted help. Parents feel that if their child is neurodivergent, then it's a lost case and, you know, I think one is their awareness and two, it's exposure because honestly, there are autistic children who require little support and they can still become very independent and very functional. You know, we don't have enough examples of such. In our society, the only autistic people or the people we associate with autism are people who require lifelong support. But those who require little support, we don't... We don't really have that. Elon Musk is autistic, the owner of Twitter and the first car in the world to drive by itself. He's autistic but because he's white, it's difficult for somebody in Ghana to relate to that and say that"* (P10, 36 years old).

Some participants have identified a challenge they refer to as a "turn off," particularly in the context of referrals:

> *"I didn't want to talk about it. So, I refer two parents to the special school that deal with I knew deals with autism. So, with one, it was a negative effect because as I said knowing child and their type their spectrum, this one, I'll say, might have been slow development. So, when she went to mix with the autistic that bang their head, his was just when you call him, he wouldn't respond quickly. Unfortunately, he went and rather learned… So now it's delicate for me to even now refer. His was mild but he went to learn those other things. So, it didn't speak well. I still feel very very…I'll say each spectrum should have it school. They shouldn't mix all of them together because they will learn from the other"* (P13, 43 years old).
>
> *"I tried talking to them, they made me to close my mouth on that. Yes. I tried talking to one of them they told me that I know my child that is why I brought him here to him to mix with the normal children so he can become a normal child. It put me off" (P16, 43 years old).*

4.6 Concluding summary

In this study, 21 experienced preschool teachers from various schools in the Greater Accra Region of Ghana, primarily female proprietresses, participated. These schools followed Montessori or Cambridge curricula for children aged 2 to 12, and there were 40 autistic children across the 21 schools. The research explores these teachers' understanding of Autism Spectrum Disorder (ASD) and their experiences. The analysis revealed three main themes: 1) Teachers' perceived knowledge of ASD, 2) Health literacy and Autism care among educators, and 3) Teachers' experiences managing autistic children. These themes were divided into 10 sub-themes covering autism basics, information sources, applying knowledge, perceptions, tailored interventions, challenges, and more. The findings offer significant insights into the research questions and contribute to the understanding of ASD.

CHAPTER 5

5 DISCUSSIONS

5.1 Introduction

This research endeavor undertakes a comprehensive analysis of the awareness and expertise pertaining to Autism Spectrum Disorder (ASD) among preschool educators in the urban center of Ghana. The investigation was structured around three primary facets: firstly, evaluating the extent of ASD comprehension among preschool teachers; secondly, discerning the channels through which they acquire information on ASD and dissecting the influence of health literacy components on their perceived knowledge of ASD; and finally, elucidating the practical encounters and strategies employed by preschool teachers in effectively managing the educational needs of children with ASD. This scholarly pursuit not only contributes to the field of education but also holds the potential to enrich the discourse on inclusive pedagogical practices.

Result Interpretation

5.2 Perceived Knowledge of ASD among Preschool Teachers

The initial theme elucidated the concept of autism. The outcomes corroborated previous research findings by Golson et al. (2022), highlighting teachers' limited awareness of autism, encompassing its nature, origins, prevalence, and evaluative procedures. This outcome aligns with the observations of Golson et al. (2022) and Gómez-Marí, Sanz-Cervera and Tárraga-Mínguez, (2021), who, following a systematic review conducted in Valencia, Spain, ascertained that educators generally possess inadequate knowledge of autism spectrum disorder (ASD). Nevertheless, disparities in knowledge emerged contingent upon participants' professional stage, prior experiences, and interactions with ASD students. Notably, merely one-third of the

respondents, who predominantly comprised tertiary-level educators, provided accurate responses regarding the definition of autism. Conversely, a majority diverged from the query, veering towards discussions on autism's indicative signs. Liu et al. (2016) in China noted a positive correlation between preschool teachers' knowledge depth and factors such as educational attainment, professional experience, and institutional setting. This thematic finding might trace back to the scarcity of comprehensive developmental disability instruction during teachers' training.

