



Awareness of the Spectrum Condition of Autism among Pre-Primary School Teachers in Western Kenya

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Abstract

BACKGROUND

Autism is a spectrum of neurodevelopmental disorders exhibited in early childhood with variable manifestations as children grow up. However, the level of awareness of the condition is poorly understood among pre-primary school teachers. This study, therefore, assessed the awareness of the spectrum condition of autism among pre-primary school teachers in western Kenya.

MATERIALS AND METHODS

A descriptive cross-sectional study design was employed and data collected from 321 participants using semi-structured questionnaires and Key Informant interviews. The participants were selected using purposive sampling. The quantitative data were analyzed using SPSS version 20 and qualitative data analyzed thematically

RESULTS

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 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.

CONCLUSIONS AND RECOMMENDATIONS

This study shows that pre-primary school teachers have inadequate awareness of the spectrum condition of autism, and this limits educational service delivery. This study therefore recommends special training for pre-primary school teachers and improvement of the curriculum and training to include the spectrum condition of autism.

Keywords: Autism spectrum disorder (ASD), Education, Early Childhood Education, Educators, Teacher training

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Introduction

Autism spectrum disorder (ASD) is a spectrum of neurodevelopmental disorders exhibited 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 [1]. This condition is highly inheritable, but caregivers notice the signs within the first two and a half years of their child's life [2].



The affected children appear perfectly normal, however, they spend their time engaged in puzzling and disturbing behaviors which are markedly different from those of typical children [3]. The etiology of autism is not known or is poorly understood [4]. However, the risk factors are gender where males are three to four times more likely to be affected than females, parents' ages, familial history, and other disorders such as Tourette's syndrome, tuberous sclerosis, fragile x syndrome, and epilepsy [5]. Other risk factors include the use of drugs such as valproic acid during pregnancy [6], congenital rubella [7, 8], and cerebral palsy [9]. Blatant symptoms of autism progressively begin after the age of six months and become recognized between ages two and three years [10].

A study in Nigeria revealed that slightly above 50% of primary school teachers had heard of autism, with the majority saying that autism is a psychiatric condition similar to madness. This shows that not all teachers who had heard of autism correctly knew about it, with the majority of those who are aware admitting that their knowledge of the same is inadequate [3]. A study by Schanding *et al.*, (2012) revealed that early identification is possible with adequate ASD knowledge among primary school teachers, unfortunately, developmental disorders in children are not a health priority, and most teachers are not equipped with the ability to identify developmental disabilities [11]. Shetty and Sanjeev (2014) reveals that only 69 of the 326 teachers had adequate knowledge of ASD, a sign that the teachers had poor knowledge about ASD [12], a similar study in Singapore among primary school teachers revealed that only 66 % had adequate knowledge of Autism Spectrum Disorder [13]. Edward, (2015) revealed that the majority of the teachers were less knowledgeable about ASD and its associated features among children, this study further revealed that majority of teachers reported that they were not trained

appropriately to accommodate children with Autism in regular classes [14]. Newton *et al.*, 2014, also revealed that teachers' lack a specific body of knowledge to the nature and needs of students with special needs [15].

The children Act 2001 underscores that every child has a central right to attain and maintain an acceptable level of education [16]. Similarly, The National Special Needs Education Policy Framework in Kenya states that every special need child be provided with education through inclusive education [17]. To achieve these expectations, the study assessed the understanding of the spectrum condition of autism among pre-primary school teachers. The results of this study will help educational institutions to recognize the spectrum condition of autism and explore suitable teaching techniques in the poor resource settings.

Material and Methods

Study area

The study was conducted in Kisumu Central Sub-County of Kisumu County; one of the seven sub-counties of Kisumu County in Western Kenya lying within longitudes 34.711913° and latitudes -0.066187° covering 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 with 345 pre-primary school teachers.

Study design

A descriptive cross-sectional study design was employed. The survey employed the use of both qualitative and quantitative study methods with the focus on the testing of the understanding on the key features or themes of the spectrum such as persistent impairments in social interaction, verbal and non-verbal communication and the presence of restricted, repetitive patterns of behavior, interests, or activities.



Study population

The study population comprised pre-primary, lower primary and their respective head teachers teaching in these schools within Kisumu Central Sub-County, Kisumu County. The teachers had to be pre-primary and lower primary school teachers who had been teaching in these schools for the past six (6) months prior to the commencement of the study and the teachers who freely consented to participate in the study. Teachers who declined to participate were excluded from the study.

