EFFECT OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE

BY

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DECLARTION

I declare that this research war carried out by me and was submitted to the Centre for Child and Adolescent Mental Health (CCAMH) of the University of Ibadan. No part of this thesis has been previously presented or published anywhere else.

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Key to Abbreviations (Acronyms)

AAIDD	**American Association on Intellectual and Developmental Disabilities**
CAMH	**Child and Adolescent Mental Health**
DSM-5	**Diagnostic Statistical Manual 5th Edition**
ID	**Intellectual Disability**
IQ	**Intelligence Quotient**
LAMIC	**Low and Medium Income Country**
MPSE	**Ministry of Primary and Secondary Education**
NEAB	**National Education Advisory Board**
UCE	**United College of Education**
UNESCO	**United Nations Education Scientific and Cultural Organisation**
WHO	**World Health Organisation**
WHRD	**World Health Report on Disability**

Abstract

Introduction

The American Association on Intellectual and Developmental Disability (2013) defined Intellectual Disability as a developmental disorder characterised by limitations in intellectual functioning and adaptive behavior. While the disorder is common in low and medium income countries, most of the data on the burden of intellectual disability is based on studies conducted in developed countries. In Zimbabwe it is estimated that 70% of children with intellectual disability are disadvantaged in terms of education,(Chakanyuka, 2009). Although the Ministry of Primary and Secondary Education put in place an environment that would cater for children with disabilities including those with intellectual disability, many factors affect the children`s chances of accessing education, some of which are lack of skilled personnel and material resources to cater for a variety of significant learning needs, (Mkandhla and Mataruse, 2002.) Because of lack of skilled personnel, some of the special needs education classes in Zimbabwe are taught by non-specialist trained teachers. The objective of this study is to assess the effects of a one day training in developmental disorders on the specialist teachers` knowledge and perception of children with intellectual disability.

Methodology

A Quasi- experimental (Pre-Post Intervention) design with no control group was used as the study focus was on a homogeneous group of special needs education teachers. Thirty (30) participants from 30 schools with special classes in the District participated in the study. The teachers were given 3 brief case studies of children with developmental disorders and questions that required them to identify the disorder, indicate how they could assist the child and how the teacher felt about the child`s problem. After completion of the case study activity, the teachers were asked to complete the Knowledge of Developmental Disorders and Attitudes towards Children with

Intellectual Disability questionnaire. The first subsection of the questionnaire gathered information on sociodemographic data. The information obtained includes age, sex, educational qualifications, religion, marital status, and location. The second subsection of the questionnaire obtained information on the specialist teachers` knowledge and perception towards children with intellectual disability. The study was conducted in three stages, which are baseline survey, the intervention stage and post intervention survey. The teachers were asked to complete the questionnaire at baseline, before the training intervention was done. After completion of the questionnaire, a 5-hour training in Developmental Disorders based on the mhGap manual was conducted. The training content included definition of intellectual disability, diagnosis, and intervention strategies. The post-test evaluation was conducted thirty minutes after the training and the teachers completed the same questionnaire they had completed at baseline.

Data Analysis

Descriptive statistics such as means, standard deviations and percentages were used to summarise the data. The Chi square was used to analyse the socio demographic items on attitude/social distance and knowledge of the respondents at pre and post-test level. The Paired t-test was used to make a comparative analysis of the mean scores before and after the training.

Results

The study results showed a positive change in the teacher knowledge and perception of children with intellectual disability. Overly, the respondents had some knowledge of developmental disorders. The study results showed that only 33% of the teachers had received information on mental health before. The majority (96.7%) however, had some knowledge about developmental disorders, its causes and symptoms. Most teachers (96.7%) also showed that they are comfortable with teaching children with developmental disorders.

The pre-test survey results of the vignettes on developmental disorders revealed that the specialist teachers could informally assess a child with intellectual disability but contend that Educational Psychologist does the formal assessment of the disorder using psychological tests. Before the training, 86.7% of the respondents indicated that they could handle children with intellectual disability in their class compared to 96.3% in the post-test assessment.

Teachers' general attitude towards developmental disability showed some improvement after the training as evidenced by their responses to questions related to interaction with children with intellectual disability. On the baseline survey, 93.3 % of the respondents indicated that they are afraid to interact with someone whose child had developmental disorder. After the training 92.6% of the same respondents reported that they are not afraid to interact with someone whose child had developmental disorder.

The Chi-square results showed no statistical significant difference on knowledge and perception of intellectual disability and socio-demographic characteristics such as age, teaching experience and qualifications. The results on knowledge of intellectual disability on the post intervention showed statistical significance ($P = 0.02$) on class size and identification of developmental disorders as a type of mental illness. The paired t-test results did not show statistical significance in the comparison of pre and post results on the knowledge and perception of the teachers towards children with intellectual disability. $t = 0.65$ was obtained on comparison of baseline and post-test knowledge of intellectual disability by the respondents. The p-value of 0.521 obtained show no statistical significant difference on knowledge of intellectual disability at baseline and post-test.

Conclusion

A positive change was observed in the teachers` knowledge and perception of intellectual disability following the training conducted. The change was however not statistically significant. Socio-demographic characteristics such as age, teaching experience and qualification have an influence on the attitude of the teachers towards children with intellectual disability. Many children with intellectual disability have been educationally disadvantaged due to limited research in the area. It is recommended that more research be conducted in order to have an in-depth understanding and literature for improved services for children with intellectual disability.

Key Words: Developmental Disorders, Intellectual Disability, Special class, Special needs education

CHAPTER 1

INTRODUCTION

1.1 Background

Intellectual disability is a common developmental disorder requiring attention from health professionals, educationists, policy makers and the community at large. According to the American Association on Intellectual and Developmental Disability (2013), intellectual disability is characterised by limitations in intellectual functioning and adaptive behaviour.

The World Health Organisation (WHO), 2007 reports the global prevalence of intellectual disability as 1% and the highest rate and greatest burden of this disorder in Low and Middle Income Countries (LAMIC). The World Health Report on Disability (2016) estimate that 90% of children with disability do not go to school. However, there is very limited literature on the prevalence of intellectual disability and comorbid disorders in Africa (World Health Report on Disability (WHRD), 2016). Most of the data on the burden of intellectual disability is based on studies conducted in developed countries (WHRD, 2016). Children with intellectual disability have less educational opportunities than their peers with normal development and this is much worse in developing countries, (WHRD, 2016).

Studies specific to teacher attitudes and responses to intellectual disabilities are few. Instead, studies in this area have looked at peer attitude among students, (Campbell et al, 2003, Rillota & Nettlebeck, 2007 and Nowicki & Sandreson, 2002) and attitudes towards integration and inclusion of children with intellectual disabilities, (Dupoux et al, 2006 and Avramidis, 2002). The studies found out that the attitudes of teachers were dependent on

many factors such as age of the teacher, years of experience, having a family member with disability and training among others. These few studies suggested that the knowledge and attitudes of classroom teachers play a very important role in service delivery to the students with disabilities.

Several factors affect the attitude of teachers towards pupils with disabilities. These factors include the severity of the disorder, causes of the disorder, stigma, available interventions and the teachers` perception of intellectual disability, (Hastings & Brown, 2002). Generally, issues of child mental health have been largely ignored in schools in LAMIC. Omigbodun, (2004) observed that there were very few facilities to cater for children and adolescents with mental health problems and stated that this was due to a number of factors. These factors include a lack of child and adolescent mental health policy, a dearth of skilled personnel in mental health and the presence of health professionals who do not know how to handle the mental health issues they come across. Other reasons for child mental health issues being ignored were due to lack of coordination between the educational and other institutions interacting with the child, (Omigbodun, 2004).

In Zimbabwe, the educational system makes provision for special classes and resource units in mainstream schools to cater for children with intellectual disability and other associated impairment such as hearing and visual impairment, and physical disability. There are also special schools for children and adolescents with severe to profound intellectual disability, the physically challenged and the deaf and the blind.

The provisions for the education of children with special learning needs in Zimbabwe are founded on the Education Act (1987). It is from this act that the Ministry of Primary and

Secondary Education (MPSE) developed circulars and policies to govern the operation of educational facilities for children with disabilities. These circulars and policies include the Secretary`s circular P36 which deals with conditions for establishing special classes and the roles of different departments, the National Policy on Special Needs Education (1994) which spells out the requirements for special needs education, the key strategies of awareness, early identification and intervention, capacity building of specialist teachers and decentralization of special needs education services.

There is a Teacher Training Institute, United College of Education (UCE) in Zimbabwe that offers specialist training in learning disabilities and covers modules in developmental disorders. The output of specialist teachers from the college however cannot meet the demand for these teachers in schools in Zimbabwe. (Mnkandla et al, 2002).

As a result, some of the teachers in special classes receive short courses in Special Education offered by the MPSE. The training however, is not comprehensive enough to fully equip the teachers with the required expertise to attend to all of the needs of the children.

1.2 Justification and Relevance of the Study

Children with intellectual disabilities like children with other disabilities, have been marginalized, stigmatized and discriminated against in terms of educational provision.

The World Report on disability (2016) observed that between 93 million and 150 million children are estimated to live with disabilities. Many children with disabilities were left out of education sector plans due to lack of knowledge on how to include them in education planning, and implementation, (WHRD, 2016). Children with disabilities, especially girls

are often at a higher risk of being victims of violence than their peers without disability, (WHRD, 2016).

A needs assessment of Primary and Secondary schools conducted in Zimbabwe by the National Education Advisory Board (NEAB) estimated that more than 469 000 require Special Needs Education, (Chakanyuka et al, 2009). Personnel in the MPSE do assessments of children with disabilities for school placement in Zimbabwe and a number of challenges constrict them. These include limited trained personnel, financial resources, standardised tests and other material resources, (Chakanyuka et al, 2009). Most teachers in special schools and special classes in Zimbabwe do not have specialist training, (Chakanyuka et al, 2009). The majority of schools in Zimbabwe lack the personnel and material resources to cater for a variety of significant learning needs, (Mkandhla and Mataruse, 2002). These factors have a negative impact on the quality of education children with intellectual disability receive which affects their ability to reach their full potential.

There is need to have baseline information on some of the factors that influence service delivery for children with intellectual disability in Zimbabwe. The study might also provide information to help stakeholders in planning of services for children with intellectual disability who happen to constitute the majority of children with special learning needs in the country.

1.3 Aim of the study

This study assessed the effects of a one day training in developmental disorders on the specialist teachers` knowledge and perception of children with intellectual disability.

1.3.1 Specific Objectives

The specific objectives of this study were:

1. To determine the baseline knowledge of developmental disorders among special needs teachers.
2. To determine the baseline attitude of Special Needs Teachers towards children with intellectual disability
3. To determine the baseline self-reported practice of Special Needs Teachers in responding to children with intellectual disability in the classroom.
4. To determine the effect of a one day training on the special class teachers` perception and knowledge of children with intellectual disability.

1.4 Outcome measures of the study

The outcome of this study is the change in special class teachers` knowledge of developmental disorders and attitude towards children with intellectual disability.

CHAPTER 2

LITERATURE REVIEW

2.1 Definitions and Descriptions of Intellectual Disability

According to the World Health Organization (2007), Intellectual disability (ID) is a disorder defined by the presence of incomplete or arrested mental development. This is characterized mainly by the deterioration of concrete functions at each stage of development and this adds up to the deterioration of the overall level of intelligence, such as cognitive, language, motor and socialization functions (WHO, 2007). In intellectual disability, adaptation to the environment is always affected (WHO, 2007). In ID, assessment of intellectual development must be determined based on all of the available information, such as clinical signs, adaptive behavior in the cultural medium of the individual and psychometric findings (WHO, 2007). In a more or less similar definition, the American Association of Intellectual and Developmental Disability (2013) indicates that Intellectual Disability is characterized by "significant limitations in both intellectual functioning and adaptive behaviour". The onset of the limitations should be before the age of 18 years. The American Association on Intellectual and Developmental Disorders (AAIDD) further qualifies intellectual functioning as general mental capacity, such as learning, reasoning, problem solving which the Intelligence Quotient (IQ) score can measure. An IQ score of 70 and below indicates limitation in intellectual functioning. (AAIDD, 2013)

Adaptive behaviour on the other hand refers to conceptual skills, social skills and practical skills (AAIDD, 2013). Examples of conceptual skills include language and literacy, money,

time, number concepts and self-direction while social skills refer to interpersonal skills, social responsibility, self-esteem, gullibility, social problem solving and ability to follow rules and avoid being victimised. Practical skills are activities of daily living, occupational skills, health care, travel, safety and use of money (AAIDD, 2013).