Theme 2 encompassed the assessment of participants' knowledge of clinical manifestations of autism and their proficiency in identifying afflicted children. Respondents exhibited a commendable grasp of recognizable cues with communication problem and speech delay gaining prominent and strategies for detecting autism by leveraging these indicators. These outcomes parallel those of Golson et al. (2022), which disclosed that autism-related awareness within the general populace of the United States primarily pertained to symptoms and behaviors associated with autism, surpassing their knowledge of its origin, prevalence, and proper assessment procedure. Furthermore, these findings align with Hanafi Mohd Yasin et al. (2019), indicating respondents' capacity to identify students with disabilities based on behavioral attributes and characteristics, with some employing academic performance indicators such as reading and writing proficiencies. However, these outcomes diverge from those of Twi-Yeboah et al. (2021), whose study exposed preschool teachers' low levels of knowledge with autism spectrum disorder, impeding accurate symptom identification. This heightened knowledge within this theme could be ascribed to the inclusive policy concerning autistic children within mainstream educational settings, affording teachers opportunities for direct interaction and firsthand exposure to indicative markers.

The final theme explored within this research question examined the array of interventions accessible to children with autism, along with the establishments offering these interventions. The results highlighted that a substantial proportion of respondents identified speech and writing therapy as a key intervention. Notably, a prevailing consensus identified special schools as the predominant institution for such interventions, although a noteworthy subset of respondents displayed limited awareness regarding the entities providing these services. These findings align with the observations of Holloway et al. (2015), which underscored teachers' comprehensive awareness of support services available to families with children affected by ASD. Importantly, these results indicated that educators' levels of experience or education did not significantly impact their familiarity with these services. The prevalent mention of speech and writing therapy as a favored intervention can be attributed to the prominent clinical manifestation outlined in Theme 2, centered on communication difficulties and speech delays.

5.3 Health Literacy and Autism Care among Early Educators

The first theme revolved around sources employed by the teachers to access information on ASD, the factors influencing source selection, and the challenges encountered in the process. Varied sources of information were mentioned in the quest to access information on Autism. The findings underscore the critical role of the internet and individual health literacy in acquiring knowledge about autism. The majority of participants predominantly utilized online sources and their own abilities to collect information that contributed to their knowledge base. While alternative sources like training, workshops, social circles, and observations were employed to access autism-related information, they constituted a minority. The diverse sources of information are congruent with a study where other caregivers resorted to diverse sources of information ((Lindly, et al., 2022). Participants' preference for the internet in our study stemmed from its capacity to provide readily

comprehensible and promptly accessible information that fulfilled their informational needs However, the prevalence of challenges related to information overload and reliability were highlighted. The study's findings aligned with previous research, such as Ayub et al. (2017) and Arif et al. (2013), which also identified media and behavioral classes as major sources of knowledge about autism. These studies highlighted the prevalence of relying on media for understanding autism, with a minority of participants having formal training or attending workshops on the subject. The findings of our study reflect a synergy of technological advancement and individual expertise in combing the internet.

Theme 2 was centered on understanding and evaluating the accessed information on autism. It highlighted the different strategies and challenges encountered by respondents when trying to comprehend and utilize information acquired from diverse sources, including experts, the internet, and personal observations. The participants of this study articulated a notable approach to understanding the information they accessed, which involved comparing information from multiple sources to derive meaningful insights. This aligns with the notion that triangulating information enhances the depth and accuracy of comprehension (Fusch, Fusch and Ness, 2018). Several respondents attested to the valuable role of experts and the internet in clarifying information and the integration of personal observations alongside external sources of information also emerged as a noteworthy trend. Notwithstanding the evident strategies employed by the respondents, they encountered substantial challenges in the process of understanding the information. The participants acknowledged the presence of biases, misinformation, and technical jargon within the materials they accessed. These findings may be explained by the sincere dedication of teachers to assist children with autism and their proficiency in digital health literacy.

The third theme talked about application of the information accessed and the challenges in its application. The result indicated that the teacher's primary strategy in applying the information involved tailoring the information using observational skills to cater to individual needs. Challenges arose from reconciling globally sourced information with local contexts, as exemplified by P13 LMH's observation. This highlights the complex interplay between information universality and its applicability within specific settings.

The last theme delved into the recommendations made by the teachers for improved health literacy. This study delved into educators' viewpoints on essential knowledge and preferred delivery methods for effective autism education. The participants emphasized critical areas such as autism management, causes, characteristics, and differentiation from slow development. The emphasis on critical knowledge domains, diverse delivery methods, and integration of autism education into training curricula were seen as pivotal. The study's findings also highlighted the need for collaborative efforts between education authorities (GES), school administrators, and specialists to ensure the successful implementation of effective autism education practices. These findings aligned with Liu et al., (2016) and Ayub, et al., (2017) who revealed the teachers recognized their lack of knowledge and expressed a desire to improve their abilities. They suggested of the government to be more involved in the services provided to children with autism and that introducing programs and educational curricula that focus on children with special needs into teacher training might boost knowledge and abilities. In line with the World Health Organization's elements of health literacy, the knowledge of early educators on Autism in this study was acquired predominantly through their individual health literacy and their recommendation for improvements through institutional collaborations aligns with the need for a better health literacy responsiveness and development (The WHO, 2022).

