

**EFFECT OF TRAINING ON CHILD MENTAL
HEALTH ON TEACHERS' KNOWLEDGE OF
DEVELOPMENTAL AND BEHAVIOURAL
PROBLEMS IN PRIMARY SCHOOL CHILDREN
IN IBADAN SOUTHWEST NIGERIA**

BY

MOHAMED JAMES KOROMA

B.SC. (HONOURS) NURSING, UNIVERSITY OF SIERRA LEONE

MATRIC NUMBER: 183526

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MAY 2015

Declaration

I hereby declare that this thesis is my original work and that it has not been submitted anywhere else for a diploma, fellowship or degree.

All the sources I have used have been indicated and acknowledged as complete references.

.....
Mohamed James KOROMA

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Certification

I certify that this thesis was prepared by KOROMA Mohamed James in the Centre for Child and Adolescent Mental Health, University of Ibadan, Ibadan, Nigeria under my supervision.

.....
Supervisor

.....
Date

Dr. Cornelius Ani

M.B., B.S. (Nigeria); M.Sc. (London); DCH (London);

MRCP (Paed); MRCP Psych; FHEA; MD

(Imperial)

Consultant Child and Adolescent psychiatrist and Honorary Senior Lecturer,

Academic unit of Child and Adolescent Psychiatry,

Imperial College, London, United Kingdom

.....
Supervisor

.....
Date

Dr. Tolulope T. Bella-Awusah

M.B., B.S. (Ibadan); M.Sc., CAMH (Ibadan), FWACP

Department of Psychiatry

College of Medicine

University of Ibadan

DEDICATION

This project is dedicated to my late parent and guardians Madam Iye Conteh and Mr. and Mrs. Alfred A Kamara, respectively in memory of their unforgettable contributions to what I am today.

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KEY TO ACRONYMS AND ABBREVIATIONS

AACAP:	American Association of Child and Adolescent Psychiatry
ADHD:	Attention Deficit Hyperactivity Disorder
ANCOVA:	Analysis of Covariance
CAMH:	Child and Adolescent Mental Health
CCAMH:	Centre for Child and Adolescent Mental Health
EBD:	Emotional and Behavioural Disorders
HIV/AIDS:	Human Immune Virus/Acquired Immune Deficiency Syndrome
LAMIC:	Low- and Middle-Income Countries
LGA:	Local Government Area (an administrative division of Nigeria that a local government is responsible for)
mhGAP:	Mental Health Gap Action Programme
NIMH:	National Institute of Mental Health
UI:	University of Ibadan
UNICEF:	United Nations International Children's Emergency Fund
UNPD:	United Nations for Population Development
WHO:	World Health Organization

ABSTRACT

Background: Recent epidemiological studies on school mental health in Nigeria suggest that teachers have limited knowledge and negative attitudes toward child mental health problems. The main aim of this study was to evaluate the effect of Child Mental Health training on primary school teachers' knowledge and their attitude towards child mental health problems as well as knowledge of developmental and behavioural problems among primary school pupils.

Methodology: The study utilized a quasi-experimental design. The study was conducted among 140 teachers in four randomly selected primary schools in Ibadan North Local Government Area. The study was done in five phases: base line assessment, initial intervention, post intervention data collection, booster session of intervention and post booster intervention data collection for intervention group only. The instruments consisted of structured questionnaires used to assess the teachers' baseline and post intervention knowledge, and attitude. A researcher designed training module including items from the World Health Organization's Mental Health Gap Action Programme was used for the intervention. Student's t-test and Chi-square were employed to test significance in difference between the two groups at 5% level of significance. The effectiveness of the intervention was assessed with Analysis of Covariance (ANCOVA) controlling for baseline scores.

Results: The study showed that the intervention was effective in improving knowledge of Learning Disability and Attention Deficit Hyperactivity Disorder with moderate and large effect sizes (0.64, and 1.27), respectively. However, the training did not improve knowledge of CAMH problems nor Attitude towards CAMH problems in the intervention group.

Conclusion: Educational interventions are practicable and effective in improving knowledge of ADHD and Learning Disability among teachers in Ibadan.

The intervention appears to improve knowledge with an increase in number of sessions. Knowledge and Attitude of general CAMH problems appear to be more difficult to change using short training programmes.

Key words: Knowledge, Attitude, Developmental problem, Behavioural problem, Primary School.

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CHAPTER ONE

INTRODUCTION

1.1 Background

Children and adolescents account for a third of the world's population and 90% live in Low and Middle income Countries (LAMIC) forming approximately 50% of the population, (Kieling *et al.*, 2011). Twenty percent of children have identifiable and treatable mental disorders including developmental and behavioural disorders (WHO, 2008). It is estimated that 10 to 20% of children have some learning and developmental disorders globally (Durkin, 2006). In the United States, an epidemiological study recorded that about 16-18% of American children had disabilities such as speech-language impairments, learning disabilities, and emotional/behavioral disturbances, and only 20-30% of them are diagnosed before school entry (Glascoe, 2008). There is an extreme dearth of good-quality data on the prevalence, types, and causes of developmental disabilities in sub-Saharan Africa (Jamison *et al.*, 2006). However, few community studies have reported prevalence of Child and Adolescent Mental Health disorders in sub-Saharan Africa (Robertson *et al.*, 1999; Omigbodun *et al.*, 2008; Cortina *et al.*, 2012)

An extensive systematic review reported 14.3% prevalence of mental health problems in children and adolescents in sub-Saharan Africa, (Cortina *et al.*, 2012), in the form of emotional disorders such as anxiety and depression (Beesdo *et al.*, 2009) and behavioural disorders such as, Attention Deficit Hyperactivity Disorders and Conduct Disorders Robertson *et al.*, 1999; Adewuya and Famuyiwa, 2007). Children and adolescents account for forty-five (45) % of the Nigerian population, (Nigerian Demographic profile, 2013). The commonest emotional and behavioural disorders affect 10 to 20% Nigerian children and adolescents (Omigbodun *et al.*, 2008).

There is improved understanding of the importance of Child and Adolescent Mental Health globally (Patel *et al.*, 2007), but scarcity of mental health professionals is huge and more serious

in Low and Middle income Countries like Nigeria (Bruckner *et al.*; 2011) where there is less than one psychiatrist for one million people (Issa, B A, 2005). Common mental health problems among children in Nigeria are anxiety and depression (Adewuya *et al.*, 2007; Omigbodun *et al.*, 2008), and Attention Deficit Hyperactivity Disorders and Conduct Disorders (Egbochuku and Abikwi, 2007, Abiodun *et al.*, 2007 and Angela *et al.*, 2008).

In spite of these difficulties, it is important to ensure early detection of these conditions as this has been shown to increase the chances of affected children's ability to graduate from high school, hold jobs, live independently, and avoid teenage pregnancies, delinquency and violent crimes (Briggs, 2008).

School age is an important period for preparing future generation for future leaders, (Kaligis and Winarsih, 2012). Developmental and behavioural problems are often considered as the most important problems to cause learning difficulties in school age, (Garralda and Flament, 2006). Learning disability and ADHD, which have direct impact on child education, were investigated in this study. Learning disability is the most common developmental disorder with a global prevalence of 1% to 3% in low and middle-income countries, respectively (WHO, 2007). Attention Deficit Hyperactivity Disorder is a heterogeneous disorder of childhood onset that affects 2% to 14% of school age children (Costello *et al.*, 1996; Wolrach *et al.*, 1996). Attention Deficit Hyperactivity Disorder is one of the leading causes of academic underachievement in school and disruptive behavior (Garralda and Flament, 2006).

School is one of the important contexts in which children develop and are however, second only to families in their potential to affect children's mental health (Morris *et al.*, 2007).

Many classroom teachers have not received training to help them address the myriad of mental health issues that may affect their students. The educational systems in LAMIC like Nigeria have several challenges including crowded classrooms, and inadequate resources, which are associated with increased risk of mental health problems (Patel and De Souza, 2000). Teachers are in prime position to be able to identify mental health problems in students. Thus, improving the knowledge of teachers on child mental health can help early access to appropriate assessment and treatment. Failure to address children's mental health needs is linked to poor academic performance, behaviour problems, school violence, school dropout, substance abuse, special education referral, suicide, and criminal activity (Whelley and Bryson, 2004).

1.2 Justification and Relevance of the Study

There is a paucity of evidence relating to interventions for young children in primary schools in LAMIC (Barry *et al.*, 2013); Nigeria is not an exception. There is clear evidence that education and mental health are both concerned with the mind. If the mind is unable to function well then learning as well as other general social and personal domains are impacted (Kemp and Hazel 2013). The improvement of teachers' knowledge on child mental health has a potential to play a significant role in achievement of Millennium Development Goal 2, to ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. In order to achieve this goal, the mental health of school children has to be considered a priority. A few community and public health setting studies in Nigeria have explored teachers' knowledge of and attitudes regarding child and adolescent mental health (Ibeziako *et al.*, 2008; Bella *et al.*, 2011; Ani, 2012; Jimoh, 2014). These studies elicited deficit in the knowledge of and negative attitudes of teachers regarding Child and Adolescent Mental Health.

In Southwest, Nigeria, there are very few interventions done for teachers on their knowledge of mental health problems among primary school children to the knowledge of the author. One among the few was the impact of a brief educational intervention on knowledge, attitude and perception of ADHD among school teachers in southwest Nigeria (Adeosun *et al.*, 2014). Adeosun *et al* study provides educational leaflets to improve knowledge, while this study provided training and educational materials. This training also included classroom management of children with ADHD which the above study did not address. This study, therefore, will be among the few to be done in this part of the sub- Saharan Africa. This project to train teachers on child mental health could help with the early recognition and referral of children with developmental and behavioural problems.

1.3 Aim

To evaluate the effect of child mental health training for primary school teachers on their knowledge of developmental and behavioral problems among primary school pupils.

1.4 Specific Objectives

1. To assess the pre-existing knowledge of teachers regarding child mental health disorders.
2. To determine the attitudes of teachers towards child mental health disorders
3. To evaluate whether training can improve teachers' knowledge of school children's developmental and behavioral problems compared with a control group.

1.5 Research Hypothesis

Null: Compared with a control group, there will be no statistically significant difference in the teachers' knowledge of developmental and behavioural problems among school children post training.

1.6.1 Primary Outcome Measure:

The post-intervention test scores of teachers' knowledge and attitudes on Developmental and behavioural problems in the intervention and control groups.

1.6.2 Secondary Outcome Measure:

a) The post intervention and post booster mean scores of teachers' knowledge and attitudes in the intervention group.

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CHAPTER TWO

LITERATURE REVIEW

The literature review is divided into six main sections. The first section includes the epidemiology of Child Mental Health disorders, risk, protective factors and consequences, the second section reviews Child Mental Health problems in Africa, the third section also reviews Child Mental Health problems in Nigeria and the last three sections are devoted on the role of school teachers in identifying Child Mental Health problems, teachers knowledge and attitudes regarding Child Mental Health problems and effects of training teachers on Child Mental Health problems.

2.1 Epidemiology of Child Mental Health Problems

Mental health problems are common in young people and make up close to one-third of the global burden of disease within adolescents population (Kutcher, 2014). Mental health problems affect up to 20% of children and adolescents worldwide (WHO, 2000). Despite their relevance as a leading cause of health-related disability in this age group and their long-lasting effects throughout life, the mental health needs of children and adolescents are not well explored, especially in low-income and middle-income countries (Morris *et al.*, 2010). Action is crucial to reduce the burden of mental health problems in future generations and to allow for the full development of vulnerable children and adolescents worldwide, (Kieling *et al.*, 2011). Children and adolescents with good mental health are able to achieve and maintain optimal psychological and social functioning and well-being, as well as having a sense of identity and self-worth, sound family and peer relationships, an ability to be productive and to learn, and a capacity to tackle developmental challenges and use cultural resources to maximize growth (WHO, 2005).

Suggestion to this definition clearly shows that, many factors influence the mental well-being of children and adolescents.

2.1.1 Risks and Protective Factors

Mental health risks manifest themselves at all stages in life, (WHO, 2012). At preconception, an individual's mental health can be influenced by circumstances occurring before birth or during childbirth (WHO, 2012). Pregnancies that are unwanted during adolescent can raise the chance of risky health behaviours in pregnancy or mental health problems in childhood (Kieling *et al.*, and 2011). Similarly, poor adaption to pregnancy can be considered a potential risk to child mental health (Keiling *et al.*, 2011). Malnutrition, low birth weight and iodine deficiency, risky behaviours in pregnancy such as use of alcohol, drugs or tobacco significantly increase the risk to brain development (Grantham-McGregor *et al.*, 2007).

During infancy and early childhood, neonatal attachment to their mothers or primary caregivers is significant for subsequent social and emotional development (Walker *et al.*; 2007). Separation anxiety and stress occur when infants are separated from their mothers or primary caregivers. Parents with problems in bonding exhibit negative attitudes that place their child at increase risk of exposure to stress problems (Walker *et al.*, 2007).

Early childhood maltreatment, neglect, malnutrition and childhood infections also have important risks to cognitive development (Walker *et al.*, 2011).

Childhood years are vital for developing skills. Negative experiences at home and school have harmful effect on the cognitive development and emotional skills (Keiling *et al.*, 2011).

The period of adolescence is another period where mental disorders are more likely to develop (Fisher, 2011). The adverse experiences, or environmental conditions affect the mental well-being of younger children equally affects adolescents.

Tobacco or drug use is one among the other significant risks of the adolescents' stage (Fisher, 2011). Substance use is particularly dangerous for adolescent as the brain and body are still developing (WHO, 2012). Adolescents are susceptible to peer pressure as well as academic failure, risky sexual behaviours and violence that are linked to substance use (WHO, 2012).

The factors discussed above are either biological psychological or social which can be broadly divided into two; risk and protective factors. Risk and protective factors for mental disorders are multifaceted, ranging from individual level factors including genetic influences, physical health, temperament and personal factors, interpersonal and immediate social factors related to family, peer, school and community influences; and societal structural factors such as economic policies and cultural influences; to other macro issues such as war and natural disaster (Petersen *et al.*, 2010). Risk factor refers to factors that increase the probability of occurrence of mental health problems or disorders, while protective factors refers to factors that moderate the effects of risk exposure (WHO, 2012). Several studies have documented a variety of risk and protective factors in Low and Middle income Countries such as school failure, poor living conditions, infections, maternal mental health (Gureje and Omigbodun., 1995), adolescent parent, history of psychiatric illness, lack of employment, disruption of family structure and function, separation from home, low socio economic status and urbanization (Costello *et al* 2005; Omigbodun *et al.*, 2008). A

systematic review of eleven studies on the prevalence of child mental health problems in Sub-Saharan Africa (Cortina *et al.*, 2012) analysed specific risk factors. The most significant risk factors for the development of psychopathology in children and adolescent are maternal mental health problems, disruption of the family and marital status, exposure to stressful events, maternal age, and poverty related factors such as insufficient food, low socioeconomic status and illness.

The high rate of deprivation experienced by many children in areas of great deprivation in sub-Saharan Africa has been a great concern of the findings.

