AWARENESS OF AUTISM AMONG PRIMARY SCHOOL TEACHERS IN KISUMU CENTRAL SUB-COUNTY, KENYA

BY

MOSES OMONDI SADIA

H153/4016/2015

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN EPIDEMIOLOGY AND BIOSTATISTICS OF JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

DECLARATION

This thesis is my original work and has not been presented for an award of a degree or diploma in any other university or institution.

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Signature ---------- Date ----------

Moses Omondi Sadia

H153/4016/2015

This thesis has been submitted for examination with our approval as the University supervisors

Signature ---------- Date ----------

George Ayodo, PhD

School of Health Sciences,

Jaramogi Oginga Odinga University of Science and Technology

Signature ---------- Date ----------

Prof. Fred Amimo

School of Health Sciences,

Jaramogi Oginga Odinga University of Science and Technology

DEDICATION

I dedicate this thesis to my beloved wife Serah and to the young autistic children, whose predicaments this research project sought to address. I have a dream that one day they will have a sense of belonging in the African society and the world at large.

ACKNOWLEDGEMENT

My candid and heart-felt thanks goes to my supervisors Dr. George Ayodo and Professor Fred Amimo for their incessant dedication, understanding, resourceful comments and unconditional support. Special appreciation to my wife Serah for her material and moral support, for the many times she listened as I vented, grumbled, and processed out loud to her, I am sincerely grateful.

LIST OF ABBREVIATIONS AND ACRONYMS

ADI-R	Autism Diagnostic Interview-Revised
ADOS	Autism Diagnostic Observation Schedule
ASD	Autism Spectrum Disorder
CAM	Complementary Alternative Medicine
CARS	Childhood Autism Rating Scale
CHAT	Checklist for Autism in Toddlers
CWA	Children with autism
DSM 5	Diagnostic and Statistical Manual of Mental Disorders vol. 5
ICD-10	International Classification of Diseases version 10
ID	Intellectual Autism Disability
KII	Key Informant Interviews
M-CHAT	Modified Checklist for Autism in Toddlers
NACOSTI	National Commission for Science, Technology and Innovation
PDDST	Pervasive Developmental Disorder Screening Test
SPSS	Statistical packages for social sciences

OPERATIONAL DEFINITIONS

Attitude- Psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor

Autism Spectrum Disorder (ASD) - A neuro-developmental disorder that manifests in early childhood in the form of deficits in social-communication functioning and the presence of repetitive behaviors and/or restricted interests

Awareness- knowledge or perception of a situation or fact

Diagnosis- The identification of the nature of an illness or other problem by examination of the symptoms

Knowledge- Fact, information, and skills acquired through experience or education; the theoretical and practical understanding of a subject.

Lower primary school- Classes/grades one, two and three

Majority- Refer to the higher percentage of the other(s)

Perception- The manner in which something is viewed, understood or interpreted

Pre-primary school- school attended before primary school

Primary school teachers- Teachers teaching in primary schools

Primary school-Includes both pre-primary and lower primary schools.

Private school- A school that is owned and or supported by a private entity.

Public school- a school supported by public government funds

Special needs education- Is the practice of educating students in a way that accommodates their individual differences, disabilities, and special needs.

Special needs school- A school where children with special needs are taught.

Urban schools- Schools situated in or close to urban centers.

Abstract

Autism is a spectrum of neurodevelopmental disorders exhibited in early childhood with variable manifestations as children grow up. Therefore, teachers need to understand the condition in order to deliver apt educational services to autistic children. However, the level of awareness of the condition is poorly understood among pre-primary school teachers. This study, therefore, analyzed the understanding of the spectrum condition of autism among pre-primary school teachers in western Kenya. A descriptive cross-sectional study design was employed to assess the understanding of the spectrum condition of autism among 321 lower school teachers of Kisumu Central sub-county in western Kenya. The study participants were selected using purposive sampling, and primary data was collected using semi-structured questionnaires and a Key Informant interview guide. The quantitative data were analyzed using SPSS version 20. However, the qualitative data were analyzed thematically. The response rate was 76.9% with 16.8% (41) males and 83.2% (203) females. A total of 41.5% (n=110) of the teachers had never heard of autism. Of all the teachers who had heard of autism, 100% (7) were from special needs schools, and 64.4% (67) and 45.1% (60) were from public and private schools, respectively. About 78.8% (105) of teachers perceived autism as a neurodevelopmental disability and academically challenged children, 15% (20) as a psychiatric illness similar to madness, 4.5% (6) as spiritual affliction/demon-possessed children and 1.5% (2) as parental neglected children. This study shows that lower school teachers have an inadequate understanding of the spectrum condition of autism, and this limits service delivery. This study, therefore, recommends special training for pre-primary school teachers to cover the spectrum condition of autism.

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CHAPTER ONE

INTRODUCTION

1.1 Background Information

Autism spectrum disorder (ASD) is a spectrum of neuro-developmental disorders exhibiting in early childhood that is categorized by persistent impairments in social interaction, verbal and non-verbal communication and the presence of restricted, repetitive patterns of behavior, interests, or activities (Association, 2013). Children with autism look flawlessly normal, but they devote time in confusing and distressing behaviors which differ from those of typical Children (Paul & Gabriel-Brisibe, 2015). This condition which is highly heritable normally begins at birth and caregivers notice the signs within thirty months child's initial life (Myers *et al.*, 2007). The principles for diagnosing autism strains that symptoms become ostensible before the child reaches three years of age (Association, 2013). Causes of autism are not known, however researchers argue that autism can be attributed to both environmental and genetic factors (Chaste & Leboyer, 2012). Research shows an existing heavy genetic association, although it can't be allied to a Mendelian transmutation (Abrahams & Geschwind, 2008).

Predisposing factors linked to having autism include gender in which males have a higher likelihood of presenting with autism of between three to four times. Other factors include, the age of the parents, familial history, and other syndromes such as Tourette's syndrome, tuberous sclerosis, fragile x syndrome and epilepsy (Scott & Hansen, 2020). Other risk factors include use of drugs such as valproic acid during pregnancy (Williams *et al.*, 2001), congenital rubella (Berger *et al.*, 2011; Chess *et al.*, 1978) and cerebral palsy (Fombonne, 2003).

Obvious symptoms of autism progressively begin after the first six months of life, become recognized between twenty four to thirty six months (Rogers, 2009), these symptoms persists to adulthood, though in an inaudible form (Rapin & Tuchman, 2008). Autism is eminent in a triad of symptoms presentation: diminishing in social interaction; diminishing in communication; and constrained interests and monotonous behavior. Other features of presentation, such as uncharacteristic eating, are also common but are not vital for diagnosis of autism (Filipek *et al.*, 1999). Autistic children may present with the inability to make eye contact and seem reserved, some of them may be engaged with the environment sporadically and may make fickle eye contact, smile, and enfold (Kliegman *et al.*, 2007). These children may also present with varying verbal capabilities, oscillating from nonverbal to cutting-edge speech. Intelligent functioning may present

as mental impedance or superior intellectual functioning in specific areas. Some autistic children may show distinctive development in other skills and even strengths in unambiguous areas, such as puzzles, art, and music. Nevertheless, generally, an autistic child is often remote and spends hours in introverted play (Kliegman *et al.*, 2007).

Several autism diagnostic tools are available, they include: the Autism Diagnostic Interview-Revised (ADI-R) which is a semi structured parent interview, and the Autism Diagnostic Observation Schedule (ADOS) which uses observation and interaction with the child and the Childhood Autism Rating Scale (CARS), this utilizes observation to assess autism severity in children (Sons, 2014).

When a child does not meet the following developmental stages within the set ages, it is absolutely necessary to conduct further assessment for ASD; inability to babble by 12 months of age, lack of gesturing by 12 months of age, when the child is not able to speak a single words by 16 months of age, not able to speak a two-word phrases by 24 months of age and any loss of any language or social skills at any age of growth (Syriopoulou-Delli *et al.*, 2012).

Treatment of autistic children is aimed at lessening the associated discrepancies and distresses to the family. It is also aimed at increasing the quality of life to the child, increasing and instilling independence in the life of that child. There is no single treatment for autism and as such, intervention is patient-oriented to meet the unique and diverse needs of each patient. Autism has no known cure, however children may recover occasionally (Myers *et al.*, 2007). The resources for treatment of autism are mainly from families and educational systems (Levy *et al.*, 2009).

1.2 Problem statement

Globally, autism affected about 21.7 million people in 2013, this was an increase of about 1–2 per 1,000 from 2010 report (Bakare & Munir, 2011) A recent review of epidemiological surveys estimated a prevalence of 62/10,000 at world-wide. In Africa, autism reports largely originate from neurological and psychiatric clinics. According to the reports from these clinics, the prevalence of autism is between 0.7% and 33.6%. There is still no proper surveillance system to monitor the prevalence.

In Africa, there are late diagnosis, cases are often reported when the child is very old (an average of about 8 years), indeed there is very limited data due to lack of proper surveillance system to inform interventions. Children with autism demonstrate reduction in mental functioning to a much higher intellectual functioning and capability; particularly, some exhibit specific forte in certain areas such as puzzles, art and music. Nonetheless, they are withdrawn and solitary. For appropriate early diagnosis and management of the potential of these autistic children, teachers are expected to play a critical role. However, there has been no study to evaluate the knowledge, perception and attitude of teachers on autism in Kenya. This study therefore sought to assess the knowledge, perception and attitude of primary school teachers in Kisumu central sub-county.

1.3 Main Objective

To determine the awareness of autism among primary school teachers of Kisumu Central Sub-County, Kenya

1.3.1 Specific Objectives

a) To assess the level of knowledge of primary school teachers of Kisumu Central Sub-County, Kenya on autism
b) To evaluate the perception of primary school teachers of Kisumu Central Sub-County, Kenya on autism
c) To determine the attitude of primary school teachers of Kisumu Central Sub-County, Kenya on autism

1.3.2 Research Questions

a) What is the level of knowledge of primary teachers of Kisumu Central Sub-County, Kenya on autism?
b) What are the perceptions of primary teachers of Kisumu Central Sub-County, Kenya on autism?
c) What is the attitude of primary school teachers of Kisumu Central Sub-County, Kenya on autism?

1.4 Justification of the study

Autism spectrum disorder (ASD) is a condition that begins at birth and its flagrant symptoms progressively instigate after six months of age and become recognized between age two and three years. At this age, most of these children are in school under the care of the teachers. It is therefore important for these teachers to be aware of autism conditions hence facilitating early diagnosis and instituting the necessary interventions to the affected children. This study aimed at highlighting the knowledge and perception gaps on childhood Autism among primary school teachers.

1.5 Significance of the study

The findings of the study informed the policy makers from the Ministry of Education and other stakeholders on the need of training teachers and equipping them with adequate knowledge as far as management of autistic children in school is concerned. Teachers working together with parents of the affected children can ensure screening and diagnosis of autism at an early age, provision of appropriate therapy and establishment of special schools and vocational training programs.

1.6 Study limitations

The researcher was faced with stigma associated with autism hence some teachers shied away from freely giving information. During the day, the teachers were busy attending to the lessons hence there was difficulty in teachers creating time for interviews. In some cases, the researcher was faced with the challenge of gaining access to conduct the interviews from school administrations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Autism

Autism, also known as Autism spectrum disorder (ASD) is a spectrum of neuro-developmental disorders exhibiting early in childhood that is categorized by persistent impairments in social interaction, verbal and non-verbal communication and the presence of restricted, repetitive patterns of behavior, interests, or activities (Association, 2013). Autism instigates at birth or within the first thirty months of the child's life. The children with the condition are impeccably normal in appearance, however, they devote some good time involved in puzzling and troubling behaviors which are evidently different from those of typical and otherwise non affected children (Paul & Gabriel-Brisibe, 2015). The etiology of autism is not known (Newschaffer *et al.*, 2007), studies however proposes an existing robust genetic association which isn't traceable to a Mendelian alteration or to a solitary chromosome abnormality (Abrahams & Geschwind, 2008). The peril factors for autism include gender in which males have a three to four times more likelihood to be infected than females, parental age, familial history, and other syndromes including Tourette's syndrome, tuberous sclerosis, fragile x syndrome and epilepsy ("Autism,"). Other risk factors include use of drugs such as valproic acid during pregnancy (Williams *et al.*, 2001), congenital rubella (Berger *et al.*, 2011; Chess *et al.*, 1978) and cerebral palsy (Fombonne, 2003). Blatant symptoms of autism progressively commence six months of age afterwards, they become recognized between age two and three years (Rogers, 2009), these symptoms tend to proceed to adult life, mostly in a more muffled form (Rapin & Tuchman, 2008). Autism does not present by just one symptom, but by a typical triad of manifestations: diminished social interaction; impaired communication; and constrained interests and repetitive behavior. Other manifestations, such as uncharacteristic eating, are common but are not critical for diagnosis (Filipek *et al.*, 1999).

Autistic children may present with the inability to make eye contact and seem reserved, some of them may sporadically engage with the environment and may make fickle eye contact, smile, and enfold. These children might also parade a variety of verbal capabilities, vacillating from nonverbal to progressive speech. Intellectual functioning can differ such that some children exhibit mental retardation, while others show higher intellectual functioning in specific areas. Besides, some autistic children may exhibit improved progress in certain skills and even strengths in

unambiguous areas, such as puzzles, art, and music. Regardless, generally, children with autism are usually remote and spend hours in introverted play (Kliegman *et al.*, 2007). Autism has no known cure; however children may recover occasionally (Myers *et al.*, 2007).

2.2 Knowledge

There is an increasing trend in autism spectrum disorders (ASD) with world's prevalence being estimated to be at 0.6% and Africa at 0.4% (Salari *et al.*, 2022). There exists a strong postulation that there is an increase in ASD incidence and this could be as a result of improved diagnostic tools and increased awareness of the disorder which has improved diagnosis and identification of children living with autism (Nassar *et al.*, 2009). In the developed countries, management of autism is characterized by early and timely diagnostic interventions as well as an array of specialist care services, which has given rise to positive outcomes. (Reichow & Wolery, 2011). Africa, However, faces challenges in dealing with autism which include lack of relevant epidemiological studies and data, inadequate knowledge among health care providers, meagre community awareness, and lack of specialist care services (Newton, C. R. & Chugani, 2013). Lack of awareness and poor knowledge of autism among the unprofessional public in general and the health and education community in particular is common in India. Lesser awareness is even evident in non- metropolitan cities due to dearth of trained personnel and centers of specialization. (Krishnamurthy, 2008).

A study conducted by Paul & Gabriel-Brisibe, 2015 revealed that slightly above 50% of the primary school teachers had heard of autism with a significant percentage saying that autism is a psychiatric illness comparable to madness. This illustrates a lack of accurate knowledge of autism even amongst the teachers who had heard of the term autism (Paul & Gabriel-Brisibe, 2015). A large number of teachers are aware of autism but admit that they still have a gap in knowledge on the same (Shetty1 & Sanjeev Rai, 2014). Knowledge and awareness among primary school instructors is critical to the early identification of learners with ASD. Nonetheless, developmental disorders in children are not prioritized among instructors and a majority of them do not have the skills and capabilities needed to identify developmental disabilities. As such, it is a logistical challenge and a huge burden on healthcare workers tasked with screening and identifying ASD among millions of students; while elementary school instructors are best suited for this onerous. The instructors interact with these learners on a daily basis hence stand a better chance to recognize

and for that matter monitor understated manifestations of ASD among these learners; indeed, there exists a gap in vital information as regards the pivotal role of instructors in ASD screening (Schanding *et al.*, 2012). Anil and Shanjeev (2014) reveals that only 69 of the 326 instructors had sufficient knowledge of ASD, a sign that the teachers had poor knowledge about ASD (Shetty1 & Sanjeev Rai, 2014), a similar study in Singapore among primary school instructors depicted that 66 % of the study population had adequate knowledge of ASD. Edward, (2015) revealed that majority of the teachers had limited knowledge about autism spectrum disorder and its accompanying characteristics amongst the children. In addition, this research further revealed that most teachers were not adequately trained to handle CWA (Children With Autism) in the regular classes (Geraldina, 2015). Newton *et al*., 2014, further added to the body of this information that these teachers' lacked an ideal knowledge to handle the needs of pupils with special needs (Newton, N. *et al.*, 2014).

