



ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

DEPARTMENT OF SPECIAL NEEDS EDUCATION

MA THESIS

**THE PRACTICE OF ADAPTIVE BEHAVIOR SKILLS FOR CHILDREN WITH AUTISM
SPECTRUM DISORDER: THE CASE AT NEHEMIAH AUTISM CENTER**

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NOVEBER, 2018

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**The Practice of Adaptive Behavior Skills Training for Children with Autism Spectrum
Disorder: The Case at Nehemiah Autism Center**

BY:

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**A Thesis Submitted to the School of Graduate Studies in Partial Fulfillment of the
Requirements for the Degree of Master`s of Art in Special Needs Education**

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College of Education and Behavioral Studies
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Acknowledgements

First and for most, I thank the Almighty God for his wisdom and protection of me in every single movement and work of this research. I am greatly indebted to my advisor, Dr. R.S. Kumar for his constructive, critical and immeasurable comments and feedback. He is really very punctual, impartial, enthusiastic, energetic, man of action, knowledgeable, and open-minded. He rose me up from zero interest, and he has been a source of inspiration, encouragement as well as the key to the accomplishment of my research work.

My sincere thanks go to the participants of the study for what they have become successful and sharing of all their personal histories.

I am also grateful to Ato Getaneh Abera, Head of Nehemiah Autism Center who has given information, his document and his subordinates for their cooperation in the selection of the participants of the study as well.

My gratitude also goes to my father, Ato Asmamaw Zewdu and my mother, Tsegiye Tilahun. I do not have words to express their devotion, commitment and love for me to reach at this level.

I would to thank the Special Needs Education Department at Kotebe Metropolitan University and Addis Ababa University for their knowledge and the insightful feedback I gained.

I also thank Laureate, Prof. TirussewTeferra, Dr. Belay Hagos,Dr.TilahunAchaw,Dr.Dameabera, Simegn Sendek(PhD Candidate),Mr.Fisha Teklu, Mrs. Keralem Getaneh, and Mr. Belesti Abawa for their psychological support and companionship.

My sincere appreciation extends to my friend, Mr. Bitwded worku and Gezahnngn Silamofor all the year along.

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List of Abbreviations

ABA	Applied Behavior Analysis
ABST	Adaptive Behavioral Skill Training
ASD	Autism Spectrum Disorder
CDCP	Centers for Disease Control and Prevention
DIR	Developmental Individual Relationship
DSM	Diagnostic Statistical Manual Four
DSM	Diagnostic Statistical Manual Five
DTT	Discrete Trial Training
EIHA	Education for All Handicapped Children Act
FASP	Free and Suitable Public Education
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Plan
IPO	Input Process and Outcome
MMR	Measles-Mumps-Rubella
NGO	Nongovernmental Organization
PRT	Pivotal Response Training
SNE	Special Needs Education
SST	Social Skills Training
USA	United States America
WHO	World Health Organization

Abstract

This study was aimed at assessing the practices of adaptive behavior skills training for children with Autism Spectrum Disorder (ASD) at Nehemiah Autism Center (NAC). NAC rendering its training services for 40 children with ASD engaged for their fulltime in the self help skills receptive skills expressive and academics consecutive levels of the center's adaptive behavior skills training program with the help of 20 practitioners. The study followed qualitative, particularly case study design. Data were collected from 12 (six practitioners, one coordinator and five parents with ASD respondents were directly related to the children with ASD selected through, purposive sampling technique. The data were collected through semi-structured interview, observation and document analysis, and analyzed by employing qualitative specifically case study design. The results of the study revealed that the center designed the plan for children based on the result of the assessment. The focus areas of the planning differ from level to level. That means, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively. In addition to these, discrete trial training (DDT), applied behavior analysis (ABA) and developmental individual relationship (DIR) are ingredients of the training. Adaptive behavior skills training (ABST) has positive perceived on both children and parents with ASD in improving basic skills of life, though it is not found at the expected level. Except leveling the problem of children, the implementation of the adaptive behavior skills training (ABST) at NAC is similar with the previous evidences. It is concluded that the content of training differs against the level of children, provided variety types of evidence based ABST targeted to perceived life skills of children with ASD and parents with ASD in the center. Lastly, individual child based planning approach, employment of well trained professionals, and ABST program evaluation, were forwarded as the major recommendations of the study.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The Swiss psychiatrist Eugene Bleaker first introduced the term autism in 1911. Autism and autistic stem from the Greek word "autos," meaning self. The term autism originally referred to a basic disturbance in schizophrenia, in short, an extreme withdrawal of oneself from the fabric of social life, but not excluding oneself (Koegel, Koegel & Dunlap, 1996). Subsequently, Autism Spectrum Disorder (ASD) was defined as a phenomenon consisting of a variety of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication and distinctive strengths and differences (Marzano, Pickering & Pollock, 2005). It is also characterized by impaired social interaction, impaired verbal, non-verbal communication and restricted and repetitive behavior. Symptoms range from very mild to quite severe and comprise of a lack or delay in spoken language, repetitive motor mannerisms like hand flapping and twirling objects, little or no eye contact, lack of interest in peer relationships, and the inability to deal with change. It ranges in severity from a handicap that somewhat restricts an otherwise normal life to a shocking disability that may need institutional care (Rutter, 1970).

There are in general three major characteristics applied to decide an ASD and are frequently present by age three. These characteristics are deficits in social interaction, verbal and nonverbal communication as well as repetitive behaviors and interests (National Institute of Child Health and Human Development, 2005).

Individuals with ASD were mostly unnoticed by the training and intervention service providing community until 1975 when the Education for all Handicapped Children Act (EHA) recognized the right of children with disabilities to get a free and suitable public education (MoE, 2012).

The limited number of children with autism who received special education services beginning in 1975 was often served below another disability such as intellectual disability. In 1990 a shift occurred when autism was particularly listed as a disability group in the Individuals with Disabilities Education Act (IDEA, 1990), a federal law that reauthorized and expanded EHA, ensuring the right to a public education including special education and related services for individuals with disabilities.

Studies on the long-term outcomes for persons with autism indicated a relatively desolate image (Dempsey & Foreman, 2001; Gill Berg, 1991; Howling, 2000). According to these authors, the majority of persons with autism have not developed the adaptive skills essential to function independently in society and many persist to exhibit considerable challenging behaviors that impede their inclusion in community environments. Due to these difficulties, many adults with autism are significantly dependent on family or third party resources for support in major life activities related to employment, adult living, leisure, and social relationships. Stein et al. (2001) reported that approximately 70% of persons with autism had poor outcomes in adulthood and continue reliant on others in almost all aspects of living. Fence and Emerson (2001) also stated that the existence of adaptive behavior deficits can put for the significant impact on person's quality of life and in great part defines his or her need for long-term support from service institutions. In spite of the considerable body of research indicating poor outcomes for the majority of persons with autism, there is lack of information currently showing the quality and

effectiveness of the adaptive behavior skills training and intervention programs implemented for children with autism that have a vital role when they become adults under the Ethiopian context. Professionals and advocates in the field of special education believe that the primary objective of special education is to make possible children learn adaptive skills that facilitate adult independence (Brown et al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980). Children with ASD need to have experiences with and instruction in adaptive behavior skills which enable them to work, live and enjoy life in their community (Wehmeyer, 1991). Though the belief, the practice and its quality of special education services provided by special education training centers for individuals with autism remains unresearched in Ethiopia. However, researches regarding the quality of special education programs for students with autism suggests that Individualized Education Programs (IEPs) are frequently not individualized in several service giving institutions based on student need (Fiedler & Knight, 1986; Reiher, 1992; Slavens, 1997; Smith, 1990; Smith & Simpson, 1989; Tymitz, 1981).

In Ethiopia, disability by and large is considered to be a curse, so families as well as communities discriminate against people with disabilities in general and children with ASD in particular. In the past, only 0.7 percent of persons with disabilities in Ethiopia have had access to education and training of any type. This situation has been changing as education and training for persons with disabilities in Ethiopia is becoming more and more inclusive (Sherer & Schriebman, 2005).

Sadly, there is no healing for autism. But, there are numerous treatment strategies identified for ASD. The continuous debate among researchers, professionals and parents of ASD are best to the existing confusion. Many techniques guaranteed notable improvement. While some of these

approaches are doing well for some, there is not one procedure that is successful for all individuals with ASD (Sanford School of Medicine, 2006). Nevertheless, there is a diversity of treatment and educational approaches that may less different challenges associated with this pervasive developmental disability. Intervention may help to reduce disruptive behaviors while education can teach self-help skills that will allow the child to become more independent (National Research Council, 2001).

Even though a cure for autism is not yet available, WHO recommended that an evidence-based psychosocial intervention can reduce difficulties in communication and social behavior, with a positive impact on the person's well being and quality of life? However, the provisions of services for children with ASD are very minimal in public schools compared to other children with disabilities. As a result, many children with autism in Ethiopia get support and a rehabilitation service from non-governmental organization among others is Nehemiah Autism Center.

Studies indicated that one important barrier in the service provision for a child with ASD is fear of stigma of parents and siblings. Many parents and siblings of children with autism in Ethiopia are worried about other people finding out about their child's condition. Some parents feel the need to keep their child hidden at home (Siegel, 2003).

In addition, many parents and caregivers provide spiritual explanations for their child's condition, for example, attributing autism or developmental delays to a curse on the family or a punishment from God (Nia foundation, 2010).Spiritual justifications for autism are common among parents in Ethiopia and this affects their cooperation with teachers and their perception about professional services provided for their children with autism. This negative perception and

causal attribution is the cause of the vast majority of children with autism to remain undiagnosed, with no access to intervention or appropriate education (Mhrki, 2010).

Research also indicated that culture and socioeconomic circumstances can have a profound influence on autism families and the nature of treatment they provide and seek from others. Hence, service providers need a better understanding of these influences before they can truly serve children with autism in Ethiopian context. Although research from wealthy countries can inform interventions, adaptations to local culture and context are essential to make sure interventions meet the needs of local families and work in low-resource countries such as Ethiopia (Pozo, Sarria & Brioso, 2011).