In the definition of ID, the AAIDD also takes into account additional considerations such as the environment and the individual`s culture (AAIDD, 2013). Considering the community environment typical of the individual`s peers and acknowledgement of cultural diversity is very important so as to avoid misinterpretation of some behaviours which could result in a wrong diagnosis (AAIDD, 2013).

The Diagnostic Statistical Manual 5 considers intellectual disability as neuro-developmental disorder. The deficits in intellectual functions include reasoning; problem solving, planning, abstract thinking, judgment, academic learning and learning from experience and practical understanding confirmed by both clinical assessment and individualized standardized intelligence tests, (Tasse, 2013). According to Tasse (2013), the deficits in adaptive functioning results in failure to meet developmental and socio-cultural standards for personal independence and social responsibility without support. They limit functioning in one or more activities of daily life such as communication, social participation and independent living across multiple environments such as home, school and recreation. Adaptive functioning involves three domains, which are conceptual, social and practical.

2.2 Prevalence of Intellectual Disability

Many studies have been conducted to determine the prevalence of intellectual disability with the majority of the estimates ranging from 1% to 3% (Harris, 2006).

Maulik et al, (2011) did a meta-analysis of studies on intellectual disability and concluded that the prevalence across the world is 1%. The authors also noted that the prevalence was twice as high in low and medium income countries compared to high-income countries and highest in children and adolescents. The male to female ratio in children was found to be 1: 0, 4 suggesting a higher prevalence in boys than girls. In adolescents, however the ratio was estimated to be 1:1, which suggests that as many females are diagnosed as males as development progresses.

In Europe, intellectual disability prevalence was reported to range from 0, 4% to1, 4% (Wittchen et al, 2010) and from 0, 06% to 1, 3% in Asia, (Jeevanandam, 2009). There are limited studies in Africa on the prevalence of intellectual disability.

2.3 Correlates and Causes of Intellectual Disability

Many causal factors for intellectual disability have been identified (Katz, 2016). Katz (2016) classified the causes of intellectual disability as genetic, acquired (congenital and developmental) and environmental and socio-cultural. It is acknowledged that intellectual disability does not discretely fit into these three categories neatly (Katz, 2016) as in many cases, there are chances of an overlap. The disability can occur during the prenatal, perinatal or postnatal stage, (Ke and Liu, 2012).

The genetic causes of intellectual disability during the prenatal stage include chromosomal disorders such as Down syndrome, Fragile X syndrome, Prader Willi syndrome, and Klinefelter`s syndrome. Trisomy 21 and Fragile X are reported to be the commonest diagnosable genetic causes of intellectual disability, (Ke and Liu, 2012). Genetic causes also include the single gene disorders such as phenylketonuria, hypothyroidism and brain malformations such as genetic microcephaly and hydrocephalus. Other single gene disorders include inborn errors of metabolism, (Ke and Liu, 2012).

Environmental factors that can cause intellectual disability during the prenatal stage include deficiencies of iodine, folic acid, severe malnutrition in pregnancy, substance use during pregnancy such as alcohol and nicotine, exposure to other harmful chemicals such as pollutants, heavy metals, abortifacients and harmful medications such as thalidomide and phenytoin (WHO, 1996).

During the perinatal stage, possible causes of intellectual disability can occur during delivery or at the neonatal stage. During labour, intellectual disability can result from difficult or complicated delivery, birth trauma, birth asphyxia and very low birth weight, (WHO, 1996). Postnatal causes of intellectual disability include brain infections such as tuberculosis, bacterial meningitis, head injury, chronic lead exposure, gross under stimulation and severe and prolonged malnutrition, (Ke and Liu, 2012). Due to improved antenatal care, injury infections and toxins have become less prevalent causes of intellectual disability. However, genetic causes have become more prominent. (Ke and Liu, 2012).

Epidemiological studies have reported a link between poverty and intellectual disability. This could come about in two ways. Firstly, when a family has a member who suffers from intellectual disability, they have a greater expenditure demand due to costs of caring for the member with intellectual disability, (Katz et al, 2016). This could considerably reduce the family`s income and in addition, resources. Secondly, there is evidence that a relation exists between poverty and exposure to a wide range of environmental and psychosocial factors and these factors are direct causes of the disproportionate increase in the incidence of intellectual disability in developing countries (Katz et al, 2016). Interactions have been reported between scarcity and poor prenatal, perinatal and postnatal health care, adolescent maternity, family instability, poor natal health care due to multiple and inadequate caregivers and health professionals, low level of stimulation and education, (Katz et al, 2016).

2.4 Classification of Intellectual Disability

Intellectual disability has one common feature, which is developmental delay in intellectual functioning and deficits in adaptive functioning (AAIDD, 2013). The extent to which an individual is unable to cope with the societal expectations of functioning in comparison to the individual`s peers resulted in classification of the disability into four levels of severity which are mild, moderate, severe and profound and these levels are determined by the IQ level as measured by the Intelligence Test scores.

The mild intellectually disabled have an IQ of between 50 and 69 (American Psychiatric Association, 2014). Children with mild intellectual disability generally have slower development than their normal counterparts during their early years (American Psychiatric

Association 2014). Children with mild intellectual disability are able to learn basic skills (Ke and Liu, 2012). According to Ke and Liu, (2012) they can look after themselves and they can do semi-skilled and unskilled work.

Persons with moderate intellectual disability have an IQ of between 39 and 49 and account for 12% of all cases, (American Psychiatric Association, 2014). They are slow in meeting intellectual developmental milestones (Ke and Liu, 2012) and their ability to think logically is impaired but with support, the moderate intellectually disabled persons are able to look after themselves (Ke and Liu, 2012). Persons with severe intellectual disability have an IQ of between 20 and 34, (American Psychiatric Association, 2014). Severe intellectually disabled persons account for 3% to 4% of all cases of intellectual disability, (American Psychiatric Association, 2014). Their development in all areas is distinctively delayed. They have limited vocabulary and have difficulties in pronouncing words (Ke and Liu, 2012). The severe intellectually disabled individuals can however develop basic self-help skills but require much assistance and support to achieve this (Ke and Liu, 2012). Profoundly intellectually disabled persons have an IQ that is below 20, (American Psychiatric Association, 2014). They account for 1% to 2% of all cases, (American Psychiatric Association, 2014). An individual with profound intellectual disability has no language and cannot take care of him or herself, (Adams and Oliver, 2011) and for such individuals, seizures, physical disabilities and reduced life expectancy are common, (Adams and Oliver, 2011).

2.5 Making a diagnosis of Intellectual Disability

Intellectual disability is diagnosed through the use of standardized tests of intelligence and assessment of the individual`s adaptive behaviour (AAIDD, 2013). The DSM IV emphasises the need to use both clinical assessment and intelligence tests in diagnosis so that the IQ score is not overemphasized in defining the individual`s overall ability (AAIDD, 2013). The assessment of intelligence is done across three domains namely conceptual, social and practical (AAIDD, 2013). Information for the diagnosis of intellectual disability can be obtained through clinical history of the patient. This involves investigation of the individual`s health care during prenatal, perinatal and postnatal stages (AAIDD, 2013). Clinical history to be obtained includes familial history of the individual, information on mental delay, psychiatric illness and congenital abnormalities, (AAIDD, 2013).

Useful diagnostic information can be acquired by making a comparison of the child`s behaviour and comprehension level with that of a chronologically younger child, (Katz, 2008). Parents can be asked to make a comparison of the individual`s behaviour with that of younger brothers and sisters or close cousins in the family as reference, (Katz, 2008).

Diagnosis should also include physical examination of the individual focusing on secondary abnormalities and congenital malformations, somatometric measurements and neurological and phenotype evaluations, (Katz, 2008). It is important to note that there is no specific clinical profile for intellectual disability, (Lazcano – Ponce, 2008) as the clinical characteristics may differ for each case. The more moderate the disability, the less evident the symptoms, (Lazcano – Ponce, 2008). Diagnosis for intellectual disability can also be

done by conducting high-resolution cytogenetic studies in addition to metabolic clinical evaluations, (Lazcano – Ponce, 2008). The application of neuro-images in diagnosis can be useful if the occipito-frontal circumference of the head is abnormal (that is above 98th percentile) or if the neurological examination reveals abnormalities (Lazcano – Ponce, 2008). Neuroimaging is also recommended if a specific neuroanatomical deficit exists or when clinical history suggests hypoxia, (Lazcano- Ponce, 2008).

The AAIDD (2013) pointed out that in diagnosing intellectual disability, limitations in the individual`s present functioning must be considered within the context of community environments typical of the individual's age, peers and culture. Secondly, the assessment should consider cultural and linguistic diversity as well as difference in communication, sensory, motor and behavioural factors. It is also important to consider the coexistence of strengths within the individual with intellectual disability in order to develop a profile of needed support, (Lazcano – Ponce, 2008).

2.6 Educating children with Intellectual Disability

The education of children with developmental disorders is intended to manage the problem the child has. Effective child behaviour management increases the likelihood of positive results on the child. Some of the strategies that have been found to be effective include classroom management, positive reinforcement, and family involvement.

Children with I.D. have difficulty coping with the ordinary school curriculum and there is therefore a need to have the curriculum adapted to suit the child`s developmental level. Teaching methods and activities have to be varied and information can be presented via

visual, auditory, and tactile modalities to make learning captivating. It may also be beneficial to use cooperative learning techniques. Generally, children with ID are less efficient at learning than other children. (WHRD, 2016). As they grow up and master activities of daily living, they need to attend school just like other children. Attending school is even more essential for children with ID to learn not only academic skills but also self-discipline, social and practical skills to maximize their development and chances in life (Ke and Liu, 2012). In high-income countries such as the United States, every child with ID from the age of three up to twenty-one years of age has access to free public education, (Ke and Liu, 2012). The education they receive is individualised in order to meet the unique needs of each child.

In low and medium income countries (LAMIC), some progress has been made to cater for the needs of children with ID. Girimaji and Srinath (2010) observed that despite the progress being made, LAMIC still have a long way to go in terms of developing effective, accessible and affordable interventions. Children with intellectual disability are at higher risk of having other health problems than other children, (Oeseburg, 2011). The extent to which children with ID can learn depends on the level of severity of the disability.

According to Ke and Liu (2012), individuals with mild ID are able to communicate and can learn basic skills (Ke and Liu, 2012). Their ability to use abstract concepts, analyse and synthesise are impaired but they can achieve reading and computing skills. Given this scenario, individuals with intellectual disability can benefit from special education.

Special education is the practice of educating students with special educational needs in a way that addresses their individual differences and needs. Ideally, this process involves the individually planned and systematically monitored arrangement of teaching procedures,

adapted equipment and materials, and accessible settings, (Hallahan, 2012). These interventions are designed to help learners with special needs achieve a higher level of personal self-sufficiency and success in school and their community, than may be available if the student were only given access to a typical classroom education, (Hallahan, 2012). Different approaches are used to provide special education services to students. These approaches can be broadly grouped into four categories, depending on how much contact the student with special needs has with non-disabled students, (Goodman, 1990). These categories are Inclusion, Resource room, Mainstreaming and Segregation, (Goodman, 1990). For inclusive education, students with special needs spend all, or most of the school day with those who do not have special needs. Because inclusion can require substantial modification of the general curriculum, most schools use it only for selected students with mild to moderate special needs, (Gaylord-Ross, 1989).

The other educational facility available for children with special learning needs is a resource room, (Goodman, 1990). Here, pupils attend classes in mainstream class and only leave the regular classroom to attend smaller, more intensive instructional sessions in a resource room. The resource room also offers other related services that might require specialised equipment or might be disruptive to the rest of the class, such as speech and language therapy, occupational therapy, physical therapy and rehabilitation counselling, (Bowe,2004). There is also mainstreaming which refers to the practice of educating students with special needs in classes with non-disabled students during specific times based on their skills, (Goodman, 1990). For the rest of the learning process, they are exclusively segregated in separate classes for the rest of the school day, (Miller et al, 2006). Children with moderate ID could benefit

from mainstreaming. The other educational approach available for children with special needs is total segregation in a separate classroom or special school for students with special needs, (Goodman, 1990). In this model, students with special needs do not attend classes with non-disabled students. Segregated students may attend the same school where regular classes are provided, but spend all instructional time exclusively in a separate classroom for students with special needs. If their special class is located in an ordinary school, they may be provided opportunities for social integration outside the classroom, such as by eating meals with non-disabled students, (Goodman, 1990). The other form of segregation is when the students attend a special school, (Turnbull, 2002). Here special needs children attend a school, which is exclusively a school for children with special needs, and they do not have an opportunity to interact with other children who are non-disabled. Children with severe intellectual disability can benefit from the segregated educational approach.