5.4 Experiences of Preschool Teachers in Managing Children with Autism

This theme, formed perceptions of children with autism through personal experience deals with the notion that engagement with autistic children plays a pivotal role in fostering a comprehensive understanding of this neurodevelopmental condition beyond its clinical manifestations. The narratives from teachers involved in caring for autistic children provided valuable insights into a range of behavioral traits commonly associated with autism. These behaviors encompass various dimensions, including cognitive abilities, dietary preferences, sensitivities, and communication patterns and the study underscored the need for a comprehensive and individualized approach to understanding and supporting autistic children. Furthermore, the study revealed intriguing observations regarding the potential influence of excessive screen time on certain behaviors resembling autistic symptoms. They stated that the emergence of such observations during the COVID-19 era adds a layer of complexity to the discourse surrounding autism. In a broader context, the study findings highlighted the importance of early engagement and dialoguing with children from infancy as a potential means of mitigating developmental challenges, including those related to speech and communication.

Theme two highlighted the importance of tailored interventions, personalized approaches, and comprehensive support systems that extend beyond traditional academic pursuits.

One prevalent theme in the participants' experiences was the emphasis on promoting independence among children with autism. This approach not only empowers the child to perform tasks independently but also aligned with the broader goal of fostering self-sufficiency. The dedication of educators, was evident in their commitment to the holistic development of children with autism. These teachers go beyond traditional instructional methods, implementing innovative strategies to address specific challenges. Nutritional interventions, communication enhancement and

behavioral management strategies also emerged as significant considerations in supporting children with autism. Moreover, the emphasis on inclusiveness was noteworthy. They indicated the provision of extra lessons rather than separate sessions emphasizes the integration of children with autism within mainstream classroom environments. This strategy fosters a sense of belonging, encourages peer interactions, and promotes a supportive social atmosphere, ultimately contributing to the overall well-being of the children. The findings of this study supported the conclusions of Dynia et al. (2022), highlighting the main areas of emphasis for helping young children with ASD in their education. These key intervention areas are communication improvement, social skill development, and addressing challenging behavior. The research also found that almost all teachers incorporated evidence-based practices (EBPs) into their teaching approaches. The most frequently employed EBPs included visual aids, behavioral techniques, and social narratives. However, the findings of this research contradicted Cassimos et al.'s (2015) study, as they unveiled that teachers expressed doubt regarding their ability to successfully integrate these students into their classrooms. Dynia et al. (2022), the primary focus areas for intervention in the education of young children with autism spectrum disorder were identified as communication, social skills, and challenging behavior. The study revealed that nearly all teachers employed at least one evidence-based practice (EBP) in their teaching methods. The most commonly utilized EBPs were visual supports, behavioral strategies, and social narratives

In theme 3, accounts shared by participants provided insights into the challenges and complexities associated with accommodating and supporting children with autism within educational settings. These narratives shed light on various issues, including the aggressive behaviors exhibited by some autistic children, the reluctance of schools and parents to fully embrace inclusion, and the pervasive stigma and misconceptions surrounding autism. One prominent challenge highlighted in the study

was the aggressive behavior demonstrated by some children with autism as a means of seeking attention or communication. These behaviors often stemmed from the child's struggle to convey their needs and frustrations effectively, highlighting the critical role of communication interventions and strategies tailored to the child's individual needs. The reluctance of schools to admit children with autism was another significant challenge identified in the study and was attributed to financial implications, additional support, and stigma associated with admitting autistic children. The reactions of other parents towards the presence of autistic children in schools highlighted the need for greater awareness and education to counteract the misconceptions and fears that can arise within the broader community. Parental denial also emerged as a barrier to early interventions for children with autism. The teachers claimed, parents' refusal to accept their child's autism status was due to lack of examples of successful outcomes of these children, positive representation and role models within society. A participant narrated an ordeal she named as a "turn off" to referrals. She revealed the need for careful consideration when making recommendations for specialized services as negative outcomes can be elicited which may be detrimental to the child. The call for specialized schools for various spectrum levels resonates with the importance of providing targeted support rather than a one-size-fits-all approach was made. These results are in line with the observations made by Lindsay et al. (2013), who similarly recognized obstacles in effectively overseeing autistic children within mainstream schools and fostering an inclusive educational atmosphere.