Sampling procedure

A total of 321 teachers teaching in pre-primary and lower primary schools who met the inclusion criteria were selected to participate in the study, this included head-teachers, class 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) were selected to participate in the study. 24 were excluded. For the KII, the schools were clustered into public (28), private (23) and special needs schools (2) after which a random simple sampling was used to select one school head-teacher from each clustered school.

Data collection tools, pretesting and validity testing

Data was collected using semi-structured questionnaires and key informant interview guide. One set of the semi-structured questionnaires was administered to teachers teaching in both public and private schools to assess their level of awareness on childhood autism. Key informant interviews were administered to the head-teachers from the selected schools. 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. A pretest of the tool was done on a total of twenty-six respondents (10% of sample size) with similar inclusion characteristics from Kisumu East Sub-County (nearby sub-County with similar characteristics). The reliability was tested by calculating the Cronbach alpha coefficient, which was greater than 0.85, and was considered adequate. Still, the data collection tool was slightly amended for clarity of a few questions.

Data analysis and presentation

Data set was entered into a computer, coded and cleaned for further analysis. 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 was analyzed by descriptive 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. Qualitative data was first transcribed (and translated, where necessary), then coded, organized into themes, and analyzed for prominently emerging points. The data was then presented in form of tables to enable comparison and easy understanding.

Ethical considerations

Ethical approval to conduct this study was obtained from Jaramogi Oginga Odinga University of Science and Technology Board of Post-Graduate Studies. Approvals were obtained from Jaramogi Oginga Odinga Teaching and Referral Hospital and a research permit obtained from NACOSTI. Permission to conduct the study



in Kisumu Central Sub-County was sought from the Ministry of Education, Kisumu County, and the local administration. Informed consent was sought from each respondent prior to enrollment. Confidentiality of data collected was maintained.

Results

Socio-demographic characteristics

The response rate was 76.9%. Majority, 203(83.2%) of the respondents were females, seventy six percent 186(76.2%) of the teachers had taught in these schools for less than 6 months. Fifty-six percent 137(56.1%) of the teachers been in service for more than 5 years.

Nearly half 120 (49.2%) of the teachers had a diploma education with only 38(15.6%) of the teachers having a training special needs education. Duration of stay in school, duration of service, level of education, having a training on special needs education and the type of school

were significantly associated with having heard of autism ($p < 0.05$). Gender and area of engagement were however not significantly associated with hearing of autism ($p > 0.05$). Table 1.

Knowledge on Autism

Nearly half, 110(45.1%) of the teachers had never heard of the word “autism”, fifty-four percent 134(54.9%) had heard of autism.

The teachers who had heard of autism when asked to define autism in their words responded as follows: “A *mentally challenged person or child*” or “*a child with a disorder of the brain that interferes with the functions of the body*”, “*madness*”, or “*a disorder in the body system caused by hormonal imbalance*”, or “*a mental condition in children with characteristic of fear, shyness, and withdrawal*” or “*Children who have poor coordination of body parts*”.

Table 1:
Socio-demographic characteristics of the respondents

| Characteristics | | Ever Heard of Autism | | |
|----------------------------|--------------------|-----------------------------|----------------|----------------|
| | | Yes, n(%) | No n(%) | P value |
| Gender | Males | 19(46.3) | 22(53.7) | 0.226 |
| | Females | 115(56.7) | 88(43.3) | |
| Area of engagement | Baby class | 24(52.2) | 22(47.8) | 0.087 |
| | Middle class | 24(47.1) | 27(52.9) | |
| | Final class | 18(64.3) | 10(35.7) | |
| | Class one | 22(56.4) | 17(43.6) | |
| | Class two | 18(52.9) | 16(47.1) | |
| | Class three | 18(50) | 18(50) | |
| | Special unit | 10(100) | 0(0.0) | |
| Duration of stay in school | More than 6 months | 115(61.8) | 71(38.2) | 0.0001 |
| | Less than 6 months | 19(32.8) | 39(67.2) | |
| Duration of service | Less than 5 years | 40(37.4) | 67(62.6) | 0.0001 |
| | More than 5 years | 94(68.6) | 43(31.4) | |
| Level of education | Master's degree | 1(100) | 0(0.0) | 0.0001 |
| | Bachelor's degree | 13(100) | 0(0.0) | |
| | Diploma | 76(63.3) | 44(36.7) | |
| | Certificate | 44(40.4) | 65(59.6) | |
| | O level | 0(0.0) | 1(100) | |
| Trained on special needs | Yes | 36(94.7) | 2(5.3) | 0.0001 |
| | No | 98(47.6) | 108(52.4) | |
| Type of school | Private | 60(45.1) | 73(54.9) | 0.001 |
| | Public | 67(64.4) | 37(35.6) | |
| | Special needs | 7(100) | 0(0.0) | |



Very few respondents could explain the spectrum condition with respect to the known etiology such as communication social, interaction and imagination.” among other responses.