On the contrary, age-appropriate physical development, good physical health, good intellectual functioning, ability to learn from experiences, good self-esteem, high level of problem solving ability, family attachment, opportunities for positive involvement in family, opportunities for involve in school life, positive reinforcement from academic achievement, identity with a school, connectedness to community, opportunities for constructive use of leisure, positive cultural experiences and role models, and connection with community organizations including religious organizations are protective factors against biopsychosocial risk factors (WHO, 2012).

2.1.2 Consequences of Mental Health Disorders in Children

Children with mental health problems face more challenges than their peers without mental health problems (Wagner *et al.*, 2004). Children with developmental, emotional and behavioural problems are more likely to have deficits in social skills, cognitive and academic functioning, communication skills, motivation, and exposure to academic activities (Pullis, 1991). They are more likely to drop out of high school, be involved with the juvenile court system, be in foster care, have poor employment histories in adulthood, and have dysfunctional relationships (Bradley, *et al.*, 2008). Another study revealed that only 51% of students identified with

Emotional Behavioural problems finished high school (Wagner *et al.*, 2005). Children who require hospitalization for mental health difficulties have even more academic and cognitive problems when hospitalized (Woolston, *et al.*, 1989). The repeated non-attendance and lack of school motivation also contribute to lower grade in addition to social problems (Suldo and Shaffer, 2008).

Mental health has been established as a precursor to academic functioning and is important for determining readiness to learn and levels of emotional distress (Roeser *et al.*, 1998).

Emotional functioning and academic functioning are interrelated due to the social and academic demands presented at school (Roeser *et al.*, 1998). Another study showed teachers report that academic and emotional functioning are separate processes (Bentz, *et al.*, 1969).

According to Smith *et al.*, (2006), mental behavioural and emotional disorders in children and adolescents cause suffering to children and their families, increase the risk of further psychopathology, functional impairment, lifetime suboptimal functioning and impose heavy cost on account of the need for extra care

In addition, children who exhibit disruptive and aggressive behaviour in elementary school are also more likely to experience conflict with teachers, which can further contribute to lower academic performance (Piata and Stuhlman, 2003).

2.2 Child Mental Health Problems in Africa

In Africa, half of the population is represented by children, (UNICEF, 1990). In many Low and Middle income Countries, children and adolescents form 50% of the population (Kieling, *et al.*, 2007) and 55% of the population of sub-Saharan Africa is under 19 years of age (UNICEF, 2012). Many children in African societies face difficult circumstances such as, armed conflict

and forced recruitment as child soldiers, child abuse, prostitution and trafficking, street living children, child labour, HIV/AIDS pandemic, deprivation of basic child rights and discrimination, (Robertson *et al.*, 2005). Such social disadvantage makes African children more vulnerable to mental health problems (Gordon, 2011).

In African societies, particularly in sub-Saharan Africa, the prevalence of child and adolescent mental health disorders is approximately 19 to 21% (Cortina, 2012).

Studies done in these regions document common mental disorders among children such as internalizing disorders in the form of depression, anxiety and post traumatic disorders (Robertson *et al.*, 1999; Abiodun, 1992;) and externalizing disorders in the form of conduct, disruptive behavioural disorders (Robertson *et al.*, 1999; Abiodun, 1992).

Despite the fact that Africa has a youthful population, less than 40% of countries have special mental health programs for children and adolescents (Atlas, 2001). However, there is well developed informal system of mental health care for children and adolescents such as care by family, traditional healers and nongovernmental organizations, (Robertson *et al.*, 2004). Many other sectors such as paediatrics maternal and child health services, schools, social welfare services and facilities, juvenile justice system and prisons play a greater role in meeting mental health needs of children and adolescents (Robertson *et al.*, 2004).

2.3 Child Mental Health Problems in Nigeria

In sub-Saharan African countries, the prevalence of child and adolescent mental health problems ranges from approximately 19% to 20% (Cortina *et al.*, 2012). Several community and primary care studies also document that up to 20% of children and adolescents have mental health problems (Abiodun, 1992; Omigbodun *et al.*, 2007). Results of these studies suggest that the

majority of children and adolescents affected with mental health problems go unrecognized and untreated.

A study done in Southwest Nigeria indicates that children and adolescent in this region suffer psychosocial problems and 62.2% of new referrals to clinic had experienced significant psychosocial stressors in the year preceding presentation (Omigbodun, 2004). In another study, to determine the association between traumatic events and depressive symptoms in Southwest Nigeria revealed that 1 in 3 youths experienced traumatic events (Omigbodun *et al.*, 2007).

Despite the high prevalence of child mental health in the country there is a wide treatment gap for mental health problems until recently the Nigerian Association for Child and Adolescent Mental Health was established (Robertson *et al.*, 2010). In order to bridge the treatment gap the West African College of physicians organizes training in centres with child and adolescent psychiatry services for participants from around Nigeria (Omigbodun, 2010). Very recently, The John D. and Catherine T. MacArthur foundation provided funding to establish a Centre for Child and Adolescent Mental health to train Child and Adolescent Mental Health professionals, not only for Nigeria but for the entire sub region. The first sets of thirteen students, ten of which are Nigerians graduated in June 2014 and have returned to work (CCAMH UI 2014). The National Postgraduate Medical College of Nigeria is currently finalizing the approval process for a two year training program in Child and Adolescent Psychiatry (Omigbodun, 2010). Since 1999 ten Child and Adolescent facilities have opened around the country including three with inpatients facilities and most of the services are provided by general psychiatrists (Robertson *et al.*, 2010).

2.4 The Role of Schools /Teachers in Identifying Child Mental Health Problems

School teachers have significant role to play in identifying children with mental health problems (Loades and Mastroyannopoulou 2010). The school has been identified as a reliable source of referral to Child and Adolescent Mental Health services (Appleton and Hammond-Rowley 2000). The role of teachers is enhanced if they are knowledgeable about the general symptoms of mental health problems and refer early to appropriate health care Illinois (2007). Teachers may be among the first people to notice changes in a child's mental health.

According to Kutcher *et al.*, (2009), with policies, funding and other resources, professional development and training, schools are exceptionally sited to deal with student mental health problems for several reasons:

The school environment is a best place to initiate the work of addressing mental health. This is because the school offers a simple and cost-effective way of reaching youth and it links with other aspects of health, such as physical health and nutrition, and with learning.

Schools can execute mental health promotion strategies by improving mental health literacy through curriculum development and application, which may enhance knowledge about mental health, change attitudes in both students and teachers, and decrease the stigma associated with mental disorders. Schools can recognize young people at risk for mental health problems

Schools can educate their personnel to understand mental health issues and recognize mental health problems. Schools can improve students' mental health by becoming sites for mental health care delivery.

Some important steps to take when a child's behaviour raises concerns, (Illinois, 2007) include:

- ❖ If a child's behaviour in the classroom or around school seems out of the norm teachers can observe and document what they see. Pay attention to clusters of symptoms observed over an extended period of time which seems to impair a student's ability to function. Share their concerns with, head teacher, a colleague teacher or social worker.
- ❖ Become familiar with the signs and symptoms of emotional and behavioural problems
- ❖ Know the school's protocol for helping at-risk students.
- ❖ Develop accommodation skills, which often are simple steps to reduce classroom stress.
- ❖ When a child seems to have mental health difficulties, the teacher can take action to help the child. It is important to be sensitive to a child's individual needs.
- ❖ Be aware of how other children in the class may be feeling about the child who is having difficulties. Are they afraid? Worried about him/her? Angry? Rejecting? The teachers' modelling can be very important. They can model acceptance of the child's needs, while at the same time assuring the class that each of them deserves the care and concern of everyone in the group. Teachers help children find ways to express care and support for a child who is recovering from a difficult experience. Show them how to stand up to someone who is aggressive and hostile, and show them how to defuse aggression.
- ❖ Teachers should be ready to talk with the child's family about their concerns.

2.5 Teachers Knowledge and Attitudes towards Child Mental Health Problems

The attitudes of teachers towards children with developmental and behavioural problems and mental health in general, may have implications on the early recognition and referral to appropriate care.

A recent study has found that teachers' perceptions played a role in the importance they place schools promoting students' mental health. They concluded that close attention should be paid to the assumptions, values, beliefs, and attitudes of teachers in relation to children's mental health because these variables may predict their confidence and skill in supporting students' social and emotional well-being in schools (Graham *et al.*, 2011).

A study in Nigeria indicates that negative attitudes in the form of stigma and discrimination against the mentally ill are widespread even in a population that is expected to be enlightened (Ukpong and Abasiubong, 2010).

There is limited knowledge about mental health among elementary school teachers in Nigeria (Ibeziako *et al.*, 2008). A variety of neuro-developmental and behavioural problems among primary school children was also found in this study.

The study by Ani *et al.*, (2011) also elicited secondary school students stigmatizing attitudes towards other students with epilepsy. In another study, Ani *et al.*, (2012) in Southern Nigeria also showed stigmatizing attitudes of trainee-teachers towards schoolchildren with sickle cell disorders. This shows that teachers negative attitudes are not limited to mental health disorders but also towards chronic physical diseases, which have risks for development of child mental health disorders.

In Nigeria, Jimoh, 2014 investigated primary school teachers' knowledge of attitudes towards ADHD among children in Nigeria. This study elicited significant negative attitudes and poor knowledge among teachers regarding pupils with ADHD. ADHD is a common childhood problem affecting up to 5% of school-aged children globally (Jimoh, 2014) and it is estimated that at least one child with ADHD is present in every class room (Barkley, 1990). Teachers'

knowledge and attitudes regarding ADHD and the likely influence on their roles and learning outcomes for children have been documented by various researchers (Greene, 1995; Sherman, *et al.*, 2008).

In another study in South-South Nigeria, Akapan *et al.*, (2012) determined the knowledge and attitudes of school teachers towards children with seizure disorders. The result of this study also recorded poor knowledge and attitudes exhibited by school teachers toward children with seizure disorders. The authors recommended community education to correct the poor knowledge and negative perception elicited.

2.6 Effects of Training Teachers on Child Mental Health Problems

Several studies have looked at the effects of training teachers on child mental health. A systemic review provides evidence on the effectiveness of health promotion interventions for young people in LAMIC (Barry *et al.*, 2013). In a review of 22 Randomized Controlled Studies and quasi-experimental studies, fourteen of the studies were school based; it was identified that interventions promoting the mental health of young people can be implemented effectively in schools and community settings in LAMIC, with moderate to strong evidence of their impact on both positive and negative mental health outcomes (Barry *et al.*, 2013). Findings of this review suggested that evidence relating to interventions for young children in primary schools in LAMIC need to be strengthened.

In Pakistan, a training program was developed and evaluated for teachers to improve their knowledge regarding signs and symptoms of ADHD (Hussein, 2011). In this study teachers knowledge regarding signs and symptoms of ADHD was determined before and after two days

training and then followed six months. The author documented that the training improved the knowledge of the schoolteachers regarding ADHD symptoms.

Jorm and colleagues (2010) carried out training for high school teachers. This study was based on the background that, mental disorders have their first onset during child and adolescent age period. For this reason, high school teachers are in a good position to provide initial assistance to students who are developing mental health problems. To improve the skills in this area a mental health First Aid training course was modified to be suitable for high school teachers and evaluated in a cluster randomized trial. The trial was carried out with teachers in South Australia high schools. Teachers at seven schools received training and those at another 7 schools were wait-listed for future training. The effect of training on teachers was evaluated using questions pre-and post training on teachers. At post-test, teachers who received training had greater gains in knowledge (mean difference =2.08, $P < 0.001$) these gains were maintained at follow up (mean difference=1.79, $P < 0.001$). The teachers who did two days training show greater gains in knowledge than those who did only one day, but difference is not significant. This study showed that the mental health first Aid training increased teachers' mental health knowledge, changed beliefs about treatment to be more like those of mental health professionals.

A study done by Forness *et al.*, (2012) in California showed that the schools are not as effective as they could be in identifying children with mental health problems or at identifying them soon enough among thirteen-year-old children, from 12 special classrooms for children with emotional disturbance such as depression (approximately one-third) Attention Deficit Hyperactivity Disorder (approximately one-fourth) and posttraumatic stress disorder secondary to abuse. In another long-term study of about 3,700 children done at the university of Alabama, assessment were conducted and mental health needs were identified using two diagnostic analogs

for emotional or behavioural disorders. Recommendations from the authors include training professionals, especially classroom teachers, to recognize early symptoms of emotional and behavioural disorders, modifying the school definition of mental health disorders and developing a more proactive identification process for mental health disorder in school, in which children are screened for emotional or behavioural disorders early in the school years.

In Lagos State Nigeria, a teachers' training workshop on Child and Adolescent, Mental Health significantly increased the teachers' knowledge regarding causes of mental illness and their ability to identify some mental health challenges as assessed by clinical case (Oshodi *et al.*, 2014). In this study, Oshodi et al conducted CAMH skills workshop for 77 high school teachers from 46 schools within two main local government areas in Lagos states.

The two-day workshop focused on topics such as early childhood development, identifying common child and adolescent mental health problems, linkages of services in resource poor settings, developing resilience and child abuse. The measure used in this training include a pre and post questionnaire which assessed knowledge, stigmatizing attitudes and interventions for students with identified mental health conditions, suggestions for improved delivery were elicited.

In Tehran, Shahmohammadi (2013) examined the effect of teacher's in-service training programmes on their attitude and performance towards child mental health. The study was conducted on 100 teachers. An attitude questionnaire was used at the beginning and at the end of the training course to check the participants' attitude change. The teacher's performance was then observed using an observation checklist. A stimulated recall interview was conducted to check the reasons for the discrepancies between the programme guidelines and the teacher's

performance. The results of the attitude questionnaire showed that the teacher's attitude had changed significantly in one area of the three areas under investigation.

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CHAPTER THREE

METHODOLOGY

3.1 Study Area

The study location was Ibadan North Local Government Area (LGA), Ibadan Southwest Nigeria. Ibadan North LGA is located approximately 8°5 East of the Greenwich meridian and latitude 7°23 North of the equator. It has an estimated population of 3.84million, (UN World Urbanization prospects 2010). Ibadan North Local Government Area has twelve political wards and the headquarters is located at Agodi Area. The principal inhabitants of the locality are the Yoruba people. The local government also houses several educational institutions like the University of Ibadan, the Ibadan polytechnic, and several public/private primary schools as well as public/private secondary schools that are registered with Ibadan north LGA. There are seventy-four registered public primary schools in the Ibadan North LGA. Ibadan North LGA was chosen for convenience from the eleven local government areas in Ibadan due to its proximity to the researcher's base.

3.2 Study Sites

The study sites were four public primary schools within the Ibadan North Local Government Area. The schools were the Salvation Army Primary school Yemetu, St. Paul's Primary school Yemetu, Immanuel College Primary School Samonda, and Abadina Primary School Abadina. The Public schools have higher number of pupils in a classroom compared to private schools.

The Salvation Army Primary School (control school 1), is located in Yemetu along Bodija-Bere high express way. The school had staff strength of 53 teachers (4males and 49 females) as at February 2015. The average class size was 35. The school did not have a Sick bay, but had a first aid box. Pupils who became ill while in school were sent to the nearby local government clinic.