Scholars in the field of Autism also suggested the several key elements as decisive when educating children with autism. These elements are entry into intervention programs as soon as an ASD diagnosis is being considered and active involvement in an intensive instructional program for a full school day, 5 days a week for a minimum of 25 hours a week, for the entire calendar year. Moreover, instruction should be one-to-one or in a small group in order to meet each child's individualized goals with a low student to teacher ration of not more than two children with ASD per SNE teacher in the classroom. It is also significant to note that the scholars did not identify a specific treatment for autism as treatments must be individually customized to the child's behaviors and special needs. Just as there is no one single signs or behavior that identifies children with autism, there lacks of single treatment that can be applied for all (Bakare, 2011; Pozo *et al.*, 2011).

Little is known about the appropriateness and effectiveness of adaptive behavior skills intervention programs for children with ASD in Ethiopia. Almost all autism research have been

conducted in Western, high-income countries, resulting in a research gap concerning studies from low-income countries like Ethiopia. Due to a lack of studies, the prevalence of autism in Ethiopia is unknown. A recent report of an autism meeting attended by 47 delegates from 14 African countries indicated the lack of autism services throughout Africa and the need to raise awareness and develop autism screening, training and service strategies on the continent (Bakare, 2011). In Ethiopia, the situation is even worse for there is serious shortage of service providers and researches conducted to know the nature of the training programs and intervention practices in the Ethiopian context. Hence, there is a need to investigate how the available training programs for children with autism are structured and practiced in Autism training Centers in Ethiopia.

Initiatives from local non-governmental organizations (NGOs) have contributed to an increase in autism awareness and service provision in Ethiopia. In this regard, Nehemiah and Joy Autism Centre take the lion share in educating these children. Some of the children with mild autism go to national and private schools. Otherwise, almost all children with ASD are deprived of education and rehabilitation due to lack of facilities, schools and trained teachers. In fact, the majority of parents do not know what autism is and those who know are pessimist regarding their children's change through education and training.

Although these developments are promising, existing services for children with autism have scarcely been documented. Moreover, little has been done to investigate opportunities and challenges to increase services and the most effective ways for future service development. Thus this study aims to assess the current adaptive behavior skills intervention/training practices for children with autism at Nehemiah Autism Centre.

1.2 Statement of the Problem

Even though autism is rising at an alarming rate, attention given by both government and the society is insignificant. Even the NGOs that are working with children, disability and women are not giving the required attention to autism. Bringing awareness to children's rights and women equality is important but addressing and supporting children who are currently suffering from autism needs prior attention than other issues.

The limited information available suggests that adaptive behavior needs of children with ASD are typically not sufficiently addressed in educational programs for these children (Rotholz *et al.*, 1989; Slavens, 1997).

There are many techniques, strategies and interventions applied to treat adaptive behavior skills deficits in children with ASD. Numerous treatment methods have been designed to address the variety of social, language, sensory and behavioral difficulties. Some of the instructional and training strategies for teaching adaptive behavior skills to children with autism take a behavioral approach and others take an interactive approach. Both models have been revealed to be effective with children with ASD (Kaiser, 1993; Prizant & Wetherby, 1998). Hence, a range of strategies have been based on a mixture of these models.

Another worry when implementing adaptive behavior skills trainings for children with ASD is the duty of designing the accurate individualized education plan for each child. Each individual with ASD display diverse characteristics and different extents of deficits. It is vital that professionals know the complexities of ASD in order to construct trainings that will best assist an individual in all aspects of adaptive behavior skills (Wilczynski *et al.*, 2007).

Adaptive behavior skills trainings are significant for all children to enhance success in training settings but are undersized for children with ASD under the current context of training centers in Ethiopia. Realizing adaptive behavior skills training and interventions being used in training settings to help children with ASD raise adaptive behavior skills training is very important. The effectiveness of the trainings should also be considered. Knowledge and understanding of effective adaptive behavior skills training and interventions can help to raise appropriate practices for individuals with ASD. Teachers in the school or training settings can help the center develop IEP for individuals with ASD. As very important team member, they can play a central role in the development and implementation of adaptive skill interventions for children with autism. One of the purposes of this study was to explore Special teachers at Nehemiah Autism Centre to get information on what adaptive behavior skills trainings they are using for children with autism.

In addition, no information is at present available concerning factors that affect team decisions to program for these needs or whether IEPs that address the adaptive behavior needs of children with autism affect daily instruction. While researchers have confirmed positive effects of a range of intervention methods in enhancing the independence of children with autism, it is uncertain whether the execution of such methods is taking place in applied settings.

Lovaas (1987) also indicated that professionals may unintentionally limit what a person with Autism can eventually achieve by waiting for adulthood to train for independence. By not targeting adaptive behavior needs and challenging behaviors in the training programs of children with autism, these children will remain dependent on others when they become adults. This practice has pervasive consequences in that it influences not only the individual with autism who is incapable to take part and function fully in his/her community but also families and

society that must give long-term care and assume an important accountability for these individuals throughout their lives.

This research will be conducted to fill a gap in the local professional literature and to make possible positive outcomes for children with autism by documenting and evaluating the existing practices in designing and implementing adaptive behavior skills training programs and instructional activities for children with autism at Nehemiah Autism Centre. This research answered the following research questions.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

1.3. Objectives of the Study

1.3.1. General Objective

The overall purpose of the study is to assess the practices of adaptive behavior skill training for children with ASD at Nehemiah Autism Centre.

1.3.2. Specific Objective

The study addressed the following specific objectives

- To describe the planning processes of ABST at Nehemiah Autism Centre.
- To explore the given of ABST at Nehemiah Autism Centre.
- To identify the perceived of ABST on children with ASD and their parents.

- To portray the extent to which ABST provided at Nehemiah Autism Centre goes in line with the evidence based practices of ABST established in literature.

1.4. Theoretical Framework

Individuals that observed are called models. In society, children are surrounded by many influential models, such as parents within the family, characters on children TV, friends within their peer group and teachers at school. These models provided examples of behavior to observe and imitate .e.g. masculine and feminine, pro and anti social etc

Children pay attention to some of these people (models) and encode their behavior. At a later time they may imitate or copy the behavior they have observed.

Children observe the people around them behaving in various ways. This is illustrated the famous Bobo doll model (Bandura 1961).

1.5. Significance of the Study

The major purpose of ABST programs is teaching children functional living skills that would be helpful to live at home and in the community. Self-help adaptive skills (day-to-day activities like brush teeth independently, put clothes away, and wash own hair, has skills in the area of self-care); expressive and receptive communication skills (expressing wants and needs, able to follow directions, focus attention on things, conversation with another person or retell); writing and memorizing academic skills; gross (walking, running, and riding a bike) and fine motor skills (drawing, tracing and typing); and sense enrichment activities. The types of trainings at NAC are categorized in to three levels: level 1, level 2 and level 3. Each category involves various components.

This study thus added knowledge about the extent of effectiveness such adaptive behavior skills training for children with autism disorders has brought about in Ethiopia. Study results helped to

fill the lack of local literature on the adaptive behavior skills service provision and the experiences of SNE teachers. The findings emerged from this research contributed a lot to strengthen the existing adaptive behavior skill training programs and services for children with ASD in the centers. The results can provide guidance for Autism Centers and schools as well as policy makers regarding ways to strengthen and improve education and training for children with ASD.

This study showed the significance of working teams among teachers and strong collaborative relationships that truly include parents as pivotal partners in planning and implementing adaptive behavior skills training plans for children with autism. Although this research will be conducted in a particular Autism Centre, the results will be useful for parents and SNE teachers and other educators in other Autism Centers and school systems and it will enhance or challenge their own practices concerning various adaptive behavior skills and educational interventions as well as instructional methods for children with ASD.

1.6. Delimitation of the Study

This study was delimited to one local organization called Nehemiah Autism Centre. The participants of this study were purposive samples by the target group of six facilitator practitioners, one educational leader employed at NAC.

They have experience of providing adaptive behavior skills training for children with ASD at least for two years and five parents with ASD. At NAC, they serve 40 students with ASD. The study was also focused on the scope of the service provided in the compound.

1.7. Operational Definition of Basic Terms

Adaptive Behavior Skills Training- refers the core training packages including self-help skills, receptive language skills training and expressive or academics language skills training designed for children with ASD at NAC.

Assessment- in this research assessment refers checking or measuring the child's developmental history through day to day observation and with the use of checklists.

Self help skills training - includes personal and daily living skills like potty training, washing, and dressing including level one.

Receptive language skills training- incorporates social skills, receiving instructions, and matching different things with realities including level two.

Expressive language skills training- refers communication skills, numeracy and literacy skills and academic issues including level three.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of literature starts with a description of the general characteristics of children with autism spectrum disorders (ASD) and definitions, information about etiology and prevalence of ASD. The literature review also addresses adaptive behavior skills and educational interventions for children with autism. Such interventions include different forms of applied behavior analysis ranging from more traditional discrete trial training to naturalistic teaching methods such as incidental teaching, pivotal response training and milieu teaching.

2.1. Definition of Autism

According to IDEA:

"Autism means a developmental disability significantly affecting verbal and Nonverbal communication and social interaction generally evident before age Three that adversely affects a child's educational performance other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements resistance to environmental change in daily routines and unusual responses to sensory experience .The term autism does not apply if child's educational performance is adversely affected primarily because the child has an emotional disturbance .a child who shows the characteristics of autism after age three could be diagnosed as having autism if the criteria above are satisfied. " (NICHCY, 2009, p.3).

Autism is a neurobiological disorder that occurs from birth or early in a child's development (National Research Council, 2001). The disorder is typically diagnosed before age 3, continues through adulthood and has no specific etiology or cure (American Academy of Pediatrics, 2001; National Research Council, 2001). Autism is usually described as a spectrum of disorders that

differ in severity of impairment and association with other disorders (e.g., intellectual disability, seizures). Although symptoms differ from one child to the next, all autism spectrum disorders are manifested by major impairment in mutual social interaction and communication skills and the occurrence of repetitive and stereotyped behaviors and interests (DSM-IV-TR, 2000).

According to DSM-V published in 2013, autism manifests in two core areas including social communication and restricted, repetitive behaviors. That is, impairments in social interaction and impairments in communication grouped into a single domain of social communication. The work further categorized the severity level of ASD in to three levels. This is clearly presented in the table below.

Table 2.1: Severity Levels for Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 “Requiring very substantial support”	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interferes with functioning in all spheres. Great distress/difficulty changing focus or action.
Level 2 “Requiring substantial support”	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change or other restricted/ repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.