When head teachers were asked about 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 KII-2*” when asked about the manifestations of autism, the responses were “*destructive behavior, hyperactivity, self-injurious behavior KII-2*”.

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 KII-3.*” On the other hand, 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 KII-1.*” This further demonstrated gaps on the training and service delivery at the schools.

Source of information about autism

Formal training, 49(36.6%) was the main source of information about autism, 46(34.3%) through media, 13(9.7%) through workshop, 17(12.7%) through personal experience and 9(6.7%) through other means not specified. 24(17.9%) of the respondents (those who had heard of autism) admitted that they had an autistic individual in their family.

Knowledge of the respondents on ASD traits

Twenty three percent 32(23.9%) knew that autism is an inherited disorder, 41(30.8%) knew that autism can be diagnosed earlier than

24months, 31(23.3%) said that the general eating habits of autistic children are normal, 76(57.1%) knew that seizures are more prevalent amongst autistic children, 41(30.6%) confirmed that autism is more prevalent in males than females and still another 82(61.2%) had knowledge that autism is not treated using medication alone. These findings were statistically significant. ($p < 0.05$) Table 2.

An assessment of the knowledge index (responses calculated by extracting the correct responses from each knowledge assessment question) of the respondents revealed that nearly forty-eight percent 117(47.95) of the respondents scored 50% and below, the level of knowledge was significantly associated with hearing of autism. ($P 0.0001$).

In multivariate logistic regression analysis, level of knowledge was more likely significantly associated with hearing of autism. ($p < 0.05$). (Table 3).

Handling and awareness of autistic children in school

On the ability to identify features of autism in a child, seventy-two percent 99(72.8%) felt confident that they could identify features of autism in a child ($p = 0.163$). In addition, sixty-five percent 90(65.7%) of the respondents felt confident in their ability to counsel parents on ASD ($p = 0.173$). These findings were statistically insignificant.

When asked on their confidence in their ability to counsel parents on available ASD services in the community, sixty-five percent 90(65.7%) of the respondents felt confident in their ability to counsel parents on available ASD services in the community ($p = 0.042$). Seventy-three percent 100(73%) of the respondents felt confident in their ability to interact with individuals with ASD ($p = 0.071$).



Table 2:

Knowledge assessment of the respondents on ASD traits among pre-primary school teachers

| | Yes n(%) | No n(%) | Don't know n(%) | P value |
|---|-----------|-----------|-----------------|---------|
| Autism is an inherited disorder | | | | |
| Private school | 11 (18.3) | 28 (46.7) | 21(35.0) | 0.0001 |
| Public school | 14(20.9) | 42(62.7) | 11(16.4) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 32(23.9) | 70(52.2) | 32(23.9) | |
| Autism cannot be diagnosed earlier than 24 months | | | | |
| Private school | 12(20.0) | 33(55.0) | 15(25.0) | 0.001 |
| Public school | 22(33.3) | 31(47.0) | 13(19.7) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 41(30.8) | 64(48.1) | 28(21.1) | |
| An autistic child has social interaction difficulties | | | | |
| Private school | 58(96.7) | 2(3.3) | 0(0.0) | 0.650 |
| Public school | 63(94.0) | 4(6.0) | 0(0.0) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total teachers | 128(95.5) | 6(4.5) | 0(0.0) | |
| An Autistic Child has difficulty in phrasing a sentence and language delay | | | | |
| Private school | 60(100) | 0(0.0) | 0(0.0) | 0.546 |
| Public school | 64(95.5) | 2(3) | 1(1.5) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 131(97.8) | 2(1.5) | 1(0.7) | |
| An Autistic child has a deficient attention span | | | | |
| Private school | 53(88.3) | 1(1.7) | 6(10) | 0.211 |
| Public school | 59(89.4) | 5(7.6) | 2(3.0) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 119(89.5) | 6(4.5) | 8(6.0) | |
| Seizures are more prevalent among autistic children | | | | |
| Private school | 31(52.5) | 10(16.9) | 18(30.5) | 0.014 |
| Public school | 38(56.7) | 20(29.9) | 9(13.4) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 76(57.1) | 30(22.6) | 27(20.3) | |
| Autism is more prevalent in males than females | | | | |
| Private school | 17(28.3) | 35(58.3) | 8(13.3) | 0.002 |
| Public school | 17(25.4) | 38(56.7) | 12(17.9) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 41(30.6) | 73(54.5) | 20(14.9) | |
| Autistic children throw frequent bouts of anger | | | | |
| Private school | 46(76.7) | 11(18.3) | 3(5.0) | 0.646 |
| Public school | 54(80.6) | 9(13.4) | 4(6.0) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 107(79.9) | 20(14.9) | 7(5.2) | |
| Autism is not treated using medication alone | | | | |
| Private school | 31(51.7) | 14(23.3) | 15(25.0) | 0.044 |
| Public school | 44(65.7) | 16(23.9) | 7(10.4) | |
| Special needs school | 7(100) | 0(0.0) | 0(0.0) | |
| Total | 82(61.2) | 30(22.4) | 22(16.4) | |