A study conducted by Jellinek *et al.,* 2022 revealed that teachers generally lacked knowledge on autism, this could be attributed to limited training during pre-service. On the other hand, teachers with special needs education certification were conveyed to have improved and adequate knowledge regarding autism (Jellinek *et al.*, 2022)

2.3 Attitude

In a study by Boone and Kurtz (2002), they defined attitude as 'a person's enduring favorable or unfavorable cognitive evaluations, emotional feelings, and action tendencies toward some object or data'(Boone & Kurtz, 2002). McGregor and Campbell (2001) further underscores that a professionals' attitudes are imperative as they settle on the kinds of interventions to implement to chance the demands of a student together with the effectiveness of the chosen interventions in improving ASD outcomes (McGregor & Campbell, 2001). Alexander and Strain (1978) further states that it is ore to determine teachers attitude towards autistic children because for inclusion in the mainstream regular education, a teachers attitude play a pivotal role, their attitude even influences their expectations for their students which will in turn affect the students' academic performance and 'self-image (Alexander & Strain, 1978). It is also important to connote those teachers with inauspicious attitudes towards autistic children may eventually have injurious impacts on those children (Hannah & Pliner, 1983). A positive attitude is therefore paramount for the success of the education of children with disabilities including ASDs. (Robertson *et al.*, 2003).

However, due to the sternness and frequency of ASD, the teaching of these pupils is usually seen as complex (Simpson *et al.*, 2003), even teachers of higher specialized qualifications regularly view themselves inadequate to deal with autistic children than those teachers with any other form of special needs (Al-Shammari, 2006).

Research has shown that teachers' attitude towards children with disability is inclined by aspects such as training, teaching experience and perception of existing resources and support which include support for further training, expertise' support, and classroom support , with the expertise other practitioners support being more treasured when it is convoyed by the necessary collaboration (Avramidis *et al.*, 2000; Villa *et al.*, 1996; Werts *et al.*, 1996). To underscore this, Giangreco (Giangreco, 1993) found out that a teacher's attitude would change over time from the early resistance to a more positive perception while handling a class where students with severe disabilities were included. A study by Isabela, (2011) concluded that inclusion education of pupils with ASD within the general classroom settings is rather an uphill task for every stakeholder, and requires specific and extraordinary support. ASD networks, however, illustrates that lack of support results into a negative attitude toward the education of the children with ASD (Rodriguez *et al.*, 2012). Generally, a majority of instructors have positive perceptions and outlook on autism and students with ASD. The attitudes are determined by social and demographic factors not limited to the level of education, age, gender and workshop experience. For instance, generally female teachers are more positive when handling autistic children, in comparison to the male instructors. Elderly teachers, above age 56 years have a significantly lower attitude score towards students with ASD, as compared to the younger teachers between 20 to 55 years of age. In addition, elementary school teachers have a higher attitude score as compared to middle school teachers. Lastly, instructors who have attended autism workshops severally show more positive attitudes as compared to instructors exposed to only one session or no training sessions whatsoever (Park & Chitiyo, 2010).

2.4 Perception

A primary role is played by the general teachers educating students with disabilities, these teachers frequently report inadequacy and unpreparedness to execute this noble role (Brownell *et al.*, 2006). Autistic children exhibit the greatest learning challenges amongst children living with other disabilities when handled by the general education teachers (Robertson *et al.*, 2003). Considering

an increasing number of students being diagnosed with autism, there is a huge challenge within the mainstream education system as they are not able to meet the general education placement expectations. The teachers re therefore overburdened and overwhelmed by responsibilities when handling pupils with ASD (Busby *et al.*, 2012). Smith, (2012), emphasizes that the greatest challenge in the public education sector is the upsurge in the number of pupils diagnosed of ASD (Friedlander, 2008; Smith, 2012). Friedlander, further underscores that the traits of ASD "can sometimes be awe-inspiring for instructors who are unaware and unexperienced in the unique issues and characteristics of autism (Friedlander, 2008).

A study steered by Martinez*,* (2006) argues that in as much as more than 66% of the general education teachers acknowledged the idea of inclusion education with half of them reporting that inclusion is beneficial for special needs education children, close to a third reported that they are adequately prepared and have the required capacity to meet these unique educational needs among these learners in their classrooms (Martinez, 2006)

A study done by DeSimone and Parmer, (2006) revealed that although most teachers are in agreement about the concept of inclusivity, they didn't believe in the viability of the general education placement for students with special needs, following the immense burden to complete the assigned curriculum and not sensationally accountable for the success of the learners included (DeSimone, 2006)

A study conducted by Paul & Gabriel-Brisibe, 2015 among the teachers who had learners with autistic traits revealed that these teachers perceived the learners' problems to be due to parental neglect, spiritual affliction, and developmental disability, (Paul & Gabriel-Brisibe, 2015).

Children with autism are perceived as academically challenged, parentally neglected or demon possessed. Autistic children can seldom be whipped should the teacher be disgusted by their sluggishness in learning (Akintunde, 2005). These children are sometimes rejected from one school to another due to their' slowness' and occasionally lack of understanding from authorities, care givers, teachers and even their parents to cope with this reality. For these reasons, these pupils have their teachers getting it difficult to inclusively teach them together with other pupils in the same class (Akintunde, 2005).

A study conducted by Paul & Gabriel-Brisibe, 2015 amongst primary school teachers revealed that teachers advised parents with autistics to take them to the church for dispossession (Paul & Gabriel-Brisibe, 2015). A study conducted by Hayes, (2014) revealed negative perceptions by the general education teachers when they were being prepared to be able to handle social matters in relation to students diagnosed with autism (Hayes & Deborah, 2014).

Assessment of the awareness of autism among primary school teachers would help in addressing issues confronting autism. In resource limited settings like Kenya, this would promote awareness, facilitate early diagnosis and intervention, and improve quality of care and outcomes in autism.

2.5. Conceptual framework

In this study framework, knowledge, perception and attitude of teachers on autism are considered as independent variables. However, training on special needs education (autism) is considered as modifiable variable and awareness level as dependent variable.

The Awareness of teachers on autism is determined by their knowledge, attitude and perceptions which is also modified by proper training on special needs and specifically on autism (**Source: researcher 2023)**

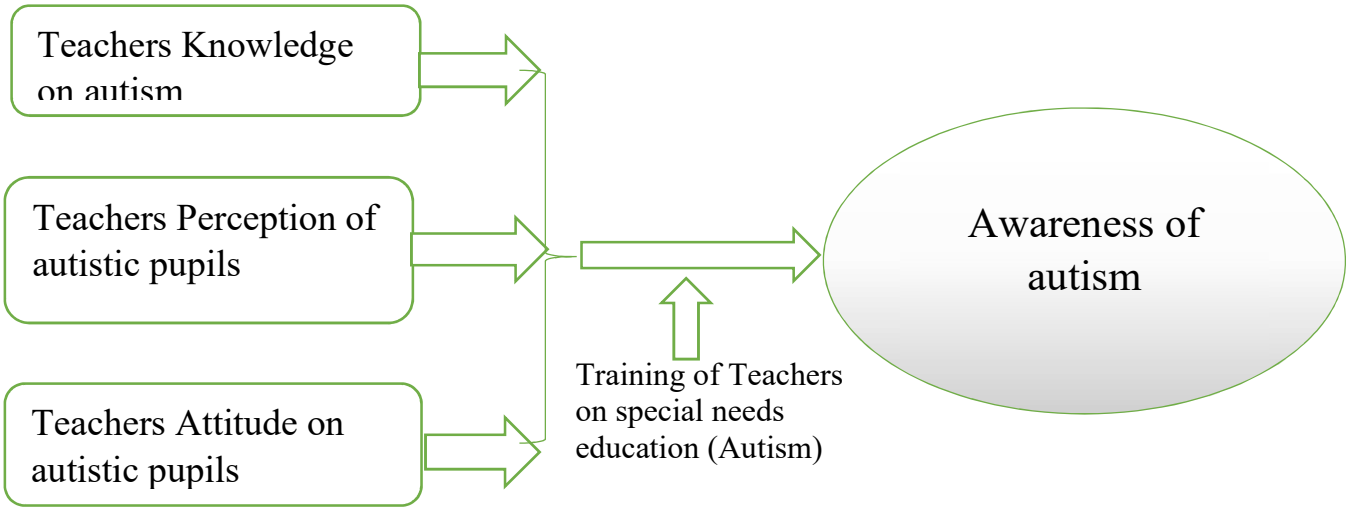

Figure 2: Conceptual framework

CHAPTER THREE

METHODOLOGY

The techniques that were employed to obtain and utilize data for this research are outlined in this chapter. Specifically, the research design, study population and area, the procedure of selecting the sample size, research instruments, quality control, data collection, analysis and limitation of the study are included in this chapter.

3.1 Study area

The study was conducted in Kisumu Central Sub-County of Kisumu County, Kenya. Kisumu Central Sub-County is one of the seven sub-counties of Kisumu County hosting the County's headquarter. Others sub counties are Kisumu West, Kisumu East, Seme, Nyando, Nyakach and Muhoroni. The sub-County has 6 administrative wards (Kondele, Market Milimani, Migosi, Nyalenda B, Railways, and Shaurimoyo Kaloleni). It covers a land area of 32.70sq Km. with an average population of 168,892 as per 2009 National Census. The sub-County had 53 primary schools, 23 being private primary schools whilst 30 were public primary schools. The County has 47014 Pre-school pupils, 997 ECD centers, 1958 ECD teachers with a teacher/pupil ratio of 1:24 as per Kisumu County Fact Sheet 2012. In addition, the County has 706 Primary schools, 6081 primary school teachers with a teacher/pupil ratio of 1:51.

3.2 Study population

The study population comprised of primary school teachers teaching in lower primary schools and their respective head teachers within Kisumu Central Sub-County.

3.3 The study design

A descriptive cross sectional study design was employed. The survey employed the use of both qualitative and quantitative study methods to collect detailed views of research participants in response to the research questions.

3.4 Sampling design and procedure

3.4.1 Selection of study participants

Kisumu Central Sub-County had a total of 53 schools (30 public and 23 private primary schools), the study therefore employed purposive sampling procedure that targeted the primary schools within the setting of Kisumu Central Sub-County (n=53). In selecting the study participants within these schools, all the class-teachers teaching in pre-primary and lower primary schools in each school were selected giving a total of 318 participants. In selecting the study participants for the KII, the schools within the sub-county were clustered into three (3) clusters that is public, private and special needs schools after which a random simple sampling was used to select one school head-teacher for the KII from each cluster giving a total of three (3) participants for the KII. This gave a total of 321 study participants.

3.4.2 Selection of the Study County

Kisumu County was purposively selected because of time and financial limitations facing the researcher.

3.4.3 Selection of Study Sub County

Simple random sampling was used to select a study Sub County. The names of the seven sub counties were typed and printed out separately. Each printout was uniformly folded and put into a non-transparent envelop. The envelopes were then poured on the floor and the researcher randomly picked one paper. The envelope picked was opened and the selected Sub County (Kisumu Central) considered the study sub county.

3.5 Sample Size and Technique

A total of 321 respondents were targeted for the survey. This included head-teachers, teachers in lower public and private primary schools and their counterparts in pre-primary schools within the Sub-County. From each school, three lower primary class teachers (grades 1-3 class teachers) and three from each pre-primary class (baby class, middle class and final class teachers) and one head-teacher from each school cluster was targeted. (The schools were clustered into public, private and special needs schools).

Table 3.1: Summary of the sample size of the different targeted categories

Category		**Total**	
Pre-primary schools	baby class, middle class and final class teachers	53×3	159
Lower primary schools	Grades 1-3 class teachers	53×3	159
Head-teachers	Public, private & special needs school	3×1	3
GRAND TOTAL			**321**

3.6 Eligibility Criteria

3.6.1 Inclusion Criteria

(a) The teachers must have been teaching in these schools for the past six (6) months prior to the commencement of the study.
(b) The schools had to be in Kisumu Central Sub-County.
(c) The teachers who freely consented to participate in the study.

3.6.2 Exclusion Criteria

(a) Teachers who declined consent to participate in the study.
(b) Any school outside Kisumu Central Sub-County

3.7 Validity and reliability test of the data tools

Before the actual data collection, a pretest was done to twenty-six of the primary school teachers to ascertain the validity and reliability of the data tools. The respondents had similar inclusion characteristics from Kisumu East Sub-County were interviewed two weeks before the main study, and amendments made to the data tools as appropriate.

3.8 Data collection Procedure

Data was collected by the researcher himself, quality control, record taking and research ethics were taken into consideration prior to the beginning of data collection process. The researcher travelled to the schools at pre-arranged dates to conduct the survey. Before administering the interviews/questionnaires, verbal and written consent was obtained from each participant.

3.9 Data collection tools

The following data tools were used for the study:

3.9.1 Semi structured Questionnaires

One set of questionnaires was used: Public, private and special needs schools' level, administered to teachers teaching in these schools to get their level of awareness on childhood autism in Kisumu Central Sub-County.

3.9.2 Key Informant Interviews

Key informant interviews were administered to the head-teachers from the selected schools to get their views to determine their level of awareness on childhood autism in Kisumu Central Sub-County. The Key informant interviews were conducted by the researcher himself. Hand written notes were taken during the dialogues and a voice recorder was used to capture the discussions. From these notes, a detailed report was written at the end of each interview. The KII targeted the head-teachers in these schools.

3.10 Data analysis

Data collected using questionnaires was entered into a computer, coded and cleaned for further analysis. The data was analyzed quantitatively. Analysis of the data was done using various statistical analysis software including Microsoft Excel and Statistical Package for Social Science (SPSS) version 20. Quantitative data for objectives 1, 2 and 3 was analyzed by descriptive analysis, and inferential analysis consisting of univariate analysis of variance, independent t-tests, and regression analysis, in order to determine the relationship between years of teaching experience, current grade level teaching assignment, previous experience with autistic children, gender, and previous training on teachers' knowledge, attitude and perceptions on autism. Descriptive statistics such as means, percentages and frequencies were used to further analyze the responses, concerns and views of the study population. The data was presented in form of tables, graphs and pie-charts to enable comparison and easy understanding.

For qualitative data of the objectives 1, 2 and 3, this data was first transcribed (and translated, where necessary), then coded, organized into themes, and analyzed for prominently emerging points. The data was then be presented in form of tables, graphs and pie-charts to enable comparison and easy understanding. The notes taken underwent the same procedures.

3.11 Ethical considerations

The researcher sought clearance to conduct the study from JOOUST BPS, approval to conduct the study from Jaramogi Oginga Odinga Teaching and Referral Hospital, a research permit obtained from NACOSTI. Permission to conduct the study in Kisumu Central Sub-County was sought form the Ministry of Education, Kisumu County, and the local administration. Informed consent of the study participants was sought from each prospective respondent prior to enrollment. Respondents were free to decline to participate. All respondents were read for/ read the informed consent form that explained the basic nature of the study and sought the agreement of the respondent to be interviewed. The study upheld utmost privacy and confidentiality while handling the study population's data. The data was collected in a private setting and confidentiality was maintained through the employment of de-identifiers and restriction of raw data to only the principal researcher and the supervisor. Access to the data was limited to study personnel and the data was protected using passwords to deter unauthorized persons from accessing the data.

4.0 CHAPTER FOUR

RESULTS

4.1. The characteristics of the study population

Out of 321 respondents targeted for the survey, a total of 247 respondents were involved in the survey, a response rate of 76.9%. The number of females (N=203, n=83.2%) in the study was more than males (N=41, n 16.8%). The number of female respondents was five times the number of male respondents. The highest number of respondents were from private schools while the least number of respondents were from the special needs schools. The number of respondents from private schools were 15 times that of the special schools (Table 4.1).