Level 1 “Requiring support”	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between Activities. Problems of organization and planning hamper independence.
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Source: American Psychiatric Association (2013)

2.2. The Characteristics of Autism

One of the central characteristics of autism spectrum disorders (ASD) is major impairment in the capability to begin and uphold reciprocal social interaction (Machalicek *et al.*, 2008; National Research Council, 2001). Children with ASD frequently avoid eye contact and appear detached and unconcerned in interaction with people. Their imitation skills and capability to engage in communal activities are usually impaired. Children with ASD have trouble learning to understand social cues (e.g., facial expressions, nonverbal gestures) and the feelings of others. Therefore, they have problems considering things from another person’s viewpoint and engaging in reciprocal social conversation.

Children with ASD display major deficits in functional and symbolic play skills. Numerous have difficulty regulating their own emotions. They may become disruptive or physically aggressive or involve in self-injurious behavior. It can be difficult for them to comply with directions and keep in cooperative social behavior either as they do not fully understand the directions, rules or social expectations or because they have compulsive interests not shared by other children (Machalicek *et al.*, 2008; National Research Council, 2001).

Children with autism spectrum disorders also display a central deficit in verbal and nonverbal communication skills (*DSM-IV-TR*, 2000; National Research Council, 2001). Several show significantly delayed language development and some stay nonverbal throughout their lives. A number of children learn to use alternative communication systems such as pictures or sign language (Schlosser & Wendt, 2008). Those who do obtain functional speech often merge normal language with idiosyncratic speech, echolalia (repeating the same words or phrase over and over) and stereotyped language.

2.3. Etiology of Autism

Autism is commonly believed to be a neuron-developmental disability with a physically powerful genetic basis but the precise reason remains unidentified for most children affected with an autism spectrum disorder (American Academy of Pediatrics, 2001).

The majority of the experts think both genes and the environment play a role and there may be multiple causes that lead to a variety of autism spectrum disorders (American Academy of Pediatrics, 2001). Strong confirmation for a genetic basis has also been found by twin studies conducted by Bailey, Le Courter, and Gottesman (1995). These researchers found that identical (monozygotic) twins had a concordance rate of 60% for children with autism disorder and 92% for the broader spectrum of ASD, while fraternal (dizygotic) twins had concordance rates of 0% for children with autism disorder and 10% to 30% for the broader spectrum. Siblings had a recurrence rate of 3% to 7% for the broader spectrum. Based on their twin research data these researchers calculated the heritability of autism to be approximately 90%.

Even though autism emerges to be largely genetic in origin, scholars in the field also believe that several environmental factors probably play a significant role in whether a child with a genetic predisposition in fact develops the disorder. Several researchers maintain a multi factorial mode

of inheritance for autism based on a mixture of genetic and environmental factors (American Academy of Pediatrics, 2001).

For example congenital rubella and early first trimester thalidomide experience have both been connected with bigger risk for autism. More recently, widespread public controversy has raged over whether the measles-mumps-rubella (MMR) vaccine and other childhood immunizations are connected with a high risk of autism. However, any connection between childhood immunizations and greater risk for autism has been repeatedly refuted by the research community (American Academy of Pediatrics, 2001).

The combination of causes of ASD is not fully known. There is growing evidence that ASD is a genetic condition and that there are likely severally different genes involved. The mode of genetic transmission appears complex and scientists are focusing their work on discovering which genes may be involved and how these genes are affected. So far, it appears that for at least a significant sub group of ASD, there is a genetic susceptibility that differs across family that is different genes may be responsibility in different families.

2.4. Prevalence of Autism

According to WHO report global median prevalence is 62/10 000, that is one child in 160 has autism in Europe, the median rate of Autism is 61.9/10 000 and in Australia half million individuals are affected with autism. A Survey which is done in Europe suggests that the prevalence of autism is 99 per 10000 (Baron-Cohen, et al., 2009).

At about the middle of the 20th century the prevalence of autism was projected to be only 4 to 5 in 10,000 children (American Academy of Pediatrics, 2001).

Such projection changed fundamentally by the end of the century. Currently it is estimated that an average of 1 in 110 children in the United States has an autism spectrum disorder (The Centers for Disease Control and Prevention (CDC), 2010). An estimated 1.5 million people in the United States are affected by autism data cost to the nation of \$35 billion annually and additional children are diagnosed with autism each year than with diabetes, AIDS and cancer combined (Autism Speaks, 2010).

Another Study which was conducted in America in different states indicate that in average one in 68 children aged less than 8 years are affected with autism with a proportion of one from 42 boys and one from 189 females (CDC, 2010). Research result from Asia disclosed the prevalence of autism in China is 26.6 per 10000(Sun, Matthews & Sharp, 2013).

Report from Oman shows that the prevalence of autism is 1.2-1.7 per 10000 (Al-sharbati & Waly, 2009). Prevalence of autism in Africa is not well known (Bakare, 2011). But there is Research result from Arabic country which shows the prevalence of autism in Egypt and Tanzania is 33.6 % and 11.5 % respectively (Salhia, Taher & Al-khathaami, 2014).

In Ethiopia disability data is fragmentary, inconstant and covers only few categories of disabilities. So, in Ethiopia, there is no official data that show the prevalence of autism. Different studies have presented their own estimation. According to Joy Autism Center Foundation the prevalence rate of autism in Ethiopia is estimated to be the same as in other regions of the world. In United States of America, one in every 115 children is diagnosed with autism and in Ethiopia's population of more than 80 million a fair estimation of at least 530,000 children suffer from autism and related developmental disorders.

2.5. Services for Individuals with ASD at Autism Centers

Though individuals with ASD may struggle socially, they may not receive appropriate adaptive behavior skills trainings within various settings especially in developing countries such as Ethiopia where there is a lack of resources and trained man power.

However, in developed countries such as in the USA there is a law for individuals with a disability that grant them access to federally funded programs, such as public schools, and may comprise accommodations so the individuals with a disability can perform at the same level as their age mates.

In order to receive special education services and other related services, under IDEA, the student with a disability must show impairments in educational performance. If educational performance is revealed to be low for a student diagnosed with ASD, than related services such as adaptive behavior skills interventions could be provided (IDEA, 2004). An IEP must be prepared for a child getting services under IDEA.

The IEP is distinctive for each individual child and needs developed goals and objectives that can be measured. Typically the parent, principal, school psychologist, special needs education teacher, regular subject teacher and speech-language pathologist are present at the first IEP meeting.

IEP meetings as well contain any service providers such as an occupational therapist, nurse, therapist, adapted physical education therapist, and so forth that would be giving services for the child throughout the year. Goals and objectives on the IEP are decided and supervised during the child's training years (IDEA, 2004; Wilczynski *et al.*, 2007).

The concern with preparing IEPs for children with ASD is the variability of impairments and signs surrounding the diagnosis. Because of the heterogeneity of the population of individuals with ASD, it can be hard for school professionals to know what deficits to focus on and what skills require being adapted for each student (Wilczynski *et al.*, 2007).

Teachers that work in schools and Autism centers often feel they are not qualified or do not have sufficient training to work with children with ASD (Simpson *et al.*, 2003). Another concern is that there are not yet good inclusive guides for developing an IEP for children with ASD, as children with ASD have diverse needs (Iovannone, Dunlap, Huber & Kincaid, 2003; Wilczynski *et al.*, 2007; Williams *et al.*, 2005).

At least one of the IEP members should have good clinical decision and knowledge of autistic symptoms and impairments in order to best assist the team form goals and objectives (Wilczynski *et al.*, 2007). School psychologists are important members of the IEP team because they can put in psychological and clinical input (Skokut, Robinson, Openden, & Jimerson, 2008).

There is a need for SNE teachers and centers of Autism in general to use evidence-based practices and to obtain information on symptoms and treatments for children ASD. Because of their practice and knowledge, SNE teachers will continue to be involved in helping students with an ASD attain and maintain appropriate adaptive behavior skills within the center, family and in the community (Koegel, Koegel, & Carter, 1999; Skokut *et al.*, 2008; Williams *et al.*, 2005).

There are many important areas in which SNE teachers are beneficial as IEP team members for children with an ASD may be their abilities to design and implement interventions and intercede concerns between families and Autism Centre /school administration staff members. Teachers can play a key role in planning and designing proper interventions that they can use as they teach children with ASD.

They can also help team members decide if adaptive behavior skills interventions and training will benefit a child with ASD and then help determine what type of adaptive skills intervention is suitable and effective. SNE teacher can also serve as a good agent to smooth the progress of the relationship between the center/school and parents of the student with ASD as training take place (Ivey, 2007).

2.6. Types of Adaptive Behavioral Skills Training for Children with ASD

The treatment of ASD differs from child to child. Research indicate that early intensive behavioral therapy of autism throughout toddlers or preschool years can considerably improve cognitive and language skills in young children with autism (NIMH, 2011). It is also indicated that early behavioral and therapeutic interventions have a significant contribution for the life of a child with autism through improving communication, forming relationships, decreasing maladaptive behavior and developing independence (Larsson as cited in Sharpe & Baker, 2007). The treatment options, showed by Ozonoff, Dawson and Mcpartland (2002) are applied behavior analysis, Treatment and Education of children with ASD, Denver and green span models, social skill groups, educational support, language and communication therapy functional behavioral analysis, medication, sensory integration therapy and individual psychotherapy.

2.6.1. Applied Behavior Analysis (ABA)

Since the early 1960s numerous researches have been conducted using ABA with children with ASD of all ages, and ABA remains one of the most popular and broadly used treatment methods for children with ASD. A wide variety of ABA-based interventions have been designed for use in structured conditions and in more “natural” daily situations and in one-to-one as well as group settings (National Research Council, 2001).

A number of researchers have conducted comprehensive reviews of a plethora of studies documenting the effectiveness of ABA-based interventions for developing communication, play, social, academic, and adaptive skills in children with ASD and reducing problem behaviors (e.g. Matson *et al.*, 1996).

Behavior analysis is a scientific method to understanding behavior based upon the principles of respondent and operant conditioning as originally described by Skinner (1953). ABA includes the application of behavior analysis and principles of learning theory to reduce or eliminate problem behaviors and teach new skills. Antecedent conditions and results of behavior are analyzed and manipulated and principles of positive and negative reinforcement, shaping, and fading are used to enhance or reduce target behaviors (Heflin & Simpson, 1998).

Positive reinforcement is used to make stronger a behavior subsequent that behavior with something that is preferred or valued. Skills are broken down into small steps and the child is given frequent chances to learn new skills with reinforcement. The goals of intervention and types of reinforces applied are modified to meet the needs of the individual child whose performance is measured by direct observation and data tracking (Lovaas, 1987).