2.7 Teachers` Perceptions and Practices towards pupils with Intellectual Disability.

Teacher`s perception of children with intellectual disability is influenced by various factors that in turn affect their practices when teaching the children. UNESCO (1994) conducted an extensive study on teacher attitudes towards children with disabilities in the various regions of the world and found out that one of the main factors affecting teachers' attitudes toward integration or inclusion is the type and severity of disabilities.

In a study that measured behavioural knowledge, perceived self-efficacy, and emotional reactions to challenging behaviours on staff working in educational environments with children with intellectual disability and/or autism. Hastings et al (2002) observed that behavioural causal beliefs, low self-efficacy and low behavioural knowledge made staff

vulnerable to experiencing negative emotional reactions to children`s challenging behaviours. Bender et al (1995) identified practical concerns raised by teachers as problems with accommodating the individualised time demands of students with disability without disadvantaging other students in the classroom, being apprehensive of the quality and quantity of work output of children with disabilities, lacking adequate support services; and limited training and competence in supporting inclusive educational practice. Attitudes towards children with disability was also found to be inversely related to the severity of the disability such that the more severe the disability, the less the teacher`s positive attitude (Forlin et al, 1996, Hastings & Oakford, 2003, Westwood & Graham, 2003, Ellins & Porter 2005, Forlin & Chambers, 2011).

In a study to identify the factors associated with primary school teachers' attitudes towards inclusion of students with all disabilities in regular schools, Sharmila Vaz et al (2015) found out that factors influencing teacher attitude towards inclusion of children with disabilities in the mainstream class include age, gender, teaching experience, self-efficacy and training. The results revealed that male teachers had a more negative attitude towards inclusion, teachers who were aged 55 years and over upheld more negative attitudes towards inclusion when compared to the 35–55 year old subgroup. The results also showed that teachers with low-levels of self-efficacy in their teaching skills were more likely to also uphold negative attitude towards including students with disabilities. Teachers who reported having trained to teach students with disability upheld positive attitudes towards inclusion compared to those without training.

2.8 Effect of training on Teachers` Perceptions towards Pupils with Intellectual Disability

Trent et al, (1998) measured the change in attitude and approach towards pupils with disability in 30 teachers who had enrolled in a course in multicultural and special education. The course covered trans-disciplinary approaches, practical skills for teaching a diverse range of students, field based experiences, and interaction with people with disability. The findings showed that the training had an impact on both the number of concepts understood and the depth of understanding (Trent et al, 1998). The teachers were reported to be better able to integrate theory and practice and demonstrated a shift from general understanding of teaching to specific strategies and techniques. Similar findings were reported for teaching students in Australia (Hickson, 1995). Carroll et al (2003) reported that in a study on the impact of teacher training in special education in Australia, the most noticeable improvement was that the teachers felt less ignorant, more able to act without bias towards people with disability and more sure of how to behave towards pupils with disability when they had completed the course. The teachers also demonstrated less pity and a greater focus on the person rather than the disability. Generally, teachers had different feelings when faced with children with intellectual disability or other problem behaviours. These feelings range from irritation, confusion, anger to sympathy and pity, (Carroll et al, 2003). From the study, Carroll et al, (2003) noted that sometimes teachers are frustrated in their attempts to manage problem behaviours in children. According to the teachers, problem behaviours can take up time and energy, and interrupt the teaching and learning process, (Carroll et al, 2003). Carroll et al, (2003), also observed that traditionally punishment had been used as a quick fix for

problem behaviour, and this approach, which is reactive, was found to be ineffective compared to a new approach that focuses on finding the purpose of the unwanted behaviour, and teaching new skills. In agreement with this observation, Goodman, (1990) noted that when teachers develop a positive attitude towards the learner, there is increased understanding of the children and in turn increased use of appropriate behaviour management strategies like praise, incentives, classroom rules, routines, teaching social and emotional skills, ignore strategy and time out, (Goodman, 1990).

2.9 Relevance of this study to the practice of Child and Adolescent Mental Health in Africa

The study will contribute additional information on existing services for children with intellectual disability in Zimbabwe. It will also add to teachers` skills on effective management of children with intellectual disability.

CHAPTER 3

METHODOLOGY

3.1 Study Area

The study was conducted in Marondera District in Mashonaland East Province of Zimbabwe. Marondera District is the Provincial capital for Mashonaland East Province. It houses the Provincial administrative government offices including the Ministry of Primary and Secondary Education. Marondera District has a total number of 95 primary schools and out of the 95 schools, 32 schools have Special Needs Education facilities. Of these 32 schools with special needs facilities, 22 schools house special classes for children with mild intellectual disorders with one of the schools having 2 classes. Six schools have resource units for moderate to severe intellectual disorders, 3 schools have resource units for children with sensory impairment with comorbid intellectual disability.

A resource unit in the Zimbabwean context refers to a class of children with a disabling condition such that they cannot be integrated in the ordinary class learning at a conventional school but in a separate classroom. This includes a class for children who have not yet mastered basic self-help skills, children with visual impairment who require braille to enable them learn or those who are hearing impaired and require the use of sign language to communicate. There is also one Special school for children with severe and profound intellectual disability.

3.2 Study Design

The study was a quasi-experimental (Pre – Post Intervention) design without a control group as the study focus was on a homogeneous group of special needs education teachers. The study was conducted in three phases, the baseline survey, the intervention stage and the post intervention survey. The baseline survey was conducted to gather data on teacher knowledge and attitudes towards children with developmental disabilities prior to the training. The teachers were then trained in the assessment and management of developmental disorders after which the post training survey was administered.

3.3 Study Population

The study population consisted of teachers who as at the time of the study were teaching in special needs education facilities for children with intellectual disability in Marondera District. There is 1 specialist teacher per special class at each school with a special needs education facility. All the 32 specialist teachers, one from each of the 32 schools with the special needs facility were invited to participate in the study.

3.3.1 Inclusion Criteria

The inclusion criterion for study participants were teachers who had been teaching in the Special Class or Resource Unit for Intellectual Disability for at least one year. The participants were recruited from schools with special needs education facilities in Marondera District in Mashonaland East Province of Zimbabwe.

3.3.2 Exclusion Criteria

The special class teachers with less than one year teaching experience were excluded from participating in the study.

3.4 Sample size

The study used 93.75 % of the population of special class teachers in Marondera District. There are 32 special needs education facilities for children with intellectual disability in Marondera District with each facility having 1 teacher. From the 32 special needs facilities, 30 teachers participated in the study.

3.5 Study instruments

The researcher adapted the following questionnaires to suit the current investigation:

3.5.1 Socio-demographic questionnaire: (See Appendix 1)

The socio-demographic questionnaire was used to obtain personal information about the respondents. Information on the age, sex, educational qualifications, and religion, marital status, location and the respondent`s experience was obtained. The questionnaire comprises 18 questions.

3.5.2 Children with Intellectual Disabilities Teachers` Knowledge, Attitude and Practice Questionnaire. (See Appendix 2)

The questionnaire was based on the Teacher`s Knowledge, Attitude and Practices questionnaire on depression developed by Adejumo (2014) to assess teachers in Ibadan, Nigeria. The questionnaire developed by Adejumo contains vignettes and questions that

describe the presentation, causes and treatment of mental illness. This questionnaire was adapted to ask questions on developmental disorders.

It assessed teachers` knowledge of developmental disorders, attitude towards and practices with children with Intellectual Disability. The questionnaire comprises of three case studies used to assess teacher knowledge, attitudes and recognition of developmental disorders. This is followed by specific questions on developmental disorders and how the teacher would assist children with the disorder.

3.5.3 The training manual: mental health Gap Action Programme (mhGAP)

WHO developed the mhGAP Intervention Guide for non-specialist health workers to identify, assess, and manage mental health needs of people with mental health disorders. The guide provides practical first line management recommendations for mental, neurological and substance use conditions. The manual consists of 11 modules including a module on Developmental Disorders. The Developmental Disorders module addresses the assessment and management of Intellectual Disability and Pervasive Developmental Disorders including autism.

3.6 Study procedure

The Socio-demographic questionnaire and the Teachers` Knowledge, Attitude and Practices questionnaire were administered to the participants at baseline before the training session. This was followed by the training workshop using the Developmental Disorders module of the mhGAP. The training and coordination of the participants was done with the support of the Ministry of Education, Marondera District office. At the end of the workshop, the

teachers completed the Knowledge, Attitude and Practices questionnaire. The training session lasted for 6 hours and was instructed by the researcher. The teaching curriculum laid emphasis on the developmental disorders module of the mhGAP:

1. Definition of Developmental Disorders
2. Perception of teachers about developmental disorders
3. The use of recommended strategies and their effects on developmental disorders

The lecture slides were printed and handed out to participants on the day of the lecture.

The sessions were interactive and delivered as Power point presentations by the Author who had received training on the use of the mhGAP in the course of training. At the end of the lecture, a question and answer session lasted about 45 minutes.

3.7 Data Analysis and Management

Data was analyzed using SPSS version 20. Collected data was coded and descriptive statistics such as percentage, means and standard deviation were used to summarise the results. The relationship between the respondents` socio-demographic characteristics and knowledge of and attitudes towards children with intellectual disability at pre and post-test level was analysed using the Chi square. The paired t-test was calculated to make a comparative analysis of the mean scores before and after the training.

3.8 Ethical considerations

3.8.1 Ethical Approval

Ethical approval was sought from the Medical Research Council of Zimbabwe. The researcher also applied for permission to conduct the study from Ministry of Primary and Secondary Education.

3.8.2 Invitation to participate

All eligible persons were asked if they were interested in participating in the study. Detailed explanation of the procedure and relevance of the study was provided to the respondents. Participation in the study was voluntary. Written consent was obtained from the participants.

3.8.3 Voluntariness

Participants had the right to decline participation in the study or withdraw participation from the study at any time without affecting any service they may seek from the researcher or from their employer.

3.8.4 Beneficence to participants

The teachers who participated in the training were exposed to new information about intellectual disability. They were also exposed to effective management skills for intellectual disability.

3.8.5 Non-maleficence to participants

The study posed no risk to the study participants and did not involve any invasive procedures or sample collection

3.8.6 Confidentiality of data

The information obtained from the participants was kept confidential and access to it was limited to only the researcher and the research supervisor. The information obtained was coded and bore no names.

CHAPTER 4

RESULTS

This chapter presents the research findings on the effect of a training programme in developmental disorders among children, on the perception of special needs teachers in Marondera District in Zimbabwe. The results are presented in four sections as follows:

Section 1: socio-demographic data of respondents and their exposure to intellectual disability

Section 2: participants' knowledge, attitude/social distance and self-reported practices towards intellectual disability at baseline. This section also presents responses on three case vignettes.

Section 3: associations between participants' socio demographic information and their knowledge, attitude and desire for social distance from persons with intellectual disability at baseline and at post-test period.

Section 4: comparison of participants' responses on knowledge, attitude and desire for social distance from persons with intellectual disability at baseline and at post-test period.