Table 4.1: Demographic characteristics of the respondents

Characteristics		**Type of school**			**Total**
		Private N=133 n (54.5%)	Public N=104 n (42.6%)	Special needs N=7 n (2.9%)	
Gender	Males	24 (9.8%)	14 (5.7%)	3 (1.2%)	41 (16.8%)
	Females	109 (44.7%)	90 (36.9%)	4 (1.6%)	203 (83.2)
Area of engagement	Baby class	29 (11.9%)	17 (7.0%)	0 (0%)	46 (18.9%)
	Middle class	33 (13.5%)	18 (7.4)	0 (0%)	51 (20.9%)
	Final class	14 (5.7%)	14 (5.7%)	0 (0%)	28 (11.5%)
	Class one	21 (8.6%)	18 (7.4%)	0 (0%)	39 (16%)
	Class two	18 (7.4%)	16 (6.6%)	0 (0%)	34 (13.9%)
	Class three	18 (7.4%)	18 (7.4%)	0 (0%)	36 (14.8%)
	Special unit	0 (0%)	3 (1.2%)	7 (2.9%)	10 (4.1%)
Length of stay in school	More than 6 months	38 (15.6%)	20 (8.2%)	0 (0%)	58 (23.8%)
	Less than 6 months	95 (38.9%)	84 (34.4%)	7 (2.9%)	186 (76.2%)
Duration of service	Less than 5 years	78 (32.0%)	28 (11.5%)	1 (0.4%)	107 (43.9%)
	More than 5 years	55 (22.5%)	76 (31.1%)	6 (2.5%)	137 (56.1%)
Level of education	Master's degree	0 (0%)	1 (0.4%)	0 (0%)	1 (0.4%)
	Undergraduate degree	1 (0.4%)	11 (4.5%)	1 (0.4%)	13 (5.3%)

	Diploma	65 (26.6%)	49 (20.1%)	6 (2.5%)	120 (49.2%)
	Certificate	67 (27.5%)	42 (17.2%)	0 (0%)	109 (44.7%)
	O level	0 (0%)	1 (0.4%)	0 (0%)	1 (0.4%)
Trained on special needs	Yes	15 (6.1%)	16 (6.6%)	7 (2.9)	38 (15.6%)
	No	118 (48.4%)	88 (36.1%)	0 (0%)	206 (84.4%)

Majority 133 (54.5%) of the respondents were from private schools while 104 (42.6%) were from public with the least 7 (2.9%) respondents from special school. One hundred and eighty-six respondents (76.2%) had taught in these schools for more than six months while 58 (23.8%) had only taught for less than six months. The number of respondents who had taught for more than six months were almost three times that of those who had just taught for less than six months. Majority, 137 (56.1%) of the respondents had been teaching including elsewhere for more than 5 years while 107 (43.9%) had been teaching in these schools for less than 5 years.

Majority of respondents 51(20.9%) taught in middle class, followed by baby class 46 (18.9%). The teachers who taught in special unit were the fewest of the respondents 10 (4.1%). Of the all the respondents, 49.2% had a diploma, 44.7% had a certificate, 5.3 % had attained a bachelor's degree education while only 0.4% had masters as their highest level of education. 0.4% of the respondents had a '0' level education as their highest level of education. The survey further revealed that only 38 (15.6%) of the respondents were trained on special needs education with the majority 206 (84.6%) had no training on special needs education. The number of teachers not trained on special needs education were almost six times the number of those trained on special needs education. Majority (90.6%) of the respondents were not upgrading in their education at the time of the survey with only 9.4% of the respondents currently attending school. Of those attending school at the time of the survey, 11 (47.8%) were upgrading for a bachelor's degree, 10 (43.4%) for a diploma course, 1 (4.3%) for a master's degree whilst 1 (4.3%) was upgrading for a PhD degree.

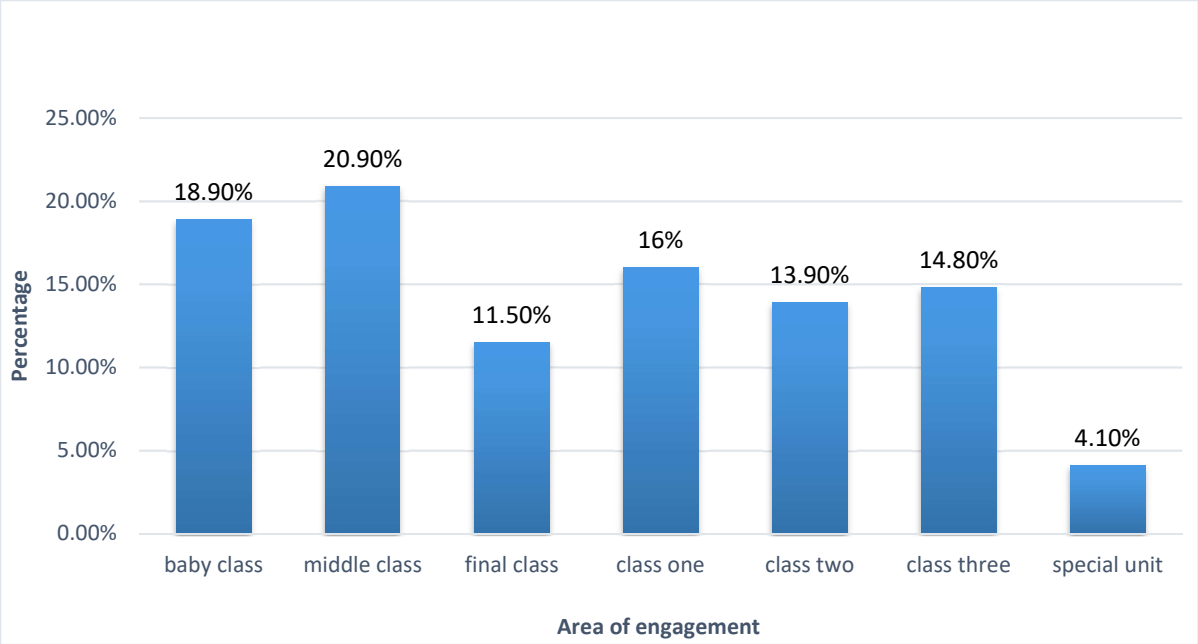

Figure 4.1: Distribution of teachers by area of engagement

4.2 Knowledge on Autism

When asked if they had ever heard of autism, 54.9% of the respondents said yes while nearly half, 45.1% of the respondents said No. (Figure 4.2)

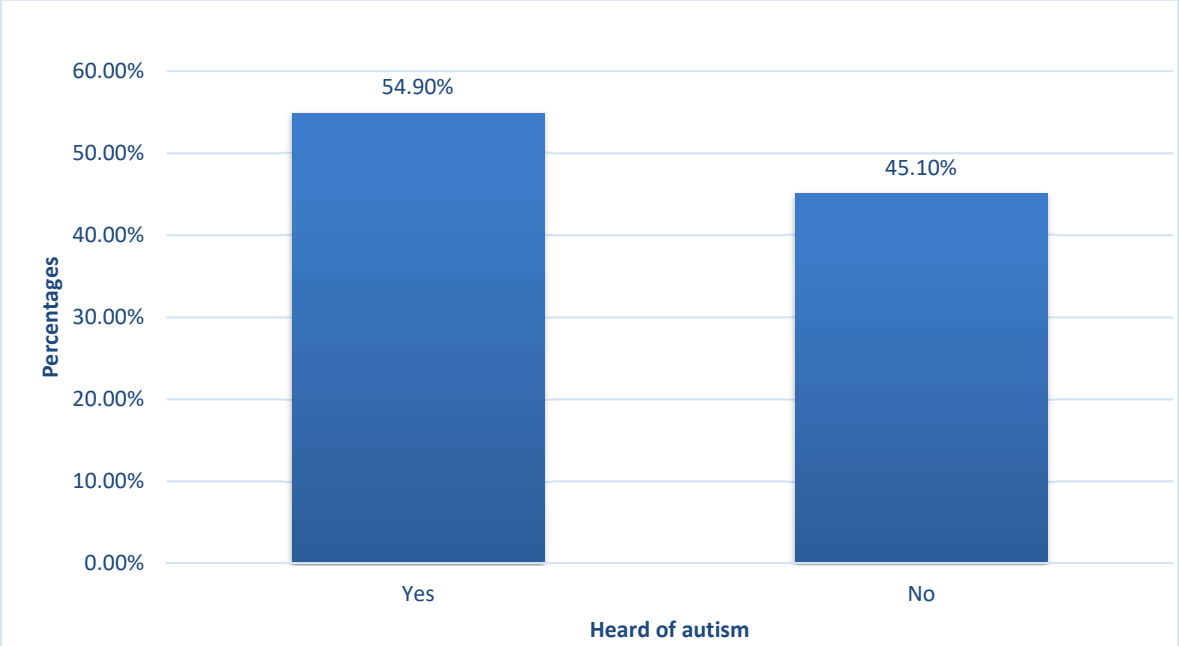

Figure 4.2: The proportion that have or have not heard of autism among teachers

The respondents were then asked to explain in their own words what autism was, varied responses were given including:

"*Mentally challenged person or child"*

"A disorder of the brain that interferes with the functions of the body"

"madness"

"They tend to be normal a bit they are not"

"A hearing disorder"

"It is a disorder in the body system caused by hormonal imbalance"

"A mental condition in children with characteristic of fear, shyness, and withdrawal"

"Children who have poor coordination of body parts"

"Mental condition that affects children in three main areas, communication social, interaction and imagination." Among other responses.

These responses depicted that these teachers could not define autism depicting low knowledge of autism

For teachers who had taught for less than 6 months, 32.8% had heard of autism while 67.2% had not heard of autism whereas teachers who had taught for more than six months, 61.8% had heard of autism while 38.2 % had never heard of autism (Figure 4.3). The difference between those who had heard of autism among two groups (less than 6 and more than six months) was statistically insignificant (p=0.03). Out of those who had heard of autism, 85.8% had taught in these schools for more than 6 months while only 14.2% had taught in these schools for less than 6 months

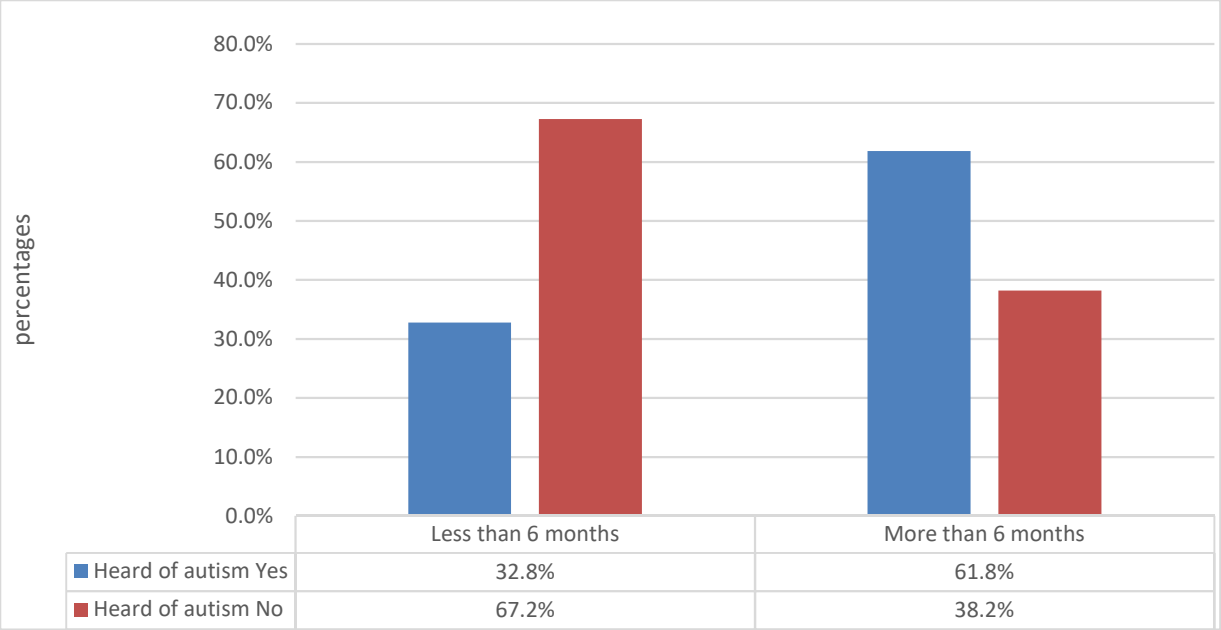

Figure 1.3: Duration of stay in school vs heard of autism

This study further tested if the duration one has taught in school is associated with having heard of autism and the findings shows that those who have taught in schools for more than 6 months were three (3) times likely to report having heard of autism than those who had stayed/taught for less than 6 months .According to type of schools, 73 (54.9%) of teachers from private schools had not heard of autism while only 60 (45.1%) of them had heard of autism whereas 67 (64.4%) of the teachers from public school had heard of autism while 37 (35.6%) of them had not. Of the total number of respondents who had heard of autism, 50% were from public schools, 44.8% were from private schools with 100% from special needs schools (Table 4.2)

Table 4.2: The proportion of teachers from different type of schools who have heard of autism

		Heard of autism	
		Yes (N=110, n=45.1%)	No (N=134, n=54.9%)
Type of school	Private school	60 (45.1%)	73 (54.9%)
	Public school	67 (64.4%)	37(35.6%)
	special needs school	7(100.0%)	0(0.0%)

Having heard of autism was also assessed in relation to area of engagement, the study findings revealed that 52.2% baby class teachers had heard of autism, 47.1% of middle-class teachers had heard of autism, 64.3% of those teaching in final class had heard of autism, 56% of class one teachers had heard of autism, 52.9% of the teachers teaching in class two had heard of autism and 50% of the teachers engaged in class 3 had heard of autism.

All (100%) of the special needs teachers had heard of autism. The study also revealed that 53.7% of the male teachers had never heard of autism while 46.3% of them had heard of autism. 56.7% of the female teachers had heard of autism with 43.3% admitting to have never heard of autism. In overall, 85.8% of the females had heard of autism while only 14.2% of the males had heard of autism (Figure 4.4). This study further revealed that being a female teacher in Kisumu central sub-county is associated with about 6 times the likelihood of hearing of autism.

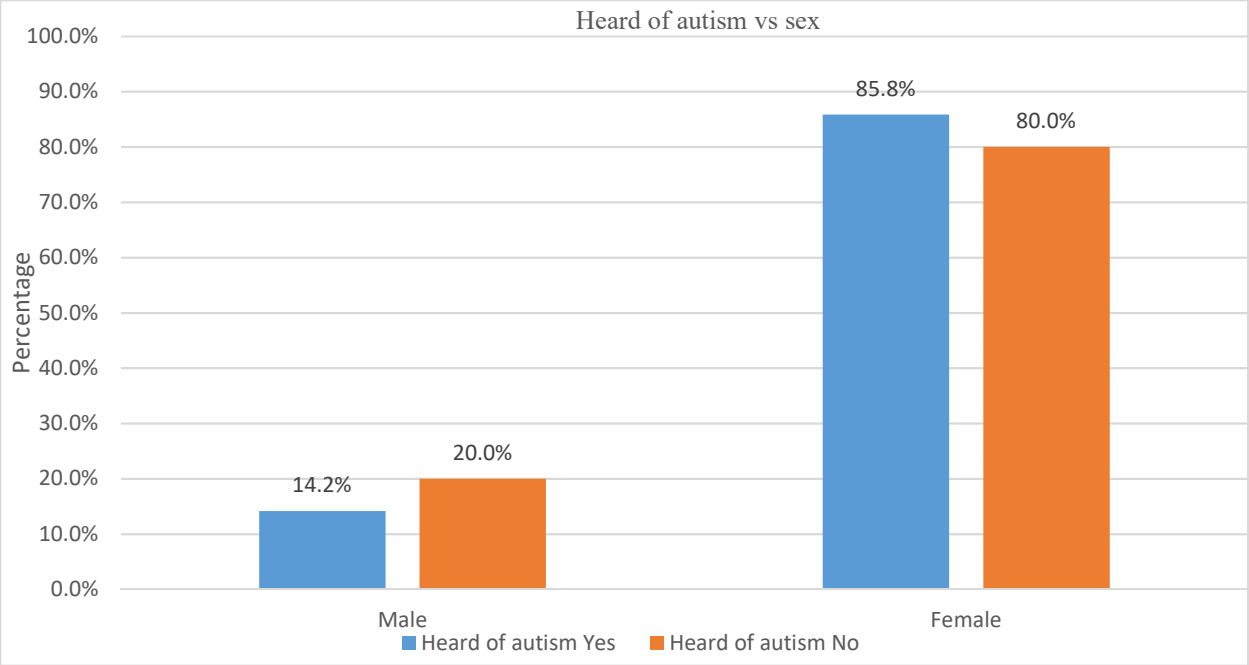

Figure 4.4: Hearing of autism vs sex

Hearing of autism was also associated with duration of service, the study noted that those who had taught for at least 5 years were 2 times less likely to have heard of autism than those who had taught for more than 5 years. Further analysis revealed that majority (62.6%) of those who had taught for less than 5 years had not heard of autism whilst majority (68.6%) of those teachers that had taught for more than 5 years had heard of autism. Of the teachers who had heard of autism, majority (70.1%) had taught for more than 5 years with only 29.9% of them having taught for less than 5 years.