St. Paul's Primary school (control school 2) is also located in Yemetu area serving the population of Bere District. The school was by the Saint Paul's Anglican Church and was later handed over to the Oyo State Government. The school had staff strength of 62 (6 males and 56 females) Two teachers are assigned to each class. The average class size was 35.

Emmanuel College Primary School (intervention school 1), is located at Samonda close to the University of Ibadan. The school was established in 1975. The school had staff strength of 50 teachers (6 males and 44 females) as at when the data for this study was collected. The school had a Sick Bay with a senior nursing officer assigned to manage pupils who became ill while in school. The room had a first aid box containing essential drugs.

Abadina Primary School (intervention school 2), is located in Abadina community within University of Ibadan. The school was established in 1976. The school had staff strength of 48 teachers (5 males and 43 females) as at, when the data for this study was collected, May 2015. The average class size was 32. The school had a Sick Bay with a registered nurse assigned to manage pupils who became ill while in school. The room had a first aid box containing essential drugs. Subjects taught in this school includes English language, Mathematics, basic science and technology, social studies, Religious Christian Studies and physical health education which is health related.

3.3 Study Design

The study utilized a quasi-experimental design. This was an interventional study which sought to evaluate the effects of an intervention on general knowledge of CAMH as well as developmental and behavioral problems in school children by teachers with specific interest in learning disability and ADHD. The study design included intervention and control groups. The respondents were 140 teachers in four randomly selected primary schools in Ibadan North Local Government Area. The study was done in five phases: base line assessment, initial intervention, post intervention data collection, booster session of intervention and post booster intervention data collection for intervention group only. Pre and post intervention results were taken at baseline, post intervention and post booster session to determine the effect of the intervention at the three phases

3.4 Study Population

The population of this study was teachers; the study population was primary school teachers from four public primary schools. This was due to the fact that Public schools are more at risk for learning and emotional problems due to the challenges of crowded classroom and inadequate resources (Patel & De Souza, 2000). Secondly, public schools have more teachers than private schools to obtain sample size

3.4.1 Inclusion Criterion

All teachers with at least three years of teaching experience

3.4.2 Exclusion criterion

Teachers who refuse to return written informed consent were excluded from the study

3.5 Sample Size Determination

The total sample size (n) for this study was calculated using the formula to estimate the minimum sample size for two proportions, as follows:

The formula is used to estimate the minimum sample size for two proportions, which is;

$$N = 2F (\sigma/d)^2$$

Where:

N = is the minimum sample for one of the two groups,

F = is 7.85

7.85 is a factor based on 80% power and 5% level of significance (Wade, 1997)

σ = is the standard deviation for the outcome measure (knowledge score),

d = is the difference expected to be found between the intervention and control group after the intervention. It was hypothesised that the training would result in the intervention group having (0.5) a standard deviation better knowledge of the intervention content than the control group, (Wade, 1997), which gave a sample size of:

$$n = 2F(\sigma/d)^2$$

$$n = 2 \times 7.85(1/0.5)^2$$

$$n = 15.7 (4)$$

n = 62.8 . This gives a minimum of 63 in each group.

Hence, a minimum of 63 teachers each was studied in the intervention and control group.

However, in order to allow for up to 10% drop out, the final sample was increased using the formula: $(N=63 + (10/100 \times 63))$

$$N = 63 + 6.3 = 69.3.$$

This was approximated to 70 in each group giving a total of 140 teachers in the study.

3.6 Sampling Technique

The study employed the multistage sampling technique involving the following stages: in the first stage, the nine geographical zones of Ibadan North LGA were listed. (Sango, Bodiya, Abadina, Mokola, Oniyanrin, Nalende, Kube, Yemetu and Oke-Are). Abadina and Yemetu Zones were purposively sampled. This was because they are geographically far from each (approximately 10 kilometers) other so as to reduce the risk of the control group being contaminated by the intervention group.

In the second stage, all the primary schools in Abadina and Yemetu were listed and two schools were randomly picked from each zone by balloting. The four schools randomly selected were the Salvation Army Primary School, Yemetu, the St. Paul's Primary School Yemetu, Abadina Primary School Abadina and Immanuel College Primary School.

At the third stage, balloting was used to divide the schools into intervention and control groups. In this stage the two zones (Abadina and Yemetu) each with two schools were to represent intervention and control. These two zones were written on equal sizes of papers and folded. The sequence of ballot was predetermined. First selection represented intervention and second selection represented control. The research assistant was asked to select one of the two folded papers. Abadina zone was first selected. Thus the schools in Abadina were allocated to intervention group and the schools in Yemetu as control group.

At the fourth stage all of the teachers from these primary schools who met the inclusion criteria above were studied. These schools have similar characteristics in terms of gender of teachers (Majority of the teachers were females), class size, teacher pupil ratio (1:17) and socioeconomic background of teachers.

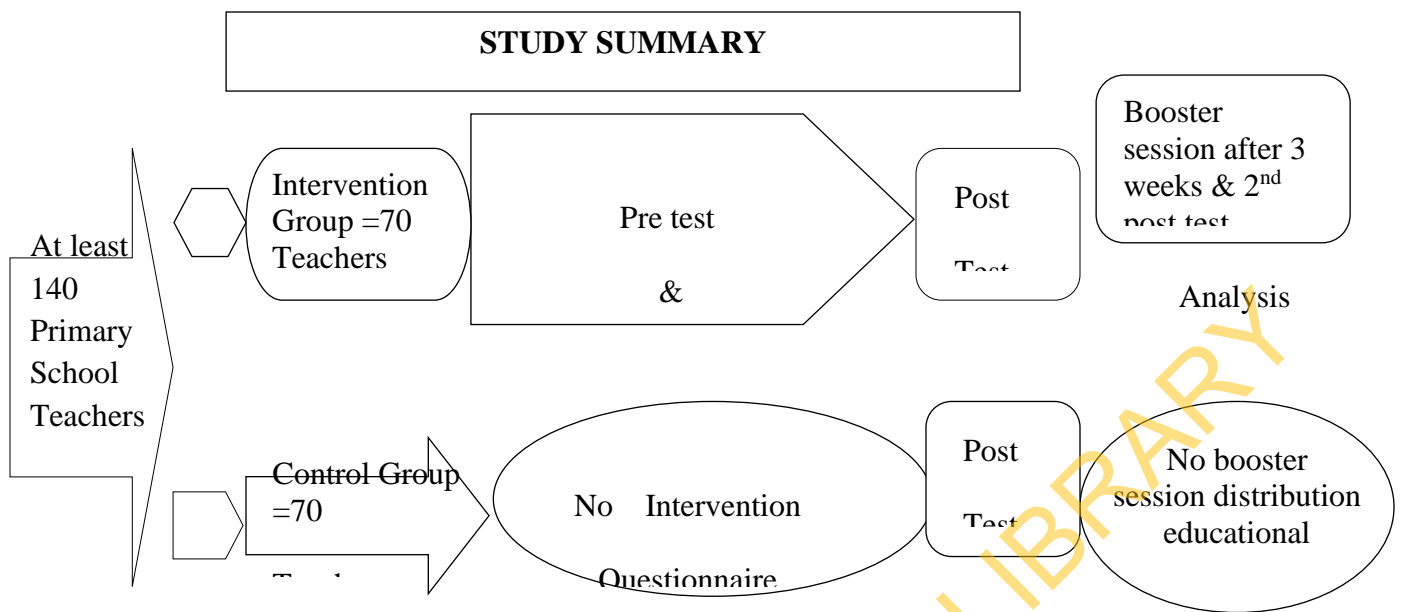


Figure 3.1: Study Flow

3.7 Data Collection Instruments

The following instruments were utilized to collect data:

1. A researcher's designed pretested self-report socio-demographic questionnaire was used to obtain information on age, gender, marital status, religion, level of education, ethnic origin, and present position at work and years of teaching experience.
2. A knowledge and attitudes questionnaire towards Child and Adolescent Mental Health Problems. The questionnaire was developed by Bella *et al.*, (2011) and was used in this region, for a school mental health survey. This is a 29 item questionnaire derived from existing literatures including results of a qualitative needs assessment for school mental health research project carried out on school administrators, head teachers and primary school teachers in rural and urban southwest Nigeria (Ibeziako, Omigbodun, Bella, and Belfer, 2008). The questionnaires mainly assess knowledge and attitudes towards Child and Adolescent Mental Health. It was

modified to suit the purpose of this study which was to measure the knowledge and attitudes of teachers on general Child Mental Health.

Fifteen items were adapted from the 29 items (seven knowledge statements and eight attitude statements). The knowledge items asked questions ranging from child mental health prevention, treatment, terminologies used to describe children with mental health problem, prevalence of child mental health and risk factors for child mental health problems. The 8 attitude items asked questions to determine individual teachers' perception about the causes and treatment of children with mental health problems, appropriate places to manage children with mental health problems and social distance with children to mental health problems. Technical words such as "disorders" on these items were modified to the level of teachers' understanding. This was done by either removed or replace technical words with simple words. Example, the word "disorder" was replaced with the word "problem" in the questionnaire.

3. A researcher designed learning disability knowledge questionnaire was developed from existing literature to assess participants' knowledge on child development, prevalence, causes, and signs and symptoms, of learning disability.

4. A modified ADHD knowledge questionnaire for teachers that has been used successfully in other studies (Sciutto *et al* 2000). The instrument was developed by Sciutto *et al.*, (2000) and it has 27 ADHD knowledge items for teachers. This was adapted and modified to suit the purpose of this study. It was reduced to 24 items by removing items not culturally appropriate and modifying or removing some technical languages such as "diagnosis" and addiction". All the questionnaires were self administered.

The knowledge questionnaires were rated as true, false and don't know and were scored as follows: correct =1, incorrect and not sure = 0, such that when summed, higher scores indicate better knowledge.

The attitude questionnaire was rated agree, disagree not sure Each answer that favours negative attitude was scored "1" and the rest were both scored "0" so that higher scores indicate more negative attitude.

All questionnaires were presented to researcher's supervisors who are child psychiatrists for scrutiny to ensure its face validity. A pretest of the instruments was conducted among 10% of the estimated sample size (14 teachers) at an independent school (Christ Apostolic Church Primary School, Sango). This was to enable the researcher determine the appropriateness and applicability of the proposed instruments for data collection. During this period a modified version of the knowledge and attitudes questionnaire, learning disability questionnaire, ADHD Knowledge questionnaire, and socio-demographic questionnaire were administered. During this pre-testing of instruments, all vague and difficult to understand questions were either modified or excluded. For example the question "Age at last birthday" was misunderstood by a third of the respondents as their date of birth instead of their age. Hence this was reworded to "What is your age?"

3.8.1 Study Procedure

The study was carried out in five phases: at base line, intervention, immediate post intervention test, booster session for intervention group and post booster session test. At base line each participant in the control and intervention group was administered the self-report socio-demographic questionnaire. This was followed by the modified Knowledge and attitude

questionnaire, learning disability and ADHD questionnaires. The training module which was developed by the author from World Health Organization's mental health Gap Action Programme was used to train and assess the knowledge of teachers on learning disability and ADHD. The training session was based on relevant facts on Child Developmental problems with particular reference to Learning Disability and Child behavioural problems with particular reference to ADHD. The training intervention was given twice to teachers in the intervention group: an initial session of two hours and a booster session of one hour after three weeks. Participants in the control group did not receive any training, but completed all questionnaires at baseline and after three weeks. The participants in the control group received educational materials on the topics studied four weeks after the final data collection. Hard copies of the training content were made available to them. The time of the intervention was scheduled such that there was minimum interference with the general daily routine of any of the teachers. The free time 8 -10 am every Thursday scheduled for environmental sanitation was utilized in agreement with the school authorities.

3.8.2 Lecture Summary/Intervention

The training sessions were based on the Mental Health Gap Action Programme (mhGAP) intervention guide (WHO, 2010) and other existing literatures (Sale 2011; WHO, 2001). The mhGAP is WHO's initiative for low and middle income countries with the objective of scaling up care for mental, neurological and substance use disorders. The priority conditions addressed by mhGAP are: depression, psychotic disorders, epilepsy, Developmental disorders, Behavioural disorders, dementia, disorders due to use of alcohol, disorders due to use of illicit drugs. Successful scaling up is the joint responsibility of government, health professionals, civil society, communities and families with support from international community. The essence of

mhGAP is building partnership for collective action. The mhGAP package consists of interventions for prevention and management for each of these priority conditions. The mhGAP has been developed for use by non specialists such as health care providers. The developmental and behavioural disorders were modified to what was relevant for teachers. Clinical materials not relevant for teachers were removed.

Three topics were taught: General overview of Child Mental Health problems, Developmental problems in children (Learning Disability) and Child behavioural problems (ADHD). Two sessions of training were given to participants of the intervention group; that was two hours initial training followed by a one hour booster session three weeks after the initial training session. The time and venue for the lecture was fixed to minimize disruption of school activities. Thus, the time for the training, was fixed on Thursdays, between 8-10 am, which was time otherwise used for “environmental sanitation” when no academic activities were meant to go on. Lunch breaks were also used. The lectures were given by the author and a guest lecturer; a graduate nurse tutor, who is a trainee in the Master of Science in Child and Adolescent Mental Health programme and had gone through the mhGAP training. Teaching methods such as lectures, flip charts, small group discussions, and role plays were used in the first training session. The booster session was more of an interaction in which small group discussions were used. This was designed to enhance knowledge of teachers on the content of the intervention. (overview of developmental and behavioural problems, child development, Causes, types, signs and symptoms, classroom management of learning disability and ADHD). Vignettes on ADHD and Learning disability were also used to give a picture of the subject matter. There was time allocated for questions and feedback. The post booster test was conducted the same day during the lunch break 2 hours after the session.

3.9 Data Analysis and Management

Data was entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 20 after editing the completed questionnaires. Cleaning of the data was done by cross-checking implausible entries. Descriptive statistics was utilized to present result using frequencies and percentages. Chi-square test of significance was used to compare responses to individual question between the control and intervention groups at baseline and post intervention and Student's t-tests of significance was used to determine differences between mean scores on the outcome measures.

The effectiveness of the intervention was assessed with Analysis of Covariance (ANCOVA) of the post treatment scores controlling for baseline scores. The post intervention knowledge score as the dependent variable and the baseline knowledge score as the covariate. This was to show if the intervention really had an effect

In relation to the analysis, the knowledge questionnaires were separated from the attitude questionnaires and analyzed both categorically and dimensionally. For the latter, each question was added up to create scales. For the analysis that combines the items in each questionnaire into scales, the questions were re-coded so that correct answer to each question was coded as "1" and both the incorrect answer and "don't know" were each coded as "0". Any negatively worded questions were reversed so that all the scores were in the same direction. The questions were then combined so that higher scores indicate higher knowledge and more negative attitude. Regarding the attitude questionnaire, each answer that favours negative attitude was coded as "1" and incorrect answers and "don't know" were both coded as "0". This means higher scores indicate more negative attitude.