Section 1

4.1.1 Socio-demographic information

Most (53.3%) of the respondents were aged between 41 to 50 years, and a greater (57%) proportion were females. An overwhelming majority (93%) of the participants indicated they were of the Christian faith. About a third (67%) of the respondents were married, 10% were separated or divorced while 7% were co-habiting or single. Most (33.3%) of the respondents had a diploma as their highest qualification while only a-tenth (10%) had a postgraduate Master's degree. The professional qualification of the respondents showed that the majority (56%) trained as primary school teachers and 27% had specialist training in special needs education. Only one (3.3%) of the participants was a student teacher and one had no teaching professional qualification. (See Table 4.1.1 below)

Table 4.1.1: Socio-demographic characteristics of respondents: Personal Information

N=30

Variable	Frequency (n)	Percentage (%)
Age in years		
≤ 40	7	23.3
41-50	16	53.3
≥ 51	7	23.4
Sex		
Male	13	43
Female	17	57
Marital Status		
Married	20	67
Single	2	7
Living together- not married	2	7
Separated/ divorced	3	10
Widowed	3	9
Type of family		
Monogamous	21	70
Polygamous	1	3.3
Other	8	26.7
Religion		
Christianity	28	93.3
Other	2	6.7
Educational Qualifications		
Primary trained	17	56.7
Graduate (degree)	10	33.3
Post Graduate	3	10
Professional Qualifications		
Primary	17	56
Secondary	3	10
Specialist Trained	8	27
Student Teacher	1	3.5
No Professional Qualification	1	3.5

4.1.2 Participants' exposure to mental health information

The analyses on the teachers' experience with children with developmental disorders showed that 3% had a close person with a developmental disorder such as intellectual disability. Most (53%) of the respondents were counsellors at their schools and offered specialist services to children including those with intellectual disability. However, only 33% indicated that they had received mental health information before. About two-thirds (67%) of the respondents indicated that their schools had individuals dedicated as school counsellors and 33% said there was a medical clinic at their respective schools. (See Table 4.1.2)

Table 4.1.2: Participants' exposure to mental health information

N=30

Variable		Frequency (n)	Percentage (%)
Close relation with someone with intellectual disability			
	Yes	1	3.3
	No	29	96.7
Participant is a counsellor			
	Yes	16	53.3
	No	14	46.6
Presence of a counsellor at participant`s school			
	Yes	20	66.7
	No	10	33.3
Availability of a medical clinic at the school			
	Yes	10	33.3
	No	20	66.7
Participant having received mental health information before.			
	Yes	10	33.3
	No	20	66.7

Section 2

4.2.1 Participants' knowledge, attitude/social distance towards intellectual disability at baseline survey

A higher proportion (90%) of participants disagreed with a common belief that developmental disability is caused by witchcraft. While the majority (56.7 %) of the respondents did not think that developmental disorder is a type of mental illness, an overwhelming proportion (86.7 %) believed that developmental disorder is a medical condition with genetic causes. The majority (53.3%) also affirmed the onset of the disability to be before 18 years. (See Table 4.2.1)

On the attitude/social distance items, most (87.7%) of the respondents indicated that they would not be disturbed about teaching a child with intellectual disability. Majority (83%) also expressed confidence in their ability to handle a child with intellectual disability in their class. When asked about having a close relation with someone with intellectual disability, 90% of the respondents indicated that they would not be embarrassed if their friends knew about it. However, the majority (93.3%) of the participants expressed reluctance about interacting with someone whose child has a developmental disorder. (See Table 4.2.2)

Table 4.2.1: Participants' knowledge of developmental disorders at baseline survey

Knowledge items	N	Frequency (n)	Percentage (%)
Developmental Disorder is a type of mental illness			
Agree	30	10	33.3
Disagree		17	56.7
Not sure		3	10
Developmental Disorders in children are caused by witchcraft			
Agree	30	1	3.3
Disagree		27	90
Not sure		2	6.7
The onset of developmental Disorders is before the age of 18			
Agree	30	16	53.3
Disagree		9	30
Not sure		5	16.7
Children with intellectual disability are unpredictable			
Agree	30	13	43.3
Disagree		13	43.3
Not sure		4	13.4
Developmental Disorder can have genetic causes			
Agree	30	26	86.7
Disagree		3	10
Not sure		1	3.3
Children with developmental disorders are helpless			
Agree	29	4	13.8
Disagree		24	82.8
Not sure		1	3.4
Caregivers are to blame for their child's developmental disorders	29	3	10.3
Agree		25	86.2
Disagree		1	3.5
Not sure			

N< 30 due to missing data

*Fishers' exact

Table 4.2.2: Participants' attitude/social distance towards developmental disorders at baseline survey

Attitude/social distance items	N	Frequency (n)	Percentage (%)
There is a stigma (shame) attached to people with intellectual disability	29		
Agree		28	96.6
Disagree		1	3.4
Not sure		0	
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?	30		
		1	3.3
Agree		27	90
Disagree		2	6.7
Not sure			
Would you feel afraid to interact with someone whose child has Developmental Disorder?	30		
Agree		28	93.3
Disagree		2	6.7
Not sure		0	0
Would you be able to handle a child with intellectual disability in your class?	30		
		25	83.3
Agree		3	10
Disagree		2	6.7
Not sure			

N less than 30 due to missing data

*Fishers' exact

4.2.2 Teachers' knowledge of intellectual disability and practice (Case Vignette 1)

In case vignette 1 (see Appendix 3), 24 respondents (80%) indicated that they would be worried about Tendai's experience and about a third (31.4%) of the participants felt that Tendia's problem was ADHD. An equal proportion (33.7%) of teachers opined that Tandia's restlessness or inability to wait for his turn were visible signs of his problems. All (100%) of the respondents agreed that Tendai needed help, however, one third (33.3%) said that they would refer Tandai for specialist attention. (See Tables 4.2.3 and 4.2.4)

4.2.3: Teachers' responses to Case vignette 1 (Tendai`s story)

Themes/Variables	n	%
Would you be worried about Tendai`s experiences?		
Yes	**24**	**80**
No	**6**	**20**
TOTAL	**30**	**100**
What do you think is Tendai`s problem?		
Intellectual disability	**15**	**29.4**
He is intellectually challenged…		
Attention Deficit and Hyperactive Disorder	**16**	**31.4**
He is hyperactive, as he cannot sit still		
Tendai has a problem of hyperactivity since he is restless		
Tendai is very forgetful and hyperactive		
Mental Retardation	**12**	**23.5**
Tendai has mental instability		
Tendai has mental retardation		
"…..combined with mental challenge"		
Behavioural Problems	**8**	**15.7**
Tendai has a multiplicity of behavioural problems		
He is maladjusted		
TOTAL	**51**	**100**
Which parts of the description make you believe he has this problem?		
Forgetting	**27**	**32.6**
When send on errands by his teacher he would always forget		
Restlessness		
Never sit still	**28**	**33.7**
Very restless in class, at home and in church		
Cannot wait for turn	**28**	**33.7**
He answer questions without waiting to be called		
He would rather answer questions without waiting to be called or waiting for his turn		
He cannot keep quiet		
TOTAL	**83**	**100**

N >30 as a result of multiple responses

Table 4.2.4: Teachers' responses to Case vignette 1 (Tendai`s story)

Themes/Variables	n	%
Do you think Tendai needs help?		
Yes	30	100
If yes, what would you do if he were your student?		
Behaviour modification	9	23.1
Use of behavior modification techniques like satiation, reinforcement….		
Applying behavior modification		
Multidisciplinary approach		
Encouraging him when he does good things		
Specialist attention	13	33.3
Keep him busy	17	43.6
Give him challenging work		
TOTAL	39	100
If yes, can anyone else help?		
Professionals	25	54.4
Seeking advice from professionals such as the psychologist, counsellors and other health professionals would be of paramount importance		
Family	14	30.4
Yes, parents		
Community	7	15.2
His community		
TOTAL	46	100
How?	25	56.8
Specialised intervention		
By giving her attention and love		
Controlling and monitoring his behaviour		
Parental involvement	14	31.8
Showing love to the boy so that he gains self esteem		
Community involvement	5	11.4
He should interact with other students and they should support him		
TOTAL	44	100

n>30 as a result of multiple responses

4.2.3 Teachers' knowledge of intellectual disability and practice (Case Vignette 2)

In vignette 2, (see Appendix 3), the majority of respondents attribute Dumi`s problem to maturational factors (32.6%) and health problem (32.6%). The teachers' most suggested self reported practice for Dumi's problem was counselling (49.1%) and majority (68.4) said that they would also refer Duni for professional help. (See Tables 4.2.5 and 4.2.6)

Table 4.2.5: Teachers' responses to Case vignette 2 (Dumi's story)

Themes	n	%
Would you be worried about Dumi`s experiences		
Yes	27	90
No	3	10
TOTAL		
What do you think is Dumi`s problem		
Down syndrome	15	32.6
She has Down syndrome		
Maturational/ puberty	15	32.6
Dumi`s problem is the encroachment of puberty		
Dumi is an adolescent and is going through developmental processes adolescents go through inspite of the Down syndrome		
Mental retardation	6	13.4
She has mental retardation		
Mental challenge (Down Syndrome)		
Obesity	10	21.7
Her problem is obesity		
TOTAL	46	100
Which parts of the description make you believe she has this problem?		
Health	13	37.1
She has had heath difficulties since she was an infant		
Overweight		
She struggles to exercise		
Mental	9	25.8
12-year-old pupil with Down syndrome		
Developmental	13	37.1
Her behavior towards Mr. Tobias is inappropriate		
The behaviour is starting to extend to men who are strangers to her		
TOTAL	35	100

n>30 as a result of multiple responses

Table 4.2.6: Teachers' responses to Case vignette 2 (Dumi's story)

Themes	n	%
Do you think Dumi needs help?		
Yes	**30**	**100**
If yes, what would you do if she was your student?		
Behaviour modification	**2**	**3.8**
Counselling	**26**	**49.1**
To keep her away from men especially strangers		
Counselling on her behavior to men		
Specialist assistance	**25**	**47.1**
Reduce food consumption		
Regular exercises		
TOTAL	**53**	**100**
Can anyone else help?		
Professionals	**26**	**68.4**
School Counsellors can help with the problem		
Specialist teachers		
Family members	**12**	**31.6**
TOTAL	**38**	**100**
How?		
Professionals	**6**	**37.5**
By encouraging exercise and monitoring weight		
Counselling Dumi and close monitoring		
Family members	**10**	**62.5**
Especially parents, keep her away from strange people especially men		
They should never leave her with strangers		
Parents should keep and monitor her always		
TOTAL	**16**	**100**

N >30 as a result of multiple responses

4.3.4 Teachers' knowledge of intellectual disability and practice (Case Vignette 3)

For vignette 3, (Appendix 3), the majority (80%) of respondents indicated that they would be worried by Simba`s experiences. The major problems identified were: delayed developmental milestones (48.1%), hyperactivity (32.7%), defiance and aggression (19.2%). Most (90.9%) of the respondents indicated that the family unit is very important in helping Simba. (See Tables 4.2.7 and 4.2.8)

Table 4.2.7: Teachers' responses to Case vignette 3 (Simba's story)

Variables/Themes	n	%
Would you be worried about Simba`s experiences?		
Yes	**24**	**80**
No	**6**	**20**
TOTAL	**30**	**100**
What do you think is Simba`s problem?		
Delayed developmental milestones	**25**	**48.1**
Hyperactivity	**17**	**32.7**
Defiance and aggression	**10**	**19.2**
TOTAL	**52**	**100**
What parts of the description make you think she has this problem?		
Developmental delay	**25**	**59.5**
Simba was slow to reach many developmental milestones		
Simba showed delays in understanding language, speaking, and performing daily tasks		
ADHD	**17**	**40.5**
First he was hyperactive and inattentive		
TOTAL	**42**	**100**

N >30 as a result of multiple responses

Table 4.2.8: Teachers' responses to Case vignette 3 (Simba's story)

Variables/Themes	n	%
Do you think Simba needs help?	**30**	**100**
Yes		
If yes, what would you do if she was your student?		
Medical attention	**17**	**41.5**
I would give her a lot of language tasks as well as seek medical attention		
Specialist teaching services	**23**	**56.1**
Give her a lot of language activities		
Multidisciplinary approach	**1**	**2.4**
Inviting members of the multidisciplinary team - medical practitioners, psychologists, audiologists, speech therapists, counsellor, social worker, specialist teacher, parents		
TOTAL	**41**	**100**
If yes, can anyone else help?		
Family	**10**	**90.9**
Yes, especially parents and relatives		
Multidisciplinary approach	**1**	**9.1**
TOTAL	**11**	**100**
How?		
Medical attention	**12**	**54.5**
Family	**10**	**45.5**
Family should be involved in the stimulation of Simba		
Help him to make regular visits to his doctor and closely follow the Doctor`s instructions		
TOTAL	**22**	**100**

N >30 as a result of multiple responses

Section 3

4.3.1 Socio-demographic characteristics of respondents and their knowledge of developmental disorders at baseline

The results show that there is no statistically significant association between the teachers' knowledge of developmental disorders disability and selected socio-demographic information. On the knowledge item, "developmental disorder is a mental illness", 25% of the teachers with a class size of less than or equal to 25children agreed with the statement compared to 66.7% of teachers with a class size of greater than or equal to 26 children, however, this difference was not statistically significant, p=0.10. (See Tables 4.3.1 to 4.3.4)

Table 4.3.1: Respondents knowledge of ID at baseline by number of children in class