Having training on special needs education was also associated with having heard of autism with those with a training on special needs having about 20 times the likelihood of having heard of autism as compared to those who did not have any training on special needs education. Majority (94.7%) of those with special needs education had heard of autism. Majority (52.4%) of those teachers not trained on special needs education had not heard of autism. The results of the survey also revealed that none (0%) of the teachers with "O' level of education had heard of autism. Only 40.4% of the teachers with certificate level of education had heard of autism, majority (59.6%) had not heard of autism. 63.3% of those with diploma level of education had heard of autism, all (100%) of those with a bachelors and a master's education level had heard of autism (Figure 4.5).

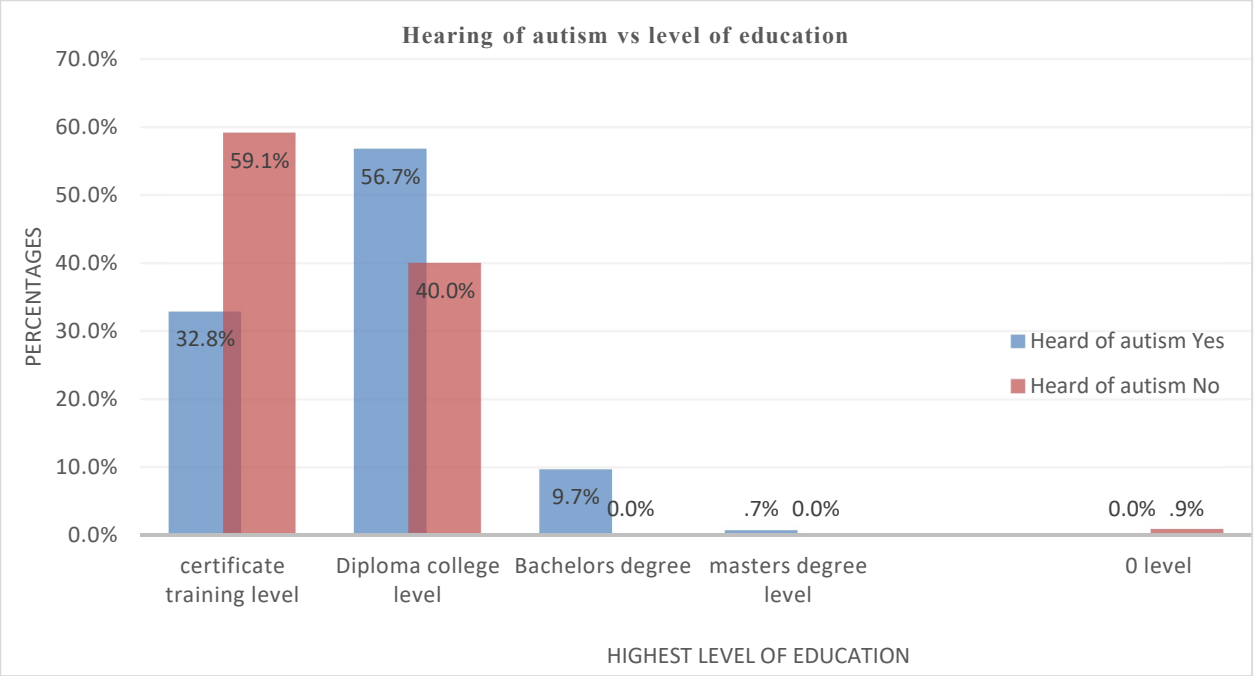

Figure 4.5: Hearing of autism vs highest level of autism

When asked of where they heard of autism, 20.1% of those who had heard of autism heard of it through a mention during a formal training, 18.9% through media, and 7% through personal experience not specified. 9.8% of these respondents (those who had heard of autism) admitted that they had an autistic individual in their family. Of interest to note was that 2% of these respondents did not know whether someone in their family had autism or not. Majority (52.2%) of the respondents said that autism is not an inherited disorder, 23.9% did not know whether autism is an inherited disorder or not with only 23.9% admitting that autism is an inherited disorder (Figure 4.6).

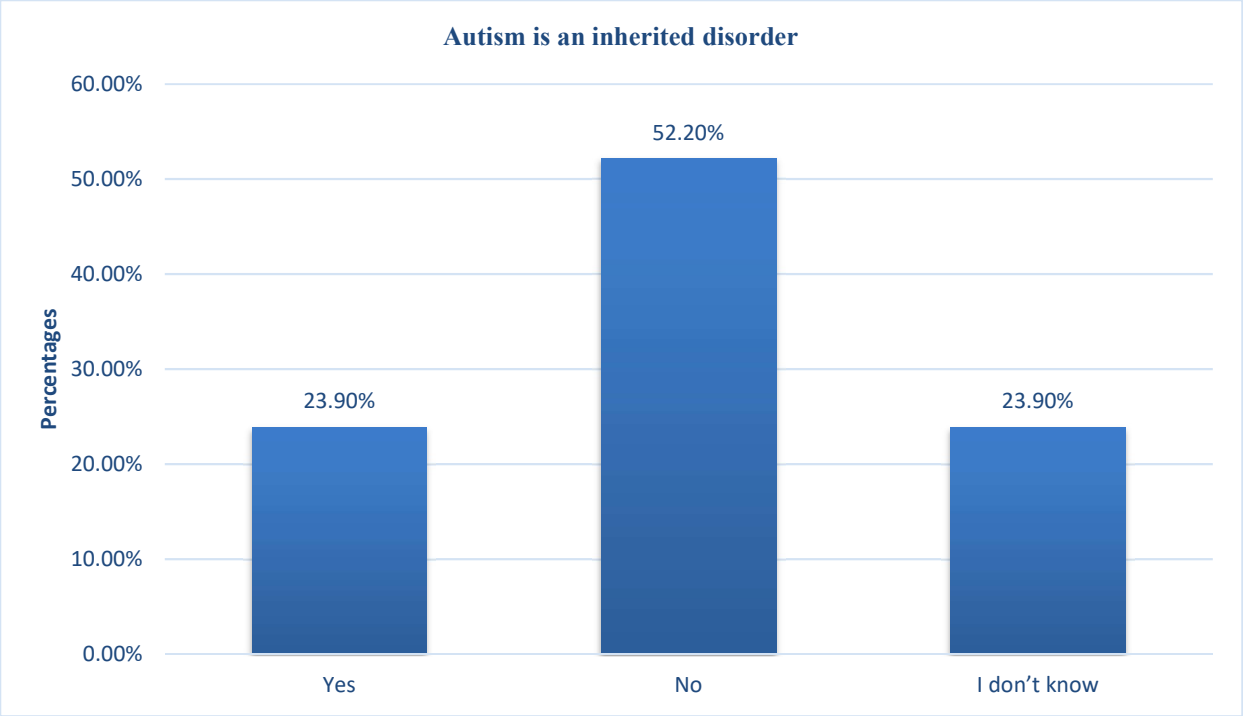

Figure 4.6: Autism is an inherited disorder

4.2.1 An inheritance of autism

As regards to inheritance of autism, the survey found out that 18.3% of the teachers teaching in private schools said that autism is an inherited disorder, 47.7% said that autism is not an inherited disorder while 35% did not know whether autism is an inherited disorder or not. 20.7% of their counterparts claimed autism to be an inherited disorder, 62.7% said that it is not an inherited disorder while 16.4% did not know the nature of disorder autism. All (100%) the teachers teaching in special needs school said that autism is an inherited disorder (Figure 4.7)

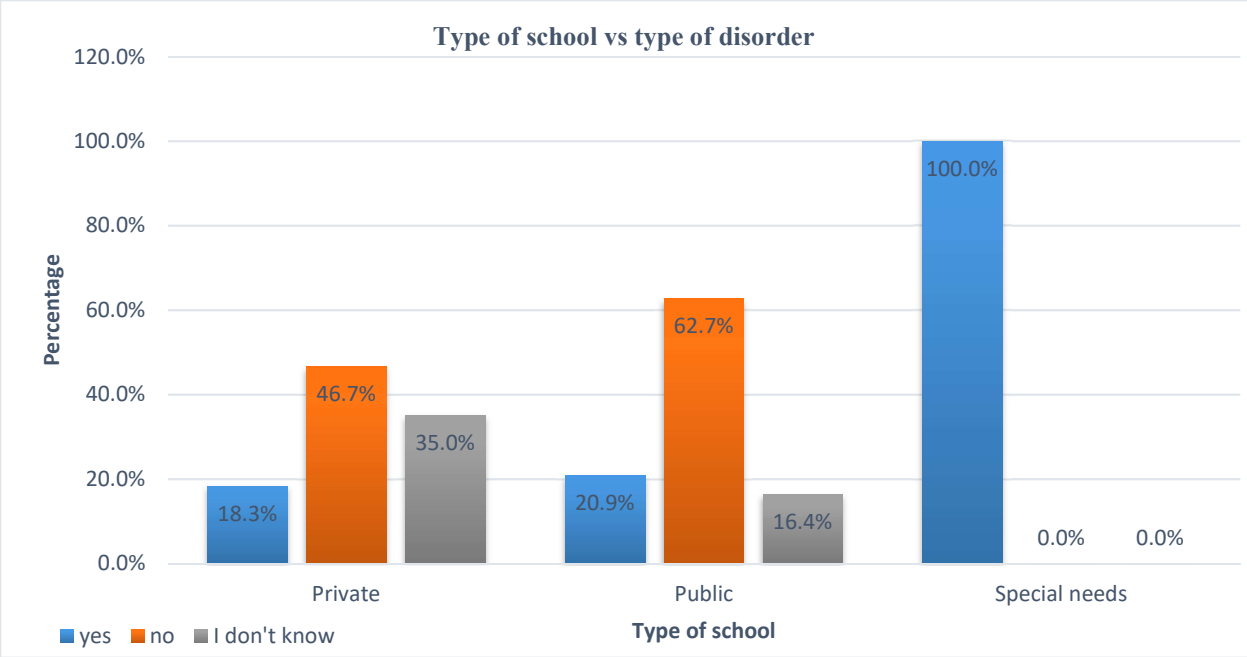

Figure 4.7: Type of school vs type of disorder

4.2.3 Learning and a mental disorder

All (100%) of the special needs school teachers said that autism was a learning and a mental disorder. However, 77.6% of the respondents acknowledged that autism is learning and a mental disorder with 16.4% saying that autism is not a learning and mental disorder. In addition, 6% of the respondents did not know whether autism was a learning and mental disorder or not. 81.7% of the private school teachers said that autism is a learning and a mental disorder, 15% said that it was not a learning and a mental disorder with 3.3% said that they did not know whether it was a learning and a mental disorder or not. Majority of the public school teachers admitted that autism is learning and a mental disorder, 19.4% said that it was not with 9 % saying that they did not know which disorder autism was. (Figure 4.8)

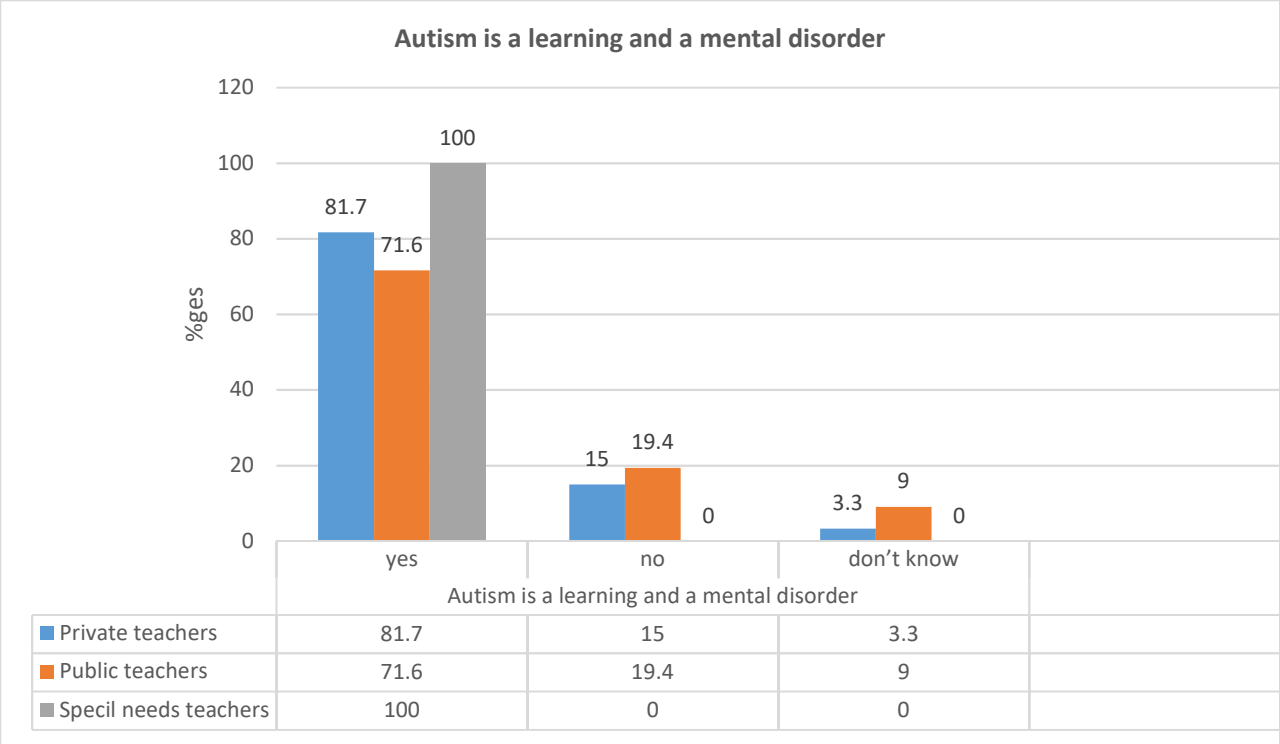

Figure 4.8: Autism is a learning and a mental disorder

4.2.4 Age of onset of autism

As regards to age when autism can be diagnosed, 48.1% said that autism cannot be diagnosed earlier than 24 months, 21.1% did not have any idea on age onset at which autism can be diagnosed and only 30.8% agreed that autism can be diagnosed earlier than 24 months (Figure 4.9). With respect to the type of school, 20% of private teachers, 33.3% of public and 100% of special needs school teachers said that autism can be diagnosed earlier than 24 months. On the contrary, 55% of

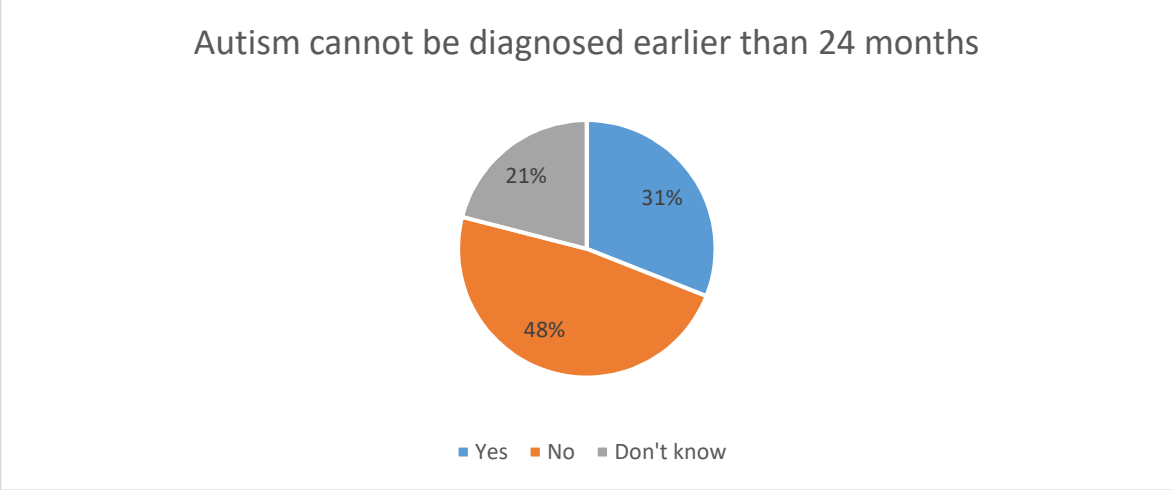

Figure 4.9: Age onset at which autism can be diagnosed

the private school teachers and 47% of the public-school teachers said that autism cannot be diagnosed earlier than 24 months. 25% and 19.7% teachers of private and public schools respectively did not know whether autism can be diagnosed earlier than 24 months or not.