CHAPTER 6

6 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This section culminated the study by offering a comprehensive overview of the primary research findings in alignment with the stipulated research objectives and questions. It underscored the significance and inherent contributions of these findings to the field. Furthermore, the section critically evaluated the study's constraints and proffered prospective trajectories for future research endeavors. This study aimed to explore the knowledge and experiences of ASD among preschool teachers in the capital of Ghana. The results indicated that preschool teachers have high level of experience on ASD as compared to their knowledge. The research's problem statement highlighted that the primary obstacle faced by preschool teachers in the early detection of autism is a lack of knowledge. However, the findings of the study revealed that preschool teachers are indeed capable of detecting signs of autism through their observations. Nevertheless, a delay in seeking help arises from parental denial. The review of existing literature brought to light certain gaps, namely the literature gap and methodological gap. This study has effectively addressed these gaps by contributing to the current pool of knowledge and by incorporating a qualitative approach to complement the existing quantitative methodologies. The findings of this study that aligned with prior research encompasses: teachers' limited knowledge on what autism is, disparities in knowledge based on professional stage and experience, identification of autism via communication issues and speech delay, prominence of special schools and speech/writing therapy as primary interventions, predominant use of online sources and personal skills for autism information acquisition, adoption of a strategy involving cross-referencing data from various sources for enhanced comprehension, explicit suggestion to integrate autism education into training curricula,

recognition of the significance of nutritional interventions, communication enhancement, and behavioral management strategies in aiding children with autism, along with the challenges associated with managing these children. However, the notion of low knowledge levels among preschool teachers and also unwillingness to support autistic children in the school environment contradict the findings of this study. Utilizing the outcomes of this study, educators can implement the diverse findings to enhance their preparedness, particularly focusing on the insights derived from the research question concerning experiences and the handling of children with autism.

6.2 Recommendation

In light of the conclusions drawn from the results, it is imperative to put forth the following recommendations:

1. In-Service Training on Autism: It is essential for educators and educational professionals to receive comprehensive in-service training on autism spectrum disorders. This training should focus on enhancing their understanding of autism, its diverse characteristics, and effective strategies for supporting students with autism in inclusive educational settings. Workshops, seminars, and online courses should be organized regularly to keep educators up-to-date with the latest research, interventions, and best practices in the field of autism education.
2. Curriculum Revision and Inclusion: The Ghana Education Service should take proactive steps to revise the curriculum at all levels of education to include disability awareness and education. A dedicated section or module on disabilities, with a special focus on autism, should be integrated into subjects such as social studies or health education. This will help foster a more inclusive and empathetic learning environment, promote awareness, and reduce stigma surrounding disabilities.

3. Professional Development Programs: Collaborative efforts between the Ghana Education Service and relevant stakeholders, such as universities, non-governmental organizations, and autism advocacy groups, should be established to design and implement comprehensive professional development programs. These programs should be tailored to the specific needs of educators and should cover a wide range of topics related to autism education, including differentiated instruction, behavioral support strategies, and effective communication techniques.
4. Resource Provision and Support: In addition to training, educators require access to appropriate resources and support materials to effectively accommodate students with autism in their classrooms. The Ghana Education Service should collaborate with publishers, organizations, and experts in the field of autism to develop and disseminate resource materials, lesson plans, and teaching aids that cater to the needs of diverse learners, including those with autism.

Considering the study's unique context and constraints:

5. Future research could integrate quantitative approach: Augmenting qualitative study with a quantitative component enhance validation and depth beyond hypothesis formulation.
6. Diverse philosophical perspectives could be employed to embrace varied philosophical paradigms to mitigate interpretive bias and attain a more nuanced comprehension.
7. Comprehensive sampling could be used to encompass both virtual and physical educational institutions to ensure comprehensive representation.