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
No of children in class					
≤ 25	3 (25)	9 (75)	12 (100)	4.20	0.10
≥ 26	8 (66.7)	4 (33.3)	12 (100)		
Developmental disorders in children is caused by witchcraft					
No of children in class					
≤ 25	0 (-)	12 (100)	12 (100)	2.18	0.48
≥ 26	2 (16.7)	10 (83.3)	12 (100)		
The onset of developmental disorders is before the age of 18					
No of children in class					
≤ 25	10 (83.3)	2 (16.7)	12 (100)	0.25	1.00
≥ 26	9 (75.0)	2 (25.0)	12 (100)		
Children with intellectual disability are unpredictable					
No of children in class					
≤ 25	4 (33.3)	8 (66.7)	12 (100)	2.67	0.10
≥ 26	8 (66.7)	4 (33.3)	12 (100)		
Developmental disorders can have genetic causes					
No of children in class					
≤ 25	10 (83.3)	2 (16.7)	12 (100)	2.18	0.48
≥ 26	12 ((100)	0 (-)	12 (100)		
Children with developmental disorders are helpless					
No of children in class					
≤ 25	1 (8.3)	11 (91.7)	12 (100)	1.20	0.60
≥ 26	3 (25)	9 (75.0)	12 (100)		
Caregivers are to blame for a child`s developmental disorder					
No of children in class					
≤ 25	1 (8.3)	11 (91.7)	12 (100)	0.38	1.00
≥ 26	2 (16.7)	10 (83.3)	12 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.2: Respondents knowledge of ID at baseline by age

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
Respondents' age (years)					
≤ 40	4 (57.1)	3 (42.9)	7 (100)	1.20	0.70*
41-50	7 (46.7)	8 (53.3)	15 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		
Developmental disorders in children is caused by witchcraft					
Respondents' age (years)					
≤ 40	1 (14.3)	6 (85.7)	7 (100)	2.30	0.22*
41-50	0 (0)	15 (100)	15 (100)		
≥ 51	1 (14.3)	6 (84.7)	7 (100)		
The onset of developmental disorders is before the age of 18					
Respondents' age (years)					
≤ 40	5 (71.4)	2 (28.6)	7 (100)	3.00	0.29*
41-50	10 (66.7)	5 (33.3)	15 (100)		
≥ 51	7 (100)	0 (-)	7 (100)		
Children with intellectual disability are unpredictable					
Respondents' age (years)					
≤ 40	3 (42.9)	4 (57.1)	7 (100)	1.20	0.70*
41-50	8 (53.3)	7 (46.7)	15 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		
Developmental disorders can have genetic causes					
Respondents' age (years)					
≤ 40	6 (85.7)	1 (14.3)	7 (100)	2.3	0.22*
41-50	15 (100)	0 (-)	15 (100)		
≥ 51	6 (85.7)	1 (14.3)	7 (100)		
Children with developmental disorders are helpless					
Respondents' age (years)					0.52*
≤ 40	1 (14.3)	6 (85.7)	7 (100)	2.0	
41-50	1 (6.7)	14 (93.3)	15 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		
Caregivers are to blame for a child`s developmental disorder					
Respondents' age (years)					
≤ 40	1 (14.3)	6 (85.7)	7 (100)	4.36	0.10*
41-50	0 (-)	15 (100)	15 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.3: Respondents knowledge of ID at baseline by teaching experience

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
Teaching experience					
≤ 20	7 (46.7)	8 (53.3)	15 (100)	0.07	0.79
≥ 21	5 (41.7)	7 (58.3)	12 (100)		
Developmental disorders in children is caused by witchcraft					
Teaching experience				0.03	1.00*
≤ 20	1 (6.7)	14 (93.3)	15 (100)		
≥ 21	1 (8.3)	11 (91.7)	12 (100)		
The onset of developmental disorders is before the age of 18					
Teaching experience					
≤ 20	10 (66.7)	5 (33.3)	15 (100)	0.96	0.41*
≥ 21	10 (83.3)	2 (16.7)	12 (100)		
Children with intellectual disability are unpredictable					
Teaching experience					
≤ 20	6 (40.0)	6 (90.0)	15 (100)	0.27	0.60
≥ 21	6 (50.0)	6 (50.0)	12 (100)		
Developmental disorders can have genetic causes					
Teaching experience					
≤ 20	14 (93.3)	1 (6.7)	15 (100)	0.27	1.00*
≥ 21	11 (91.7)	1 (8.3)	12 (100)		
Children with developmental disorders are helpless					
Teaching experience					
≤ 20	1 (6.7)	14 (93.3)	15 (100)	0.68	0.57*
≥ 21	2 (16.7)	10 (83.3)	12 (100)		
Caregivers are to blame for a child`s developmental disorder					
Teaching experience					
≤ 20	0 (-)	15 (100)	15 (100)	2.70	0.19*
≥ 21	2 (16.7)	10 (83.3)	12 (100)		

N<30 due to missing data

*Fishers' exact

Developmental disorder is a type of mental illness					
Certificate in education				0.44	0.84*
Basic	5 (50)	5 (50)	10 (100)		
Graduate	6 (37.5)	10 (62.5)	16 (100)		
Postgraduate	1 (50)	1 (50)	2 (100)		
Developmental disorders in children is caused by witchcraft					
Certificate in education					
Basic	0 (-)	10 (100)	10 (100)	1.61	0.58*
Graduate	2 (12.5)	14 (87.5)	16 (100)		
Postgraduate	0 (-)	2 (100)	2 (100)		
The onset of developmental disorders is before the age of 18					
Certificate in education					
Basic	7 (70.0)	3 (30.0)	10 (100)	1.13	0.68*
Graduate	13 (81.3)	3 (18.8)	16 (100)		
Postgraduate	1 (50.0)	1 (50.0)	2 (100)		
Children with intellectual disability are unpredictable					
Certificate in education					
Basic	6 (60.0)	4 (40.0)	10 (100)	1.26	0.70*
Graduate	6 (37.5)	10 (62.5)	16 (100)		
Postgraduate	1 (50.0)	1 (50.0)	2 (100)		
Developmental disorders can have genetic causes					
Certificate in education					
Basic	10 (100)	0 (-)	10 (100)	1.62	0.58*
Graduate	14 (87.5)	2 (12.5)	16 (100)		
Postgraduate	2 (100)	0 (-)	2 (100)		
Children with developmental disorders are helpless					
Certificate in education					
Basic	1 (10.0)	9 (90.0)	10 (100)	2.28	0.46*
Graduate	2 (12.5)	14 (87.5)	16 (100)		
Postgraduate	1 (50.0)	1 (50.0)	2 (100)		
Caregivers are to blame for a child`s developmental disorder					
Certificate in education					
Basic	1 (10.0)	9 (90.0)	10 (100)	0.30	1.00*
Graduate	2 (12.5)	14 (87.5)	16 (100)		
Postgraduate	0 (100)	0 (-)	2 (100)		

N< 30 due to missing data

*Fishers' exact

4.3.2 Socio-demographic characteristics of respondents and their attitude/social distance towards developmental disorders at baseline

The results also showed no statistically significant association between teachers' attitude and desire for social distance from persons with developmental disorders, and the selected socio-demographic information. The majority (100%) of the participants with a class size of less than or equal to 25 children compared to 94.7% of those with a class size of 26 or more children agreed that there is stigma attached to people with intellectual disability, p = 1.00. On whether the participants would feel afraid to interact with someone whose child has intellectual disability, 85% of those aged 40 and below, 100% of those between 41 and 50 years old and 100% of those 51 years and above indicated that they would not be afraid, p=0.48. Participants' response on if they would be embarrassed to have a close relation with intellectual disability showed that 71.4 % of the participants who are 40 years and below, 100% of those between 41 and 50 years and 85.7% above 50 years would not be embarrassed, p=0.10. (See Tables 4.3.5 to 4.3.8)

Furthermore, 93% of teachers with less than or equal to 20 years of teaching experience compared to 91.7% of those with 21 or more years indicated that they would be able to handle a child with intellectual disability in their class, p = 1.00. (See Tables 4.3.5 to 4.3.8)

Table 4.3.5: Respondents attitude/social distance towards ID at baseline by number of children in class

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
No of children in class					
≤ 25	10 (100)	0 (-)	10 (100)	0.55	1.00*
≥ 26	18 (94.7)	1 (5.3)	19 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
No of children in class					
≤ 25	1 (10)	9 (90.0)	10 (100)	0.56	0.45*
≥ 26	4 (21.1)	15 (78.9)	19 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
No of children in class					
≤ 25	0 (-)	10 (100)	10 (100)	1.76	0.30*
≥ 26	3 (15.8)	16 (84.2)	19 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
No of children in class					
≤ 25	0 (-)	10 (100)	10 (100)	0.55	1.00*
≥ 26	1 (5.3)	18 (94.7)	19 (100)		
Would you be able to handle a child with intellectual disability in your class?					
No of children in class					
≤ 25	8 (80.0)	2 (20.0)	10 (100)	1.53	0.53*
≥ 26	18 (94.7)	1 (5.3)	19 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.6: Respondents and their attitude/social distance towards ID at baseline by age

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Respondents' age (years)					
≤ 40	7 (100)	0 (-)	7 (100)	3.26	0.48*
41-50	15 (100)	0 (-)	15 (100)		
≥ 51	6 (85.7)	1 (3.4)	7 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Respondents' age (years)					
≤ 40	1 (14.3)	6 (85.7)	7 (100)	0.16	1.00*
41-50	3 (20.0)	12 (80.0)	15 (100)		
≥ 51	1 (14.3)	6 (82.8)	7 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Respondents' age (years)					
≤ 40	2 (28.6)	5 (71.4)	7 (100)	4.36	0.10*
41-50	0 (-)	15 (100)	15 (100)		
≥ 51	1 (14.3)	6 (85.7)	7 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Respondents' age (years)					
≤ 40	1 (14.3)	6 (85.7)	7 (100)	3.26	0.48*
41-50	0 (-)	15 (100)	15 (100)		
≥ 51	0 (-)	7 (100)	7 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Respondents' age (years)					
≤ 40	7 (100)	0 (-)	7 (100)	1.07	0.80*
41-50	13 (86.7)	2 (13.3)	15 (100)		
≥ 51	6 (85.7)	1 (14.3)	7 (100)		

N < 30 due to missing data

*Fishers' exact

Table 4.3.7: Respondents attitude/social distance towards ID at baseline by teaching experience

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Teaching experience					
≤ 20	15 (100)	0 (-)	15 (100)	1.30	0.44*
≥ 21	11 (91.7)	1 (8.3)	12 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Teaching experience					
≤ 20	1 (6.7)	14 (93.3)	15 (100)	0.68	0.57*
≥ 21	2 (16.7)	10 (83.3)	12 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Teaching experience					1.00*
≤ 20	1 (6.7)	14 (93.3)	15 (100)	0.03	
≥ 21	1 (8.3)	11 (01.7)	12 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Teaching experience					
≤ 20	0 (-)	15 (100)	15 (100)	-	
≥ 21	0 (-)	12 (100)	12 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Teaching experience					
≤ 20	14 (93.3)	1 (6.7)	15 (100)	0.03	1.00*
≥ 21	11 (91.7)	1 (8.3	12 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.8: Respondents attitude/social distance towards ID at baseline by qualifications

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Certificate in education					
Basic	10 (100)	0 (-)	10 (100)	0.78	1.00*
Graduate	15 (93.8)	1 (6.3)	16 (100)		
Postgraduate	2 (100)	0 (-)	2 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Certificate in education					
Basic	2 (20.0)	8 (80)	10 (100)	1.73	0.56*
Graduate	2 (12.5)	14 (87.5)	16 (100)		
Postgraduate	1 (50)	1 (50)	2 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Certificate in education					
Basic	2 (20.0)	8 (80)	10 (100)	1.48	0.63*
Graduate	1 (6.3)	15 (93.8)	16 (100)		
Postgraduate	0 (-)	2 (100)	2 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Certificate in education					
Basic	1 (10.0)	9 (90)	10 (100)	1.87	0.43*
Graduate	0 (-)	16 (100)	16 (100)		
Postgraduate	0 (-)	2 (100)	2 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Certificate in education					
Basic	10 (100)	0 (-)	10 (100)	4.48	0.15*
Graduate	14 (87.5)	2 (12.5)	16 (100)		
Postgraduate	1 (50.0)	1 (50.0)	2 (100)		

N< 30 due to missing data

*Fishers' exact

4.3.3 Socio-demographic characteristics of respondents and their knowledge of Intellectual disability at post-intervention

At post-intervention test, one-quarter (25%) of teachers with a class size of less than or equal to 25 children agreed that "developmental disorder is a type of mental illness" compared to 80% of those with a class size of 26 or more children and this was statistically significant, p = 0.02. All (100%) of the respondents with teaching experience of 20 years and below compared to 90.1% of those with teaching experience of 21 years and above affirmed that a caregiver is not to blame for the child's with developmental disorder, and this was not statistically significant, p = 1.00. (See Tables 4.3.9 to 4.3.12)