4.2.5 Interaction difficulties

Only 4.5% said that autistic children do not have social interaction difficulties with the majority (95.5%) saying that autistic children have social interaction difficulties. Majority of the private school teachers (96%) and public-school teachers (94%) said that an autistic child has social interaction difficulties. All (100%) special needs school teachers admitted that an autistic child has social interaction difficulties

4.2.6 Communication skills

On the communication skills, 94% said that autistic children have poor communication skills and cannot express themselves while 6% said that autistic children do not have poor communication skills and cannot express themselves. Majority (93.3%) of the private schools and 94% of the respondents in public schools and 100% of the respondents in special needs schools said that autistic children had poor communication skills. When asked on whether autistic children have a hard time in phrasing a sentence and had a language delay, 97.8% of the respondents said Yes, 1.5 % said No while 0.7% of the respondents did not know the answer. All (100%) of the teachers teaching in private and special needs schools said that autistic children had difficulty in phrasing a sentence and also had a language delay. Majority (95.5%) of the public school teachers asserted that autistic children had difficulty in phrasing a sentence and also had a language delay, 3% said no while 1.5% said that they did not know. 14.4% of the respondents that had heard of autism had no idea that autistic children do repetitive gestures to express themselves.

4.2.7 Deficient attention span

When asked on the nature of the attention span of the autistic children, 89.5% said that it was deficient whilst 10.5% said that the attention span of autistic children was not deficient. Majority (88.3%) of the teachers teaching in private schools said that autistic children had deficient attention span, 89.4% of their counter parts in public schools said that that autistic children had deficient attention span while all the special needs teachers said that autistic children had deficient attention span (Figure 4.10).

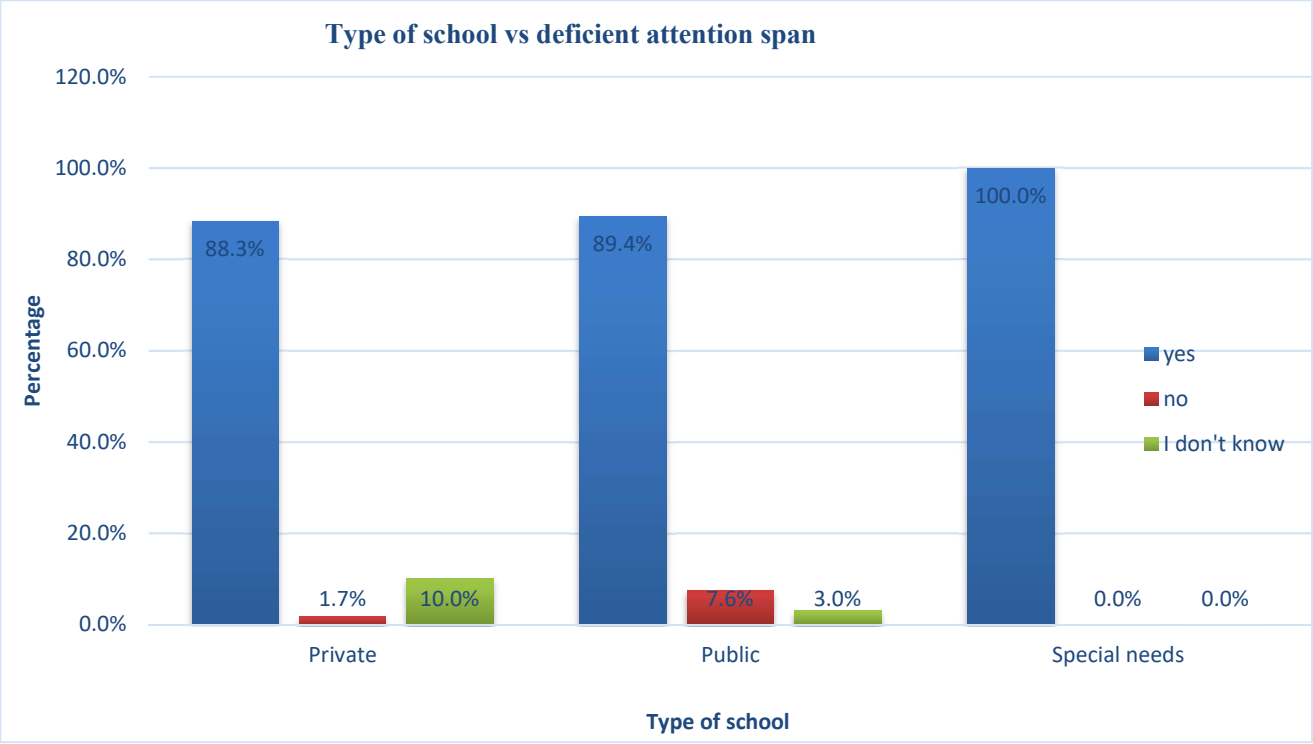

Figure 4.10: Knowledge of teachers on deficient attention span from type of schools

4.2.7 Restricted general interests

Twenty-point three percent (20.3%) of those who had heard of autism said that the general interests of an autistic child are not restricted, three percent (3%) had no idea whether they were restricted or not with 76.7% saying that their general interests were restricted (Figure 4.11). In looking at the general interests of an autistic child in relation to the type of school, 16.7% and 25.8% of private and public-school teachers respectively said that the general interests of an autistic child were not restricted. All (100%) special needs school teachers reported that the general interests on an autistic child were restricted. The study also found out that majority (81.7%) and (72.7%) of private and public-school teachers respectively said that that the general interests on an autistic child were restricted

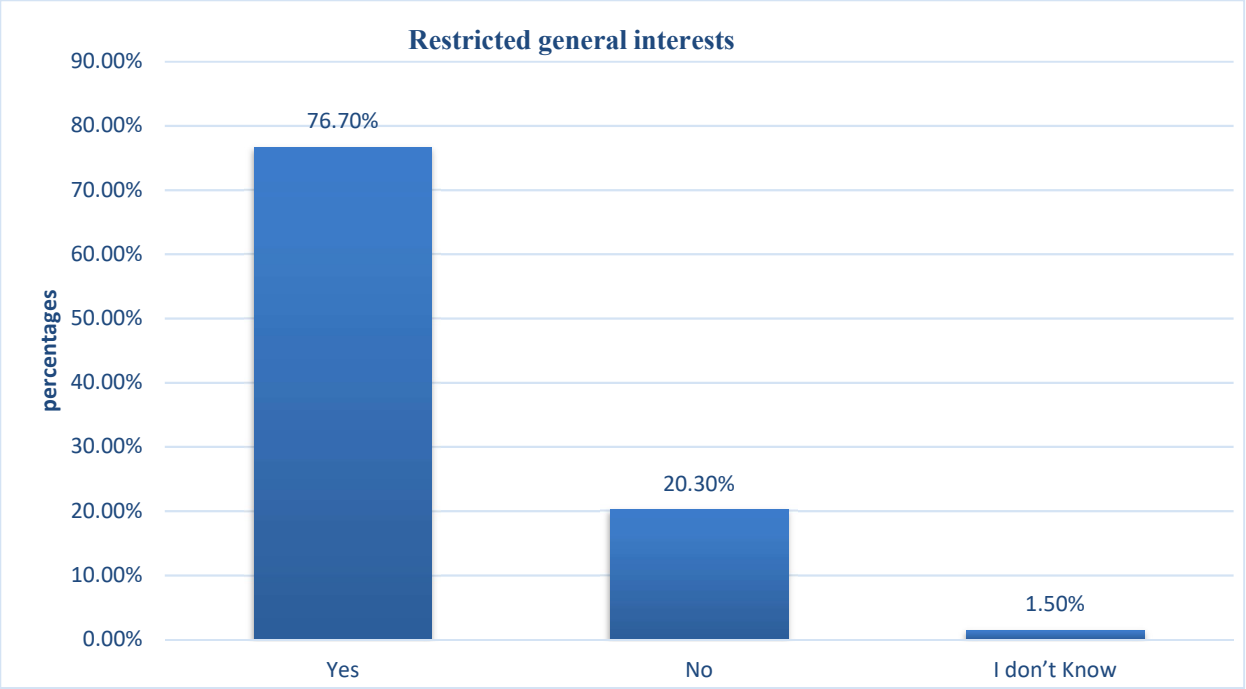

Figure 4.11: Knowledge on restricted general interests of autistic children

4.2.7 Eye contact

Minority (20.9%) of the respondents who had heard of autism said that autistic children do not maintain minimal eye contact with others. Majority (79.1%) of them said that autistic children maintain a minimal eye contact with others. Majority (78.3%) of the teachers teaching in private schools said that an autistic child maintains minimal eye contact with others. 15% said that an autistic child does not maintain minimal eye contact with others while 6.7% of them said that they did not know whether an autistic child maintains minimal eye contact with others or not. Majority (77.6%) of the teachers teaching public schools said that an autistic child maintains minimal eye contact with others. 19.4% said that an autistic child does not maintain minimal eye contact with others while 3.0% of them said that they did not know whether an autistic child maintains minimal eye contact with others or not. All (100%) teachers teaching in special needs school said that an autistic child maintains minimal eye contact with others.

4.2.7 Eating Habits

When asked about the general eating habits of autistic children, the majority (60.9%) of the respondents said that they were not normal, 23.3% said they were normal, 15.8% did not know whether they were normal or not (Figure 4.12).

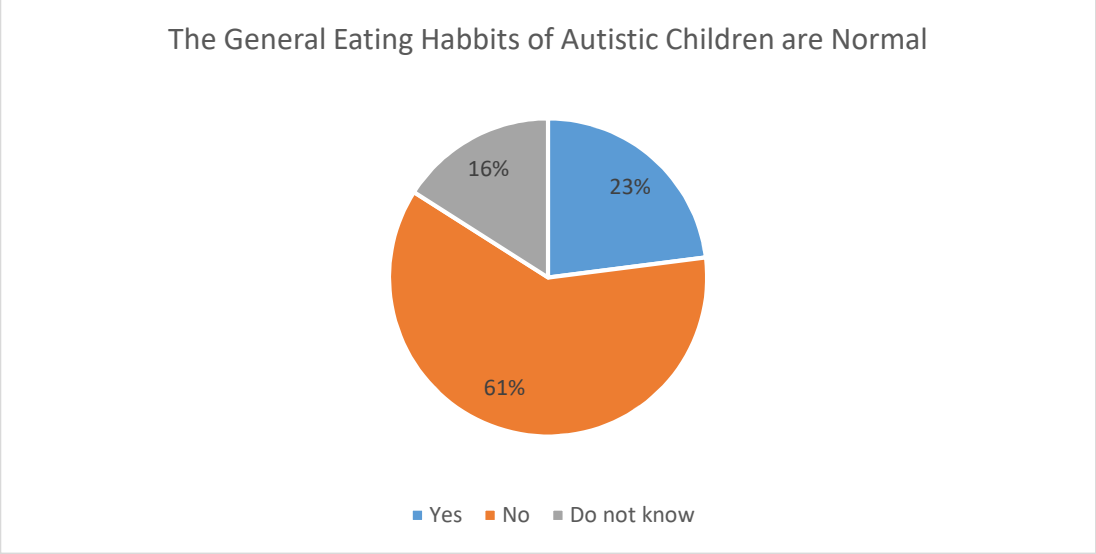

Figure 4.12: Knowledge on eating habits of autistic children

Half (50%) of the private school teachers said that the general eating habits of autistic children are not normal, Majority (66.7%) of the teachers from public school said that the general eating habits of autistic children were not normal while all the special needs teachers said that the general eating habits of autistic children were not normal. On the contrary, 25% of the private school teachers said that the general eating habits of autistic children were normal while 25% of them did not know whether the general eating habits of autistic children were normal or not. 24.2% of the teachers from public school said that the general eating habits of autistic children were normal, 9.1% of them did not know whether the general eating habits of autistic children were normal or not (Figure 4.13).

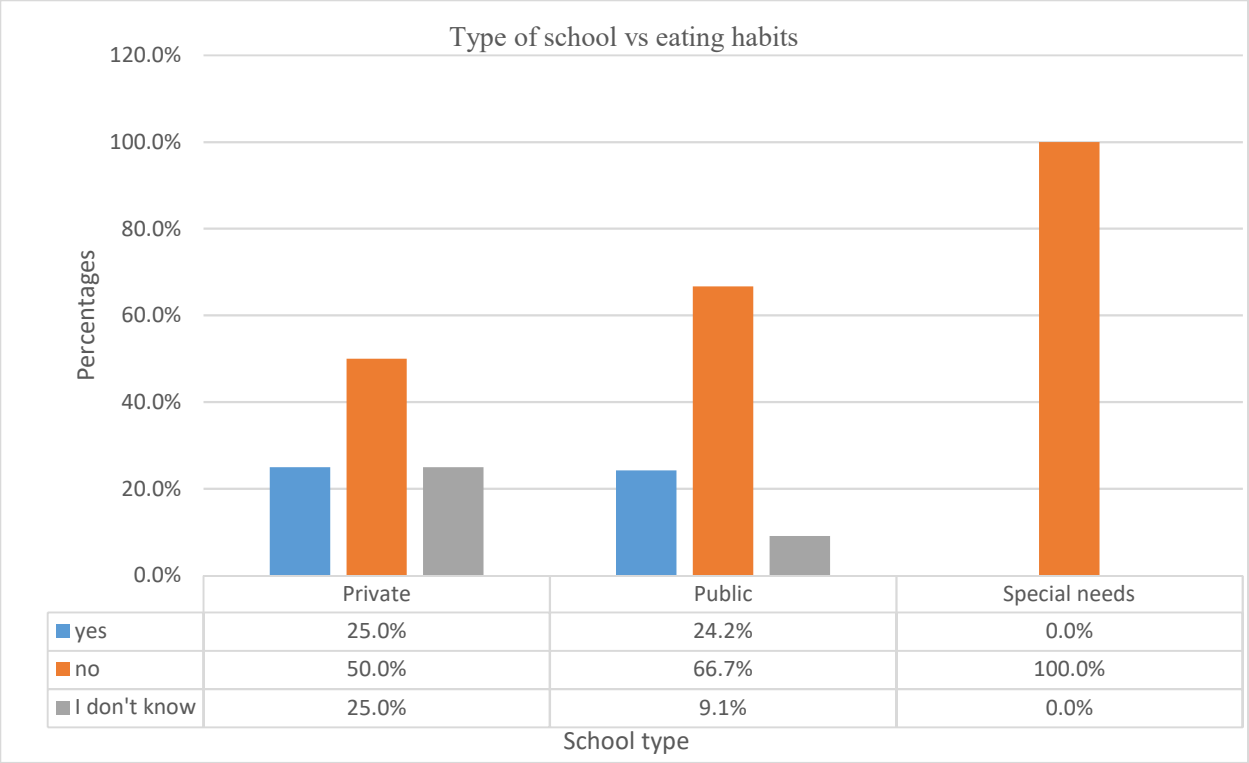

Figure 4.13: Type of school vs eating habits

4.2.8 Knowledge on prevalence of ASD among socio-economic class

31.7% of the teachers teaching in private schools said that ASD was more common among the high socio-economic and educational levels, 36.7% of them said that ASD was not more common among the high socio-economic and educational levels whilst 31.7% of these teachers did not know whether ASD was more common among the high socio-economic and educational levels or not. Amongst the public teachers, 22.4% of them said that ASD was more common among the high socio-economic and educational levels, 59.7% of them said that ASD was not more common among the high socio-economic and educational levels, 17.9% of them did not know whether ASD was more common among the high socio-economic and educational levels or not. 57.1% of the special unit teachers said that ASD was more common among the high socio-economic and educational levels whilst 42.9% of them said that they did not know whether ASD was more common among the high socio-economic and educational levels or not (Figure 4.14).