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APPENDICES

Appendix 1. Interview Guide

Demographics

1. Gender

2. Age

3. Education level

4. Marital status

5. Religion

6. Rank

7. Years of practice

8. Grade/class

Knowledge

9. Have you ever heard of ASD?

a. If yes, can you tell me more about this condition?

b. Characteristics of children with Autism

10. Can you mention any possible interventions for children with Autism?

11. Can you identify any facility or institution which supports autistic children in Ghana?

Elements of Health Literacy and Autism

12. Access: In the past 12 months, how have you mainly gotten information on autism treatment and services for your child?

a. Probe: (Individual, Community, Health system) - Part of training (institution/external), colleagues, Media, pastors, family, internet, friends, etc.

b. Probe: Why do you opt for this source? Credibility, Mandatory, availability, accessibility, social support, information is easy to understand, culture, etc.

c. Probe: What information do you get from the sources mentioned?

d. Probe: Has there been a difference between information you received from someone versus information you have gotten on your own?

e. Probe: What helped you the most to get information on autism treatment and services?

f. Probe: What trouble did you have getting information on autism treatment and services?

g. Probe: What information on Autism do you think could be useful in your line of work?

13. Understanding & Evaluation: Once the educator gets information about autism, they process it by trying to understand it and then evaluating it.

Again, thinking about the past 12 months, once you have gotten information on autism how do you go about understanding and evaluating it? (Probe for each source mentioned to address individual, community or health literacy responsiveness)

a. Probe: Which of the sources of information mentioned earlier helps you better understand the information? (Individual, Community, Health system)- Part of the training, colleagues, Media, pastors, family, internet, friends, etc.

b. Probe: What helped you to understand or evaluate information about autism treatment and services?

c. Probe: What trouble did you have understanding or evaluating information on autism treatment and services? Is this typical of a particular source? (Individual, Community, Health system)- Part of the training, colleagues, Media, pastors, family, internet, friends, etc.

d. Probe: Has there been a time when you checked your understanding with other information sources? Please describe.

e. Probe: How did you decide if an information source was credible?

Health Literacy & Autism Treatment and Services Use

We also want to find out more about how you have used information in deciding on which autism treatment and services to use for your child.

We are first going to ask about detecting the condition in children.

14. In the past 12 months, how has information influenced you in detecting children on the autism spectrum?

a. Probe: Which information sources have been more helpful in this regard? (Individual, Community, Health system)- Part of the training, colleagues, Media, pastors, family, internet, friends, etc.

Next, we will ask about the referral of identified cases.

15. Again, thinking about the past 12 months, how has information influenced your referral of identified cases?

a. Probe: Which information sources have been more helpful in this regard? (Individual, Community, Health system)- Part of the training, colleagues, Media, pastors, family, internet, friends, etc.

Now, we are going to ask about services you might be providing at school for children on the Autism Spectrum. These include services like early intervention, applied behavioral analysis (ABA), floor time, speech and language therapy, occupational therapy, physical therapy, and special education.

16. In the past 12 months, how has information influenced you in providing some form of services for the child under your care?

Probe: Which information sources have been more helpful in this regard? (Individual, Community, Health system)- Part of the training, colleagues, Media, pastors, family, internet, friends, etc.

Improvement Areas

We will now ask about ways you think educators could easily get and use information about autism treatment and services for young children.

17. Can you explain how information on Autism Spectrum Disorder is relevant to your work?

18. What information about autism treatment and services do you think all educators should get to provide better education and care for children living with Autism?

a. Probe: When should educators get this information?

b. Probe: Who should give educators this information?

c. Probe: How should this information be delivered? For example, information could be provided through a mobile app, a web page, a pamphlet, a video, or training by: GES, GHS, School

19. Understanding & Evaluation: What would help educators better understand and evaluate information on autism spectrum disorder?

20. Use: How can we get educators to use science-based information more often in deciding which autism treatment and services to use for their child?

Experience with Autistic Children at work

21. Have you ever had an experience with a student with Autism? Probe

a. How many?

b. How long ago was your recent experience?

c. What made you perceive that the child has autism?

d. What did you do about your observations? Probe

i. referrals?

ii. Informed parents or caregivers

e. For how long was the child in your care?

f. How old is/was this child?

22. Can you share some of your experiences with the child in your class or care? Probe

a. Lesson time Probe

i. Do you provide separate lessons for the child?

ii. How many hours, on average, do you spend on the child?

iii. Does child respond to instructions? If yes describe with an example. If no, what do you do in such a case?

iv. Does the information from the mentioned sources help in the lessons for the child?

b. Feeding

c. Playtime

d. Your interactions with parents (Positive and/or negative interactions)

23. Was/is the child on any therapy? Probe

a. Which therapy?

b. Did you observe any impact of the therapy on the child?