Table 4.3.9: Respondents knowledge of ID at post-intervention by number of children in class

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
No of children in class					
≤ 25	3 (25.0)	9 (75.0)	12 (100)	6.60	0.02
≥ 26	8 (80.0)	2 (20.0)	10 (100)		
Developmental disorders in children is caused by witchcraft					
No of children in class					
≤ 25	0 (-)	12 (100)	12 (100)	2.64	0.20*
≥ 26	2 (20.0)	8 (80.0)	10 (100)		
The onset of developmental disorders is before the age of 18					
No of children in class					
≤ 25	8 (66.7)	4 (33.3)	12 (100)	0.49	0.65*
≥ 26	8 (80.0)	2 (20.0)	10 (100)		
Children with intellectual disability are unpredictable					
No of children in class					
≤ 25	11 (91.7)	1 (8.3)	12 (100)	1.72	0.29*
≥ 26	7 (70.0)	3 (30.0)	12 (100)		
Developmental disorders can have genetic causes					
No of children in class					
≤ 25	12 (100)	0 (-)	12 (100)	1.26	0.46*
≥ 26	9 (90.0)	1 (10)	10 (100)		
Children with developmental disorders are helpless					
No of children in class					
≤ 25	2 (16.7)	10 (83.3)	12 (100)	0.21	1.00*
≥ 26	1 (10.0)	9 (90.0)	10 (100)		
Caregivers are to blame for a child`s developmental disorder					
No of children in class					
≤ 25	0 (-)	12 (100)	12 (100)	1.26	0.46*
≥ 26	1 (10)	9 (90.0)	10 (100)		

n < 30 due to missing data

*Fishers' exact

Table 4.3.10: Respondents knowledge of ID at post-intervention by age

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
Respondents' age (years)					
≤ 40	3 (42.9)	4 (57.1)	7 (100)	0.33	1.00*
41-50	7 (53.8)	6 (46.2)	13 (100)		
≥ 51	3 (42.9)	4 (57.1)	7 (100)		
Developmental disorders in children is caused by witchcraft					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	6.17	0.12*
41-50	0 (-)	13 (100)	13 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		
The onset of developmental disorders is before the age of 18					
Respondents' age (years)					
≤ 40	6 (85.7)	1 (14.3)	7 (100)	1.58	0.58*
41-50	8 (61.5)	5 (38.5)	13 (100)		
≥ 51	4 (57.1)	3 (42.9)	7 (100)		
Children with intellectual disability are unpredictable					
Respondents' age (years)					
≤ 40	4 (57.1)	3 (42.9)	7 (100)	1.59	0.62*
41-50	10 (76.9)	3 (23.1)	13 (100)		
≥ 51	6 (85.7)	1 (14.3)	7 (100)		
Developmental disorders can have genetic causes					
Respondents' age (years)					
≤ 40	5 (71.4)	2 (28.6)	7 (100)	6.17	0.12*
41-50	13 (100)	0 (-)	13 (100)		
≥ 51	7 (100)	0 (-)	7 (100)		
Children with developmental disorders are helpless					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	3.19	0.41*
41-50	1 (7.7)	12 (92.3)	13 (100)		
≥ 51	2 (28.6)	5 (71.4)	7 (100)		
Caregivers are to blame for a child`s developmental disorder					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	1.04	1.00*
41-50	1 (7.7)	12 (92.3)	13 (100)		
≥ 51	1 (14.3)	6 (85.7)	7 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.11: Respondents knowledge of ID at post-intervention by teaching experience

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
Teaching experience					
≤ 20	7 (50.0)	7 (50.0)	14 (100)	0.47	0.39*
≥ 21	4 (36.4)	7 (63.6)	11 (100)		
Developmental disorders in children is caused by witchcraft					
Teaching experience					
≤ 20	1 (7.1)	13 (92.9)	14 (100)	0.03	1.00*
≥ 21	1 (9.1)	10 (90.9)	11 (100)		
The onset of developmental disorders is before the age of 18					
Teaching experience					
≤ 20	11 (78.6)	3 (21.4)	14 (100)	2.93	0.12*
≥ 21	5 (45.5)	6 (66.7)	11 (100)		
Children with intellectual disability are unpredictable					
Teaching experience					
≤ 20	6 (40.0)	9 (60.0)	14 (100)	0.27	0.60
≥ 21	6 (50.0)	6 (50.0	11 (100)		
Developmental disorders can have genetic causes					
Teaching experience					
≤ 20	12 (85.7)	2 (14.3)	14 (100)	1.71	0.49*
≥ 21	11 (100)	0 (-)	11 (100)		
Children with developmental disorders are helpless					
Teaching experience					
≤ 20	1 (7.1)	13 (92.9)	14 (100)	0.71	0.41*
≥ 21	2 (18.2)	9 (81.8)	11 (100)		
Caregivers are to blame for a child`s developmental disorder					
Teaching experience					
≤ 20	0 (-)	14 (100)	14 (100)	1.33	0.44*
≥ 21	1 (9.1)	10 (90.9)	11 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.12: Respondents knowledge of ID at post-intervention by qualifications

Items	Agree	Disagree	Total	χ^2	p Value
Developmental disorder is a type of mental illness					
Certificate in education					
Basic	3 (30.0)	7 (70.0)	10 (100)	1.71	0.25*
Graduate	9 (56.3)	7 (43.8)	16 (100)		
Postgraduate					
Developmental disorders in children is caused by witchcraft					
Certificate in education					
Basic	1 (10.0)	9 (90.0)	10 (100)	0.12	1.00*
Graduate	1 (6.3)	15 (93.8)	16 (100)		
Postgraduate					
The onset of developmental disorders is before the age of 18					
Certificate in education					
Basic	7 (70.0)	3 (30.0)	10 (100)	0.15	1.00*
Graduate	10 (62.5)	6 (37.5)	16 (100)		
Postgraduate					
Children with intellectual disability are unpredictable					
Certificate in education					
Basic	6 (60)	4 (40)	10 (100)	1.26	0.70*
Graduate	6 (37.5)	10 (62.5)	16 (100)		
Postgraduate	1 (50)	1 (50)	2 (100)		
Developmental disorders can have genetic causes					
Certificate in education					
Basic	9 (90.0)	1 (10.0)	10 (100)	0.12	1.00*
Graduate	12 (93.8)	1 (6.3)	16 (100)		
Postgraduate					
Children with developmental disorders are helpless					
Certificate in education					
Basic	0 (-)	10 (100)	10 (100)	2.12	0.26*
Graduate	3 (18.8)	13 (81.3)	16 (100)		
Postgraduate					
Caregivers are to blame for a child`s developmental disorder					
Certificate in education					
Basic	0 (-)	10 (100)	10 (100)	1.35	0.25
Graduate	2 (12.5)	14 (87.5)	16 (100)		
Postgraduate					

N< 30 due to missing data

*Fishers' exact

4.3.4 Socio-demographic characteristics of respondents and their attitudes/social distance towards intellectual disability at post-intervention

There was no significant statistical difference in the participants` selected socio-demographic characteristics and their attitude/social distance towards intellectual disability at post intervention. Majority (90%) of respondents with a class of 25 or less children compared to 100% of those with 26 children and above indicated that they would be able to handle the children with intellectual disability, p=1.00. The majority (100%) of teachers with basic education and 87.5% graduate teachers reported that they would be able to handle children with intellectual disability p=1.00. (See Tables 4.3.13 to 4.3.16).

Table 4.3.13: Respondents attitude/social distance towards ID at post-intervention by number of children in class

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
No of children in class					
≤ 25	11 (100)	0 (-)	11 (100)	-	-
≥ 26	10 (100)	0 (-)	10 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
No of children in class					
≤ 25	0 (-)	12 (100)	12 (100)	-	-
≥ 26	0 (-)	10 (100)	10 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
No of children in class					
≤ 25	0 (-)	11 (100)	11 (100)	-	-
≥ 26	0 (-)	10 (100)	10 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
No of children in class					
≤ 25	0 (-)	12 (100)	12 (100)	-	-
≥ 26	0 (-)	10 (100)	10 (100)		
Would you be able to handle a child with intellectual disability in your class?					
No of children in class					
≤ 25	10 (90.9)	1 (9.1)	11 (100)	2.00	1.00*
≥ 26	10 (100)	0 (-)	10 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.14: Respondents attitude/social distance towards ID at post-intervention by age

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Respondents' age (years)					
≤ 40	6 (100)	0 (-)	6 (100)	-	-
41-50	13 (100)	0 (-)	13 (100)		
≥ 51	7 (100)	0 (-)	7 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	-	-
41-50	0 (-)	13 (100)	13 (100)		
≥ 51	0 (-)	7 (100)	7 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	-	-
41-50	0 (-)	12 (100)	12 (100)		
≥ 51	0 (-)	7 (100)	7 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Respondents' age (years)					
≤ 40	0 (-)	7 (100)	7 (100)	-	-
41-50	0 (-)	13 (100)	13 (100)		
≥ 51	0 (-)	7 (100)	7 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Respondents' age (years)					
≤ 40	7 (100)	0 (-)	7 (100)	-	-
41-50	13 (100)	0 (-)	13 (100)		
≥ 51	7 (100)	0 (-)	7 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.15: Respondents attitude/social distance towards ID at post-intervention by teaching experience

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Teaching experience					
≤ 20	13 (100)	0 (-)	13 (100)	-	-
≥ 21	11 (100)	0 (-)	11 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Teaching experience					
≤ 20	0 (-)	14 (100)	14 (100)	-	-
≥ 21	0 (-)	10 (100)	10 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Teaching experience					
≤ 20	0 (-)	13 (100)	13 (100)	-	-
≥ 21	0 (-)	11 (100)	11 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Teaching experience					
≤ 20	0 (-)	14 (100)	14 (100)	-	-
≥ 21	0 (-)	10 (100)	10 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Teaching experience					
≤ 20	13 (92.9)	1 (7.1)	14 (100)	0.75	1.00*
≥ 21	10 (100)	0 (-)	10 (100)		

N< 30 due to missing data

*Fishers' exact

Table 4.3.16: Respondents attitude/social distance towards ID at post-intervention by qualifications

Items	Agree	Disagree	Total	χ^2	p Value
There is a stigma (shame) attached to people with intellectual disability					
Certificate in education					
Basic	10 (100)	0 (-)	10 (100)	-	-
Graduate	15 (100)	0 (-)	15 (100)		
Would you be upset or disturbed to teach a child with intellectual disability in your class?					
Certificate in education				-	-
Basic	0 (-)	10 (100)	10 (100)		
Graduate	0 (-)	16 (100)	16 (100)		
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?					
Certificate in education					
Basic	0 (-)	10 (100)	10 (100)	-	-
Graduate	0 (-)	15 (100)	15 (100)		
Would you feel afraid to interact with someone whose child has developmental disorder?					
Certificate in education				-	-
Basic	0 (-)	10 (100)	10 (100)		
Graduate	0 (-)	16 (100)	16 (100)		
Would you be able to handle a child with intellectual disability in your class?					
Certificate in education					
Basic	10 (100)	0 (-)	10 (100)	0.69	1.00*
Graduate	14 (87.5)	1 (6.7)	16 (100)		

N< 30 due to missing data

*Fishers' exact

Section 4

4.4.1 Comparison between participants' responses at baseline and post-intervention on knowledge items

There was no statistical significance in the pre and post-test results of teachers` response to knowledge items on intellectual disability. At post-test, a slightly higher proportion of the participants affirmed that "Developmental disorder is a type of mental illness" than at baseline (46.2 Vs. 42.3, p=1.00). (See Table 4.4.1)

Table 4.4.1: Comparison between participants' responses at baseline and post-intervention on knowledge items

Items	Pre-test		Post-test		p value
	Agree	Disagree	Agree	Disagree	
	n (%)	n (%)	n (%)	n (%)	
Developmental disorder is a type of mental illness	11 (42.3)	15 (57.7)	12 (46.2)	14 (53.8)	1.00
Developmental disorders in children is caused by witchcraft	2 (7.7)	24 (92.3)	2 (7.7)	24 (92.3)	1.00*
The onset of developmental disorders is before the age of 18	20(76.9)	6 (23.1)	17 (65.4)	9 (34.6)	0.51
Children with intellectual disability are unpredictable	11 (42.3)	15 (57.7)	20 (76.9)	6 (23.1)	0.12*
Developmental disorders can have genetic causes	24 (92.3)	2 (7.7)	24 (92.3)	2 (7.7)	1.00*
Children with developmental disorders are helpless	3 (11.5)	23 (88.5)	3 (11.5)	23 (88.5)	1.00*
Caregivers are to blame for a child`s developmental disorder	3 (11.5)	23 (88.5)	1 (3.8)	25 (96.2)	0.5*

N< 30 due to missing data

*Fishers' exact

4.4.2 Comparison between participants' responses on attitude/social distance items at baseline and post-intervention

There was no statistical significance in the pre and post-test results of teachers` response to attitude/social distance items on intellectual disability. The P values obtained ranged from 0.13 to 1.00

Table 4.4.2: Comparison between participants' responses on attitude/social distance items at baseline and post-intervention

Items	N	Pre-test		Post-test		p value
		Agree	Disagree	Agree	Disagree	
		n (%)	n (%)	n (%)	n (%)	
There is a stigma (shame) attached to people with intellectual disability.	25	24 (96)	1 (4)	25 (100)	0	1.00*
Would you be upset or disturbed to teach a child with intellectual disability in your class?	26	4 (15.4)	22 (84.6)	0	26 (100)	0.13*
Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?	25	3 (12)	22 (88)	0	25 (100)	0.25*
Would you feel afraid to interact with someone whose child has developmental disorder?	26	1 (3.8)	25 (96.2)	0	26 (100)	1.00*
Would you be able to handle a child with intellectual disability in your class?	25	24 (96)	1 (4)	24 (96)	1 (4)	1.00*

N< 30 due to missing data

*Fishers' exact

4.4.3 Comparison of the mean scores of participants' responses on knowledge items at baseline and post-intervention

The mean score of participants at baseline was 8.4 compared to 8.1 at posttest but this difference was not statistically significant, p=0.521. On the attitude/social distance scale, mean score rose from 8.9 at baseline to 9.5 at posttest, but this was not statistically significant (0.216).See Table 4.4.3 below.