Even though ABA is now widely established among researchers as powerfully empirically supported and among the most effective interventions for children with autism, ABA remains among the most contentious and widely misunderstood treatment strategies (Heflin & Simpson, 1998).

In part this is as many mischaracterize ABA as synonymous with Discrete Trial Training (DTT) and the early work of Lovaas (1987) that describes only one type of applied behavior analysis (Tarbox & Najdowski, 2008).

DTT and the Lovaas method have played a significant role in intensive ABA intervention programs mainly for very young children during the initial stages of treatment. However, the field of applied behavior analysis has widened in the past 30 years to comprise numerous other applied behavioral approaches including “naturalistic” teaching procedures (e.g., “pivotal response training,” “incidental teaching,” and “milieu teaching”) and an array of other methods such as prompting, choice, priming, time delay, adult and peer modeling, and picture exchange systems (Allen & Cowan, 2008).

The field of ABA remains a long way from recognizing any one systematic approach that best fits the needs of an individual child (Lovaas, 1987) and educators are faced with an increasingly vast array of choices.

2.6.2. Social Skills Training (SST)

Significant impairment in social interaction is one of the core characteristics of children with autism spectrum disorders (*DSM-IV-TR*, 2000). Vital social skills such as sharing joint attention, initiating and maintaining social interaction, and engaging in cooperative play may be lacking or severely impaired (National Research Council, 2001).

Several excellent reviews of the literature have been conducted describing a variety of interventions used to teach social skills to children with autism (e.g. McConnell, 2002). Such studies have generally used single subject designs with pre-post, multiple baselines, or ABAB formats without ensuring researcher blindness or random assignment to treatment conditions (National Research Council, 2001).

In spite of these methodological limitations, a significant body of research has emerged providing empirical support for various types of social skills interventions. Machalicek *et al.*

(2008) also identified four general categories of interventions used to teach social skills to children with autism including: (a) Adult mediated antecedent interventions (e.g., priming and social stories); (b) peer-mediated strategies; (c) Video modeling; and (d) Pivotal Response Training (PRT).

This method is a comprehensive teaching approach used to target a wider range of behaviors than just social skills. Examples from the research have already been cited describing the effectiveness of PRT in teaching children with autism social skills such as initiating social interactions and increasing joint attention, which are pivotal behaviors for developing more complex social skills (e.g. McConnell, 2002). A discussion of adult-mediated and peer-mediated strategies follows with examples from the research literature illustrating the effectiveness, strengths, and limitations of each strategy.

2.6.3. Discrete Trial Training (DTT)

DTT is ground on the perspective of ABA therapy and is now used in several educational and therapeutic centers for children with autism. The basic principles of DTT are one-to-one intervention, precise, succinct instructions, planned prompts and fading of prompts, and instantaneous praise for accurate responses.

When integrating the discrete trial methodology, teachers use a single cycle of a behaviorally-based training routine, meaning that the job is begin in small steps until the task is mastered. Mastery of a skill may be attained after a particular trial has been repeated numerous times in series, either many times a day or over numerous days. Skokut *et al.* (2008), describe four parts of discrete trial, with an optional fifth.

The first step consists of instituting a teaching relationship, involving the teacher using one-step instructions to reduce unsuitable behaviors. The second step is defined as teaching foundational skills, using the discrete trial method to teach academic and life skills. This includes matching and identifying objects, mimicking actions, suitable play skills and following and discerning between given instructions. The third step includes communication intervention. Expressive language skills such as verbal imitation, recognizing actions, objects and pictures are dealt with. The last two steps maintained to support the building of communication skills. The fourth and fifth steps focus on increasing communication by sustaining and encouraging verbal peer interaction while focusing on turn taking conversations.

2.7. Planning for Intervention of ASD

The aim of planning of adaptive skills is to obtain a measure of the child's typical functioning in familiar environments such as the home and the school. Such measures provide clinicians with an estimate of the degree to which the child can meet the demands of daily life and respond appropriately to environmental demands. A significant level of adaptive skills or between observed performance in a highly structured situation and in more typical situations indicates that an explicit focus on acquisition and generalization of adaptive behavior skills training is important.

Adaptive behavior skills training is a "less intensive" plan designed to enhance the individual's overall quality of life. Individual's age three to adult are able to access these services. The principles and procedures for analyzing and changing behavior (ABA) are used to target the following skill areas: Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management.

Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Behavioral interventions for toilet training have been based upon principles of the behavior the problem of nocturnal enuresis has been addressed with urine detection devices that serve to awaken children with ASD. So they can get out of bed when wet, as well as with systematic behavioral procedures involving practice, rewards, and clean-up requirements (National Research Council 2001).

In other words, many events for teaching self-help skills to adults with ASD have been extended to younger children with ASD. Yet there have been relatively few direct empirical tests of adaptations to young children with ASD. This situation may partially result from the lack of emphasis on publishing systematic replications, as well as from the cost- and time-efficiency of simply using existing procedures that prove to be clinically effective.

2.8. Perceived of ABST for children with ASD

The impact of ABST for children is increasing independence for each individual with ASD. Plan monitoring is performed in the same environment the service is provided. The Clinical program coordinator will monitor data to decide the route of treatment, provide feedback to the instructors, and train continuity of care with the parents/caretakers.

All programs are implemented by instructor's who all receive an initial training on the principles and procedures for analyzing and changing behavior, in addition to, a program specific training prior to starting adaptive behavior skills training for children with ASD (National Research Council 2001).

2.9. Perceived of ABST for parents with ASD

Parents and other family members can benefit from bringing the children to the center to address the various emotions and stress of having a child with ASD in the family and to ensure that their own needs are also met. This could include providing information about the children with ASD daily living progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals (National Research Council 2001).

Parents whose child is diagnosed with ASD experience difficulties and it changes the dynamics of the family in that everyday activities need to be modified and the child with ASD will need extra attention from the parents. Children with ASD can result in scattered emotions for the parents. Each family handles the vision of their child differently. Just as the spectrum varies, so does each family's experience. Upon hearing their child's diagnosis, one study found that in parents, "52% felt relieved, 43% felt grief and loss, 29% felt shock or surprise, and 10% felt self-blame" (Banach, Iudice, Conway, & Couse, 2010). Often, parents are relieved that they were given an answer in regards to their child's symptoms but this does not erase the stress that they endure while raising a child with autism. Parents often experience stressful situations upon the initial diagnosis that relate to their child's behavior, adapting to this new lifestyle and the complexity of finding access to the appropriate services useful to the family (Banach *et al.*, 2010). Stressors from an ASD diagnosis can cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others.

2.10. Assessment of Adaptive Behavior Skills Training

An assessment is conducted using an adapted functional behavior assessment. Once the assessment is completed, a report is composed then submitted to the funding source (regional center). The assessment report will provide an overview of the individual's skill deficits, targeted goals, and behavior change procedures that will take program development and implementation.

All programs are structured to record quantitative and qualitative data, which are used to drive the decision making process. Skills are taught at home, center and community environments.

Assessment of adaptive behavior skills training is particularly important for children with ASD for several reasons.

First, measures of a child's typical patterns of functioning in familiar and representative environments, such as the home and the center, can be obtained.

Assessment of adaptive behavior skills training provides a measure of a child's ability to generalize teaching across settings; given the nature of the cognitive difficulties in generalization in ASD, such assessments are especially important. As with other children with ASD, acquisition of basic capacities for communication, socialization, and daily living skills are important determinants of outcome. Adaptive behavior skills training may be in marked contrast to a child's higher ability to perform in one-on-one teaching situations or in highly structured behavioral programs.

Second, assessment of adaptive behavior skills training can be used to target area for skills acquisition.

Third, there is some suggestion that relatively typical patterns of performance in ASD can be identified and that some aspects of adaptive assessment of social skills can contribute to a diagnostic evaluation.

Fourth, assessment of adaptive behavior skills training, as well as of intellectual ability, is essential in documenting the prevalence of associated intellectual disability and, thus, eligibility for some services (National Research Council 2001).

CHAPTER THREE

METHODS

This chapter presents the design used, the sampling techniques employed, the data collection instruments used, and the procedure of the study and the method of data analysis.

3.1. Research Design

The design used in this particular research was qualitative, specifically case study design. This is because it is useful to obtain in-depth data from the center facilitator, practitioners and parents with ASD regarding the practice and implementation of adaptive behavior skill training programs.

This study was to examine the practices of adaptive behavior skills training for children with Autism Spectrum Disorder (ASD) at Nehemiah Autism Center (NAC). To conduct this study qualitative research approach especially, case study design was used.

3.2. Study Site

The study was conducted at Nehemiah Autism Center (NAC), found around Megenagna area, Addis Ababa City. NAC is a non-governmental local organization established for providing services for children with ASD since 2012. It also offers a family support group in addition to holistic rehabilitation services to children with autism spectrum disorders. It has also experience sharing and a family support meeting with parents and staff from other canthers of Autism. It is now growing its work to allow more children with autism spectrum disorders to obtain professional services. The center provides services in three level (level1: self-help skills, level 2: receptive skills, and level 3: expressive skills) by accommodating 40 children with ASD and facilitated by 20 teachers.

Nehemiah Autism Center has a license from Charities and Societies Agency, which is a concerned governmental office, and has rented a house to receive children with ASD. The center started work on June 16, 2011 after it got its license on August 31, 2010. At the moment the center is giving adaptive behavior skill training and treating children with ASD in its center. This NGO is non-profit and a non-governmental organization.

It also provides transportation free of charge for those families who cannot afford to send their children with ASD to the center due to the reason that it is difficult to use public transport for these kinds of children with ASD. Nehemiah Center aspires to see every ASD child is cared for, parents of ASD children are supported and awareness about ASD created in the society.

Nehemiah Autism Center's mission is to provide care, instruction and support for children with autism and related disabilities - promoting cognitive, emotional and relational growth through individualized programs, while providing counseling and support to parents, especially mothers as they deal with these particularly difficult challenges; teaching the parents to become active participants in their child's education and development; and finally, to raise public awareness of the nature and prevalence of ASD.

According to their starting story, they are a group of families of children with ASD. They were unable to send children with ASD to a school or a center to train and teach children with ASD due to lack of space in the then only available Autism center in Ethiopia.

So their option was, especially mothers, to abandon the job and stay at home to look after their child with no hope insight. When one of the mothers, Miss Rahel Abayneh, came with a vision to open another center for these kinds of children, they stand with her and managed to open this center.