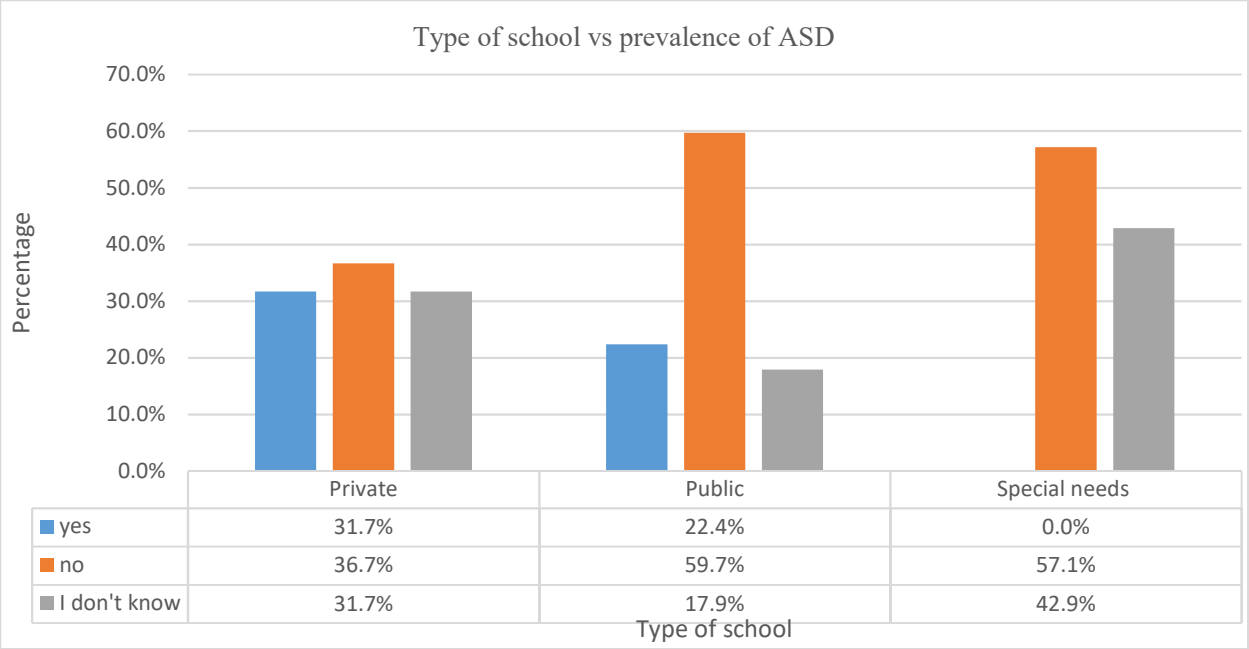

Figure 4.14: Type of school vs prevalence of ASD

When assessed on their knowledge on the prevalence of seizures among the autistic children, majority (57.1%) of the respondents said that seizures were more prevalent among the autistic children, 22.1% of the respondents said that seizures were not prevalent among the autistic children with 20.3% of the respondents who had heard of autism saying that they did not know whether seizures were more prevalent among autistic children or not (**Table 4.3**).

Table 1.3: Frequency of seizures amongst autistic children

		Frequency	Percent (%)
Valid	Yes	76	57.1%
	No	30	22.6%
	I don't know	27	20.3%
	Total	133	100.0%

When asked about the frequency of seizures amongst autistic children, majority (52.5%) of private school teachers said that seizures were more prevalent amongst autistic children, 56.7% of public teachers said that seizures were more prevalent amongst autistic children while all (100%) of the special needs teachers said that seizures were more prevalent amongst autistic children.

The result of the survey revealed that 21.6% of the respondents noted that vaccines can cause autism, 28.4% had no idea whether or not vaccines can cause autism with 50% of the respondents saying that vaccines cannot cause autism. When asked whether vaccines could cause autism, 30% of the teachers in private schools said that vaccines can cause autism, 38.3% of them said that vaccines do not cause autism while 31.7% did not know whether vaccines can cause autism or not.16.4% of their counterparts in public schools said that vaccines cause autism, 55.2% said that vaccines do not cause autism while 28.4% of them did not know whether vaccines can cause autism or not. All (100%) the special needs teachers said that vaccines do not cause autism.

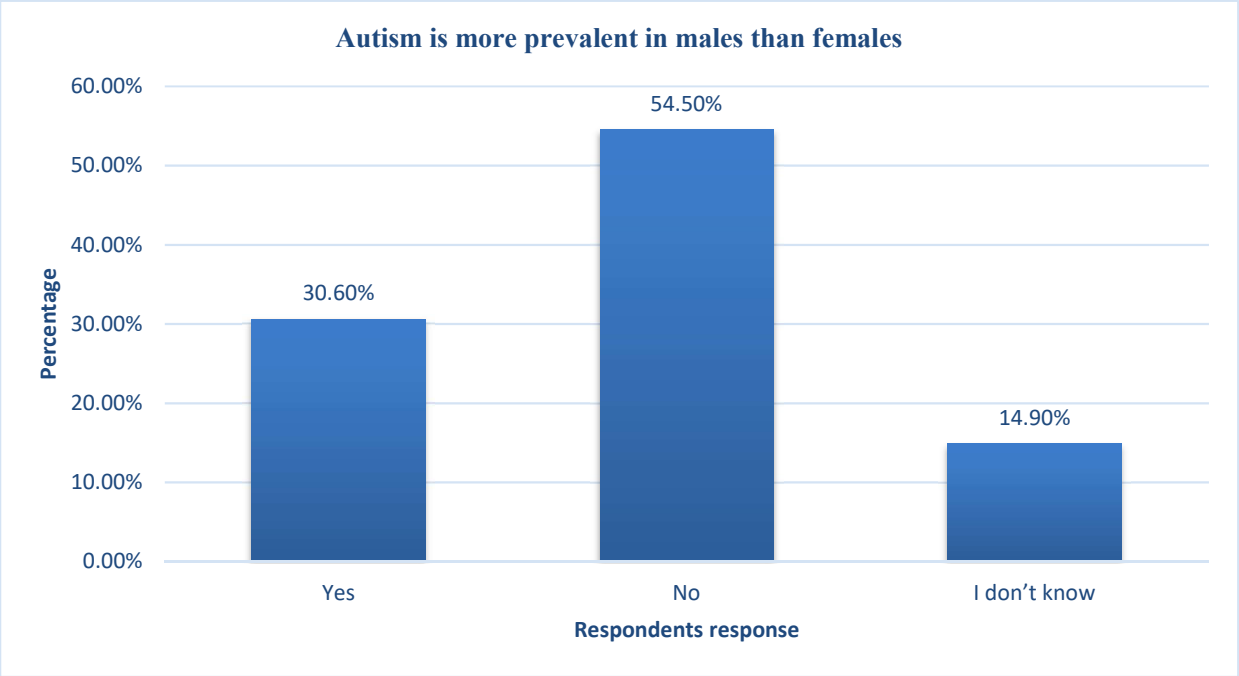

Figure 4.15: Prevalence of autism in respect to sex

When asked the prevalence of autism in respect to sex, majority (54.5%) said that autism was more prevalent amongst the females than males, 30.6% said that autism was more prevalent among the males than the female whilst 14.9% did not know amongst which sex autism was more prevalent than the other (Figure 4.15). An assessment of teachers' knowledge on the prevalence of autism in respect to gender revealed that 28.3% of the private teachers school said that autism is more prevalent in males than girls, 58.3% of them said that autism is more prevalent in girls than boys while 28.4% of them did not know in which sex/gender autism was more prevalent than the other. 25.4% of the public school teachers said that autism was more prevalent amongst the boys than the girls, 56.7% said that autism was more prevalent in girls than the boys while 17.9% of them

did not know. All (100%) of the special needs teachers said that autism was more prevalent amongst the boys than the girls.

Majority (79.9%) of the respondents who had heard of autism said that autistic children throws frequent bouts of anger while only 21.1% said that they don't throw frequent bouts of anger. Majority (76.7%) and (80.6%) of private school teachers and public school teachers respectively noted that autistic children throws frequent bouts of anger. All (100%) of their special needs counterparts said that autistic children throws frequent bouts of anger.

When asked the mode of treating autism, majority (61.2%) of the respondents said that autism is not treated using medication alone, 22.4% said that for one to treat autism other modes of treatment are necessary also other than medicines alone while 16.4% of the respondents did not know whether autism is treated using medication alone or not.

When asked about the treatment option for autism among autistic children, majority (51.7%), (65.7%) and (100%) of private, public and special needs teachers respectively said that one needs medicine alone to treat an autistic child. 23.3% and 23.9% of private and public school teachers respectively said that autism is not treated using medication alone. 25% of private teachers and 10.4% of public school teachers did not know whether an autistic child is treated using medication alone or not (Figure 4.16).

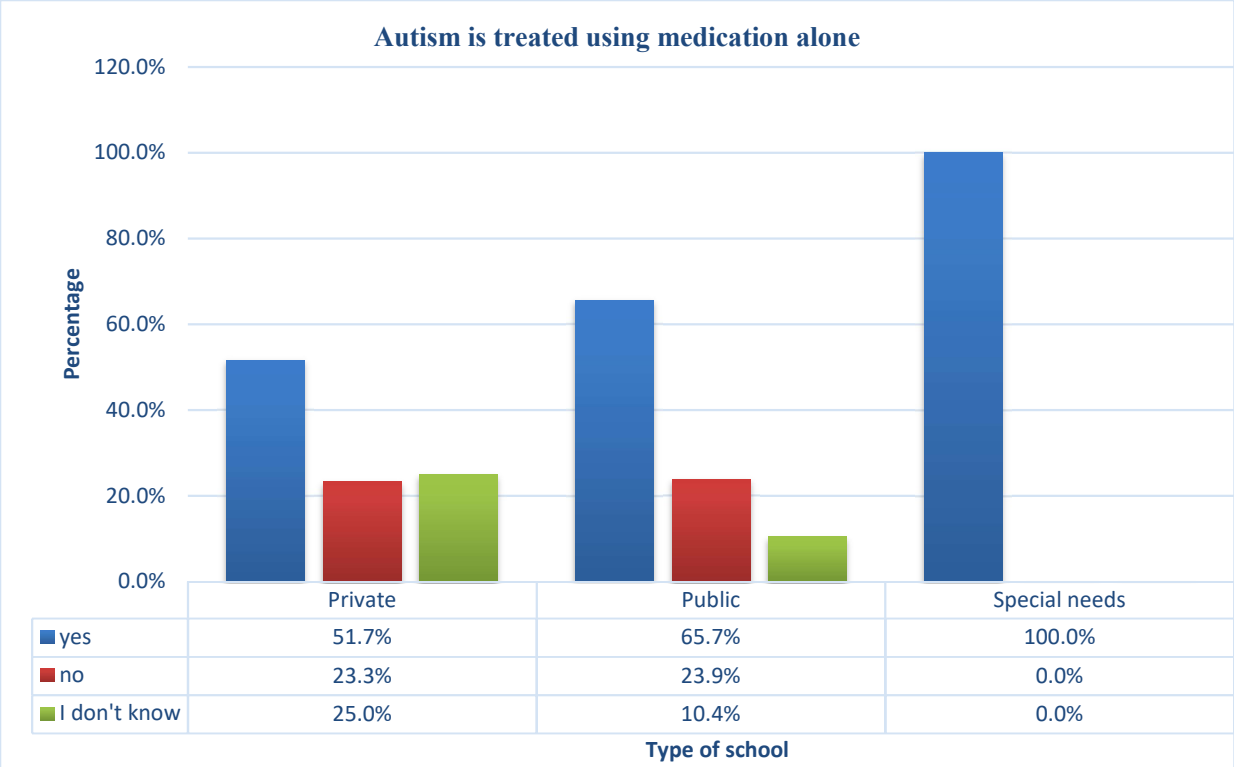

Figure 4.16: Type of school vs treatment option for autism

4.2.9 Self-assessment of knowledge

During this study, the respondents were asked to assess themselves on their ability to identify features of autism in a child, the majority (72.8%) felt confident that they could identify features of autism in a child, 10.3% felt inadequate to identify fetures of autism in a child with 16.9% being uncertain in their ability to identify features of autism in a child. The results of the survey further revealed that majority (65.7%) of the respondents felt confident in their ability to counsel parents on ASD, 12.4% of the repondents did not have confidence in their ability to counsel parents on ASD while 21.9% were uncertain on their ability to counsel parents on ASD. When asked on their confidence in their ability to counsel parents on available ASD services in the community, majority (65.7%) of the respondents felt confident in their ability to counsel parents on available ASD services in the community, 13.9% did not have confidence in their ability to counsel parents on available ASD services in the community, 20.4% were uncertain on their ability to counsel parents on available ASD services in the community. Majority (73%) of the respondents felt confident in their ability to interact with individuals with ASD, 7.3% of the respondents were not confident in their ability to interact with individuals with ASD, 19.7% of the repondents were uncertain with their ability to interact with individuals with ASD.

Majority (98.8%) of the respondents said that a further training on identification and diagnosis of ASD would benefit them, 98.8% said that they would benefit from further training on how to interact with individuals with ASD, 98.4% aluded to the fact that a furhter training on the available ASD services in the community would benefit them (Figure 4.17.).

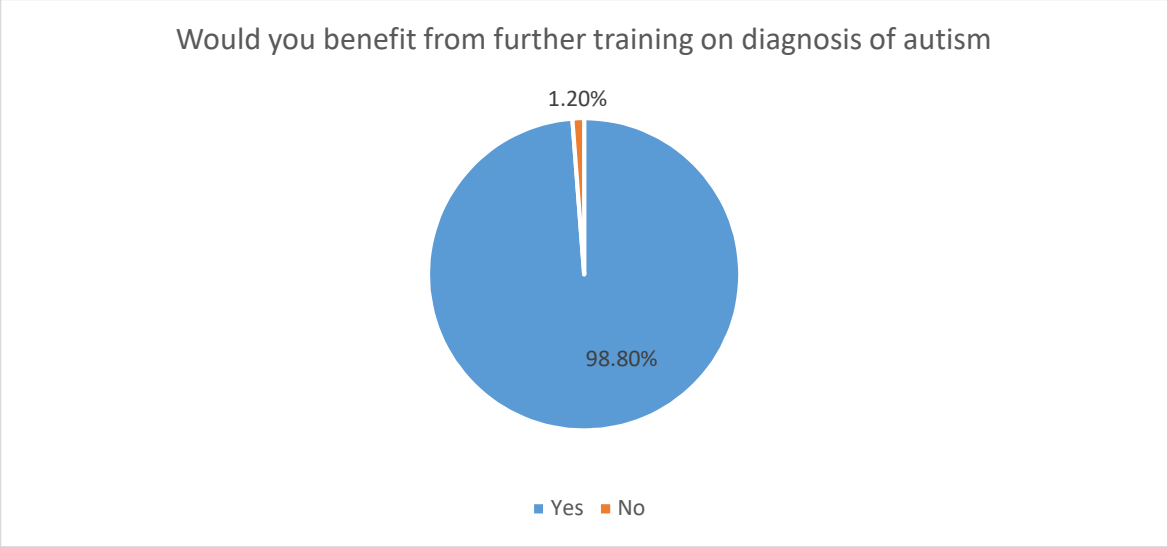

Figure 4.17: Proportion of respondents who would benefit from a further training on diagnosis of autism

Key informant interviews were also administered to head teachers from every category to assess their level of knowledge on autism, when asked the definition of autism, the special needs school head teacher defined autism to be a "*A neurodevelopmental disorder manifesting in early childhood that is characterized by deficits in social-communication, repetitive behaviors and restricted interests*" when asked about the manifestations of autism, the responses were "*destructive behavior, hyperactivity, self-injurious behavior".* The private school head teacher when asked the definition of autism said that they are those "*children with disability*, *whose presentations depends on the type of disability e.g straining to see the board especially a white board and surface."* On the other hand, when the public-school head teacher was asked the definition of autism, the response was that "*autism is a mental disorder presenting with lack of balance and having behaviors between normal and abnormal in physical and mental factors*."

4.3. Attitude on autism

The findings of the study revealed that 32.1% of the respondents who had heard of autism suggested that autistic children should be taught in the normal general public schools, 64.9% said that autistic children be taught in special needs schools while 3% of the respondents did not know which is the correct school to enroll the autistic children. When asked the type of school in which an autistic child should be taught, 68.3% of the private school teachers said that an autistic child should be taught in a special needs school, 30% said that they should not be taught in special needs school, 1.7% of these teachers did not know whether an autistic child should be taught in a special needs school or not. 58.2% of the public-school teachers said that autistic children should be taught in special needs school, 37.3% of them said that an autistic child should not be taught in a special needs school while 4.5% did not know whether an autistic child should be taught in a special needs school or not. All (100%) special need s school teachers said that an autistic child should be taught in a special needs school.