3.10 Ethical Consideration

Ethical Clearance

Ethical approval was obtained from the Oyo State Ministry of Health ethical review committee and permission from the Oyo State Universal Basic education Board (see Appendix III and IV). Teachers also gave written informed consent before the commencement of the study.

Confidentiality of Data

The data was collected, coded and kept under lock and key with restricted access by only the researcher. However, the data for each teacher was tagged and assigned a code to ensure that post test rating could be correctly matched to the pre-test rating of the same participant. All data was anonymised and to make sure participants could not be identified in the result of the research, as no names were used when reporting individual teacher's data.

Beneficence

Teachers who participated in the study gained knowledge on developmental and behavioural problems among school children more especially teachers in intervention group who had training on child mental health while the educational materials were also made available to the control group after the intervention. The school pupils with mental health problems also benefited through early detection and referral since the teachers have better knowledge.

Nonmaleficence

The protocol did not involve any major risk of physical, psychological or any other form of harm. However, there were inconveniences involved in the time taken by participants to answer questions and attend the training. This was minimized by giving small incentives and

refreshments. Efforts were made to minimize disruption of teacher's routine as much as possible.

Right of Decline/Withdrawal from Participation

Participants were informed of their right to withdraw from the project prior to and during the study. Potential participants were informed that their participation was strictly voluntary and if they chose to withdraw they deserved the right to do so without adverse effect on them or their job.

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CHAPTER FOUR

RESULTS

This chapter describes the result of data analysis of this research project.

4.1 Socio-demographic Characteristics of the Respondents.

One hundred and forty teachers were recruited for the study (70 intervention groups and 70 control group) and 140 successfully completed the questionnaires (70 intervention group and 70 control group) at baseline and post intervention. This gives a response rate of 100%, while there was 3 (2.1%) drop out in the intervention group at the booster session. The mean age of the respondents was 49 years (SD=5.8), minimum age was 32years while maximum age was 60years. About 89% were females and 57% of the respondent had National Certificate of Education (NCE). The proportion of those with 20-29 years working experience was highest (42%) (See Table 4.1)

Table 4.1: Socio-demographic Characteristics of Respondents

Variables	n (%)
Age (years)	
< 39	7(5.2)
40-49	56(41.8)
50 and above	71(53.0)
Total	134(100)
Sex	
Male	15(10.7)
Female	125(89.3)
Total	140(100)
Religion	
Islam	45(32.4)
Christianity	94(67.6)
Total	139(100)
Marital status	
Married	97(70.3)
Never married	36(26.1)
Separated/widowed	5(3.6)
Total	138(100)
Ethnic group	
Yoruba	129(99.2)
Igbo	1(0.8)
Total	130(100)
Highest Educational Level	
Grade two Certificate of Education	11(7.9)
National Certificate of Education	81(57.9)
University Degree	39(27.9)
Postgraduate degree	9(6.4)
Total	140(100)
Teaching experience (years)	
Less than 10	4(2.9)
10-19	40(28.8)
20-29	59(42.4)
30 and above	36(25.9)
Total	139(100)

4.2 Socio-demographics Comparison between Intervention and Control Group

There are differences and similarities in the socio-demographic profiles between the intervention and control group. There was no statistically significant difference in the respondents' age, sex, highest working experience and ethnicity. However, there were statistically differences in religion, marital status and level of education between the two groups. Christians make the highest proportion 56 (81.2%) in the control group while Muslims make the highest proportion 32 (45.7%) in the control group. The control group make the highest proportion of married respondents compared to intervention group 34 (41.3) vs 63 (91.3). About 58% of the respondents in both groups had National Certificate of Education (NCE) of which 67% were in the control group. The intervention group had higher number of respondents with postgraduate degree than the control group (11.4% vs 1.4%).

Table 4.2 Socio-demographics Comparison between intervention and Control Group

Variables	Intervention Group	Control Group	Total	χ^2 value	p-value
Age (years)	n (%)	n (%)	n (%)		
< 39	4(5.8)	3(13.5)	7 (5.2)	22.618	0.600
40-49	30(43.5)	26 (39.9)	56(41.8)		
50 and above	35(50.7)	36 (46.6)	71(53)		
Total	69(100)	65(100)	134(100)		
Sex					
Male	9(12.9)	6 (8.6)	15(10.7)	0.672	0.586
Female	61 (87.1)	64 (91.4)	125(89.3)		
Total	70(100)	70 (100)	140(100)		
Religion					
Muslim	32(45.7)	13(18.8)	45(32.4)	11.462	0.001*
Christian	38(54.3)	56(81.2)	94(67.6)		
Total	70 (100)	69 (100)	139 (100)		
Marital Status					
Married	34(49.3)	63(91.3)	97(70.3)	35.670	0.000*
Never married	33(47.8)	3(4.3)	36(26.1)		
Separated	1(1.4)	0(0)	1(0.7)		
Widowed	1(1.4)	3(4.3)	4(2.9)		
Total	69(100)	69(100)	138(100)		
Ethnicity					
Yoruba	64(98.5)	65(100)	129(99.2)	1.008	1.00
Igbo	1(1.5)	0(0.0)	1(0.8)		
Total	65 (100)	65(100)	130(100)		
Teaching experience (years)					
Less than 10	2(2.8)	2(2.8)	4 (2.9)	26.152	0.455
10-19	21(30)	19(27.5)	40(28.8)		
20-29	30(43)	29(42)	59 (42.4)		
30 and above	17(24.2)	19(27.5)	36 (25.9)		
Total	70(100)	69(100)	139 (100)		
Highest Educational Level					
Grade two Certificate	8(11.4)	3(4.3)	11(7.9)	9.829	0.020*
National Certificate of Education (NCE)	34(48.6)	47(67.1)	81(57.9)		
University Degree	20(28.6)	19(27.1)	39 (27.9)		
Postgraduate degree	8(11.4)	1(1.4)	9(6.4)		
Total	70(100)	70(100)	140 (100)		

* Significant at $p < 0.05$

4.3 Baseline CAMH Knowledge of the Respondents

Overall, there was no statistically significant difference in baseline knowledge of Child and Adolescent Baseline Mental health problems between the control and intervention groups. Out of the 140 responses ninety-seven percent (95.7%) of the respondents in the intervention group correctly responded to the question ‘Child Mental Health problems can be prevented’, which is similar to the proportion in the control group (95.7%) ($p= 1.00$). Almost half (48.64%) of the respondents in the intervention group indicated that imbecile and moron are appropriate words to describe a child with Child Mental Health problem. This did not differ much from the proportion in the control group (41.4%) ($p=0.396$). A high proportion of respondents in the intervention and control groups incorrectly agreed that “children do not suffer from mental health problems” (86.8% vs. 81.4%). The difference was not statistically significant ($p=0.392$) (see Table 4.3).

Table 4.3: Baseline Knowledge of Respondents Regarding CAMH Problems.

SN	Statements Regarding CAMH Problems	Intervention group n (%)	Control group n (%)	Total	χ^2 value	p-value
1	Child mental health problems can be prevented					
	Incorrect	3(4.3)	3(4.3)	6(4.3)	0.00	1.00
	Correct	67(95.7)	67(95.7)	134(95.7)		
	Total	70(100)	70(100)	140(100)		
2	Imbecile and moron are appropriate words to describe a child with mental health problem					
	Incorrect	36(51.4)	41(58.6)	77(55.0)		
	Correct	34(48.6)	29(41.4)	63(45.0)	0.722	0.396
	Total	70(100)	70(100)	140(100)		
3	Poor academic performance is a type of mental health problem					
	Incorrect	32(45.7)	25(35.7)	57(40.7)		
	Correct	38(54.3)	45(64.3)	45(59.3)	1.450	0.229
	Total	70(100)	70(100)	140(100)		
4	Mental health problems in children cannot be treated					
	Incorrect	7(10.1)	12(17.1)	19(13.7)		
	Correct	62(89.9)	58(82.9)	120(86.3)	1.442	0.230
	Total	69(100)	70(100)	139(100)		
5	Children do not suffer from mental health problems					
	Incorrect	9(13.2)	13(18.6)	22(15.9)		
	Correct	59(86.8)	57(81.4)	116(84.1)	0.733	0.392
	Total	68(100)	70(100)	138(100)		
6	Children with mental health problems have inherited weak genes from their parents.					
	Incorrect	25(35.7)	22(31.4)	47(33.6)		
	Correct	45(64.3)	48(68.6)	93(66.4)	0.288	0.591
	Total	70(100)	70(100)	140(100)		
7	One in ten children will develop mental health problems before they become adults					
	Incorrect	21(30.4)	24(34.3)	45(32.4)		
	Correct	48(69.6)	46(65.7)	94(67.6)	0.235	0.628
	Total	69(100)	70(100)	139(100)		

* Significant at $p < 0.05$

4.4 Baseline Attitude of the Respondents toward CAMH Problems

A large proportion of the respondents in both the intervention and control groups (92.9% vs. 78.6%) endorsed the belief that “Children with mental health problems are possessed by demons”. The intervention group were significantly more likely to hold this negative belief ($p=0.016$). More respondents in the intervention group agreed that “Children with mental health problems should be taken to Church/Mosque or traditional healer for intervention” compared to those in the control group (61.4% vs. 32.9%) and this was statistically significant ($p=0.001$). Respondents in the intervention group had a higher proportion of those who agreed that “The Juvenile Remand Home is a good place to manage children with mental health problems” compared to respondents in the control group (72.5% vs. 47.1%), this was statistically significant ($p=0.002$).

Table 4.4: Baseline Attitude of Respondents toward CAMH Problems

Attitude Statements Regarding CAMH Problems	Intervention group n (%)	Control group n (%)	Total	χ^2 value	p- value
1 For children with mental health problems their families are to blame for this					
Incorrect	11(15.7)	12(17.1)	23(16.4)	0.52	0.820
Correct	59(84.3)	58(82.9)	117(83.6)		
Total	70(100)	70(100)	140(100)		
2 The main cause of mental health problems in children is a curse on the family					
Incorrect	4(5.7)	7(10.0)	11(7.9)	0.888	0.346
Correct	66(94.3)	63(90.0)	129(92.1)		
Total	70(100)	70(100)	140(100)		
3 Children with mental health problems are possessed by demons					
Incorrect	5(7.1)	15(21.4)	20(14.3)	5.833	0.016*
Correct	65(92.9)	55(78.6)	120(85.7)		
Total	70(100)	70(100)	140(100)		
4 Children with mental health problems are unpredictable					
Incorrect	34(48.6)	46(65.7)	80(57.1)	4.200	0.040*
Correct	36(51.4)	24(34.3)	60(42.9)		
Total	70(100)	70(100)	140(100)		
5 Children with mental health problems may be taken to Church/Mosque or traditional healer for intervention					
Incorrect	27(38.6)	47(67.1)	74(52.9)	11.466	0.001*
correct	43(61.4)	23(32.9)	66(47.1)		
Total	70(100)	70(100)	140(100)		
6 Treating mental health problems in children is always very expensive					
Incorrect	35(50.0)	49(70.0)	84(60.0)	5.833	0.016*
Correct	35(50.0)	21(30.0)	56(40.0)		
Total	70(100)	70(100)	140(100)		
7 The Juvenile Remand Home is a good place to manage children with mental health problems.					
Incorrect	19(27.5)	37(52.9)	56(40.3)	9.261	0.222
Correct	50(72.5)	33(47.1)	83(59.7)		
Total	69(100)	70(100)	139(100)		
8 I Would allow my child or relative to maintain a friendly relationship with a child with mental health problem					
Incorrect	32(46.4)	29(41.4)	61(43.9)	0.345	0.557
Correct	37(53.6)	41(58.6)	78(56.1)		
Total	69(100)	70(100)	139(100)		

* Significant at $p < 0.05$

4.5 Respondents Knowledge of CAMH Problems Post Intervention

A higher proportion of respondents in control group than the intervention group agreed that “Children with mental health problems have inherited weak genes from their parents” (62.9% vs. 37.9%), this was statistically significant ($p=0.004$). For the knowledge question “One in ten children will develop mental health problems before they become adults” more respondents in the control group answered correctly compared to the intervention group (71.4% vs. 41.8%) and this was statistically significant ($p<0.001$). (See Table 4.5)

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Table 4.5: Respondents' Knowledge of CAMH Problems Post Intervention

No	Statements Regarding CAMH Problems	Intervention group n (%)	Control group n (%)	Total	χ^2 value	p-value
1	Child mental health can be prevented					
	Incorrect	4(6.2)	1(1.4)	5(3.7)	2.062	0.151
	Correct	61(93.8)	68(98.6)	129(96.3)		
Total	65(100)	69(100)	134(100)			
2	Imbecile and moron are appropriate words to describe a child with mental health problem					
	Incorrect	30(44.8)	38(54.3)	68(49.6)	1.2238	0.266
	Correct	37(55.2)	32(45.7)	69(50.4)		
Total	67(100)	70(100)	137(100)			
3	Poor academic performance is a type of mental health problem					
	Incorrect	39(59.1)	26(37.7)	65(48.1)	6.194	0.013*
	Correct	27(40.9)	43(62.3)	70(51.9)		
Total	66(100)	69(100)	135(100)			
4	Mental health problems in children cannot be treated					
	Incorrect	17(25.4)	5(7.1)	22(16.1)	8.440	0.004*
	Correct	50(74.6)	65(92.9)	115(83.9)		
Total	67(100)	70(100)	137(100)			
5	Children do not suffer from mental health problems					
	Incorrect	10(14.9)	12(17.6)	22(16.3)	0.183	0.669
	Correct	57(85.1)	56(82.4)	113(83.7)		
Total	67(100)	68(100)	135(100)			
6	Children with mental health problems have inherited weak genes from their parents.					
	Incorrect	41(62.1)	26(37.1)	67(49.3)	8.480	0.004*
	Correct	25(37.9)	44(62.9)	69(50.7)		
Total	66(100)	70(100)	136(100)			
7	One in ten children will develop mental health problems before they become adults					
	Incorrect	39(58.2)	20(28.6)	59(43.1)	12.264	<0.001*
	Correct	28(41.8)	50(71.4)	78(56.9)		
Total	67(100)	70(100)	137(100)			

* Significant at $p < 0.05$

4.6 Respondents Attitude towards CAMH Problems Post Intervention.

A higher proportion of respondents in the intervention group (88.1%) agreed that main cause of mental health problems in children is a curse on the family compared to those in the control group (84.3%), this was however not statistically significant ($p=0.523$). More respondents in the intervention group agreed that “Children with mental health problems may be taken to Church/Mosque or traditional healer for treatment” compared to those in the control group (66.7% vs. 30.4%), and this was found to be statistically significant ($p<0.001$). Similarly, for the attitude question “Treating mental health problems in children is always very expensive” more respondents in the intervention group agreed compared to those in the control group (65.7% vs.38.6%), ($p=0.002$).