Majority 241(98.8%) of the respondents would benefit from a further training on identification and diagnosis of ASD, 241(98.8%) would benefit from further training on how to interact with individuals with ASD, and yet 240(98.4%) would benefit further training on the available ASD services in the community. The findings were statistically insignificant. ($P>0.05$). Table 4.

Teaching autistic children

Among the respondents, 43(32.1%) who had heard of autism suggested that autistic children should be taught in the normal general public schools, 87(64.9%) said special needs schools while 4(3%) did not know which school

to enroll the autistic children. ($p=0.210$). Thirteen percent of the respondents felt that it wasn't a must to have a prior training on autism to manage an autistic child, 7(5.3%) did not know if a training was needed, and 81.2% said that the training was needed ($p=0.472$). These findings were statistically insignificant ($p>0.05$).

The special needs school considered itself able to handle autistic children, However, few trained teachers on autism with the teacher to pupil ratio of 1:5 instead of the recommended 1:1, more learning tools were also required for smooth learning, the school was supplying the pupils with the recommended meals however this was inadequate.

Table 3:
Multivariate analysis of factors associated with hearing of autism

| Heard of Autism | Coef. | Std. Err. | t | p> t | [95% conf. interval] | |
|----------------------------|-----------|-----------|--------|-------|----------------------|-----------|
| Knowledge index | -.3880416 | .0104184 | -37.25 | 0.000 | -.4085661 | -.3675172 |
| School type | .03033122 | .0216161 | 1.40 | 0.162 | -.0122721 | .0728965 |
| Duration of stay in school | -.0137057 | .0290537 | -0.47 | 0.638 | -.0709422 | .0435309 |
| Duration of service | -.009593 | .0262959 | -0.36 | 0.716 | -.0613966 | .0422106 |
| Highest level of education | -.0169275 | .0175468 | -0.96 | 0.336 | -.051495 | .01764 |
| Trained on special needs | -.039168 | .0335892 | -1.17 | 0.245 | -.1053394 | .0270035 |
| _cons | 2.034651 | .0967934 | 21.02 | 0.000 | 1.843966 | 2.225337 |

Table 4:
Respondents' perceptions on Autism

| | Yes n(%) | No n(%) | P value |
|--|-----------|---------|---------|
| I would benefit from further training on identification and diagnosis of ASD | | | |
| Private school | 131(98.5) | 2(1.5) | 0.891 |
| Public school | 103(99) | 1(1) | |
| Special needs school | 7(100) | 0(0.0) | |
| Total | 241(98.8) | 3(1.2) | |
| I would benefit from further training on how to interact with individuals with ASD | | | |
| Private school | 130(97.7) | 3(2.3) | 0.282 |
| Public school | 104(100) | 0(0.0) | |
| Special needs school | 7(100) | 0(0.0) | |
| Total | 241(98.8) | 3(1.2) | |
| I would benefit from further training on available ASD services in the community | | | |
| Private school | 131(98.5) | 2(1.5) | 0.912 |
| Public school | 102(98.1) | 2(1.9) | |
| Special needs school | 7(100) | 0(0.0) | |
| Total | 240(98.4) | 4(1.6) | |



The school also required larger classrooms for better learning space which were lacking.

The private school had no autistic pupil at the time of the study. 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 said that the “an autistic child should not be handled differently from the others” and that “the school has no any provision for an autistic child” however “we would need support in areas of having specialized teachers on autism and training the available teachers on autism”.

The public school similarly had no autistic child at the time of the interview hence had no measures in place to handle autistic children except having a few teachers trained on special needs education. 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.”

Perception of autism

When asked on their perception of autism, 4.5% of the respondents 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. These findings were statistically insignificant ($p > 0.05$). Table 5.