24. Can you share with us some of the support you provided for the child while in your care?

Appendix 2. Participants Consent Form

EARLY DETECTION OF AUTISM SPECTRUM DISORDER AMONG PRESCHOOLERS: THE CASE OF EARLY CHILD EDUCATORS IN GREATER ACCRA REGION, GHANA

Emergency contact information of Principal Investigator;

Names of Principal Investigator: Dr. Ofori-Boateng Millicent

Email: millicent.boateng@ensign.edu.gh

Contact number: 0241719042

Academic supervisor: Dr. Ofori-Boateng Millicent

School: Ensign Global College, Kpong.

The aim of this study is to explore the knowledge and experiences of ASD among preschool teachers in five districts in Greater Accra Region, Ghana.

"Autism spectrum disorder (ASD) refers to a group of pervasive neurodevelopmental disorders that involve moderately to severely disrupted functioning in regard to social skills and socialization, expressive and receptive communication, and repetitive or stereotyped behaviours and interests"(Pennington, Cullinan and Southern, 2014).

The interview will take less than an hour to complete and it will be based on your knowledge on and experiences on autism. By signing and providing your name, you have agreed to be a participant of the study. Thank you for partaking.

- I…… voluntarily agree to participate in this research study.

- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.

- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.

- I understand that participation involve providing honest answers on my knowledge and experiences on ASD interview.

- I understand that I will not benefit directly from participating in this research.

- I agree to my interview being audio-recorded.

- I understand that all information I provide for this study will be treated confidentially.

- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.

- I understand that disguised extracts from my interview may be quoted in dissertation, conference presentation, and published papers.

- I understand that the signed consent forms and original audio recordings will be retained in the school under lock and key for a minimum of 5years. The research supervisor and other members of the ethical board may have access until the exam board confirms the results of their dissertation.

- I understand that a transcript of my interview in which all identifying information has been removed will be retained for a minimum of 5years until the paper have been published.

- I understand that under freedom of information legalisation, I am entitled to access the information I have provided at any time while it is in storage as specified above.

- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

A consent form adapted and modified from Participant consent form template.pdf (tcd.ie)

Signature of research participant

Date:

Signature of researcher

Date:

Name: Patience Agbate

Email: patience.agbate@st.ensign.edu.gh

Contact number: 0246346995

Appendix 3. Ethical Clearance from Ghana Education Service

GHANA EDUCATION SERVICE

In case of reply the
Number and date of this
Letter should be quoted
My Ref: GES/GAR/ PR1/20237
EMAIL: gesgar09@yahoo.com

REPUBLIC OF GHANA

REGIONAL EDUCATION OFFICE
P. O. BOX M.148
ACCRA
14th April, 2023

DISTRIBUTION:
METRO/MUNICIPAL/DISTRICT DIRECTORS OF EDUCATION IN
SHAI-OSUDOKU
TMEA METRO.
ABLEKUMA WEST
ACCRA METRO.
AYAWASO CENTRAL

RE- REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN EARLY CHILDHOOD EDUCATION INSTITUTIONS.

Permission is granted to **MILLICENT OFORI BOATENG** of **ENSIGN GLOBAL COLLEGE** to undertake the above exercise in your respective institutions.

Kindly permit and extend the needed courtesies to **Millicent Ofori Boateng** for a successful exercise.

Find attached the necessary documents for your perusal.

Thank you.

STEPHEN ABAMFO (MR.)
For DIRECTOR OF EDUCATION
GREATER ACCRA REGION

Appendix 4. Ethical Clearance from Ensign Global College

ENSIGN GLOBAL
COLLEGE

OUR REF: ENSIGN/IRB/EL/SN-239
YOUR REF:

May 3, 2023.

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Patience Agbate
Ensign Global College
Kpong

Dear Patience,

ETHICAL CLEARANCE TO UNDERTAKE POSTGRADUATE RESEARCH

At the General Research Proposals Review Meeting of the *INSTITUTIONAL REVIEW BOARD (IRB)* of Ensign Global College held on Wednesday, May 3, 2023, your research proposal entitled **"Early Detection of Autism Spectrum Disorder Among Preschoolers: The Case of Early Child Educators in Greater Accra Region, Ghana"** was considered.
You have been granted Ethical Clearance to collect data for the said research under academic supervision within the IRB's specified frameworks and guidelines.

We wish you all the best.

Sincerely

Dr. (Mrs.) Rebecca Acquaah-Arhin
IRB Chairperson

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