Table 4.4.3: Comparison of the mean scores of participants' responses on knowledge items at baseline and post -intervention

Items	N	Mean Scores	SD	Paired t	95% Confidence Interval		P
					Lower	Upper	
Knowledge							
Baseline	26	8.4	2.0	0.65	0.7	1.3	0.521
Post-test	26	8.1	2.2				
Attitude/Social distance							
Baseline	23	8.9	2.0	1.3	0.4	1.2	0.216
Post-test	23	9.5	0.8				

N= number of respondents who had complete responses on all the items in each scale

4.5 Chapter Summary

This chapter presented the results of the study on the effect of training special needs teachers on their perception of developmental disorders. Pre and Post Test results were presented to assess the knowledge, attitudes and perceptions of teachers on developmental disorders before the short training and after. It was observed that teachers had basic knowledge on Developmental Disorders. Post Test results revealed an improvement in their knowledge and perceptions on children with developmental disorders.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This study evaluated the effectiveness of a training programme on developmental disorders on Special Class Teachers` knowledge, attitude, social distance towards children with intellectual disability.

5.1 Socio-demographic characteristics and participants' attitude/social distance towards children with developmental disorders at baseline survey

The socio-demographic characteristics of the study participants include sex, age, marital status, religion and qualifications. The study participant composition consisted of more females (57%) than males (43%). The over half (53%) of the participants were aged between 41 and 50 years and were primary school trained (56%). Previous studies on the influence of age and gender on having an inclusive attitude among teachers was reported to be largely mixed (Vaz *et al*, 2015). Some studies reported no significant effect of teachers` age on accommodating children with disabilities (Ellins *et al*, 2005)). Other studies showed that younger teachers` attitudes significantly improve with training than older teachers (Forlin *et al*, 2009). Ellins *et al*, (2005) observed that female teachers were more tolerant in implementing inclusive education.

The findings of Wilson and Scior (2015) on the implicit attitude towards individuals with intellectual disability showed no statistical difference on gender ($p = 0.74$), and on educational attainment ($p=0.06$). The findings suggest that implicit attitudes do not differ between men and women and by educational attainment (Wilson & Scior 2015).

In this study on the effects on the perception of special needs teachers following a training on developmental disorders in children in Marondera District, Zimbabwe, no significant differences were found between teachers' knowledge by age, qualifications and experience.

The results of this study showed that over half (56%) of the teachers were primary school graduates and just over a quarter (27%) had specialist training. Following a review of the needs analysis in Zimbabwe conducted by the National Education Advisory Board, Chakanyuka (2009) observed that most teachers in special schools and special classes in Zimbabwe do not have specialist training. Qualifications have a bearing on the knowledge of the teachers of intellectual disability as well as their capacity to teach children with the disability, (Mkandla and Chakanyuka, 2009). Bender et al (1995) argued that formal educational training was one of the main factors that promote an inclusive attitude.

The current research study showed no significant difference in special class teachers` attitude towards children with intellectual disability by the number of children in the class, age of the respondent and teaching experience. Asked whether the teacher would be disturbed to teach a child with intellectual disability, 85.7 % of the participants in the age group 40 and below, 80% aged between 41 to 50 and 82.8% aged 51 years and above reported that they would be comfortable to teach children with intellectual disability. These findings are in line with Wilson and Scior`s (2015) findings on implicit attitudes towards people with intellectual disability and their association with emotional reactions and contact. The results showed that implicit attitudes were not significantly associated with explicit attitudes or social distance. Further, implicit attitudes did not differ between men and women (t (322) p = .74 and by educational attainment (p = 0.06).

Antonak et al (2000) observed that reliance on self-reported attitudes poses a significant risk to validity of the results as respondents` reactivity may influence the reported attitudes.

5.2 Baseline teacher knowledge of developmental disorders and their perception of children with intellectual disability

The findings from the pretest survey showed that the special class teachers had some knowledge of developmental disorders. 90% disagreed with the common belief that intellectual disability is caused by witchcraft. The majority (86.7%) believed that developmental disorder is a medical condition with genetic causes. The study participants also showed a positive attitude towards children with intellectual disability. An overwhelming majority (90%) indicated that they would not be embarrassed if their friends knew that they had a close relation with intellectual disability. However, the majority (93.3%) would not want to interact with someone whose child has a developmental disorder.

The respondents` knowledge and positive perception could be due to the experience they have had in teaching children with intellectual disability since participation was based on at least one-year experience of teaching in a special needs education facility. The teachers` level of knowledge could also be attributed to the training received at tertiary education institution or the in-service training and short courses that are offered to enhance the skills of specialist teachers. (National Policy on Special Needs Education, 1994). Some of the special class teachers received training at the United College of Education, an institution that offers professional qualifications in special needs education in Zimbabwe.

In a similar study, Gilmore et al (2003) investigated the perception of Down's syndrome in the Australian community and 1228 respondents` perception was examined. The results

showed that the participants` knowledge was high with 86% of the participants recognizing Down syndrome as resulting from chromosome disorder. Expectations for developmental outcomes of the children were optimistic with 40% of the participants agreeing that the Down syndrome level of engagement for most school activities was possible. These results suggest the relationship between knowledge and the perception people have of the disorder.

However, in both studies described above, it was noted that there was still negativity associated with a disorder. In the current study, not virtually all participants would not want to interact with someone whose child had a developmental disorder and the results of the second study by Gilmore *et al* (2003) reflected stereotyped views in the terms the respondents used to describe Down's syndrome.

Some of the respondents in the current study indicated a lack of knowledge on developmental disorders from their responses on the vignettes. They emphasized the need for psychological testing to diagnose children with intellectual disorder. The AAIDD, (2013) states that diagnostic criteria include obtaining diagnosis information of intellectual disability through clinical history of the patient. Teachers can therefore obtain the clinical history including familial history of the individual, information on mental delay, and other general diagnostic information without necessarily waiting for an expert. They are capable of doing the initial screening before consulting professionals such as Psychiatrists. Katz (2008) observed that diagnostic information could also be obtained by making comparison of the child`s behavior and comprehension level with that of a chronologically younger child.

5.3 Effectiveness of the training program on developmental disorders

The results of this study show that short training courses can produce some change in the teachers` knowledge and perception of developmental disorders. However, the results did not show significant statistical difference in the pre and post-test scores. The P value obtained in the pre and post-test responses to the attitude items ranged from 0.13 to 1.00. There was a difference in the mean score of participants on the knowledge items at baseline (8.9) and post-test (9.5). The difference was not statistically significant (P = 0.216). A slightly higher proportion of participants at post-test (46.2%) indicated that developmental disorder is a mental disorder compared to 42.3% at pretest in the knowledge items section.

The method used in training was also found to be important in determining the extent of effectiveness of the training. Vuran et al (2012) used presentation, information manual, prompting modelling and error correction for on the job training of special education staff. A multi baseline analysis of the results showed a 100% increase in the teachers' performance and an equivalent 80% increase in the responding level by the students taught by these teachers.

Martin et al (2005) used a video to educate 54 medical students about cerebral palsy. The study was to examine the knowledge and attitudes of medical students about cerebral palsy and to examine the effects of a video tape on educating the students. The results showed that the students had limited knowledge of cerebral palsy and the videotape was effective in improving the students` knowledge. A small but significant improvement in attitudes was shown (P = 0.014).

In this study, the training session lasted for 6 hours and was conducted by the researcher. The amount of time allocated was adequate to cover all the topics. The participants were handed copies of the lecture notes on the day of the training. The sessions were interactive and PowerPoint presentations were used in delivering the training. At the end of the lecture, a question and answer session lasted about 45 minutes. The pre and post-test results however may be inadequate to evaluate the effectiveness of the training method used.

Limitations of the study

The study did not have a control group with which a comparison of the intervention could be made before and after treatment. The sample size for the study was small (30 teachers participated in the study) due to the limited number of special needs education facilities (32) in the District where the study was conducted. The result therefore, could not be generalized to all special needs education teachers.

5.4 Recommendations

Although there is considerable progress in Zimbabwe in enhancing the education of children with learning disabilities in general and children with intellectual disability in particular, it is recommended that:

i. All specialist teachers receive professional training in other mental health disorders in view of the comorbidities of intellectual disorder.
ii. Regular in-service training for specialist teachers be conducted to keep abreast with emerging issues in the area of mental disorders.

iii. There should be more collaboration between government departments, particularly the Ministry of Health and the Ministry of Education in the area of convergence when it comes to assisting children with developmental disorder.

iv. A multidisciplinary approach in dealing with mental health issues is adopted as it would produce results that are more and holistic.

v. Advocacy for comprehensive services for children with developmental disorders is also an important aspect. From the study, only a small proportion of teachers reported availability of a health facility at the school despite the fact that learners with developmental disorders require constant and regular health services.

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Appendix 1:

EFFECT OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE

Sociodemographic Questionnaire

Serial No ---------- Date of Interview----------

Name of School_____

How old are you? :.....

Are you ( ) Male or ( ) Female?

What is your highest level of education?
None ( ) Primary ( ) Secondary ( )

Post-secondary, non-degree ( ) [please specify_____

_____

Post-secondary, degree ( ) PGD ( ) Masters ( ) PhD ( ) other _____

What is your religion?

( ) Islam ( ) Christianity [Specify] _____

( ) traditional religion [Specify] _____

( ) others [Specify] _____

Where are you from?

Town _____Province_____

Are you: single ( ) living together, but not married ( ) married ( )

Separated / divorced ( ) widowed/ widower ( )

What is YOUR family type, if married: monogamous ( ) polygamous ( )

How long have you been married? _____

How many children do you have? _____

Were you married before your current marriage? _____ If yes, how many times? _____

Does anybody close to you have developmental disorder such as intellectual disability? _____

If YES who? (E.g. myself, sister, uncle, grandfather)

_____

Please state your EXACT occupation:

_____

If teaching, in what type of school? Nursery/Day Care ( ) Primary ( ) Secondary ( )

How many years have you been teaching? _____

How many pupils or students are there in your class?

_____

Are you a Counsellor in your school?	YES	NO
Are you a Counsellor in your school?	YES	NO
Is there a Counsellor in your school?	YES	NO
Is there a medical clinic in your school?	YES	NO

If your school has a clinic, who is the most senior medical staff there? A doctor ( )

A nurse ( ) A nurse-aid ( ) other [specify] _____

Have you received any mental health information before? YES □ NO □

If yes, please say what form, when & how

_____

Appendix 2

EFFECT OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE

Children with Intellectual Disabilities Teachers` Knowledge, Attitude and Practice Questionnaire

SECTION 1

Please read the following information carefully, and kindly answer the questions following each, based on your understanding about the problems in each case.

Tendai is a 14-year old boy who is known to be very restless in class, at home and in church. Since he was in primary school, he would never sit still or keep quiet in class. He would often answer questions in class without waiting to be called, and sometimes would have forgotten the question. This has often affected his school performance. When sent on errands by his teacher, he always forgets, and his parents complain about this too. When doing things with others, he always likes to be in front because he cannot wait for his turn. This often causes fights and many of his classmates do not like doing anything with him.