Table 4.6: Attitude of Respondents toward CAMH Problems Post Intervention

No	Attitude Statements Regarding CAMH Problems	Intervention group n (%)	Control group n (%)	Total	χ^2 value	P-value
1	For children with mental health problems their families are to blame for this					
	Incorrect	14(20.9)	11(15.7)	25(18.2)	0.616	0.433
	Correct	53(79.1)	59(84.3)	112(81.8)		
	Total	67(100)	70(100)	137(100)		
2	The main cause of mental health problems in children is a curse on the family					
	Incorrect	8(11.9)	11(15.7)	19(13.9)	0.408	0.523
	Correct	59(88.1)	59(84.3)	118(86.1)		
	Total	67(100)	70(100)	137(100)		
3	Children with mental health problems are possessed by demons					
	Incorrect	7(10.4)	16(23.2)	23(16.9)	3.927	0.066
	Correct	60(89.6)	53(76.8)	113(83.1)		
	Total	67(100)	69(100)	136(100)		
4	Children with mental health problems are unpredictable					
	Incorrect	39(58.2)	39(56.5)	78(57.4)	0.040	0.842
	Correct	28(41.8)	30(43.5)	58(42.6)		
	Total	67(100)	69(100)	136(100)		
5	Children with mental health problems may be taken to Church/Mosque or traditional healer for intervention					
	Incorrect	22(33.3)	48(69.6)	70(51.9)	17.738	<0.001*
	Correct	44(66.7)	21(30.4)	65(48.1)		
	Total	66(100)	69(100)	135(100)		
6	Treating mental health problems in children is always very expensive					
	Incorrect	23(34.3)	43(61.4)	66(48.2)	10.070	0.002*
	Correct	44(65.7)	27(38.6)	71(51.8)		
	Total	67(100)	70(100)	137(100)		
7	The Juvenile Remand Home is a good place to manage children with mental health problems.					
	Incorrect	22(32.8)	36(51.4)	58(42.3)	4.848	0.038
	Correct	45(67.2)	34(48.6)	79(57.7)		
	Total	67(100)	70(100)	137(100)		
8	I Would allow my child or relative to maintain a friendly relationship with a child with mental health problem					
	Incorrect	21(31.8)	26(37.1)	47(34.6)	0.426	0.514
	Correct	45(68.2)	44(62.9)	89(65.4)		
	Total	66(100)	70(100)	136(100)		

* Significant at $p < 0.05$

4.7 Baseline Knowledge of Respondents about Learning Disability.

As indicated in table 4.6 below, 52.9% of the respondents in the intervention group wrongly agreed with the statement “Starvation during pregnancy cannot cause learning disability”, compared with an even higher proportion of the control group (71.4%) ($p=0.023$). About half (47.1%) of the respondents in the intervention group indicated that learning disability is a condition that appears before age 3 in which intelligence is significantly below average. This differed but not statistically from the proportion in the control group (31.4%) ($p=0.083$). A high proportion of respondents in the intervention and control groups did not agree that “there is no cure for learning disability once it has occurred” (90.0% vs. 87.1%). The difference was not statistically significant ($p=0.595$).

Table 4.7A: Respondents' Baseline Knowledge on Learning Disability.

No	Learning Disability Knowledge Statements	Intervention group n (%)	Control group n (%)	Total	χ^2 value	p- value
1	A learning disability is a condition that appears before age 3 in which intelligence is significantly below average.					
	Incorrect	37(52.9)	48(68.6)	85(60.7)	3.624	0.083
	Correct	33(47.1)	22(31.4)	55(39.3)		
	Total	70(100)	70(100)	140(100)		
2	There are two main types of learning disability				0.062	0.803
	Incorrect	32(45.7)	33(47.8)	65(46.8)		
	Correct	38(54.3)	36(52.2)	74(53.2)		
	Total	70(100)	69(100)	139(100)		
3	Teachers should discourage children with learning Disability from taking part in group activities				0.000	1.000
	Incorrect	6(8.6)	6(8.6)	12(8.6)		
	Correct	64(91.4)	64(91.4)	128(91.4)		
	Total	70(100)	70(100)	140(100)		
4	A typical child is able to scribble with a crayon or pencil at the age of 18 months.				2.944	0.086
	Incorrect	36(51.4)	46(65.7)	82(58.6)		
	Correct	34(48.6)	24(34.3)	58(41.4)		
	Total	70(100)	70(100)	140(100)		
5	There is no cure for learning disability once it has occurred.				0.282	0.595
	Incorrect	63(90.0)	61(87.1)	124(88.6)		
	Correct	7(10.0)	9(12.9)	16(11.4)		
	Total	70(100)	70(100)	140(100)		
6	Starvation during pregnancy cannot cause learning disability.				5.131	0.023
	Incorrect	33(47.1)	20(28.6)	53(37.9)		
	Correct	37(52.9)	50(71.4)	87(62.1)		
	Total	70(100)	70(100)	140(100)		
7	Only 2% of children with learning disability are slow learners.				0.124	0.724
	Incorrect	26(37.1)	24(34.3)	50(35.7)		
	Correct	44(62.9)	46(65.7)	90(64.3)		
	Total	70(100)	70(100)	140(100)		
8	Learning disability is the least common type of developmental problems.				2.543	0.111
	Incorrect	29(41.4)	20(28.6)	49(35.0)		
	Correct	41(58.6)	50(71.4)	91(65.0)		
	Total	70(100)	70(100)	140(100)		

* Significant at $p < 0.05$

Table 4.7 B: Respondents' Baseline Knowledge on Learning Disability.

No	Learning Disability Knowledge Statements	Intervention Group n n(%)	Control Group n(%)	Total	χ^2 value	P-value
9	Learning disability affects more males than females in Africa					
	Incorrect	57(81.4)	61(87.1)	118(84.3)	0.863	0.353
	Correct	13(18.6)	9(12.9)	22(15.7)		
	Total	70(100)	70(100)	140(100)		
10	Learning disability affects only academic learning.					
	Incorrect	4(5.7)	8(11.4)	12(8.6)	1.458	0.227
	Correct	66(94.3)	62(88.6)	128(91.4)		
	Total	70(100)	70(100)	140(100)		
11	Up to 19% of school children have learning disability in Nigeria.					
	Incorrect	23(32.9)	28(40.0)	51(36.4)	0.771	0.380
	Correct	47(67.1)	42(60.0)	89(63.6)		
	Total	70(100)	70(100)	140(100)		
12	A child with learning disability may have a short attention span.					
	Incorrect	38(54.3)	33(47.1)	71(50.7)	0.714	0.398
	Correct	32(45.7)	37(52.9)	69(49.3)		
	Total	70(100)	70(100)	140(100)		
13	Learning disability is the same as child mental health problem.					
	Incorrect	29(41.4)	29(41.4)	58(41.4)	0.000	1.000
	Correct	41(58.6)	41(58.6)	82(58.6)		
	Total	70(100)	70(100)	140(100)		
14	Learning disability in a child can result from problems arising during the mother's pregnancy					
	Incorrect	21(30.0)	19(27.1)	40(28.6)	0.140	0.708
	Correct	49(70.0)	51(72.9)	100(71.4)		
	Total	70(100)	70(100)	140(100)		
15	A 10 year old child with learning disability may not understand how to use money to pay for goods.					
	Incorrect	30(42.9)	23(32.9)	53(37.9)	1.488	0.223
	Correct	40(57.1)	47(67.1)	87(62.1)		
	Total	70(100)	70(100)	140(100)		

*Significant at $p < 0.05$

4.8 Respondents' Knowledge of Learning Disability Post Intervention

Table 4.7 shows the proportion of respondents from both intervention and control groups post treatment knowledge about learning disability. Following the intervention, the intervention group correctly answered more questions better than the control group. More respondents in the intervention group (73.1%) answered correctly the knowledge question “There are two main types of learning disability” compared to those in the control group (38.6%), ($p < 0.001$). A higher proportion of respondents in intervention group than the control group responded that “A typical child is able to scribble with a crayon or pencil at the age of 18 months” (49.3% vs. 28.6%), this was statistically significant ($p = 0.013$). For the knowledge question “learning disability affects more males than females in Africa” more respondents in the intervention group answered correctly compared to the control group (71.6% vs. 10.1%) and it was statistically significant ($p < 0.001$).

Table 4.8A: Respondents' Knowledge of Learning Disability Post Intervention

No	Learning Disability Knowledge Statements	Intervention group n(%)	Control group n(%)	Total	χ^2 value	p-value
1	A learning disability is a condition that appears before age 3 in which intelligence is significantly below average.					
	Incorrect	32(47.8)	48(98.6)	80(58.4)	6.102	0.014*
	Correct	35(52.2)	22(31.4)	57(41.6)		
	Total	67(100)	70(100)	137(100)		
2	There are two main types of learning disability					
	Incorrect	18(26.9)	43(61.4)	61(44.5)	16.557	<0.001*
	Correct	49(73.1)	27(38.6)	76(55.5)		
	Total	67(100)	70(100)	137(100)		
3	Teachers should discourage children with learning Disability from taking part in group activities					
	Incorrect	8(11.9)	4(5.8)	12(8.8)	1.595	0.207
	Correct	59(88.1)	65(94.2)	124(91.2)		
	Total	67(100)	69(100)	136(100)		
4	A typical child is able to scribble with a crayon or pencil at the age of 18 months.					
	Incorrect	34(50.7)	50(71.4)	84(61.3)	6.174	0.013*
	Correct	33(49.3)	20(28.6)	53(38.7)		
	Total	67(100)	70(100)	137(100)		
5	There is no cure for learning disability once it has occurred.					
	Incorrect	31(46.3)	64(92.8)	95(69.9)	34.880	<0.001*
	Correct	36(53.7)	5(7.2)	41(30.1)		
	Total	67(100)	69(100)	136(100)		
6	Starvation during pregnancy cannot cause learning disability.					
	Incorrect	44(65.7)	31(44.3)	75(54.7)	6.320	0.012*
	Correct	23(34.3)	39(55.7)	62(45.3)		
	Total	67(100)	70(100)	137(100)		
7	Only 2% of children with learning disability are slow learners.					
	Incorrect	18(27.3)	25(35.7)	43(31.6)	1.120	0.290
	Correct	48(72.7)	45(64.3)	93(68.4)		
	Total	66(100)	70(100)	136(100)		
8	Learning disability is the least common type of developmental problems.					
	Incorrect	23(34.3)	22(31.9)	45(33.1)	0.092	0.762
	Correct	44(65.7)	47(68.1)	91(66.9)		
	Total	67(100)	69(100)	136(100)		

* Significant at $p < 0.05$

Table 4.8B: Respondents' Knowledge of Learning Disability Post Intervention

No	Learning Disability Knowledge Statements	Intervention group n(%)	Control group n(%)	Total	χ^2 value	P- value
9	Learning disability affects more males than females in Africa					
	Incorrect	19(28.4)	62(89.9)	81(59.6)	53.373	0.001*
	Correct	48(71.6)	7(10.1)	55(40.4)		
Total	67(100)	69(100)	136(100)			
10	Learning disability affects only academic learning.					
	Incorrect	12(17.9)	7(10.0)	19(13.9)	1.793	0.181
	Correct	55(82.1)	63(90.0)	118(86.1)		
Total	67(100)	70(100)	137(100)			
11	Up to 19% of school children have learning disability in Nigeria.					
	Incorrect	22(32.8)	27(39.1)	49(36.0)	0.584	0.445
	Correct	45(67.2)	42(60.9)	87(64.0)		
Total	67(100)	69(100)	136(100)			
12	A child with learning disability may have a short attention span.					
	Incorrect	14(20.9)	33(47.1)	47(34.3)	10.465	0.001*
	Correct	53(79.1)	37(52.9)	90(65.7)		
Total	67(100)	70(100)	137(100)			
13	Learning disability is the same as child mental health problem.					
	Incorrect	38(56.7)	29(41.4)	67(48.9)	3.202	0.074
	Correct	29(43.3)	41(58.6)	70(51.1)		
Total	67(100)	70(100)	137(100)			
14	Learning disability in a child can result from problems arising during the mother's pregnancy					
	Incorrect	6(9.0)	21(30.0)	27(19.7)	9.581	0.002*
	Correct	61(91.0)	49(70.0)	110(80.3)		
Total	67(100)	70(100)	137(100)			
15	A 10 year old child with learning disability may not understand how to use money to pay for goods.					
	Incorrect	6(9.1)	21(30.0)	27(19.9)	9.334	0.002*
	Correct	60(90.9)	49(70.0)	109(80.1)		
Total	66(100)	70(100)	136(100)			

* Significant at $p < 0.05$

4.9 Baseline Knowledge of Respondents about ADHD

There was no significant difference in knowledge of respondents about ADHD in most of the knowledge items, except item 2, 23 and 24 which showed significant differences in ADHD knowledge between the intervention and control groups. A greater proportion of the respondents in the intervention group wrongly agreed that “ADHD is often caused by food additives such as spices and salt” and “There are approximately 3 children in every classroom with ADHD” while a greater proportion of the respondent in the control group wrongly agreed that “Only children from poor families can have ADHD”, (See Table 4.9A).

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Table 4.9A: Baseline Knowledge of Respondents about ADHD

No	ADHD Knowledge Statements	Intervention group n(%)	Control group n(%)	Total	χ^2 value	p-value
1	There are a greater number of boys than girls with Attention Deficit Hyperactivity Disorder (ADHD)				0.862	0.353
	Incorrect	47(67.1)	52(74.3)	99(70.7)		
	Correct	23(32.9)	18(25.7)	41(29.3)		
	Total	70(100)	70(100)	140(100)		
2	There are approximately 3 children in every classroom with ADHD.				4.406	0.036*
	Incorrect	20(28.6)	32(45.7)	52(37.1)		
	Correct	50(71.4)	38(54.3)	88(62.9)		
	Total	70(100)	70(100)	140(100)		
3	If medication is prescribed, for a child with ADHD educational support is no longer required.				0.416	0.519
	Incorrect	15(21.4)	18(26.1)	33(23.7)		
	Correct	55(78.6)	51(73.9)	106(76.3)		
	Total	70(100)	69(100)	139(100)		
4	Children with ADHD are born with tendency towards lack of concentration and poor self control.				0.264	0.608
	Incorrect	39(55.7)	42(60.0)	81(57.9)		
	Correct	31(44.3)	28(40.0)	59(42.1)		
	Total	70(100)	70(100)	140(100)		
5	Children with ADHD usually have good peer relations because of their outgoing nature.				2.326	0.127
	Incorrect	33(47.1)	42(60.0)	75(53.6)		
	Correct	37(52.9)	28(40.0)	65(46.4)		
	Total	70(100)	70(100)	140(100)		
6	A child who is not over-active, but fails to pay attention, may have ADHD.				1.042	0.307
	Incorrect	42(60.0)	36(51.4)	78(55.7)		
	Correct	28(40.0)	34(48.6)	62(44.3)		
	Total	70(100)	70(100)	140(100)		
7	Family problems may increase the likelihood that a child will be identified with ADHD.				0.759	0.384
	Incorrect	24(34.3)	29(41.4)	53(37.9)		
	Correct	46(65.7)	41(58.6)	87(62.1)		
	Total	70(100)	70(100)	140(100)		