They are now trying to reach to so many children with ASD who are deprived of their rights for education and rehabilitation because of shortages of schools and society's lack of awareness.

They first started with 6 children with ASD. At those beginning days, due to lack of funds the board members were forced to discuss about the center sitting on the floor. They were in shortage of funds to pay salaries for the caregivers. Now, Nehemiah autism center has 40 children and 20 caregivers to train the children with ASD.

Based on their success story, they have some accomplishment in spite of the few years since they started the Nehemiah autism center. They see lots of change on the children with ASD they train including understanding what one says, able to eat independently, capable of toileting and clothing, completing puzzles, and able to speak.

They see hopes in the families' children with ASD, especially mothers are now able to work and add incomes to the family. Due to the awareness they created, they see understanding in more part of the society about autism. Consequently stigma and discrimination is slowly decreasing.

3.3. Participants of the Study

The researcher used parents of children with ASD and special needs education teachers working at Nehemiah Autism Centre as participants of this study. Six teachers of the center, two from each level were identified and took part in the study. In addition, five parents who are trained and have relatively close connection with the center teachers were participants in this study.

Both groups (practitioners and parents) of participants were selected using purposive sampling technique. The criteria of the purposive sampling technique help for the target of the participants' direct relationships between the children with ASD.

3.4. Data Collection Instruments

The study classified the research questions that are needed to be addressed in the scientific study and to make decisions that should be studied what source of file should be involved and what kind of tools should be employed. The data for this study were obtained from both primary and secondary sources.

The primary data sources have been prepared and checked within piloting by semi structure interview and observation. The secondary data were relevant document analysis and child profiles.

3.4.1. Semi-structured Interview

The researcher developed semi-structured interview guide after a through revision of relevant literature concerning the major areas of the study. The interview guide consisted of 10 questions designed to dig in-depth information related with the research objectives.

3.4.2. Observation Guide

Similar to the semi-structured interview guide, class room observation guide was prepared by the current researcher in consultation with the related literature. It is a kind of checklist consisting of 11 items structured into Yes or No options in order to strengthen the data collected by the interview. The practitioners and parents participants were selected because they were the only available and identified by their strong relationships and may expected to give more and detailed information about children with ASD.

3.4.3. Document Analysis Guide

For the sake of comparing the ABST practices in the current research site with the already established scientific literature, document analysis guide was developed by the present investigator. The tool incorporates basic criteria including training types, components, goals, and planning, implementation, and evaluation processes.

All items of the three instruments were first prepared in English. But for the sake of the effective communication, the interview guide was translated into Amharic.

3.5. Pilot Study

The purpose of the pilot study was to assess the relevance and clarity of the questions of the tools designed to collect data for the study in order to check clarity of the items of the tools. Thus all the preliminary semi-structure interview guide, observation guide and document analysis guide were presented to three participants found at Joy Autism Center. In addition, the advisor of the research and one language expert reviewed the tools. Based on their responses, necessary modifications were made on the data collection instruments and made ready for the main study.

3.6. Data Collection Procedure

The data collection process was as follows. First, letter of permission was taken from special need department of Addis Ababa University.

The letter was submitted to the heads of at Nehemiah Autism Center associations and then agreement was arrived on the objective of the study and they became willing to inform participants for the study.

Then, participants were selected for the study and necessary rapport was established with frequent visits of the researcher and through phone calls. Next, after agreement on using tape recorder was assured, interviews sessions were made with each respondent.

The interviewees were made free to arrange the time and place of the interview session, as it was very comfortable for them. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use prompts to encourage the interviewee to consider the question further.

The interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee. In addition to use tape recorder and notes was recorded using note book during an intensive interview held with each case privately.

In order to reinforce the information obtained through interview, classroom observations were also made for about four months and during this period each of teachers/facilitators observed once in a week. Moreover, the documents were reviewed side-by-side to the observation process. Then, the three data instruments triangulated in the finding process. After that the findings discussed.

Finally, summarized, concluded and recommended based on the findings and discussions.

3.7. Data Analysis

Thematic analysis was used to analyze the data in this study. As described previously varieties of data collection instruments were used to collect enormous amount of data. Accordingly, the major tasks during analysis made by researcher were as follows; organizing the data, generating categories, themes and patterns, coding the data, and reviewing the emergent ideas and searching for alternative explanations. It was done after all the data in Amharic were transcribed into written paper. Then, the investigator tried to identify themes by categorizing the transcribed data.

3.8. Ethical Considerations

When conducting this study, the researcher followed some ethical guidelines. Thus, the first activity of the researcher was getting permission from participants. Once permission was obtained, the researcher made the participants feel safe and secure regarding the information they provided on the issue of investigation. In other words, the researcher assured participants that the information they provide would be used only for research purpose. Moreover, to make participants feel more confident about the information they provided, each informant was pre-informed that her/his real name will not be used while reporting the results.

All participants were also oriented to understand their rights to confidentiality and anonymity in the research process and the right to withdraw from the research at any time, without having to give their reasons.

CHAPTER FOUR

RESULTS

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa. To achieve this research purpose, the data were collected based up on the basis of the research questions and specific objectives.

In order to answer the research questions and specific objectives, the data were collected through semi-structured interview, observation and document analysis. The participants of the current study were six caregivers, one educational leader and five parents of children with ASD who are undergoing training at NAC.

4.1. Demographic Characteristics of Respondents

4.1.1. Demographic Characteristics of Practitioners

Six practitioners and one center coordinator were interview participants. These practitioners have been working at NAC for one year up to three years. Most of the practitioners were females; among all five were female practitioners. Abbreviated names were used to present the information given by the respondents voluntarily and confidentially.

Table 4.1: Demographic Characteristics of practitioners

No	Name	Sex	Age	Marital status	Educational Level	Experience in the center
1	G	M	40	Married	Education	4
2	W1	F	30	Single	Psychology	1
3	A	F	29	Single	IT	3
4	Z	F	32	Married	ECCE	2
5	M	F	28	Single	Nurse	2
6	W2	F	30	Married	Building work	3
7	G	M	28	Single	Accounting	3

4.1.2. Demographic Characteristics of Parents with ASD

Five parent respondents were involved in this study. As indicated in Table 2 below, interview was conducted with one father and four mothers whose children were with ASD.

Table 4.2: Demographic Characteristics of Parents and their Children with ASD

No.	Parents				Children			
	Category	Sex	Age	Educ. level	Child Name	Sex	Age	Stay in the center
1	Mother	F	40	12	NA	M	8	3
2	Mother	F	39	12	YO	M	14	5
3	Mother	F	42	12	YE	F	11	4
4	Father	M	52	MA	YH	M	10	3
5	Mother	F	38	12	KE	M	7	1

4.2. Planning Adaptive Behavior Skills Training

The goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance. Essential outcomes focus on improvements in social communication that affect the individual's ability to develop relationships, function effectively, and actively participate in everyday life.

Generally, the adaptive behavioral skills training are considered as intervention practices and/or programs in the center. The center provides need-based adaptive skills trainings at each level with children of different interest and potential.

In addressing this issue, observation was conducted at the center which revealed that the center has used scientifically proven ABST for children with ASD. It implements the training using organized training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year. There are training aids and resources available for the training in the center. As an instance, pictures placed at the eye-level of each child. In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all children that can help them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

The data collected through semi-structured interview from practitioners of students with ASD about the planning processes of adaptive behavioral skills training indicated that the planning process will be determined after the center identifies the problem of each child by conducting assessment. Three of the respondents stated that each individual child has his/her own education plan in the training. All of the interviewees indicated that self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities ,especially for children with ASD at level one. The result from the document analysis also fits with this result. In addition, some respondents indicated that music and TV room refreshment activities are also considered in the plan.

In relation to the planning process, the data from document analysis pinpointed that receptive order and communication skills are the major focus areas of the plan for children at level two. Some of the major activities impinged in the plan include social interaction by calling days and names, giving and receiving properties, receiving directions, matching of materials, clothes, body structures with what they hear from the facilitators. The same source of data also shows that academic and expressive skills are the major areas of concern in the planning process for level three children. These skills are expected to develop through social interactions, communications, and writing, playing, accepting and responding the directions from the facilitators.

Table 4.3: Examples of Schedules of Daily Activities

Self-help therapy	Social skills	Physical	Sensory skills
Going to toilet alone	Able to ask their needs	Sports	Smell
Holding the toilet handle	Mimicking	Relaxation	Sound
Going inside the toilet	Reply to command	Indoor play	Food interest
Taking off trouser and	Relating objects with name	Outdoor play	Identify objects
Using toilet properly	Responding to call		Keep self
Going back to class	Behaving in crowd		
	Playing alone		

A daily routine is designed to each level student on different types of daily activity. Practitioners have multiple tasks during daily activity in a center. They follow the protocol which is designed by the educational analyst in the center.

Activity schedules/visual supports include objects, photographs, drawings, or written words that act as cues or prompt to help individuals complete a sequence of tasks/activities attend to tasks, transition from one task to another, or behave appropriately in various settings. Written and/or visual prompts that initiate or sustain interaction are called scripts. Scripts are often used to promote social interaction, and they can also be used in a classroom setting to facilitate academic interactions and promote academic engagement.

NAC has used different objects, drawings, written words that help the children to teach and do tasks. These items are used in the center so that the children can learn by doing different activities and concentrate on things. As most of the children have a problem on concentration these activities will help them.

4.3. Types of Adaptive Behavior Skills Training

The data collected from the three instruments (interview, observation, and document analysis), revealed that the major purpose of ABST programs is teaching children functional living skills that would be helpful to live at home and in the community. Self-help adaptive skills (day-to-day activities like brush teeth independently, put clothes away, and wash own hair, has skills in the area of self-care); expressive and receptive communication skills (expressing wants and needs, able to follow directions, focus attention on things, conversation with another person or retell); writing and memorizing academic skills; gross (walking, running, and riding a bike) and fine motor skills (drawing, tracing and typing); and sense enrichment activities.

Based on the semi-structured data gathered from the practitioners, the types of trainings at NAC are categorized in to three levels: level 1, level 2 and level 3. Each category involves various components.