The results of the study further revealed that 13.5% of the respondents who had heard of autism said that in managing an autistic child one does not need to have a prior training on autism, 5.3% of the respondents did not know whether one needed to have a prior training on autism to manage autistic children, the remaining which formed the majority (81.2%) said that one needed to have a prior training on autism in order to manage autistic children. Majority (81.7%), (80.3%) and (85.7%) of the private, public and special needs school teachers respectively said that managing an autistic child comes with prior training. 11.7% and 16.7% of private and public primary school teachers said that managing an autistic child does not come with prior training. 6.7% and 3.0% of private and public primary school teachers respectively did not know whether managing an autistic child comes with prior training

When asked on their treatment advice for parents with autistic children, 39.6% of the respondents said that these children should be taken to special needs school for the deaf, dumb and mentally retarded, 18.7% said that parents should be more caring, 41.8% suggested that parents should Visit hospital for medical attention (Figure 4.18).

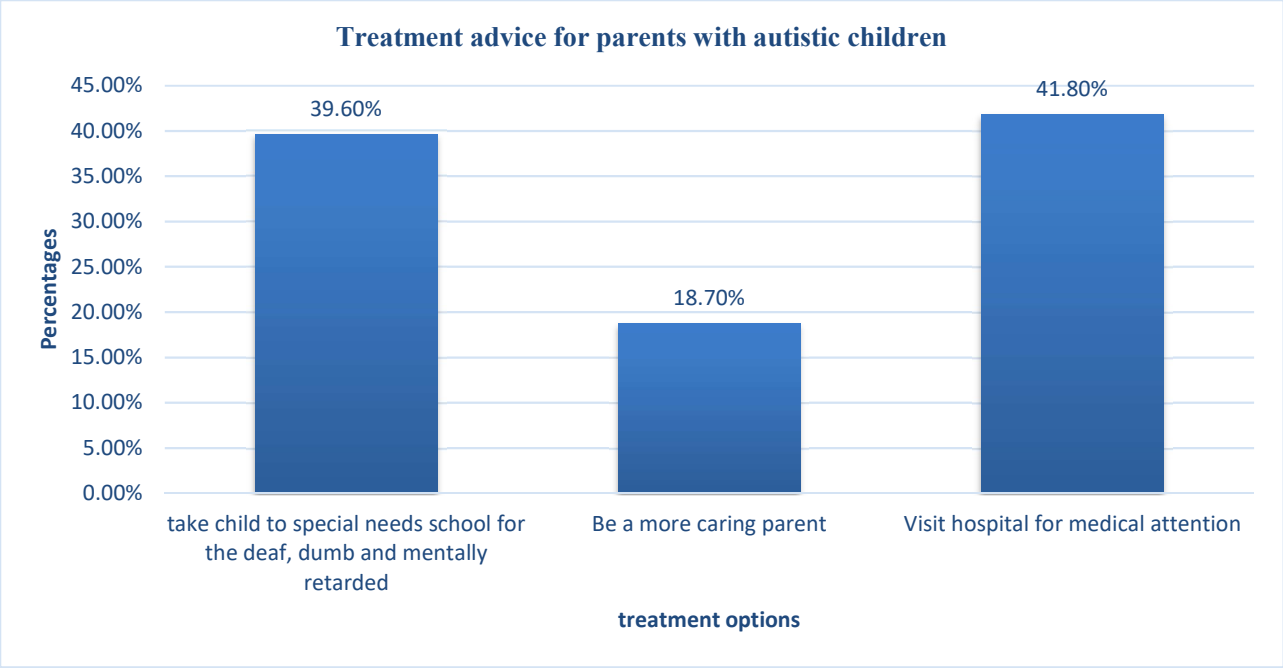

Figure 4.18: Treatment options for parents with autistic children

An attempt to determine the attitude of the head teachers on autism from various school categories showed that special needs schools were addressing autism by diet modification e.g a diet with no spices, no juices as these makes the autistic children very hyperactive. In addition, the pupils had their own well-ventilated classes with specified teaching and learning aids suitable for their learning, the pupils also had special needs teachers trained specifically on autism. The special schools also employed the individualized education program, that is what pupil one is able to do another pupil may not be able to execute hence employing the art of one topic but different objectives for every individual pupil. These schools (special needs) also had various learning facilities that were able to cool down the hyperactive pupils e.g swings, therapy balls and radio for music amongst others. The schools were also teaching the autism curriculum to the pupils hence addressing their learning needs.

The special needs schools considered themselves to be able to handle autistic children however had challenges in areas of few trained teachers on autism having teacher to pupil ratio of 1:5 instead of the recommended 1:1, more learning tools were required for smooth learning, the schools were supplying the pupils with meals however it was inadequate to meet the required standards. These schools also required larger classrooms for better learning space.

The private school had no autistic pupil hence there was no person to deal with autism." On how the school should deal with autistic children the response was that there should be a specialized teacher on autism and referral facilities like referral centers for these pupils. The head teacher also reiterated that the autistic child should not be handled differently from the others and that the school had no any provision for an autistic child however would need support in areas of having specialized teachers on autism and training the available teachers on autism.

The public school had no autistic child hence had no measures in place to handle autistic children except having a few teachers trained on special needs education hence need to refer the pupils with autism. When asked on the ability of the school to handle autism, the response was that "no ability at all" however the school needed support in areas of "training the teachers on autism and also regular visits by an expert to assess the needs of the teacher and the learners."

4.4. Perception and practices on autism

4.4.1 Understanding on the cause of autism

When asked on their perception of autism, 4.5% of the repondents said that autism is a spiritual affliction, 1.5% perceived autism to be a parental neglect, 15% perceived autism to be a psychiatric illness similar to madness while 78.8% perceived autism to be a Neuro-developmental disability (Figure 4.19).

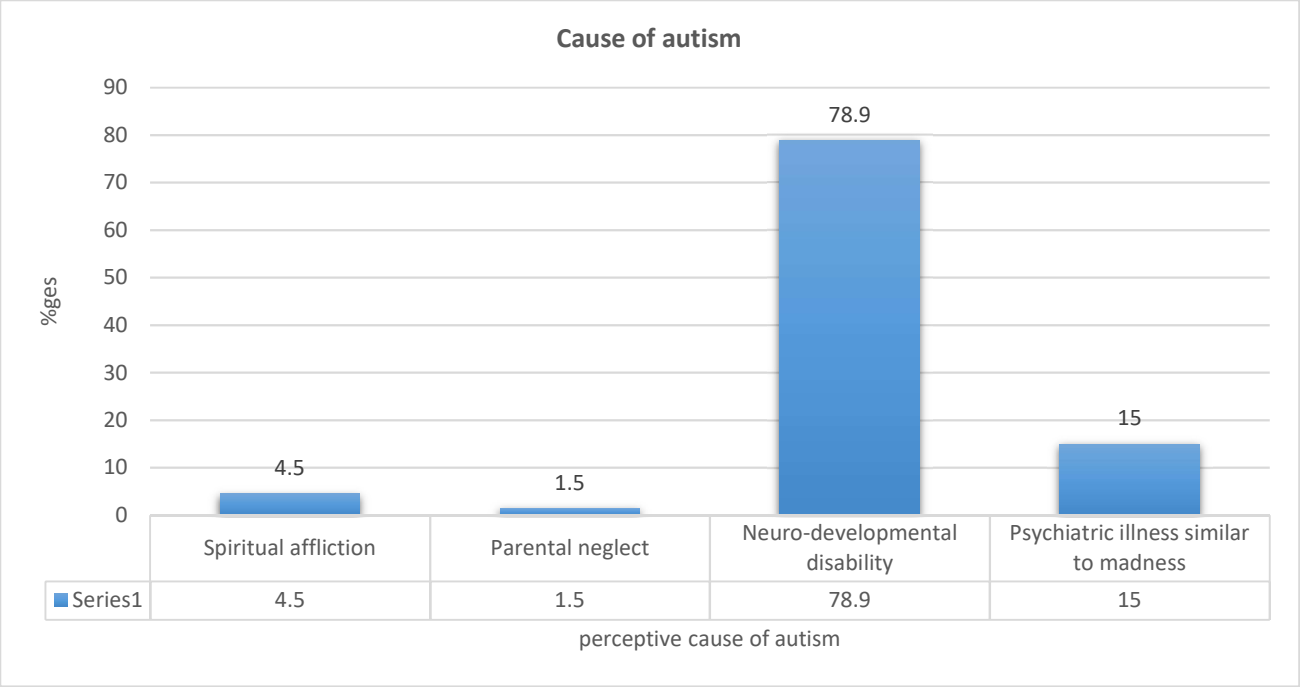

Figure 4.19: Cause of autism

4.4.2. Use of screening tools.

The survey targeted 244 respondents with 38 (15.6%) of them having a prior training on special needs education. When asked on their frequency of using any screening tools designed for ASD

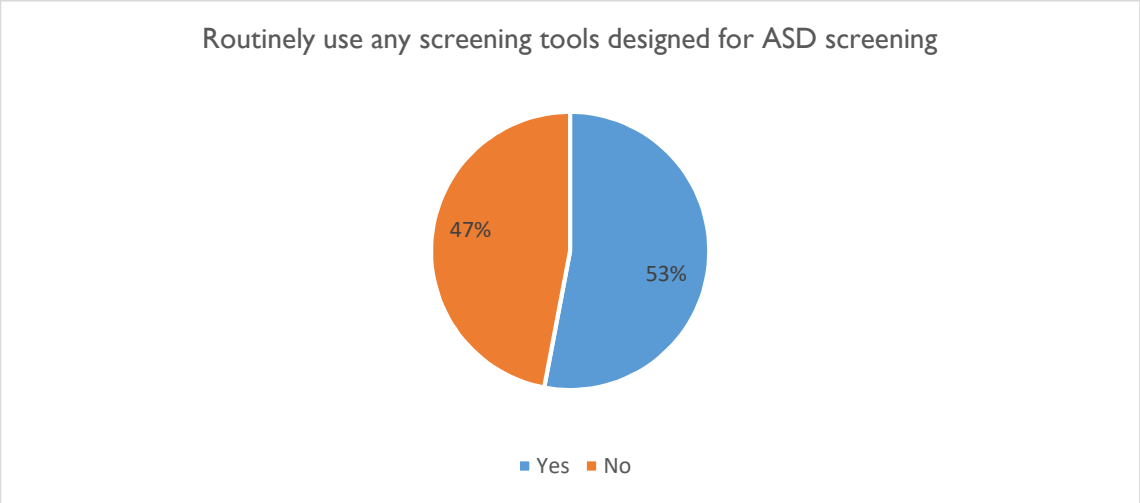

Figure 4.20: Routinely use any screening tools designed for ASD screening

47.1% said that they do not routinely use any screening tools designed for ASD screening, 52.9% of the respondents however said that they routinely use screening tools designed for ASD screening (**Figure 4.20**). 32.3% of them confessed being unfamiliar with community resources that support ASD families with information to help them make informed decision about their child with ASD, majority (67.7%) of the respondents were familiar with community resources that support ASD families with information that would help the parents make informed decision about their children with ASD. Sixty-seven-point seven percent (67.7%) of the respondents were familiar with community resources for referring children who exhibit characteristics commonly associated with ASD, 33.3% of the respondents were not familiar with community resources for referring children who exhibit characteristics commonly associated with ASD.

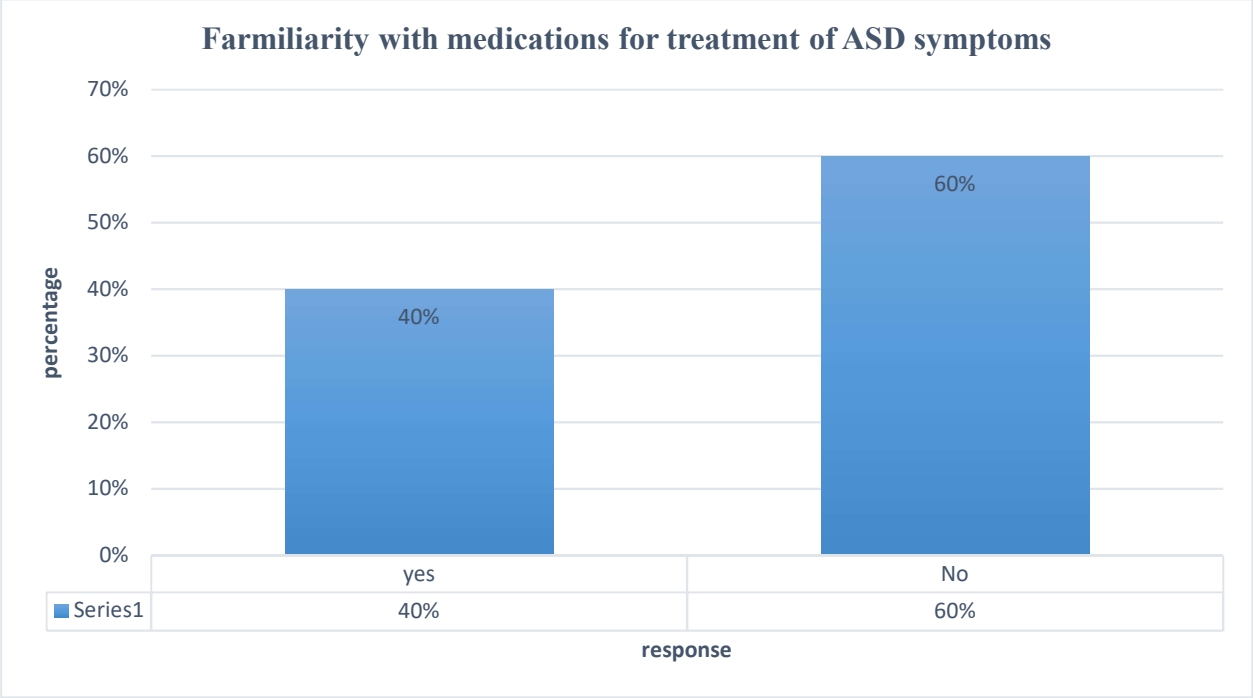

Figure 4.21: Familiarity with ASD medications

4.4.3. Medication to autistic children

When questioned on their familiarity with the medications for treatment of ASD symptoms, majority (60%) of the respondents were not familiar with these medications with only 40% of the respondents being familiar with these medications (**Figure 4.21**). Similarly, the majority (57.1%) of the respondents were not familiar with complementary alternative medicine (CAM) commonly used by families for children with ASD. 42.9% of the respondents were however familiar with CAM commonly used by families for children with ASD.

CHAPTER FIVE

DISCUSSION

5.1 Knowledge on autism

The study revealed that 45.1% of the teachers had never heard of autism with only 54.6% of the teachers having heard of autism, this is in agreement with a study conducted by Paul & Gabriel-Brisibe, 2015 which also revealed that slightly above 50% of the primary school teachers had heard of autism

A study conducted by Anil and Shanjeev (2014) revealed that only 69 of the 326 teachers had adequate knowledge of ASD, a sign that the teachers had poor knowledge about ASD (Shetty1 & Sanjeev Rai, 2014). Edward, (2015) also revealed that majority of the teachers were less knowledgeable about ASD and its associated features among children, these studies are consistent with this study which revealed that only 35.7% of the teachers are knowledgeable about autism with the majority having poor knowledge on autism. Newton *et al*., 2014, also added to the body of these findings in his study when he revealed that teachers' lack a specific body of knowledge to the nature and needs of students with special needs (Newton, N. *et al.*, 2014).

In comparison of the level of knowledge on autism among private and public teachers, the study discovered that the public teachers were more knowledgeable about autism than their private counterparts, these findings were similar to the findings in a study by Muhammad Mustafa Arif *et al*., 2013 which revealed that the teachers in the public sector had better knowledge and perception regarding autism when compared with their counterparts in the private sector.

Early diagnosis of autism is highly beneficial in the intellectual development of the child as this enables initiation of appropriate therapy and care in children, aiding in their development. Teachers play a vital role in interaction with these children at an early age hence their proper knowledge on autism is essential as this will enhance early diagnosis and initiation on the appropriate therapy.