Would you be worried about Tendai`s experiences?

1. I DON‟T KNOW	2.NOT AT ALL WORRIED	3.SLIGHTLY WORRIED	4.VERY WORRIED

What do you think is Tendai`s problem?

_____
_____
_____
_____
_____
_____

Which parts of the description make you believe he has this problem?

_____
_____
_____
_____
_____

How long will it take for Tendai to feel better?

1. I DON‟T KNOW	**4** A FEW DAYS	4 A FEW WEEKS	4. A FEW MONTHS	5 SEVERAL MONTHS

Do you think Tendai needs help? YES/NO _____

If yes, what would you do if he was your student?

_____
_____
_____
_____

If YES, can anyone else help?

_____
_____
_____
_____

How?

_____
_____
_____
_____
_____

Dumi is a 12-year-old pupil with Down syndrome. She has had health difficulties since she was an infant and as a result struggles to exercise which has led to her being overweight.

Dumi likes Mr. Tobias very much and often acts inappropriately towards him. Her behavior is causing the school to be concerned because it is starting to extend to men who are strangers to her.

Would you be worried about Dumi`s experiences?

1. I DON‟T KNOW	2. NOT AT ALL WORRIED	3.SLIGHTLY WORRIED	4.VERY WORRIED

What do you think is Dumi`s problem?

_____
_____
_____
_____

Which parts of the description make you believe she has this problem?

_____
_____
_____
_____

Do you think Dumi needs help? YES/NO _____

If YES, what would you do if she was your student?

_____
_____
_____
_____
_____

If YES, can anyone else help?

_____
_____
_____
_____

How?

_____
_____
_____
_____

Simba was a 5-year-old boy referred to our clinic by his pediatrician. Simba showed delays in understanding language, speaking, and performing daily tasks. His mother had used alcohol and other drugs during pregnancy. She did not receive prenatal care because she was afraid that an obstetrician would report her drug use to the police. Simba was born with various drugs in his system and had respiratory and cardiovascular problems at birth. Shortly after delivery, Simba`s mother disappeared, leaving him in his grandmother's care. Simba was slow to reach many developmental milestones. Whereas most children learn to sit up by age 6 months and walk by their first birthday, Simba showed delays mastering each of these developmental tasks. Most striking was Simba`s marked delays in language. Although he could understand and obey simple commands, he was able to speak only 15 to 20 words, and many of these were difficult to understand. He could not identify colors, was unable to recite the alphabet, and could not count. He also had problems performing self-care tasks typical of children his age. For example, he could not dress himself, wash his face, brush his teeth, or eat with utensils. Simba showed significant problems with his behavior. First, he was hyperactive and inattentive. Second, Simba showed serious problems with defiance and aggression. When he did not get his way, he would tantrum and throw objects. He would also hit, kick, and bite other children and adults when he became upset. Third, Simba`s grandmother said that he had "an obsession for food." Simba apparently had an insatiable appetite and was even caught hoarding food under his bed and stealing food from relatives. Dr. Aaron, the psychologist who performed the evaluation, was most struck by Simba`s appearance. Although only 5 years old, Simba weighed almost 85 lbs. He approached Dr. Aaron with a scowl and icy stare. Dr. Aaron extended her hand and said, "Hello." Simba grabbed Dr. Aaron`s hand and kissed it! His grandmother quickly apologized, responding, "Sorry . . . he does that sometimes. He's showing that he likes you."

Would you be worried about Simba`s experiences?

1. I DON"T KNOW	2. NOT AT ALL WORRIED	3.SLIGHTLY WORRIED	4.VERY WORRIED

What do you think is Simba problem?

_____

Which parts of the description make you believe she has this problem?

Do you think Simba needs help? YES/NO _____

If YES, what would you do if she was your student?

If YES, can anyone else help?

How?

SECTION II

Teacher ID: **Class ID:** **School ID:**

People have different experiences and feelings about children who have developmental disorders. The following questions ask you to describe some of your views.

1. What sorts of words or phrases might you use to describe someone with developmental disorder

_____
_____
_____
_____
_____

The following statements are commonly held beliefs about developmental disorders. Can you tell us whether *you* personally agree or disagree with each statement by ticking in the provided box?

a. Developmental disorder is a type of mental illness

AGREE	DISAGREE	NOT SURE

b. Developmental disorders in children is caused by witchcraft

AGREE	DISAGREE	NOT SURE

c. The onset of developmental disorders is before the age of 18

AGREE	DISAGREE	NOT SURE

d. Children with intellectual disability are unpredictable

AGREE	DISAGREE	NOT SURE

e. There is a stigma (shame) attached to people with intellectual disability.

AGREE	DISAGREE	NOT SURE

f. Developmental disorders can have genetic causes.

AGREE	DISAGREE	NOT SURE

g. Parents of children with developmental disorders neglect their children

AGREE	DISAGREE	NOT SURE

h. Children with developmental disorders are helpless.

AGREE	DISAGREE	NOT SURE

i. Caregivers are to blame for a child`s developmental disorder

AGREE	DISAGREE	NOT SURE

j. Would you be upset or disturbed to teach a child with intellectual disability in your class?

AGREE	DISAGREE	NOT SURE

k. Would you be embarrassed if your friends knew that someone in your close family had developmental disorder?

AGREE	DISAGREE	NOT SURE

l. Would you feel afraid to interact with someone whose child has developmental disorder?

AGREE	DISAGREE	NOT SURE

m. Would you be able to handle a child with intellectual disability in your class?

AGREE	DISAGREE	NOT SURE

n. Where have you obtained most of your understanding and knowledge of intellectual disability?

SECTION I1I

Teacher ID: **Class ID:** **School ID:**

The following questions require you to provide information from your experience in working with children with intellectual disability.

1. Define intellectual disability?

2. What are the causes of intellectual disability?

3. How do you identify a child with intellectual disability?

4. How do you assist a child with intellectual disability?

Appendix 3

Case study Vignettes.

Vignette 1: Tendai`s story

Tendai is a 14-year old boy who is known to be very restless in class, at home and in church. Since he was in primary school, he would never sit still or keep quiet in class. He would often answer questions in class without waiting to be called, and sometimes would have forgotten the question. This has often affected his school performance. When sent on errands by his teacher, he always forgets, and his parents complain about this too. When doing things with others, he always likes to be in front because he cannot wait for his turn. This often causes fights and many of his classmates do not like doing anything with him.

Vignette 2: Dumi`s story

Dumi is a 12-year-old pupil with Down syndrome. She has had health difficulties since she was an infant and as a result struggles to exercise which has led to her being overweight. Dumi likes Mr. Tobias very much and often acts inappropriately towards him. Her behavior is causing the school to be concerned because it is starting to extend to men who are strangers to her.

Vignette 3: Simba`s story

Simba was a 5-year-old boy referred to our clinic by his pediatrician. Simba showed delays in understanding language, speaking, and performing daily tasks. His mother had used alcohol and other drugs during pregnancy. She did not receive prenatal care because she was afraid that an obstetrician would report her drug use to the police. Simba was born with various drugs in his system and had respiratory and cardiovascular problems at birth. Shortly after delivery, Simba`s mother disappeared, leaving him in his grandmother's care. Simba was slow to reach many developmental milestones. Whereas most children learn to sit up by age 6 months and walk by their first birthday, Simba showed delays mastering each of these developmental tasks. Most striking was Simba`s marked delays in language. Although he could understand and obey simple commands, he was able to speak only 15 to 20 words, and many of these were difficult to understand. He could not identify colors, was unable to recite the alphabet, and could not count. He also had problems performing self-care tasks typical of children his age. For example, he could not dress himself, wash his face, brush his teeth, or eat with utensils. Simba showed significant problems with his behavior. First, he was hyperactive and inattentive. Second, Simba showed serious problems with defiance and aggression. When he did not get his way, he would tantrum and throw objects. He would also hit, kick, and bite other children and adults when he became upset. Third, Simba`s grandmother said that he had "an obsession for food." Simba apparently had an insatiable appetite and was even caught hoarding food under his bed and stealing food from relatives. Dr. Aaron, the psychologist who performed the evaluation, was most struck by Simba`s appearance. Although only 5 years old, Simba weighed almost 85 lbs. He approached Dr.

Aaron with a scowl and icy stare. Dr. Aaron extended her hand and said, “Hello.” Simba grabbed Dr. Aaron`s hand and kissed it! His grandmother quickly apologized, responding, “Sorry . . . he does that sometimes. He’s showing that he likes you.”

Appendix 4:

Informed consent form

RESEARCH TITLE:

EFFECTS OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE

My name is _____and I am a postgraduate student at the University of Ibadan, Centre for Child and Adolescent Mental Health studying for a Master's Degree in Child and Adolescent Mental Health. I am inviting you to participate in a research study. Involvement in the study is voluntary, so you may choose to participate or not. In this study, I am interested in learning more about special class teachers` knowledge and perception of intellectual disability. You will be asked to complete a questionnaire on your opinion about common beliefs about intellectual disability and knowledge of intellectual disability. A short training in developmental disorders with a focus on intellectual disability will follow this. The training will take approximately 5 hours of your time. This will be followed by completion of a second questionnaire on knowledge and perception of intellectual disability. All the information will be kept anonymous and confidential. I will assign a number to your responses and only I will have the key to indicate which number belongs to which participant. In the write up, I will do and the presentations that I make, I will not reveal any details about your personal information, where you work or where you live.

Please feel free to ask any questions that you may have about the research, I will be happy to explain anything in detail.

If you agree to participate in this study, you are requested to sign the certification confirmation below and retain a copy of the signed form.

Participant certification

I have read and understood this consent and authorisation form and I agree to participate in this study. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study and the use and disclosure of information about me for the study. I affirm my willingness participate in the study by signing this consent form.

_____ _____

Participant`s Name Date

_____

Participant`s Signature

_____ _____

Researcher`s Name Date

_____

Researcher`s Signature

Appendix 5:

EFFECT OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE

Ethics Approval Application Letter

19 Mull Road. Belvedere,

Harare,

Zimbabwe**.**

2 January 2017.

The Director,

Medical Research Council of Zimbabwe

Cnr Josiah Tongogara/ Mazowe Street

Harare

Dear Sir/Madam,

RE: APPLICATION FOR APPROVAL TO CONDUCT A RESEARCH IN MARONDERA DISTRICT.

I write to apply for approval to conduct a research on THE EFFECT OF A TRAINING IN DEVELOPMENTAL DISORDERS ON SPECIAL NEEDS EDUCATION TEACHERS` KNOWLEDGE AND PERCEPTION OF CHILDREN WITH INTELLECTUAL DISABILITY IN MARONDERA DISTRICT, ZIMBABWE. Attached please find the research proposal as well as the research instruments and the informed consent form. I agree to abide by the ethical guidelines and procedures of the Ethics Council of Zimbabwe. I am aware of my responsibility to be familiar with the standards and I further agree to notify the

Ethics Council of Zimbabwe of any change in the methodology or status of the research project. I also agree to comply with request made by the Ethics Council of Zimbabwe during the life of this research.

Yours Faithfully,

David Gwasira. (Mr.)

APPENDIX 6: DEVELOPMENTAL DISORDERS TRAINING PLAN

TIME	TOPIC	CONTENT
0800 - 0830	Participant arrival and registration	Registration
0830 - 0845	Introduction 1. Training overview 2. Training objectives 3. Informed consent	Outline of the training and request for participants` consent.) List of objectives (see power point presentation)
0845 - 0915	Baseline Survey/ Pretesting	Knowledge, Attitudes and Practices Questionnaire
1000 -1020	Child Development and stages of development	Definition, Domains of child development, Developmental milestones from birth to 5 years.
1020 - 1030	Developmental Disorders	Definition, Types (Intellectual disability, Pervasive developmental disorders), traditional beliefs, prevalence, causes, domains, effects
1030 - 1100	Assessment of Developmental Disorders	Establishing rapport Communication skills Presentation of Developmental Disorders
1100 - 1130	Risk Factors	Maternal Depression Mental and neurological disorders Sensory Impairment
1130 - 1210	Management	Psycho-education Referral Community based rehabilitation Follow up care

1210 - 1220	**Prevention of Developmental Disorders**	**Child`s Health** **Training parents** **Caring for the carer**
1220 - 1300	**Post Training assessment**	**Knowledge, Attitudes and Practices Questionnaire**
1300 - 1330	**Refreshments, Reimbursements and closure**	