4.3.1. Self Help Skills Training

The level 1 training: *“This training is given for children come to the center, and these children have no experiential daily living skills at the home-environment.”* Based on the interview data, at this level, children with severe ASD are given various trainings such as self-help skill training and sensory enrichment such as five sensory senses like taste, smell, visual audio, tactile and vestibular, perceptive and other daily living skill training, potty training, hand washing, face washing, wearing of jacket, T-shirt, trousers and shoes. As part of the training at Nehemiah

Autism Center, this category depends on social communication (friendship, residual language difficulties), functional regulation managing self-control and anger, anxiety and depression, work skills-personal and class room organization skills.

4.3.2. Receptive Language Skills Training

The level 2 training: *“level two receptive language skills training is provided if children successfully accomplish level I training.” The center has its own assessment mechanisms.*

Accordingly, it focuses on the receptive communication skill like to accept the direction, playing skill following the command the eye contact and attention. This training focuses on social communication interacts and making sense of people understanding and listening conversation and rigidity preparing for change; sensory motor difficulties; inappropriate reaction to sound touch and vision, and emotional difficulties encouraging motivation and limiting over dependency.

4.3.3. Expressive Language Skills Training

The level 3 training: *“This training is given for children who effectively achieved level I and Level II training components.”* The educational leader interviewee has favorably explained that this part of the training focuses on the expressive communication skills such as occupational therapy, speech therapy applied behavior analysis art, letter, number music and reading academic is another task of level three. Level three children with ASD the educational leader developed self-skill and receptive communication skill try to express their feeling and interest. The care givers treat them by different mechanisms such as ABA, DIR and DTT. And the children with ASD will go the inclusive class, and the students with ASD to be independent for each activity. In addition, this part of the training is intended in establishing joint attention, and

communication, visual learning and structure, building communication, preparing for change and remembering. Auditory/Sensory Integration Training- Broadly speaking, sensory integration therapies are used to treat integration dysfunction in one or more sensory systems. Treatments can include physical exercise, sensory/tactile stimulation, and auditory integration training. NAC gives a physical exercise daily to the children so that they can socialize and know how to socialize themselves. But they didn't give the formal therapy for sensory system.

Discrete Trial Training (DTT) - This is a one-to-one instructional approach utilizing behavioral methods to teach skills in small, incremental steps in a systematic, controlled fashion. The teaching opportunity is a discrete trial with a clearly identified antecedent and consequence (e.g., reinforcement in the form of praise or tangible rewards) for desired behaviors. DTT is most often used for skills that learners are not initiating on their own, have a clear, correct procedure, and can be taught in a one-to-one setting. DTT is informally been addressed at NAC, whenever students achieve one goal or do one daily task; they reinforce them in showing their support to the kids. For example, giving hug, allowing playing with toys and so on.

The data collected from observation and document analysis also confirmed the presence of some implementation of scientifically proven adaptive behavioral skills training for children with ASD at the center. These are ABA, DTT, DIR and other self-help skills, receptive language skills and expressive language skills in the all levels of sections for each individual child; however, it is not at the expected level.

In general, as it was witnessed by the researcher's observation, there are different adaptive behavior skills training aids and resources available for the training in the center. For instance, pictures placed at the eye-level of each child.

In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all that can help them adapt the social and physical environment; learn adaptive behavior skills training such as interpersonal and intrapersonal skills.

The practitioners and caregivers treat the children with ASD used the guidelines of center for each IEP and level. But, facilitators sometimes gave different trainings based on the individual performance and quality. The practitioner or care giver used different mechanisms of maintaining eye contact. Some pictures are also placed at the eye level of children at class room. According to the report of the center coordinator, Assessment of Basic Language and Learning Skills, music, occupational, physical and sensory integration therapies are also the common intervention mechanisms at the center.

4.4. The perceived of Adaptive Behavior Skills Training

4.4.1. Perceived on children with ASD:

According to the data collected from interview participants, the major impact of the implementation of different ABST programs is making children to be independent in order to handle various activities in their life at the center and out of it. More specifically, the respondents indicated that ABST programs are important to help children to be self-reliant manage, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications.

In addition, ABST contributed to develop children's sense enrichment including visual, auditory, tactile, taste, smell, and vestibular systems. All these help children to promote themselves from one level to the next. As it was reported by the center coordinator, 13 children out of the total 40 children were transferred from one level to the next. That is, four children from level one were

promoted to level two, the other four children were promoted to level three, and five children with ASD got registered to grade one inclusive formal school systems due to the positive effect of ABST. On the other hand, around two-third (27 children) did not fulfill the standard/criteria to pass to the next level.

4.4.2. Perceived on Parents with ASD

Interview was conducted with parents of children with ASD for the purpose of gathering data about the perceived of ABST program provided to them. Parents reported that the training package prepared for the practitioners at the center is also organized for the parents in order to equip them to give the training to their children at home. Parents taught about how to manage and maintain their child's basic skills at home.

Almost all participants indicated that the primary importance of getting the training is to get relief and psychological stability. Especially, those parents with children at level one are highly happy when their children get improved in self-help skills such as potty training, dressing and undressing, eating, toileting, and washing. After the trainings the parents with ASD to changes behavior due to the training provided by practitioners at the center and parents at home.

Moreover, due to the awareness created by the training, two of the participants' mothers sometimes come to the center to give additional support to their children with ASD.

4.5. The Adaptive Behavioral Skills Training and Its Evidence Based Practices

According to the document analysis there were different types, goals, components, planning implementation and evaluation of training phase. In order to portray the extent to which ABST provided at NAC goes in line with its evidence-based practices of ABST established in the literature. For the purpose of achieving such issue, document analysis was conducted, and results are presented in the Table 4.4 below.

Table 4.4: Packages of ABST at NAC

	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's reflections
ABST provided at NAC	Level 1: Self-help skills Level 2: receptive language skills Level 3: expressive and academic skills	Level 1: Potty training, toileting, washing, dressing Level 2: play, following directions and instructions Level 3: expressive communication skills and academics	To make children self-independent	Assessment, consulting, preparing IEP, assessment, plan	Training, guiding, modeling, Eye-contact Speech therapy and sensory enrichment	Teachers evaluate each children based on the criteria set for each level.	The researcher has identified the presence of gaps with what is written on the document with the practice in the classroom.

Taking data from the document analysis and observation, the researcher have recognized the presence of linkages of the practices at the research center with the existed literature though it is not found at an expected level. Most of the practitioners of the center are not professionals who challenge implementation of ABST beginning from planning to the evaluation phases.

As it is expressed above, the implementation of the ABST at NAC is similar with the evidences in different literatures. However, there is one major difference in terms of leveling the problem of children. The leveling used by the NAC center is the reverse of what is existed in the DSM-V. On the basis of the level of severity from most sever to less sever of the ASD, DSM-V the classification begins from level three and ends at level one. But for NAC the opposite is true (see Table 4.5 below).

Table 4.5: ASD Leveling of DSM-V and NAC

DSM -V	At Nehemiah Autism Center
Level- 3: Require high support	Level- 1: Require high support
Level- 2: Require moderate support	Level- 2: Require moderate support
Level- 1: Require less support	Level- 3: Require less support

The researcher posed a question for the center coordinator regarding the reason behind the inverse leveling of ASD. The coordinator responded that the center used such leveling in order to be congruent with the Ethiopian school system going from the least up to highest level.

The practitioners teach the children with ASD how to learn to interact with their environment as Social Learning Theory suggests. The primary goal of the educator is to serve as care givers that are teaching the children with ASD are serving as per their needs. As the children with ASD have difficult circumstances and needs support in every aspect of their activities, we have seen that the practioners serve and give support. They will support them to cope with the environment, teach them how to wash, wear clothes, use toilets, play and socialize. They engage the children to restore and enhance their cognitive ability.

One of the values is to respect human rights and committed to promote social justice. As the researcher have discussed with the director of the Nehemiah Autism center, she has told the researcher that she has tried to ensure the rights of the children with ASD and promote social justice by advocating that this disorder is a part of disability and get recognition from the government and one of the reasons why the center is doing this because parents whose children with ASD are afraid to bring their ASD child to public as they are considered as cursed or punished by God.

The other reason is that if autism is recognized as disability the children will benefit.

Practice has focused on meeting human needs and developing human potential so, the center is really working regarding this value. Even though the center lacks different resources we can say that it is trying hard to give access of resources for the children so that they will develop their

skills. This is for example, by teaching with different materials, giving occupational therapy and so on.

The center is giving the intervention in one-to-one direction applied to each kid. ABA is the use of these techniques and principles to bring about meaningful and positive change in behavior. This analysis is very helpful to work with young children with ASD and other related disorders.

The center has used ABA as the principle that explains how learning takes place. As mentioned, behavior analysts began working with young children with ASD and other related disorders. The techniques are used in structured situation in daily basis in all the three levels.

ABA helps kids to live happily and become productive in their day to day life. ABA principles and techniques can foster basic skills like looking, listening and imitating as well as complex skills as reading and understanding another person's perspective. ABA can produce improvement in communication, social interaction /relationship, play, self-care, school and employment. Intensive and early intervention program for children with ASD address full range of life skills from communication and sociability of self-care and readiness for school.

CHAPETR FIVE

DISSCUSION

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa. To achieve this research purpose, the data and the literature were discussed based up on the basis of the research questions.

5.1. Planning Adaptive Behavior Skills Training

The first question of this research was looking the planning process of adaptive behavior skills training children with ASD at NAC. The findings revealed that the goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance.

The center provided the training in a way that helped them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

This result is almost consistent with the research conducted by the National Research Council (2001); which indicated that adaptive skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life. Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management are the planning areas.

The activities that are planned in ABST for children with ASD at NAC implemented with the help of training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

5.2. Types Adaptive Behavior Skills Training given for Children with ASD

According to Hansen as cited in National Research Council (2001), Potty training and related issues have been the center of attention of a broad range of early behavioral interventions.

Similarly, at Nehemiah Autism center for ASD, the potty training is an integral part of the initial phase of the consecutive trainings. Children who are legible for the initial or level one training scheme are those who usually suffer from controlling urine.

As the research report by Hansen such problem has been addressed with urine detection devices that serve to awaken children with ASD; whereas, at Nehemiah Autism Center offers diaper for the children until they successfully complete the training and achieve the skill of urine control.

The self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities, especially for children with ASD at level one in NAC.

According to the practice of NAC receptive and expressive language skills training are the common forms of training packages for children with ASD at level two and level three respectively. This result is also similar the existed literature identified by National Research Council (2001) which pinpointed that functional academics, safety skills, community access, communication, social skills, and self-management skills should be the focus areas of intervention for helping children with ASD.