Discussion

Autism is a spectrum of neurodevelopmental disorders exhibited in early childhood with variable manifestations as children grow up. However, the level of awareness of the condition is poorly understood among pre-primary school teachers. This study, therefore, sought to assess the awareness of the spectrum condition among pre-primary school teachers in western Kenya

According to the findings of this study, 45.1% of the teachers in this population had never heard of autism, consistent with Paul *et al*, 2015 who also reported that only slightly above 50% of the primary school teachers had ever heard of autism [3]. Autistic pupils are generally enrolled to special needs schools, perhaps explaining why teachers in private and public schools have limited interactions with autistic children. All special needs teachers participating in this study had heard of autism.

Studies conducted in India and Tanzania, reported poor knowledge about ASD [12, 18]. These studies are consistent with the present study which revealed that a whole 117(47.95%) of the teachers had an average knowledge score of below 50% depicting poor knowledge on autism[18]. This poor knowledge (only 2.9%) indicates the wide gap and need for training teachers on special needs education.

Table 5:
Teacher’s perception on autism

| | Spiritual affliction n(%) | Parental neglect n(%) | Neurodevelopmental disability n(%) | Psychiatric illness similar to madness n(%) | P value |
|----------------------|------------------------------|--------------------------|---------------------------------------|--|---------|
| Private school | 3(2.3) | 1(1.7) | 42(70) | 14(23.3) | 0.311 |
| Public school | 3(4.5) | 1(1.5) | 56(84.8) | 6(9.1) | |
| Special needs school | 0(0.0) | 0(0.0) | 7(100) | 0(0.0) | |
| Total | 6(4.5) | 1(1.5) | 105(78.9) | 20(15) | |



Still very few of the sampled teachers had an advanced level of education (Bachelor's and Master's degree). Poor knowledge was also associated with the duration of service where those teachers who had taught for longer duration were likely to have had knowledge on autism.

Newton *et al.*, 2014, further shows that teachers' lack a specific body of knowledge to the nature and needs of students with special needs [15]. The available literature suggests that there is a widespread inadequate knowledge about autism and among teachers and with the increasing population of the autistic children, there is a need for the global community to share a platform to develop a framework for the strategies to improve the situation.

On comparing 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 Arif *et al.*, 2013 which showed that the teachers in the public sector had better knowledge and perception regarding autism when compared with their counterparts in the private sector [19]. The difference we have observed suggest that teachers learn more about autism when in service and training provides inadequate knowledge. This essentially emphasizes the need for the review of the curriculum and exploration of in-service training on the special conditions for the effective delivery of the inclusive education system [19]. Our findings show that teachers from the special schools are more informed and therefore with the appropriate coordination or training framework, they can be useful for training public and private school teachers in the resource limited settings.

In addition, the study shows that many teachers feel that autistic children should be taught in their special schools and this is in agreement with a study conducted by Fredrickson *et al.*, (2010) which concluded that inclusion of

pupils with ASD in mainstream settings is a considerable challenge for those involved, needing specific and extraordinary support[20]. The suggestion to teach autistic children needs to consider the spectrum nature of the condition as the child grows and indeed, there sub-population of autistic children that may fit well in the inclusive education system. This however needs the support of ASD networks with the clear emphasis on the positive attitude toward the education of the pupils with ASD [21]. It is important to re-train teachers with ominous attitudes towards autistic children because their attitude have injurious impacts not only to the children but also to the caregivers who find themselves desolation. For the success of the education of children with autism, the teachers' attitude needs to be positive.

The study also shows that the respondents perceived autism to be a spiritual affliction, a parental neglect and a psychiatric illness similar to madness. The findings of this study were in agreement with a study conducted by Paul *et al.*, 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 [3]. In addition, children with autism are perceived as academically challenged, suffering from some kind of parental neglect, madness or demon possessed. Due to their sonority 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 autistic children.

As much as this study shows that there are widespread challenges in the education of



autistic children, the following limitations are observed; the study was carried out in an area predominant of a single ethnic group and therefore the findings of the study cannot be generalized, the study was done in an urban setting which may not represent the real situation in the rural setting and also the special need schools were under-represented.

Conclusions

This study shows that pre- primary school teachers have inadequate knowledge of the spectrum condition of autism. This limits their service delivery to the autistic children. The study further shows difference in the level of knowledge among teachers in public, private and special schools.

Recommendations

Special training for pre-primary school teachers need to be prioritized and improvement of the curriculum to cover the spectrum condition of autism. Further, research on how teachers from special education school can play a role identifying autistic children as they grow up to join inclusive or non-inclusive education systems is also needed.

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