* Significant at $p < 0.05$

Table 4.9B: Baseline Knowledge of Respondents about ADHD

No	ADHD Knowledge Statements	Intervention group n(%)	Control group n(%)	Total	χ^2 value	p-value
8	The doctors in the clinic do not need information from school to identify children with ADHD.					
	Incorrect	25(35.7)	36(51.4)	61(43.6)	3.515	0.061
	Correct	45(64.3)	34(48.6)	79(56.4)		
	Total	70(100)	70(100)	140(100)		
9	Children with ADHD always need a quiet environment to concentrate.					
	Incorrect	25(36.2)	18(25.7)	43(30.9)	1.799	0.180
	Correct	44(63.8)	52(74.3)	96(69.1)		
	Total	69(100)	70(100)	139(100)		
10	Approximately 10% of Nigerian primary school children have ADHD.					
	Incorrect	30(42.9)	39(55.7)	69(49.3)	2.315	0.128
	Correct	40(57.1)	31(44.3)	71(50.7)		
	Total	70(100)	70(100)	140(100)		
11	Children with ADHD are usually from divorced families.					
	Incorrect	24(34.3)	21(30.0)	45(32.1)	0.295	0.587
	Correct	46(65.7)	49(70.0)	95(67.9)		
	Total	70(100)	70(100)	140(100)		
12	Diet is usually not helpful in treating most children with ADHD.					
	Incorrect	29(41.4)	31(44.3)	60(42.9)	0.117	0.733
	Correct	41(58.6)	39(55.7)	80(57.1)		
	Total	70(100)	70(100)	140(100)		
13	ADHD can be inherited.					
	Incorrect	28(40.0)	25(35.7)	53(37.9)	0.273	0.601
	Correct	42(60.0)	45(64.3)	87(62.1)		
	Total	70(100)	70(100)	140(100)		
14	Medication is a cure for ADHD.					
	Incorrect	32(45.7)	23(32.9)	55(39.3)	2.426	0.119
	Correct	38(54.3)	47(67.1)	85(60.7)		
	Total	70(100)	70(100)	140(100)		
15	All children with ADHD are over-active.					
	Incorrect	31(44.3)	34(48.6)	65(46.4)	0.258	0.611
	Correct	39(55.7)	36(51.4)	75(53.6)		
	Total	70(100)	70(100)	140(100)		
16	There are 5 different types of ADHD.					
	Incorrect	20(28.6)	22(31.4)	42(30.0)	0.136	0.712
	Correct	50(71.4)	48(68.6)	98(70.0)		
	Total	70(100)	70(100)	140(100)		
17	ADHD affects male children only.					
	Incorrect	7(10.0)	5(7.1)	12(8.6)	0.365	0.546
	Correct	63(90.0)	65(92.9)	128(91.4)		
	Total	70(100)	70(100)	140(100)		

* Significant at $p < 0.05$

Table 4.9 C: Baseline Knowledge of Respondents about ADHD

No	ADHD Knowledge Statements	Intervention group n(%)	Control group n(%)	Total	χ^2 value	P-value
18	The cause of ADHD is usually unknown					
	Incorrect	53(75.7)	45(64.3)	98(70.0)	2.177	0.140
	Correct	17(24.3)	25(35.7)	42(30.0)		
	Total	70(100)	70(100)	140(100)		
19	ADHD is as a result of poor parenting practice.					
	Incorrect	21(30.0)	16(22.9)	37(26.4)	0.918	0.338
	Correct	49(70.0)	54(77.1)	103(73.6)		
	Total	70(100)	70(100)	140(100)		
20	Flogging a child can cure ADHD.					
	Incorrect	14(20.0)	11(15.7)	25(17.9)	0.438	0.508
	Correct	56(80.0)	59(84.3)	115(82.1)		
	Total	70(100)	70(100)	140(100)		
21	Children with ADHD cannot sit s till long enough to pay attention.					
	Incorrect	25(36.2)	33(47.1)	58(41.7)	1.701	0.192
	Correct	44(63.8)	37(52.9)	81(58.3)		
	Total	69(100)	70(100)	139(100)		
22	ADHD is caused by too much sugar in the diet.					
	Incorrect	6(8.6)	10(14.3)	16(11.4)	1.129	0.288
	Correct	64(91.4)	60(85.7)	124(88.6)		
	Total	70(100)	70(100)	140(100)		
23	ADHD is often caused by food additives such as spices and salt					
	Incorrect	7(10.0)	16(22.9)	23(16.4)	4.214	0.040*
	Correct	63(90.0)	54(77.1)	117(83.6)		
	Total	70(100)	70(100)	140(100)		
24	Only children from poor families can have ADHD.					
	Incorrect	15(21.4)	5(7.1)	20(14.3)	5.833	0.016*
	Correct	55(78.6)	65(92.9)	120(85.7)		
	Total	70(100)	70(100)	140(100)		

* Significant at $p < 0.05$

4.10 Knowledge of Respondents about ADHD Post Intervention

Following the intervention, the intervention group correctly answered more questions than the control group. For example more respondents in the intervention group answered correctly the knowledge question “There are a greater number of boys than girls with ADHD” (86.2%) compared to those in the control group (24.3%), this was statistically significant ($p < 0.001$). For the knowledge question “Children with ADHD are born with tendency towards lack of concentration and poor self-control” more respondents in the intervention group answered correctly compared to the control group (90.8% vs. 40.6%) and it was statistically significant ($p < 0.001$). However, a higher proportion of the respondent in the intervention group than the control group incorrectly agreed that “If medication is prescribed, for a child with ADHD educational support is no longer required”. (90.8 vs 71.4) this was statistically significant ($p < 0.004$)

Table 4.10A: Respondents' Knowledge about ADHD Post Intervention

No	ADHD Knowledge Statements	Intervention Group n(%)	Control group n(%)	Total	χ^2 value	p-value
1	There are a greater number of boys than girls with Attention Deficit Hyperactivity Disorder (ADHD)					
	Incorrect	9(13.8)	53(75.7)	62(45.9)	51.947	<0.001*
	Correct	56(86.2)	17(24.3)	73(54.1)		
	Total	65(100)	70(100)	135(100)		
2	There are approximately 3 children in every classroom with ADHD.					
	Incorrect	28(43.1)	35(50.0)	63(46.7)	0.649	0.420
	Correct	37(56.9)	35(50.0)	72(53.3)		
	Total	65(100)	70(100)	135(100)		
3	If medication is prescribed, for a child with ADHD educational support is no longer required.					
	Incorrect	6(9.2)	20(28.6)	26(19.3)	8.108	0.004*
	Correct	59(90.8)	50(71.4)	109(80.7)		
	Total	65(100)	70(100)	135(100)		
4	Children with ADHD are born with tendency towards lack of concentration and poor self-control.					
	Incorrect	6(9.2)	41(59.4)	47(35.1)	37.023	<0.001*
	Correct	59(90.8)	28(40.6)	87(64.9)		
	Total	65(100)	69(100)	134(100)		
5	Children with ADHD usually have good peer relations because of their outgoing nature.					
	Incorrect	19(29.2)	39(55.7)	58(43.0)	9.647	0.002*
	Correct	46(70.8)	31(44.3)	77(57.0)		
	Total	65(100)	70(100)	135(100)		
6	A child who is not over-active, but fails to pay attention, may have ADHD.					
	Incorrect	11(17.2)	31(44.3)	42(31.3)	11.408	0.001*
	Correct	53(82.8)	39(55.7)	92(68.7)		
	Total	64(100)	70(100)	134(100)		
7	Family problems may increase the likelihood that a child will be identified with ADHD.					
	Incorrect	10(15.9)	31(44.3)	41(30.8)	12.553	<0.001*
	Correct	53(84.1)	39(55.7)	92(69.2)		
	Total	63(100)	70(100)	133(100)		

*Significant at $p < 0.05$

Table 4.10 B: Respondents' Knowledge about ADHD Post Intervention

	ADHD Knowledge Statements	Intervention Group n(%)	Control group n(%)	Total	χ^2 value	p-value
8	The doctors in the clinic do not need information from school to identify children with ADHD.					
	Incorrect	15(23.4)	34(48.6)	49(36.6)	9.105	0.003*
	Correct	49(76.6)	36(51.4)	85(63.4)		
	Total	64(100)	70(100)	134(100)		
9	Children with ADHD always need a quiet environment to concentrate.					
	Incorrect	13(20.0)	14(20.3)	27(20.1)	0.002	0.967
	Correct	52(80.0)	55(79.7)	107(79.9)		
	Total	65(100)	69(100)	134(100)		
10	Approximately 10% of Nigerian primary school children have ADHD.					
	Incorrect	30(46.2)	38(54.3)	68(50.4)	0.892	0.345
	Correct	35(53.8)	32(45.7)	67(49.6)		
	Total	65(100)	70(100)	135(100)		
11	Children with ADHD are usually from divorced families.					
	Incorrect	8(12.7)	24(34.3)	32(24.1)	8.457	0.004*
	Correct	55(87.3)	46(65.7)	101(75.9)		
	Total	63(100)	70(100)	133(100)		
12	Diet is usually not helpful in treating most children with ADHD.					
	Incorrect	16(24.6)	31(44.3)	47(34.8)	5.746	0.017*
	Correct	49(75.4)	39(55.7)	88(65.2)		
	Total	65(100)	70(100)	135(100)		
13	ADHD can be inherited.					
	Incorrect	5(7.8)	23(32.9)	28(20.9)	12.687	<0.001*
	Correct	59(92.2)	47(67.1)	106(79.1)		
	Total	64(100)	70(100)	134(100)		
14	Medication is a cure for ADHD.					
	Incorrect	39(60.0)	24(34.8)	63(47.0)	8.544	0.003*
	Correct	26(40.0)	45(65.2)	71(53.0)		
	Total	65(100)	69(100)	134(100)		
15	All children with ADHD are over active.					
	Incorrect	38(59.4)	35(50.0)	73(54.5)	1.185	0.276
	Correct	26(40.6)	35(50.0)	61(45.5)		
	Total	64(100)	70(100)	134(100)		
16	There are 5 different types of ADHD.					
	Incorrect	18(27.7)	23(32.9)	41(30.4)	0.425	0.514
	Correct	47(72.3)	47(67.1)	94(69.6)		
	Total	65(100)	70(100)	135(100)		
17	ADHD affects male children only.					
	Incorrect	3(4.6)	9(12.9)	12(8.9)	2.827	0.093
	Correct	62(95.4)	61(87.1)	123(91.1)		
	Total	65(100)	70(100)	135(100)		

*Significant at $p < 0.05$

Table 4.10 C: Respondents' Knowledge about ADHD Post Intervention

No	ADHD Knowledge Statements	Intervention Group n(%)	Control group n(%)	Total	χ^2 value	p-value
18	The cause of ADHD is usually unknown					
	Incorrect	45(69.2)	44(62.9)	89(65.9)	0.609	0.435
	Correct	20(30.8)	26(37.1)	46(34.1)		
	Total	65(100)	70(100)	135(100)		
19	ADHD is as a result of poor parenting practice.					
	Incorrect	12(18.5)	21(30.4)	33(24.6)	2.585	0.108
	Correct	53(81.5)	48(69.6)	101(75.4)		
	Total	65(100)	69(100)	134(100)		
20	Flogging a child can cure ADHD.					
	Incorrect	15(22.7)	11(15.7)	26(19.1)	1.080	0.299
	Correct	51(77.3)	59(84.3)	110(80.9)		
	Total	66(100)	70(100)	136(100)		
21	Children with ADHD cannot sit still long enough to pay attention.					
	Incorrect	14(21.2)	32(45.7)	46(33.8)	9.111	0.003
	Correct	52(78.8)	38(54.3)	90(66.2)		
	Total	66(100)	70(100)	136(100)		
22	ADHD is caused by too much sugar in the diet.					
	Incorrect	5(7.7)	10(14.3)	15(11.1)	1.484	0.223
	Correct	60(92.3)	60(85.7)	120(88.9)		
	Total	65(100)	70(100)	135(100)		
23	ADHD is often caused by food additives such as spices and salt					
	Incorrect	10(15.4)	13(18.8)	23(17.2)	0.281	0.596
	Correct	55(84.6)	56(81.2)	111(82.8)		
	Total	65(100)	69(100)	134(100)		
24	Only children from poor families can have ADHD.					
	Incorrect	3(4.7)	7(10.1)	10(7.5)	1.422	0.233
	Correct	61(95.3)	62(89.9)	123(92.5)		
	Total	64(100)	69(100)	133(100)		

*Significant at $p < 0.05$

4.11 Independent Sample t- test Mean Differences between Intervention and Control

Groups at Baseline

Table 4.10 shows the independent t-test at baseline between the intervention and control groups.

For this test, the outcome measures were converted into scales, (see data analysis and

management in methodology in page). The results for Knowledge of Child Mental Health problems scale shows an insignificant difference between the mean scores of two groups, (5.429 vs 5.000) $t(138)=0.191$, $p=0.849$, this indicates similar mean score in Child Mental Health problems knowledge between the two groups. However, for the attitude towards Child Mental Health problems at baseline, there was a significant difference between the two groups (5.585 vs 4.5429) $p<0.001$ (see Table 4.10). This shows that respondents in the intervention group showed significantly more negative attitude towards Child Mental Health problems than those in the control group (5.5857 vs 4.5429) In learning disability scale, the mean scores were (8.671 vs 8.428) $p=0.414$. For Knowledge of learning disability indicates no significant difference between the mean scores of the two groups. This is similar to ADHD knowledge, where the respondents showed similar mean score values for both the intervention and control groups, [$t(138)=0.312$, $p=0.755$].

Table 4.11: Baseline Comparisons of Mean Scores between Intervention and Control Group

Variables	n	Mean(SD)	T	df	95% CI Lower bound	Upper bound	p-value
CAMH Knowledge (baseline)							
Intervention group	70	5.0429(1.2090)	0.191	138	-0.40053	0.48625	0.849
Control group	70	5.0000(1.4345)					
Attitude (baseline)							
Intervention group	70	5.5857(1.4395)	4.168	138	0.54814	1.53758	<0.001*
Control group	70	4.5429(1.5197)					
Learning disability(baseline)							
Intervention group	70	8.6714(1.7833)	0.819	138	-0.34339	0.82911	0.414
Control group	70	8.4286(1.7242)					
ADHD(baseline)							
Intervention group	70	14.9857(2.4166)	0.312	138	-0.68593	0.94307	0.755
Control group	70	14.8571(2.4570)					

4.12 Paired t test of Means for Control Group Comparing Baseline and Post Intervention

Table 4.11 shows paired t-test for the control group comparing their baseline and post-intervention scores. The respondents showed no statistically significant difference in Child Mental Health knowledge, {t (69) = 0.832, p = 0.408} as the mean scores at baseline and post intervention are similar. This is also a similar pattern in the attitude towards Child Mental Health problems, {t (69) = 1.026, p=0.308}. However for learning disability, there was significant difference between baseline and post intervention knowledge, {t (69) = 2.772, p = 0.007}. This reveals that at baseline, the mean score was higher compared to post intervention. A similar pattern is observed for ADHD knowledge, mean score at baseline was higher than at post intervention with a significant t value of t n (69) = 8.806, p<0.001.