Similar to the literature written by Heflin and Simpson, (1998); Lovaas (1987); Machalicek *et al.* (2008); Matson *et al.* (1996); McConnell (2002); Mcpartland (2002); National Research Council (2001); Tarbox and Najdowski, (2008) all the interventions at NAC includes discrete trial training, applied behavior analysis, and social skills training.

However, as to the present research findings NAC has one additional type of training packages that is DIR. In similar line Ozonoff, Dawson and Mcpartland (2002) pinpointed that applied behavior analysis, social skill groups, educational support, language and communication therapy, functional behavioral analysis, and sensory integration therapy are the treatment options for improving the overall developments of children with ASD.

5.3. The perceived of ABST

As it is supported and advocated by many research out comes, the primary objective of special education like in the form of ABST is to make possible children with ASD learn adaptive behavior skills that facilitate independent functioning in the society (Brown *et al.*, 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980) which specifically enable them to work, live and enjoy life in their community (Wehmeyer, 1991).

According to the present research finding ABST has positive contribution both on children and their parents. As reported by the participants the primary and major impact of ABST was making children independent that can be visible in handling various activities in their life in and out of the center. That means, ABST programs help children to be self-reliant, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications which is

congruent with the National Research Council (2001) where ABST has utmost importance to foster children independence skills in the journey to their development.

However, there is still one contradictory finding in the current study; children of the center did not pass to the next level as to their expectation. Since, children are independent in handling different activities; they are expected to go to the next level. This contradiction may be attributed to the small number of the participants and their bias to the questions posed during data collection. Therefore, this needs further in-depth investigation by other researchers.

A substantial body of research (e.g. Banach, Iudice, Conway and Couse, 2010) pointed out that parents experience different psychological (grief and loss, felt shock, self-blame, stress, etc.) and social (cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others) problems. However, parents benefit a lot when they bring their children to the center; get informed about daily progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals and these helps to address the various emotions and stress, and maintain social ties.

In similar line as to the present research finding ABST has also positive contribution for parents of children ASD. It helped parents to get relief to some extent, though they were not satisfied at the expected level with may be due to a lack of professional competence.

5.4. The Adaptive Behavior Skills Training Practice and its Evidence based Practices

In order to describe the extent to which ABST provided at NAC goes in line with its evidence – based practices of ABST established in the literature, the result was compared with DSM-V. According to The DSM-V published in 2013 concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard. The all levels have chronological differences, but they do not have practical work.

The theoretical difference in DSM-V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent. As to the knowledge of the present researcher, there are no previous research findings that support or contradict with this finding. Therefore, is special to the current investigation.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. SUMMARY

The purpose of the study was investigating the situations of the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. There were four main research questions and specific objectives.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the perceived of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

This study has mainly aimed at assessing the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. For this purpose, the samples have been drawn from one non-profit and a non-governmental organization located at Addis Ababa, Bole Sub- City around Megenagna.

The Societal Agency, which is not a concerned governmental office, has rented a house to receive Road called Nehemiah Autism Center. It has a license from Charities and children with ASD. The center has started working since 16th June, 2011 after it got its license on 31th August 31, 2010. At the moment, the center is giving adaptive behavior skills training and treating forty children with ASD. It has 20 caregivers to train them.

Among these total populations, the data collection has been started from March 2 up to April 10, 2018 E.C. Among the 20 practitioners, six caregivers, one educational leader, and five parents were selected. Because, in the under graduate level the researcher was some voluntary activities and research paper about the children with ASD.

The research was a qualitative approach, case study design; the data were collected through semi-structured interview and non-participant observation and document analysis, which were analyzed qualitatively using the thematic analysis.

The findings of the research indicated that the NAC designed the ABST plan for children at each level based on the result of the assessment. The focus areas of the planning differ from level to level. That is, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively.

In addition to these, discrete trial training, applied behavior analysis and developmental individual relationship are ingredients of the training. ABST has positive impact on both children and parents in improving basic skills of life, though it is not found at the expected level.

Except leveling the problem of children with ASD, the implementation of the ABST at NAC is similar with the previous evidences. Based on the results of the study, major conclusions were made and important recommendations were made.

6.2. Conclusions

Based on the findings and discussion of the research, the following conclusions have been made:

- The process of planning ABST at NAC is determined by the result of the assessment conducted on children. The focus of the training content differs in relation to the levels of children where self- helps skills, receptive order, communication skills, academic and expressive skills are common in level one, level two, and level three respectively.
- The most common types of ABST intervention at NAC are discrete trial training, applied behavior analysis, developmental individual relationship, assessment basic language skills, music, and occupational, physical and sensory integration therapies.
- Though ABST programs had positive impacts on some children to be independent by improving their daily life skills including social, communication skills and behavioral manifestations. It is not found at the expected level, since many children are repeating the same level for many years.
- On the other hand, the ABST training organized by the center for parents on how to manage and maintain their child's basic skills at home helped them to get relief and psychological stability by equipping them the necessary self-help skills to train their children though parents were not much satisfied by the change observed on their children with ASD. The implication of ABST at NAC is similar with what is existed in the literature. But the inverse is true at NAC in terms of categorizing the problem of children as compared with DSM-V.

6.3. Recommendations

Based on the results of the research and the conclusions made, the following recommendations are forwarded.

- The center prepares a plan for intervention based on the assessment for the overall children categorized at each level. Therefore, it is more advisable for NAC to prepare educational plan for each individual child based on the results of the assessment.
- There are many types of training interventions impinged in implementing ABST. However, there are limited numbers of well-trained, skilled and qualified professionals and the necessary skills to practice them properly. Hence, the center should employ social workers from Special Needs, Psychology, Education and related fields. Moreover, it will be better for the center if it organizes different capacity enhancement trainings for the existed staffs.
- Large numbers of children are still repeating the same level many times. Thus, the center should conduct program evaluation for ABST in order to check its effectiveness in bringing fundamental changes on children with ASD and parents with ASD.
- The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM -V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.

- Theoretically, the level of support extent required will get increased while the level of training increased in DSM-V; whereas, the level of support required will decreased at Nehemiah Autism center for ASD when the level of training increased.

References

- Al-Faiz, H. S. (2007). Attitudes of elementary school teachers in Riyadh, Saudi Arabia toward the inclusion of children with autism in public education. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 68 (4-A), 1403.
- Allen, K. D., & Cowan, R. J. (2008). Naturalistic teaching procedures. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 213-240). New York: Oxford University Press.
- Al-Shammari, Z. A. (2006). Special education teachers' attitudes toward autistic students in the autism school in the State of Kuwait: A case study. *Journal of Instructional Psychology*, 33, 170-178.
- American Academy of Pediatrics (2001). Committee on children with disabilities. Technical report: The pediatrician's role in the diagnosis and management of autistic spectrum disorder in childhood. *Pediatrics*, 107(5), e85. Retrieved from <http://pediatrics.aappublications.org>
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision, *DSM-IV-TR*). Washington, DC: Author.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* DSM V. Washington, DC: Author.
- Autism Speaks. (2010). Facts about autism. Retrieved from <http://www.autismspeaks.org>.
- Bakare, M., O. (2011). Autism spectrum disorders (ASD) in Africa: a perspective. *African Journal of Psychiatry*; 14:208-10.
- Banach, M., Iudice, J., Conway, L. & Couse, L. (2010). *Family Support and Empowerment: Post Autism Diagnosis Support Group for Parents*; Pages 69-83.

- Baron-cohen, S., S., Allison, C., Williams, J., Bolton, P. (2009). British Journal of psychiatry. Prevalence of autism-spectrum conditions: UK school -based population study. 10: 500-9.
- Bailey, A., Le Courteur, A., & Gottesman, I. (1995). Autism as a strongly genetic disorder: Evidence from a British twin study. *Psychology of Medicine*, 25, 63-77.
- Centers for Disease Control and Prevention (CDC). (2010). Autism spectrum disorders. Data and statistics. Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>.
- Glashan, L., Mackay, G., & Grieve, A. (2004). Teachers' experience of support in the mainstream education of pupils with autism. *Improving Schools*, 7, 49-60.
- Heflin, L. J., & Simpson, R. L. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part I: Intervention and treatment option review. *Focus on Autism and Other Developmental Disabilities*, 13,194-211.
- Individuals with Disabilities Education Act of 1990, 20 U.S.C. §1400 *et seq.* (1990).
- Individuals with Disabilities Education Act (IDEA) Data. (2007). Data tables for OSEP state reported data. Part B child count 2007. Table 1-11. Children and students served under IDEA, Part B, in the U.S. and outlying areas by age group, year, and disability category: Fall 1998 through fall 2007. Retrieved from <https://www.ideadata.org>.
- Kaiser, A. P. (1993). Functional language. In M. E. Snell (Ed.), *Instruction of students with severe disabilities*. New York: Macmillan.
- Koegel, L. K., Koegel, R. L, & Dunlap, G. (Eds.). (1996). *Positive behavioral support: Including people with difficult behavior in the community*. Baltimore: Paul H. Brookes.
- Lorna selfe (2013) *All that matters autism spectrum disorder*
- Lovaas, O., I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55, 3-9.
- Machalicek, W., Davis, T., O'Reilly, M., Beretvas, N., Sigafos, J., Lancioni G., et al. (2008).

- Teaching social skills in school settings. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 269-298). New York: Oxford University Press.
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2005). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Upper Saddle River, NJ: Pearson.
- Mavropoulou, S., & Padeliaadu, S. (2000). Greek teachers' perceptions of autism and implications for educational practice: A preliminary analysis. *Autism, 4*, 173-183.
- Mhrki, A., P. (2010). Knowledge and Attitude of General Practitioners Regarding Autism in Karachi, Pakistan. *Journal of Autism Dev Disorder*.
- Matson, J. L., Benavidez, D. A., Compton, L. S., Paclawsky, T., & Baglio, C. (1996). Behavioral treatment of autistic persons: A review of research from 1980 to the present. *Research in Developmental Disabilities, 17*, 433-465.
- McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention and future research. *Journal of Autism and Developmental Disorders, 32*, 351-372.
- Machalicek, J. J., Smith, T., & Lovaas, O. I. (2008). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation, 97*, 359-372.
- Ministry of Education (MOE, 2012). *Reference material for special needs/inclusive/ education courses*. Addis Ababa, Ethiopia.
- Morgan, W. R. (2010). *Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years*. New York: Mcgraw Hill.