5.2. Attitude on autism

The study found out that 15.07% of the general respondents had a positive attitude on autism while 14.18%, 16.02% and 13.73% of the private, public and special needs teachers respectively had a positive attitude towards autism; an indication a negative attitude towards autism exhibited by the teachers. The findings of this study were in agreement with a study conducted by Isabela, (2011) which concluded that inclusion of pupils with ASD in mainstream settings is a considerable

challenge for those involved, needing specific and extraordinary support (Isabela, 2011). (Rodriguez *et al.*, 2012) further connotes that if this support, as illustrated by the efforts of the ASD networks is not implemented, then lack of response to this demand could be fostering a less positive attitude toward the education of the pupils with ASD (Rodriguez *et al.*, 2012). It is important to connote those teachers with ominous attitudes towards autistic children may eventually have injurious impacts on those children. For the success of the education of children with autism, the teachers' attitude needs to be positive.

5.3. Perception on autism

The study also revealed that 4.5% of the repondents perceived autism to be a spiritual afliction, 1.5% perceived autism to be a parental neglect, 15% perceived autism to be a psychiatric illness similar to madness while 78.8% perceived autism to be a Neuro-developmental disability. The findings of this study were in agreement with a study conducted by Paul & Gabriel-Brisibe, 2015 among the teachers who had pupils with traits of autism, this study revealed that the pupils problem was perceived to be due to spiritual affliction, parental neglect and developmental disability (Paul & Gabriel-Brisibe, 2015).

Children with autism are perceived as academically challenged, suffering from some kind of parental neglect, madness or demon possessed. Due to their lowness in learning, an autistic child can even be scourged if the teacher gets disgusted by their slowness in learning. They are sometimes vetoed from school to school due to their' slowness' and "inability to learn' and sometimes lack of empathy from authorities and other care givers and teachers and their parents to cope with this reality. As a result of these problems, teachers may have difficulty in teaching them more so if the teacher's knowledge on autism is poor.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

(a) This study concluded that the primary school teachers of Kisumu Central Sub-County had a poor knowledge on autism.

(b) The findings of this study also concluded that the attitude of both general and special needs teachers on autism was negative with most of the respondents from each category saying that autistic children should be taught in special needs schools, thereby denying the inclusion policy.

(c) This study also concluded that most of the general teachers perceived autism to be a neuro-developmental disability and an academic challenge, while others still perceived autism to be a spiritual affliction or being demon possessed. Some teachers also perceived autism to be due to parental neglect and a psychiatric illness similar to madness; thereby underscoring a poor perception of autism amongst the primary school teachers of Kisumu Central.

6.2. Recommendation.

This study revealed a great lack of awareness amongst teachers regarding autism. The researcher therefore recommends that:

6.2.1 Practice

(a) Teachers training institutions to implement proper training programs for teachers to train them in diagnosing autistic children and then teach them accordingly.

(b) Review the teachers training curriculum to adequately equip teachers with knowledge on how to diagnose and manage autistic children, this curriculum should equip the teachers with knowledge and skills on multi-sectoral collaboration with other professionals such as occupational therapists, speech therapist and educational psychologists on diagnosis and management of autistic children

(c) The teachers should also be given in-service and other refresher courses and trainings on autism so as to improve on their attitudinal and socio-psychological support systems in the school to handle autistic children.
(d) There should be clear policy guidelines on implementation of inclusive education.
(e) The government should allocate enough funds to the special needs education department to be used in purchasing the necessary learning and therapy equipment for the children with autism.
(f) The Ministry of Education should work with other government department such as Ministry of Health to second occupational therapists, physiotherapists' nutritionists, and speech therapists to work collaboratively with special needs education teachers

6.2.2 Future research

The study has revealed that gross gaps still exist and there is need to conduct further studies in areas such as:

(a) There is need to conduct research on knowledge, attitude and practices of autism on parents with autistic children
(b) A research study needs to be carried out on transition of children with autism from separate special units and special schools to inclusive classes and vocational training.
(c) There is the need for research study to establish diagnostic criteria and tools used to identify children with autism and their educational placement.
(d) There is need to investigate the attitudes of the parents and regular learners without disability on inclusive education for children with autism
(e) Challenges facing the system of inclusive education.

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APPENDICES

Appendix 1: PARTICIPANT INFORMED CONSENT DOCUMENT (PRE-PRIMARY AND LOWER PRIMARY SCHOOL TEACHERS)

TITLE: AWARENESS OF AUTISM AMONG PRIMARY SCHOOL TEACHERS OF KISUMU CENTRAL SUB-COUNTY-KENYA

PART A:

Investigator: Moses Sadia

INTRODUCTION

You are being asked to participate as a respondent in the study named above. This study targets pre-primary, lower primary school, and head-teachers of Kisumu Central Sub-County. Before you decide on whether to be in the study, we would like to explain its purpose, and benefits, what is expected of you, and what you can expect from us. Please ask questions about anything you want to learn more about. Once you have understood the study and agree to take part, you will be asked to sign your name or make your mark on this form. You will be offered a copy to keep. It is important to notify you that it is up to you whether or not you join the autism study.

Purpose of the Study The purpose of this study is to assess the knowledge and perception of autism among pre-primary and primary school teachers of Kisumu Central Sub-County. The study is permitted by the Ministry of Education in conjunction with the Ministry of health and the ethical review committee of Jaramogi Oginga Odinga Teaching and Referral hospital. About 268 participants will be invited into the study. The entire research will be done in the course of. Should you decide to be a participant, you will take part once. The r research findings and information gathered from the participants in the study will be helpful in addressing issues confronting autism in resource limited settings like Kenya; this would promote awareness, facilitate early diagnosis and intervention, and improve quality of care and outcomes in autism.

.

STUDY PROCEDURES

If you agree to participate in the study, you will follow this procedure; -You will answer the interviewers' questions as outlined in the questionnaire -You will also need to participate in only one interview. The questions will be about your knowledge and perception on autism and the interviewer will write down what you say.

BENEFITS There are no direct benefits linked to your participation in this research. Regardless, the information that we will gather from you may be beneficial to Government-Ministry of Education in better understanding autism and its effects on early childhood education and develop responsive interventions.

CONFIDENTIALITY Results of study might be made available if required for legal reasons. However, any information that specifically identifies with you will be protected. Any publication arising from this study will not include any private information about you. **Persons to Contact:** The researcher conducting this study is **Moses Omondi Sadia**. You may ask any questions you have now or if you have any questions later, you are encouraged to contact him through mobile number: **0727414037**, or email sadiaomondi@gmail.com or **sadiaomondi@yahoo.com.**

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the following:

The Dean,
School of Health Sciences- Jaramogi Oginga Odinga University of Science and Technology
P.O. BOX 210-4060- Bondo.
Tel no: 0721-401453
Email: jamimo@jooust.co.ke

OR

Dr. George Ayodo PhD.
Jaramogi Oginga Odinga University of Science and Technology
P.O. BOX 210-4060- Bondo.
Tel no: 0712176738.

PART B

Participant consent form

I have understood the above information which has been fully explained to me by the investigator and I voluntarily consent to participate.

Signature……...
Or participants thumb print.
Date……...
Witness signature……..

Appendix 2: QUESTIONNAIRE

_____For Official Use Only_____

School Number: _____ Interviewer Name: _____Date of Interview: __ __/__ __/__ __ (dd/mm/yy)

County: _____

Sub-County: _____ Type of school: _____

I. Demographic Characteristics

We would first like some information about yourself and career.

Resident	Area of engagement	Sex	Duration of stay in school	Duration of service	Age	Education			Size of the classroom
Q. 1) Name of the Respondent (Optional)	Q. 2) What level/class do you teach in this school?	Q. 3) What is the sex of the respondent?	Q. 4) For how long have you been	Q. 5) For how long have you been a teacher	Q. 6) What is the average age of the	Q. 7) Are you trained on special needs education?	Q. 8) Are you currently attending school? If yes	Q. 9) What is the highest level of education	Q. 10) How many pupils are in your class? (categorize

			teaching in this school?	?(including elsewhere)	pupils in your class?		which one	that you have attained?	boys and girls)
___ ___	Kindergarten…1 Nursery…….2 Grade 1…….3 Grade 2…….4 Grade 3……5	M F 1 2	< 6 months 1 > 6 months 2	< 5Yrs 1 > 5yrs 2	< 8Yrs 1 > 8yrs 2	Y N 1 2	Y N 1 2 ___ ___	___ Level	___ ____

Codes for Q. 9*– Level of school attended:* 1=Certificate training 2= Diploma college 3=University 4=Postgraduate

Codes for Q.10 -*size of classroom:*1=1-25 pupils, 2 = 26-50 pupils, 3= above 50 pupils

NO.	QUESTION	RESPONSE AND CODING	COMMENTS
1.	Have you heard about Autism?	Yes……1 No…….2	If no, move to question 5 and 6
2.	If yes, where did you hear of autism?	Media……..1 Personal experience…2 Workshop……....3 Formal training……4 Other……..….5	
3.	In your very own words, what is autism?		
	Do you or does someone in your immediate family have an Autism Spectrum Disorder?	Yes……1 No…….2 I don't know...3	
4.	Respond to the following concerning autism		
4a.	Autism is an inherited disorder	Yes……1 No…….2 I don't know...3	
4b.	Autism is a learning and mental disorder	Yes…….1 No……..2 I don't know...3	
4c.	ASD cannot be diagnosed earlier than 24 months	Yes…….1 No……..2 I don't know...3	
4d.	An autistic child has social interaction difficulties	Yes…….1 No……..2 I don't know...3	
4e	An autistic child has poor communication skills and cannot express himself	Yes…….1 No……..2 I don't know...3	

4f	Verbally, an autistic child will have a hard time phrasing a sentence and normally have a language delay	Yes…….1 No……..2 I don't know...3	
4g	Nonverbally, an autistic child does repetitive gestures to express himself	Yes…….1 No……..2 I don't know...3	
4h	The attention span of an autistic child is deficient	Yes…….1 No……..2 I don't know...3	
4i	General interests of an autistic child are restricted	Yes…….1 No……..2 I don't know...3	
4j	An autistic child maintains minimal eye contact with others	Yes…….1 No……..2 I don't know...3	
4k	General eating habits of an autistic child are normal	Yes…….1 No……..2 I don't know...3	
4l	An autistic child is resistant to change	Yes…….1 No……..2 I don't know...3	
	ASDs occur more commonly among higher socioeconomic and educational levels	Yes…….1 No……..2 I don't know...3	
	Seizures are more prevalent among children with autism	Yes…….1 No……..2 I don't know...3	
	Vaccines can cause autism	Yes…….1 No……..2 I don't know...3	

	Autism is more prevalent in males than females	Yes…….1 No……..2 I don't know...3	
4m	An autistic child throws frequent bouts of anger	Yes…….1 No……..2 I don't know...3	
4n	Autism is not treatable using medication alone	Yes…….1 No……..2 I don't know...3	
4o	Autistic child should be taught in special school	Yes…….1 No……..2 I don't know...3	
4p	Managing a child with autism comes with prior training	Yes…….1 No……..2 I don't know...3	
4q	What is your treatment advice for parents with autistic children?	Take child to special need school for the deaf, dumb and mentally retarded…….1 Take child for deliverance in a Church……..2 Be a more caring parent……3 Visit a hospital for medical attention……4	
4r	What do you perceive autism to be?	Spiritual affliction ……1 Parental neglect ……2 Neuro-developmental disability ……3	

		Psychiatric illness similar to madness……4	
SELF ASSESSMENT OF KNOWLEDGE OF AUTISM			
5a	I feel confident in my ability to identify features of Autism Spectrum Disorders in a child.	Agree…….1 Disagree…….2 Uncertain……3	
5b	I feel confident in my ability to counsel parents on Autism Spectrum Disorders.	Agree…….1 Disagree…….2 Uncertain……3	
5c	I feel confident in my ability to counsel parents on available Autism Spectrum Disorder services in the community.	Agree…….1 Disagree…….2 Uncertain……3	
5d	I feel confident in my ability to interact with an individual with Autism Spectrum Disorder	Agree…….1 Disagree…….2 Uncertain……3	
I WOULD BENEFIT FROM FURTHER TRAINING ON:			
6a	Identification and diagnosis of Autism Spectrum Disorders	Yes…….1 No……..2	
6b	How to interact with individuals with Autism Spectrum Disorders	Yes…….1 No……..2	
6d	Available Autism Spectrum Disorders services in the community	Yes…….1 No……..2	
FOR SPECIAL NEEDS TEACHERS			
7a	Do you routinely use any tools designed specifically to screen for Autism Spectrum Disorders?	Yes…….1 No……..2	For special needs teachers

7b	Are you familiar with community resources that support families and provide information to help them make informed decisions about their child with Autism Spectrum Disorders?	Yes…….1 No……..2	
7c	Are you familiar with community resources that can be used for referral of a child who is exhibiting characteristics commonly associated with Autism Spectrum Disorders?	Yes…….1 No……..2	
7d	Are you familiar with medication used in the treatment of symptoms commonly associated with Autism Spectrum Disorders?	Yes…….1 No……..2	
7e	Are you familiar with complementary alternative medicine (CAM) commonly used by families for children with Autism Spectrum Disorders?	Yes…….1 No……..2	

Appendix 3: PARTICIPANT INFORMED CONSENT DOCUMENT (PRIMARY SCHOOL HEAD-TEACHERS)

TITLE: AWARENESS OF AUTISM AMONG PRIMARY SCHOOL TEACHERS OF KISUMU CENTRAL SUB-COUNTY-KENYA

PART A:

Investigator: Moses Sadia

INTRODUCTION

You are being asked to participate as a respondent in the study named above. This study targets pre-primary, lower primary and school head-teachers of Kisumu Central Sub-County. Before you decide on whether to be in the study, we would like to explain its purpose, and benefits, what is expected of you, and what you can expect from us. Please ask questions about anything you want to learn more about. Once you have understood the study and agree to take part, you will be asked to sign your name or make your mark on this form. You will be offered a copy to keep. It is important to notify you that it is up to you whether or not you join the autism study.

Purpose of the Study The purpose of this study is to assess the knowledge and perception of autism among pre-primary, lower primary school and primary head-teachers of Kisumu Central Sub-County. The study is permitted by the Ministry of Education in conjunction with the Ministry of health and the ethical review committee of Jaramogi Oginga Odinga Teaching and Referral hospital. About 268participants will be invited to join in the study. The whole study will take about 3 months to finish. If you agree to participate, you will take part once. Results and other research findings collected from participants in the study will be helpful in addressing issues confronting autism in resource limited settings like Kenya; this would promote awareness, facilitate early diagnosis and intervention, and improve quality of care and outcomes in autism.

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STUDY PROCEDURES

If you agree to participate in the study, the following procedures will occur; -You will participate in a key informant interview (KII) -You will be asked to participate in only one interview. The questions will be about your knowledge, attitude and perception on autism and the interviewer will write down what you say.

BENEFITS You may not get any direct benefit from being in this study however, the information that you provide may help the government-Ministry of Education to better understand autism and its effects on early childhood education and develop responsive interventions.

CONFIDENTIALITY Results of study might be made available if required for legal reasons. However, any information that specifically identifies with you will be protected. Any publication arising from this study will not include any private information about you. **Persons to Contact:** The researcher conducting this study is **Moses Omondi Sadia**. You may ask any questions you have now or if you have any questions later, you are encouraged to contact him through mobile number: **0727414037**, or email sadiaomondi@gmail.com or **sadiaomondi@yahoo.com.**

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the following:

The Dean,
School of Health Sciences- Jaramogi Oginga Odinga University of Science and Technology
P.O. BOX 210-4060- Bondo.
Tel no: 0721-401453
Email: jamimo@jooust.co.ke
OR
Dr. George Ayodo PhD.
Jaramogi Oginga Odinga University of Science and Technology
P.O. BOX 210-4060- Bondo.
Tel no: 0712176738.

PART B

Participant consent form

I have understood the above information which has been fully explained to me by the investigator and I voluntarily consent to participate.

Signature……...
Or participants thumb print.
Date……...
Witness signature……..

APPENDIX 4: QUESTIONNAIRES FOR HEADTEACHERS.

_____For Official Use Only_____

School Number: ___Interviewer Name: _____Date of Interview: __ __/__ __/__ __ (dd/mm/yy)

County: _____Sub-County: _____Type of school: _____

1. What is autism?
2. What are the behaviors (signs and symptoms) of child with the condition
3. Describe how the school is addressing autism
4. Describe how the school should address the needs of autistic children.
5. How does the school handle autistic children? (Suppose you had autistic pupils in this school, how would you handle them?)
6. What is your general feeling on the ability of your school to handle autistic children?
7. In which areas do your school need more support to handle and manage autism better?

----------END----------