Table 4.12: Mean Scores for Control Group Comparing Baseline and Post Intervention

Variables	n	Mean (SD)	t	df	95% CI Lower bound	Upper Bound	p-value
CMH Knowledge							
Baseline	70	5.0000(1.4345)	-0.832	69		0.15967	0.408
Post intervention	70	5.1143(1.4992)			-0.38824		
Attitude (baseline)							
Baseline	70	4.5429(1.5197)	-1.026	69	-0.37856	0.12141	0.308
Post intervention	70	4.6714(1.7422)					
Learning disability(baseline)							
Baseline	70	8.4429(1.7242)	2.772	69	0.12813	0.78615	0.007*
Post intervention	70	7.9714(1.7192)					
ADHD(baseline)							
Baseline	70	14.8571(2.4571)	8.806	69	2.03309	3.22405	<0.001*
Post intervention	70	12.2286(2.4915)					

*Paired T-test

4.13 Paired t test of Means of the Intervention Group Comparing Baseline and Post

Intervention

Table 4.12 shows paired t-test for the intervention group, comparing baseline and post intervention scores on knowledge and attitude scales. For knowledge on Child Mental Health problems, respondents showed significantly higher mean score knowledge at baseline than post intervention, {t (69) = 4.340, p<0.001}. Respondents showed a statistically significant increase in ADHD knowledge, {t (69) =3.144, p = 0.002}, from baseline to post intervention.

Table 4.13: Mean Scores for Intervention Group Comparing Baseline and Post Intervention

Variables	n	Mean (SD)	t	df	95% CI		p-value
					Lower bound	Upper Bound	
CMH Knowledge							
Baseline	70	5.0429(1.2090)	4.340	69	0.52494	1.41792	<0.001*
Post intervention	70	4.0714(1.5633)					
Attitude (baseline)							
Baseline	70	5.5857(1.4395)	0.723	69	-0.32664	0.69807	0.472
Post intervention	70	5.4000(1.8988)					
Learning disability(baseline)							
Baseline	70	8.6714(1.7833)	-2.330	69	-1.88258	-0.14600	0.23
Post intervention	70	9.6857(3.6017)					
ADHD(baseline)							
Baseline	70	14.9857(2.4166)	-3.144	69	-3.26888	-0.73112	0.002*
Post intervention	70	16.9857(5.0404)					

*Paired t test

4.14 Effect of the Booster Training Session.

Table 4.13 shows paired t-test for mean comparison of post intervention scores and post-booster session scores on knowledge and attitude for the intervention group only. Respondents had an increase in the knowledge of Child Mental Health problem scale but this was not significant, {t (66) =1.210, p = 0.231}. The booster did not significantly change scores on the Child Mental Health attitude scale, {t (66) =1.662, p = 0.101}. However, knowledge for learning disability showed a statistically significant increase in score between the post intervention and booster intervention, {t (66) = 3.641, p = 0.001}. Similarly, ADHD knowledge showed a statistically significant increase in scores {t (66) =2.150, p = 0.035}.

Table 4.14: Means Scores for Intervention Group Comparing Post Intervention and post booster Session

Variables	n	Mean (SD)	t	df	95% CI		p-value
					Lower bound	Upper bound	
CMH Knowledge							
Post intervention	67	4.2537(1.3296)	-1.210	66	-0.63278	0.15516	0.231
Booster	67	4.4925(1.0056)					
Attitude (baseline)							
Post intervention	67	5.6418(1.5443)	-1.662	66	-0.88722	0.08125	0.101
Booster	67	6.0448(1.3306)					
Learning disability(baseline)							
Post intervention	67	10.1194(3.0177)	-3.641	66	-3.00426	-0.87633	0.001*
Booster	67	12.0597(2.6848)					
ADHD(baseline)							
Post intervention	67	17.7463(3.5859)	-2.150	66	-2.30310	-0.08496	0.035*
Booster	67	18.9403(2.5812)					

4.15 Post Intervention Comparison between Intervention and Control Group

Table 4.14 shows the independent t-test at post treatment between the intervention and control groups. The results for Knowledge of CAMH problems shows the intervention group had a statistically significant lower knowledge than the control group post intervention {t (138) = 4.028, p<0.001}. For the attitude towards CAMH post-intervention the intervention group showed significantly more negative attitude than the control group {t (138) = 2.365, p<0.019}. However, for knowledge of learning disability, the intervention group showed significantly better knowledge than the control group {t (138) =3.594, p<0.001}. This is similar for the ADHD knowledge where the intervention group showed significantly higher knowledge than control group, {t (138) =7.079, p<0.001}.

Table 4.15 Post Intervention Comparison between Intervention and Control group

Variables	n	Mean	t	df	95% CI Lower bound	Upper bound	p-value
CMH Knowledge							
Intervention group	70	4.0714(1.56336)	-	138	-1.55476	-	<0.001*
Control group	70	5.1143(1.49921)	4.028			0.53095	
Attitude							
Intervention group	70	5.4000(1.89889)	2.365	138	0.11953	1.33761	0.019*
Control group	70	4.6714(1.74224)					
Learning Disability							
Intervention group	70	9.6857(3.60170)	3.594	138	0.77108	2.65749	<0.001*
Control group	70	7.9714(1.71921)					
ADHD							
Intervention group	70	16.9857(5.04040)	7.079	138	3.42834	6.08595	<0.001*
Control group	70	12.2286(2.49156)					

4.16 Test of Intervention Effect

Given that the baseline knowledge of CAMH scores for the intervention group was lower than their own post intervention scores (Table 4.12); and their post intervention scores were also lower than the post intervention scores of the control group (Table 4.14), it was concluded that the intervention did not improve knowledge of CAMH in the intervention group. So no further analysis was conducted for intervention effect.

Similarly, given that the baseline attitude to CAMH score for the intervention group did not differ significantly from their own post intervention score (Table 4.12); and their post intervention score was higher (i.e. more negative attitude) than the control group (Table 4.14), the intervention was judged not to have improved attitude to CAMH in the intervention group. So no further analysis was conducted for intervention effect.

To determine treatment effect, Analysis of co-variance (ANCOVA) was performed on the two remaining outcome measures (Knowledge about Learning Disability, and Knowledge of ADHD) for which bivariate analyses suggest possibility of intervention effect. The ANCOVA analyses show that the intervention showed treatment effect for Knowledge of Learning disability, and Knowledge of ADHD (Tables 4.15.1 and 4.15.2).

Table 4.15.1 shows ANCOVA post intervention knowledge of learning disability controlling for baseline knowledge and socio demographics. There is a statistically significant intervention effect (0.001)

Table 4.15.1: Intervention Effect on Knowledge of Learning Disability

Source	Sum of squares	df	Mean square	F	p-value
Corrected Model	284.999 ^a	8	35.625	5.184	0.000*
Intercept	119.349	1	119.349	17.367	0.000*
Learning Disability Baseline	97.982	1	97.982	14.257	0.000*
Religion	21.773	1	21.773	3.168	0.077
Treatment Group	72.889	1	72.889	10.606	0.001*
Educational level	22.685	1	22.685	3.301	0.072
Religion * Treatment Group	4.130	1	4.130	.601	0.440
Religion * Education	5.922	1	5.922	.862	0.355
Treatment Group *education	25.270	1	25.270	3.677	0.057
Religion * Treatment Group * Education	3.011	1	3.011	.438	0.509
Error	893.403	130	6.872		
Total	12098.000	139			
Corrected Total	1178.403	138			

. R Squared = .242 (Adjusted R Squared = .195)

Table 4.15.2 shows ANCOVA post intervention knowledge of ADHD scores controlling for baseline knowledge and socio-demographics. There is a statistically significant intervention effect ($p = 0.000$)

Table 4.15.2: Intervention Effect on Knowledge ADHD

Source	Sum of Squares	df	Mean square	F	p-value
Corrected Model	969.466 ^a	8	121.183	7.913	0.000
Intercept	328.529	1	328.529	21.453	0.000
ADHD Baseline	96.034	1	96.034	6.271	0.014
Religion	26.643	1	26.643	1.740	0.189
Treatment Group	463.799	1	463.799	30.286	0.000
Education	39.441	1	39.441	2.576	0.111
Religion * Treatment Group	1.459	1	1.459	.095	0.758
Religion * Education	3.116	1	3.116	.203	0.653
Treatment Group * Education	11.105	1	11.105	.725	0.396
Religion * Treatment Group * Education	7.884	1	7.884	.515	0.474
Error	1990.821	130	15.314		
Total	32724.000	139			
Corrected Total	2960.288	138			

*R Squared = .327 adjusted R Squared = .286

4.16 Intervention Effect Sizes

The intervention effect sizes were calculated using mean difference between the two groups which is known as Cohen's d . This is calculated by subtracting (the post-test) mean score of control group (M_c) from the mean score of the intervention group (M_i) and dividing the result by the pooled standard deviations of the intervention and control groups (SD_{ic}). Mathematically, Cohen's $d = (M_i - M_c) / SD_{ic}$.

In the interpretation of Cohen's d , a score of zero means the intervention and comparison group have no deference intervention effect, while 0.20-0.49, 0.50-0.79, and 0.8 or higher represent small, medium and large effect sizes respectively (Cohen, 1988). The analyses show that the intervention produced medium effect size (0.64) on knowledge of learning disability and a large effect size (1.27) on knowledge of ADHD (see Table 4.15.3).

Table 4.15.3 Intervention Effect Sizes

Post intervention Outcome Measures	Intervention Group		Control group		Pooled $SD_{i c}$	$M_i - M_c$	Cohen's d $\frac{M_i - M_c}{SD_{i c}}$
	Mean (M_i)	SD	Mean (M_c)	SD			
Knowledge of Learning Disability	9.68	3.6	7.97	1.72	2.66	1.71	0.64
Knowledge of ADHD	16.98	5.0	12.22	2.49	3.74	4.76	1.27

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CHAPTER FIVE

DISCUSSION, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

5.1 Discussion

The aim of this study was to evaluate the effect of child mental health training for primary school teachers on their knowledge of child mental health difficulties, learning disability, and ADHD. This study also evaluated the effect of the training on the attitude of teachers towards Child Mental Health problems. This was a school based quasi experimental study with an intervention arm and a control arm. Two sessions of interventions were given to the intervention group (initial and a short booster, three weeks apart). In this study, it was hypothesized that child mental health training would improve the knowledge of teachers on child mental health, learning disability and ADHD among primary school pupils. A hundred and forty teachers were recruited (70 intervention group and 70 control group). Data was collected from 140 participants at baseline, post initial intervention and from 67 participants for intervention group only.

5.1.1 Socio-demographic Characteristics of the Respondents

Out of the 140 respondents recruited at the beginning of the study (70 intervention and 70 controls). 125 (89.3%) were females, (94) 67% were Christians, 129 (92%) were Yoruba and the mean age was 49 years (5.8 SD). Three weeks later, 67 who participated in the intervention group took part in a booster session. Three were lost to follow up and were not included in the post booster session assessment. There were no losses to follow up in the control group. The gender, religious, ethnic and age distributions in this study showed female respondents were more than male respondents, and Christian respondents were more than Muslim respondents. This is similar to the profile found in a previous study of elementary school teachers in rural and urban locations in Ibadan, southwest Nigeria (Bella *et al.*, 2011), which found 85.4% of the

teachers were females, 63.1% Christians, more than half of the respondents were over 40 years and majority of the respondents (62%) had Grade II certificate. On the contrary the present study found that majority of the respondents had National Certification of Education (NCE) (57%) as the highest level of education. The findings in the present study are also similar to research done in Akwa Ibom State; South-South Nigeria, which determined the knowledge and attitudes of elementary school teachers toward children with seizure disorder. In the same study in Akwa Ibom State, was also found that there were significantly more female teachers (66.7%), and Christians 100% (Akpan, *et al.*, 2012).

5.1.2 Key Findings

At baseline, there was no significant difference in knowledge of Child and Adolescent Mental Health (CAMH) Problems between the intervention and control groups. Post intervention, the intervention group had lower knowledge of CAMH Problem than the control group. This indicates the intervention did not improve the intervention group's knowledge of CAMH problems.

Also, the second (booster) training session given to the intervention group did not produce additional gain in knowledge of CAMH Problems.

At baseline, the intervention group showed more negative attitude towards CAMH Problems than the control group. Post intervention, the intervention group continued to show more negative attitude toward Child Mental Health Problems than the control group. So, the initial intervention did not significantly reduce negative attitude towards CAMH Problems in the intervention group. Also, the second (booster) session given to the intervention group did not achieve significant reductions in negative attitude after the initial training session ($p=0.101$).

At baseline, knowledge of learning disability and ADHD were not significantly different between the two groups. For the control group, their knowledge of learning disability and ADHD got significantly worse over time while the intervention group significantly improved their knowledge of ADHD from baseline and also scored significantly higher than the control group on knowledge of ADHD post-intervention.

Regarding knowledge of learning disability, the intervention group also improved from baseline but this was not significant in within group paired t tests. However, the intervention group scored significantly higher than the control group in knowledge of learning disability post intervention. A positive intervention effect was confirmed with ANCOVA.

A second (booster) session for the intervention group significantly improved knowledge of learning disability further compared with first post intervention knowledge. The booster session also improved the intervention group's knowledge of ADHD over and above their first post intervention scores.

5.1.3 Knowledge of Respondents on CAMH Problems

The first hypothesis this research investigated was: can the training improve the pre-existing knowledge of teachers regarding Child Mental Health Problems? Contrary to this hypothesis, the intervention did not improve the pre-existing knowledge of intervention group. This is evidenced by the fact that the baseline knowledge of CAMH scores for the intervention group was lower than their own post intervention scores; and their post intervention scores were also lower than the post intervention scores of the control group.

The baseline knowledge of CAMH between the two groups identified evidence of inadequate knowledge of CAMH problems to justify the need for an intervention of this kind among teachers.

Example a high proportion of respondents in the intervention and control groups incorrectly agreed that children do not suffer from mental problems” (86.8% vs. 81.4%). This implies most teachers believe that mental problem in children are rare (Gureje *et al.*, 2005). Majority of the respondents in both groups wrongly responded to the knowledge questions: “Children do not suffer from mental health problem” (84%), and “Mental health problems in children cannot be treated (86.3%).

This limited knowledge of CAMH problems has also been reported by other researchers in this region (Ani *et al.*, 2011; Bella *et al.*, 2011). On the other hand about half (51.4%) of the respondents in the intervention group and more than half in the control group answered incorrectly that imbecile and moron are appropriate words to describe a child with mental health problems. This finding is similar to (Ibeziako *et al.*, 2007) qualitative study where most teachers used imbecile, psycho and madness to describe children with mental health problems. This implies that despite their training to become teachers, some still use outdated and stigmatizing phrases (Graham *et al.*, 2001).

It is unclear why this training programme did not produce improved knowledge of CAMH problems in the intervention group whereas it improved knowledge of ADHD and Learning Disability. It may be that the knowledge base for the latter conditions are more specific and so easier to acquire from a relatively short training, while the knowledge of general Child and Adolescent Mental Health Problems is more diverse and so requires more time and several

training sessions to understand. It could also be that the training materials or techniques were less optimised for CAMH problems than for ADHD and Learning Disability. Another possibility is that most primary school teachers have poor English language background. Better understanding of CAMH concept requires more explanation in the local language which the researcher did not speak. The improvement in knowledge of learning disability may be due to the involvement of the guest lecturer who spoke the local language; whereas, the general CAMH was taught by the researcher alone.

5.1.4 Attitude of Respondents toward Child Mental Health Problems

A second hypothesis this research investigated was teacher's attitudes towards CAMH problems will significantly differ from the control and post intervention. The results of this study show that the intervention did not have significant effect on attitude towards CAMH problems in the intervention group. The intervention group continued to show more negative attitude toward CAMH Problems than the control group and the second (booster) session given to the intervention group had no significant effect on their attitude after the initial intervention.

The reason for this lack of intervention effect on attitude to CAMH problems is unclear but may include the short duration of the training (only 2 sessions). The finding supports the fact that attitude is difficult to change easily by training alone (Doel, 2006). Also changes in attitudes tend to be slow (Smith 2002). It is also similar and consistent with previous intervention studies of both adolescents and adults who have reported an improvement in knowledge but limited improvement in attitude towards mental illness in this region (Omigbodun *et al.*, 2007). In another attitudinal study, Paykel (1997), reported only limited changes in attitude (5- 10%), after six years of anti-stigma campaign. This is contrary to a study done in other part of Nigeria which found remarkable changes in both knowledge and attitude of the respondents in the order

of and greater than 20% (Jidda *et al.*, 2013). However, the improvement in attitude in short term training was attributed to the packaging of the process of persuasion and the controlled atmosphere of the class room (with comfort and few distractions).

At baseline, a high proportion of teachers in both intervention and control groups (89.6% vs 76.8%) expressed belief that children with mental health problems are possessed by demons. This finding is similar to (Ibeziako *et al.*, 2007) qualitative study where teachers identified spiritual forces as one of the main cause of mental illness in children.

A sizable proportion of the teachers believed that children with mental health problems are unpredictable (41.8%) vs (43.5%) compared with the control group (38.6%). A significantly higher proportion of teachers in the intervention group (65.7%) believed that treating children with mental health problems is always expensive $p = 0.002$. This result is similar to other studies (Ibeziako *et al.*, 2007) which found that teachers believe that expenses in hospitals discourages parents and their children from seeking help for mental health problems.

5.1.5 Effectiveness of the Training in the Knowledge of Teachers on Learning Disability

The third hypothesis this research investigated was: can the training improve teachers' knowledge of learning disability? The 15 items questions designed by the author explored knowledge of learning disability which is an important early childhood developmental problem (Walter *et al.*, 2006). Baseline, knowledge of learning disability was not significantly different between the two groups ($p=0.414$). For the control group, their knowledge of learning disability got significantly worse over time (8.44 vs. 7.97) $p=0.007$ in contrast with the intervention group, in which the intervention produced improved knowledge of learning disability but this was not statistically significant between baseline and post intervention (8.67 vs. 9.68) $p=0.23$. However,

the post intervention scores on knowledge of learning disability were significantly higher in the intervention than control groups. A positive intervention effect was confirmed with ANCOVA which controlled for baseline scores.

The second (booster session) for the intervention group significantly improved knowledge of learning disability compared with first post intervention (10.12 versus 12.05) $p=0.001$. This implies that the use of additional sessions to reinforce a first training session can help to improve knowledge. This suggests that the intervention may require more sessions to reinforce at regular interval in order to bring a sustainable change about the subject matter (Mohr *et al.*, 2008).

5.1.6 Effectiveness of the Training in the Knowledge of Teachers on ADHD.

It was also hypothesized that child mental health training would improve the knowledge of teachers on ADHD, which is one of the commonest behavioural problems among school age children was studied. At baseline, knowledge of ADHD was not significantly different between the intervention and control groups (14.98 vs 14.85) $P= 0.755$. For the control group, their knowledge of ADHD got significantly worse over time as their baseline mean score was higher than the post intervention mean score (14.85 vs. 12.22) $p<0.001$. In contrast, the intervention group showed a statistically significant increase in ADHD knowledge from baseline, $t(69) = 3.144$ $p=0.002$. ANCOVA of post-intervention ADHD knowledge controlling for baseline knowledge confirmed a positive intervention effect ($p<0.001$). This improved knowledge in the intervention group was further extended by the booster session ($p=0.02$). These findings support previous research that educational intervention is effective in improving knowledge of ADHD (Hussein, 2011; Adeosun *et al.*, 2014).

5.1.7 Effectiveness of the Booster Session in the Knowledge of Respondents

A significant finding in this study is the benefit of the booster session which showed statistically significant additional improvement in knowledge of learning disability, and knowledge of ADHD from post intervention scores. However the booster session did not further improve knowledge of or attitude to CAMH problems. It shows that adding the booster session was worth it to a degree. The author's experience is that it can be difficult for people to retain information and use it in practice from one session of training; hence the need for reinforcement, (Mohr *et al.*, 2008). This finding supports the assertion of Jorm *et al.*, (2010), who evaluated the effect of training on teachers. They found that the teachers who did two days training showed greater gain in knowledge than those who did only day.

5.1.8 Limitations

A few limitations were noted during the study: As a result of the time constraint imposed by the duration of the M.Sc. program the duration of intervention was short, 2 hours initial session and 1 and half hour booster session. There was also constraint in getting ethical clearance which delayed the commencement of the training a month later. The booster post intervention measures were performed immediately after the completion of the intervention which did not allow for adequate time for teachers to fully internalize all the theoretical knowledge gained from the booster session. This study was limited to a maximum of four schools, which may affect the generalisability of the findings.

Interventions that use a wait-list control (as in this study) tend to show higher treatment effects than those that used active control group.

5.2 CONCLUSION

Primary school teachers in this study showed limited knowledge of CAMH problems, learning disability, and ADHD; and unfavourable attitude towards CAMH problems. The training and booster sessions produced the most benefit in terms of improving knowledge of ADHD and Learning Disability. Educational interventions are practicable and effective in improving knowledge of ADHD and Learning Disability but more effective if additional sessions are used to boost the knowledge from the first session. Attitude change towards child mental health by training is still a serious concern but appears difficult to change using short training programmes. Knowledge of more general Child and Adolescent Mental Health Problems appears harder to improve with a short intervention compared with knowledge of ADHD and Learning Disability.

The results of this study suggest that one session of training for teachers can improve their knowledge of ADHD and Learning Disability especially if reinforced with an additional booster session

5.3 RECOMMENDATIONS

Based on the findings of this study, the researcher would like to make the following recommendations:

1. Longer forms of training may be required to improve teachers' knowledge and attitude towards Child Mental Health Problems.
2. Further study is necessary to evaluate the impact of this intervention on a larger diverse sample in the future.

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APPENDIX I

INFORMED CONSENT

My name is Mohamed James Koroma; I am a postgraduate student of the Centre for Child and Adolescent Mental Health, University of Ibadan. I am conducting a research, aiming at evaluating the effect of a child mental health training for primary school teachers on their recognition of developmental, and behavioral problems among primary school pupils. In this research a short training will be provided in two sessions. You have been identified as a participant and I therefore request that you kindly spare sometime out of your busy schedules to attend the training sessions. Before and after the training sessions a questionnaire will be given to you which has some questions. The responses will be used solely for academic research. Your honest and sincere responses are highly appreciated and shall be treated with utmost confidentiality. You will be given a number and your name will not be written on the questionnaire so that your name will not be linked with any information you give. The information you and other people give will be used to make recommendations to health policy makers and government to find a solution to Child Mental Health Problems.

You have a right to withdraw at any given time if you choose to. I will greatly appreciate your help in responding to the survey and taking part in the study

Consent: Now that the study has been well explained to me and I fully understand the content of the process, I will be willing to take part in the study.

.....

.....

Signature of participant

Interview Date

APPENDIX IIA

SOCIO-DEMOGRAPHIC QUESTIONNAIRE FOR TEACHERS

INSTRUCTION

Thank you for agreeing to participate in this survey. Please answer all questions to the best of your ability and where relevant tick (✓) box that applies to you.

SERIAL NUMBER..... **Date**.....

1. School Name.....

2. How old are you?

3. Sex { } Male { } Female

4. Marital Status

{ } **Married** { } Never Married { } separated { } Divorced { } Widowed { } **Cohabiting**

5. What is your religion?

6. Educational qualifications

{ } Grade II Certificate { } National Certificate of Education { } University Degree
{ } postgraduate degrees { } other
(Specify).....

7. Ethnic origin

8. How many years have you worked as a teacher?.....

9. Please write down your present position at work?

10. How long have you been teaching in this school?.....

11. Please state other duties in this school apart from teaching.....

APPENDIX IIB

GENERAL KNOWLEDGE OF AND ATTITUDES TOWARDS CHILD MENTAL HEALTH QUESTIONNAIRE

NO	The following statements are commonly held beliefs about Child Mental Health Problems. Can you tell us whether you personally agree, disagree or are not sure about each statement? Please feel free to express your views	True	False	Don't Know
1	Child mental health problems can be prevented.			
2	Imbecile and moron are appropriate words used to describe a child with mental health problem.			
3	Poor academic performance is a type of mental health problem.			
4	Mental health problems in children cannot be treated.			
5	Children do not suffer from mental health problems.			
6	Children with mental health problems have inherited weak genes from their parents.			
7	One in ten children will develop mental health problems before they become adults.			
8	For children with mental health problems their families are to blame for this.			
9	The main cause of mental health problems in children is a curse on the family.			
10	Children with mental health problems are possessed by demons.			
11	Children with mental health problems are unpredictable.			
12	Children with mental health problems may be taken to Church/Mosque or traditional healer for treatment.			
13	Treating mental health problems in children is always very expensive.			
14	The Juvenile Remand Home is a good place to manage children with mental health problems.			
15	I Would allow my child or relative to maintain a friendly relationship with a child with mental health problem.			

APPENDIX II C

LEARNING DISABILITY QUESTIONNAIRE

NO	Question	True	False	Don't know
1	A learning disability is a condition that appears before age 3 in which intelligence is significantly below average.			
2	There are two main types of learning disability			
3	Teachers should discourage children with learning Disability from taking part in group activities.			
4	A typical child is able to scribble with a crayon or pencil at the age of 18 months.			
5	There is no cure for learning disability once it has occurred.			
6	Starvation during pregnancy cannot cause learning disability.			
7	Only 2% of children with learning disability are slow learners.			
8	Learning disability is the least common type of developmental problems.			
9	Learning disability affects more males than females in Africa.			
10	Learning disability affects only academic learning.			
11	Up to 19% of school children have learning disability in Nigeria.			
12	A child with learning disability may have a short attention span.			
13	Learning disability is the same as child mental health problem.			
14	Learning disability in a child can result from problems arising during the mother's pregnancy			
15	A 10 year old child with learning disability may not understand how to use money to pay for goods.			

APPENDIX II D

ADHD KNOWLEDGE ITEMS FOR TEACHERS

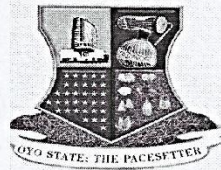
NO	Questions regarding children with Attention Deficit Hyperactivity Disorder (ADHD)	True	False	Don't know
1	There are a greater number of boys than girls with Attention Deficit Hyperactivity Disorder (ADHD)			
2	There are approximately 3 children in every classroom with ADHD.			
3	If medication is prescribed, for a child with ADHD educational support is no longer required.			
4	Children with ADHD are born with tendency towards lack of concentration and poor self control.			
5	Children with ADHD usually have good peer relations because of their outgoing nature.			
6	A child who is not over-active, but fails to pay attention, may have ADHD.			
7	Family problems may increase the likelihood that a child will be identified with ADHD.			
8	The doctors in the clinic do not need information from school to identify children with ADHD.			
9	Children with ADHD always need a quiet environment to concentrate.			
10	Approximately 10% of Nigerian primary school children have ADHD.			
11	Children with ADHD are usually from divorced families.			
12	Diet is usually not helpful in treating most children with ADHD.			
13	ADHD can be inherited.			
14	Medication is a cure for ADHD.			
15	All children with ADHD are over-active.			
16	There are 5 different types of ADHD.			
17	ADHD affects male children only.			
18	The cause of ADHD is usually unknown			
19	ADHD is as a result of poor parenting practice.			
20	Flogging a child can cure ADHD.			
21	Children with ADHD cannot sit still long enough to pay attention.			
22	ADHD is caused by too much sugar in the diet.			
23	ADHD is often caused by food additives such as spices and salt			
24	Only children from poor families can have ADHD.			

APPENDIX III

ETHICAL APPROVAL

TELEGRAMS.....

TELEPHONE.....



MINISTRY OF HEALTH
DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION
PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No.

All communications should be addressed to
the Honorable Commissioner quoting

Our Ref. No. AD 13/ 479/ _____

January, 2015

The Principal Investigator,
Centre for Child and Adolescent Mental Health,
University of Ibadan,
Ibadan.

Attention: Mohammed Koroma

Ethical Approval for the Implementation of your Research Proposal in Oyo State

This acknowledges the receipt of the corrected version of your Research Proposal titled:
"Teachers Training on Child Mental Health: Effect on Recognition of Development and
Behavioural problems in Children in Ibadan, Southwest Nigeria ."

2. The committee has noted your compliance with all the ethical concerns raised in
the initial review of the proposal. In the light of this, I am pleased to convey to you the
approval of committee for the implementation of the Research Proposal in Oyo State,
Nigeria.

3. Please note that the committee will monitor closely and follow up the
implementation of the research study. However, the Ministry of Health would like to
have a copy of the results and conclusions of the findings as this will help in policy
making in the health sector.


4. Wishing you all the best.



Sola Akande (Dr)
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethical Review Committee

APPENDIX IV

PERMISSION LETTER



OYO STATE
UNIVERSAL BASIC EDUCATION BOARD
(OYO-SUBEB)

P.M.B. 5150, Secretariat, Agodi, Ibadan
Phone: 02-7524175, 02-7523437
e-mail: chairman@oyosubebnigeria.net/oyosubebchairman@yahoo.com www.oyosubebnigeria.net

SCHOOLS SERVICES Department
SUBEB/G.463/Vol.II/58 18th Feb, 2015

Our Ref:..... Your Ref:..... Date:.....

Mohammed James Koroma,
Centre for Child and Adolescent Mental Health,
U.I, Ibadan.

**RE:REQUEST FOR PERMISSION TO CONDUCT RESEARCH AMONG
PRIMARY SCHOOLS TEACHERS IN SELECTED PUBLIC PRIMARY
SCHOOLS IN IBADAN NORTH LOCAL GOVERNMENT UNIVERSAL
BASIC EDUCATION BOARD**

I have the directives of the Board to refer to the above subject and convey the Board's approval to conduct your proposed research work among One hundred and twenty (120) teachers in at least 4 Public Primary Schools in Ibadan North Local Government Area.

2. Kindly liaise with the Education Secretary of Ibadan North Local Government Area for further arrangement.
3. Accept our warmest regards
4. Thank you.

Raji
Mrs. Raji A.O.
For: Executive Chairman.