- NICHCY (2009). Categories of disability under IDEA. *National Dissemination Center for Children with Disabilities*. Retrieved from [www. Nichcy.org](http://www.nichcy.org).
- National Institute of Child Health and Human Development (2005).Autism research at the NICHD.*NIH Publication No. 05-5592*.
- National Research Council. (2001). *Educating children with autism*. Committee on Educational Interventions for Children with Autism, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academies Press.
- Nia Foundation Autism in Ethiopia (2010).Retrieved from www.niafoundation.wordpress.com/autism/accessed on Nov. 27, 2017.
- Ozonoff, S., Dawson, G., &Mcpartland, J. (2002). A parent's guide to Aspergers syndrome and high functioning autism. The Guilford Press, New York, London.
- Pozo, P., Sarria, E.,Brioso.A.(2011). Psychological Adaptation in Parents of Children with Autism Spectrum Disorders. In Mohammadi, M.R(Ed.), A Comprehensive Book on Autism Spectrum Disorders (pp.107-130).
- Prizant, B. M. &Wetherby, A. M. (1998). Understanding the continuum of discrete trial traditional behavioral to social pragmatic developmental approaches in communication enhancement for young children with autism PDD. *Seminars in Speech and Language*, 19(4), 329-353.
- Rutter, M. (1970). Autistic children: Infancy to adulthood. *Seminars in Psychiatry*, 26, 435-450.
- Salhia, H., O., Taher, L., S., Al-khathaami, A., M. (2014) . Systemic review of the epidemiology of autism in Arab. *Neurosciences*; 19(4):291-6.

- Sanford School of Medicine. (2006). *The University of South Dakota Center for Disabilities Autism spectrum disorders handbook*. Retrieved Nov 3, 2017, from <http://www.usd.edu>.
- Schlosser, R. W., & Wendt, O. (2008). Augmentative and alternative communication intervention for children with autism. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 325-389). New York: Oxford University Press.
- Sherer, M. R., & Schreibman, L. (2005). Individual behavior profiles and predictors of treatment effectiveness for children with autism. *Journal of Consulting and Clinical Psychology*, 73, 525-538.
- Siegel, B. (2003). *Treatment approaches for parents and professional*. London: Oxford university press.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.
- Tarbox, R. S. F., & Najdowski, A. C. (2008). Discrete trial training as a teaching paradigm. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 181-194). New York: Oxford University Press.
- Skokut, M., Robinson, S., Openden, D., & Jimerson, S. (2008). Promoting the social and cognitive competence of children with autism: Interventions at school. *California School Psychologist*, 13, 93-108.
- Whitaker, P. (2007). Provision for youngsters with autistic spectrum disorders in mainstream Schools: What parents say – and what parents want. *British Journal of Special Education*, 34, 170-178.
- Wilczynski, S. M., Menousek, K., Hunter, M., & Mudgal, D. (2007). Individualized education programs for youth with autism spectrum disorders. *Psychology in the Schools*, 44, 653-666.

APPENDIX A

Observation protocol

The general aim of this observation is to collect data to identify the types of adaptive behavior skill trainings in the centre. To do so, the data will be recorded on the following checklist.

	Types of adaptive behavior skill trainings in Nehemiah Autism centre	Yes	No	Observation comments
1	Does the centre implement scientifically proven adaptive behavior skills training for children with autism?			
2	Are there organized adaptive skills training manuals in the training centre?			
3	Do the trainers use real objects and locally made media during the training?			
4	Does the centre have education schedule based on the training standards?			
5	Do teachers and care givers treat children with ASD following the adaptive behavior skills training guidelines of the centre?			
6	Are there training aids and resources in the centre			
7	Are pictures placed at the eye level of children?			
8	Is the centre safe and friendly enough for children with ASD to be involved in the adaptive behavior skills training?			
9	Is the centre's built in physical environment accessible for children with ASD to learn interpersonal skills from other members of the center			
10	Are the adaptive behavior skills training considered as intervention program in the centre?			
11	Does the centre provide need-driven adaptive behavior skills trainings for children with ASD?			

APPENDIX B

Interview guide for teachers

First of all, I would like to thank you very much for your precious time to respond the questions provided below. The main purpose of this interview is to collect data from the teachers of children with ASD at Nehemiah Centre in order to describe the planning processes of adaptive behavior skill training; to explore the types of adaptive behavior skill trainings, to identify the impact of adaptive behavior skill training on children with ASD at Nehimia Autism Centre, and also to portray the extent to which adaptive behavior skill training provided at Nehimia Autism Centre goes in line with its evidence based practices of adaptive behavior skill training established in literature. Thus, I need to ensure you that the data collected from you will be used to achieve these objectives, not for other purpose. Therefore, your responses are the valuable input to improving the quality of the research study.

Key interview questions

1. As a teacher, how do you undergo the planning processes of adaptive behavior skill training at Nehemiah autism centre?
2. Explain how ABST is planned for each child with ASD?
3. Would you, please, explain the types of trainings in the entre? What are the objectives of training children with ASD?
4. What is the impact of providing ABST on children with ASD in the centre? What tangible improvements can you tell me as a result of the trainings?
5. What types of skills and competences are planned to be developed in the ABST?
6. What do you think is the perceived of the training on parents of children with ASD?
7. Who developed the ABST manual in the centre?
8. To provide the ABST, is the existence of adaptive behavior deficits proven through training ass
9. Are there training manuals and packages prepared for the implementation of ABST? Who is responsible to develop the manuals?
10. What challenges impede the implementation of ABST in the NAC ?

APPENDIX C
Document Analysis Protocol

The main aim of the document analysis is to portray the extent to which adaptive behavior skill training provided at Nehemiah Autism Centre goes in line with its evidence based practices of adaptive behavior skill training established in literature.

ABST at Nehemiah Centre (Ethiopia) vis-à-vis the training practices established in scientific literatures	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's final comments and reflection
Adaptive behavior skill trainings provided at Nehemiah Autism centre							
The Researcher's analysis of evidence based practices of ABST established in scientific literatures							

APPENDIX D
 Documents of the Center
 Nehemiah Autism Center
 Level one Education Training
 Checklist

Checklist

Section one

Problem solving skill

Name of students with ASD

Topic to solve out the problem challenge

Objective to solve the problem and to do the small work skill

Type of activity	Starting date	Skill full date
To practice the different		
To open an lock the toilet and class door/gate		
To open the windows on the top		
To practice the wearing of thresher		
To sit the chairs around the table		
To support the sitting on the table		
To practice the wearing cloth		
To use the purple		
To support the open door		

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Eating and drinking

Objective Before feeding during feeding and after feeding to

Type of activity	Starting date	Capability	Comment
To use spoon			
To eat feeding			
To drink the			
To drink the cup			
To drink tea			
To use the sugar with spoon			
To drink from pun			

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Topic to use cloth and shoes

Objective To independent without support to use the cloth and shoes

Types of activity	Starting date	capability	comment
Shoes			
Shoes			
Stock			
Stock			
Jacket down			
Jacket			
T –shirt			
T –shirt			
Zip lock			
Zip open			
Open the cloth			
Lock the cloth			
Shoes			
Shoes			

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Topic to use cloth and shoes

Objective To independent without support the personal hygiene and????

Types of activity	Starting date	capability	comment
To clean hand wash			
To use soap			
To use tawl			
To wash face			
To use tawl			
To clean teeche			
To clean nose			
To use comp			
To use toilet			
To use the soap			
To clean after toileting to use water			
To clean after hand the toileting to wash			

Cognitive Development skill

Name of the students with ASD

Concentration and remember

Objective To give concentration remember and develop the hand movement and cognitive development

Types of activity	Starting date	Capability	Comment
Concentration			
To grasp the hidden objects			
To ask the hidden object			
Eye contact block and purples			
To order the blocks from the small no			
To comment the purples			
To work different block			
Circle training rectangle			
To identify			
Three colours matching			
Match the similar pictures			

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section one

Physical exercise and movement activity skill

Name of students with ASD

Body structure performance and movement

Objective gross motor and fine motor

Type of Activity	Starting Date	Capability	Comment
Physical movement			
To easy finger movement			
To			
To repeat the hand movement			
To repeat the hand movement			
To repeat the simple hand			
To grasp by hand			
To take the door			
To fill the d/t objects			
To order the blocks			
To work the			
To use the door key			
To connect the cloth with			
To move the object & other object			
To eat Enjera			
To drink by spoon			
To fill the ball on the basket			
To fill 1 meter the ball on the basket			
To work eye contact and hand			
Tracing			
Shade the color			
To cut the line			

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section one

Physical exercise and movement activity skill

Name of students with ASD

Body structure performance and movement

Objective gross motor and fine motor

Type of Activity	Starting Date	Capability	Comment
Feet movement			
Back 1-5			
Run 2-5			
Jump half meter			
Jump			
Ball 1m			
Ball 2m			
Hand movement			
Ball-half basket			
Ball-1meter			
Ball 1.5			
Ball 1/2			

Nehemiah Autism center

Level One

Plan One

Name of the student.....

1.1 Self help skill – washing faces & hands

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism center

Level One

Plan One Two

Name of the student.....

1.2 Self help skill – Dressing & Undressing top clothes

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism center

LEVEL ONE

PLAN ONE THREE

Name of the student.....

1.3 Self help skill – Dressing & undressing bottom clothes

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL ONE

PLAN ONE FOUR

Name of the student.....

1.4 Self help skill –Putting on & off shoes & socks

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center
LEVEL ONE

PLAN ONE FIVE

Name of the student.....

1.5 Self help skill – Potty training

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center
LEVEL TWO

PLAN TWO ONE

Name of the student.....

2.1. Social skill – Attendance & calendared

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Attendance						
Raise hand with prompt						
Raise hand without prompt						
Raise hand & respond verbally (yes)						
Calends						
Indicate the day date & year with prompt						
Verbally repeat the day, date & year						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO

Name of the student.....

2.2. Self-help skill clothes shirt and jacket

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO THREE

Name of the student.....

2.3. Self-help skill – wearing clothes and socks

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL two

PLAN two three

Name of the student.....

2.3. Receptive instruction for basic needs

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Go to toilet						
Wash your hand						
Wash your face						
Brush your teeth						
Bring your food						
Eat						
Drink						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO FOUR

Name of the student.....

2.4. Receptive instruction different instruction (utensils, body parts, types of clothes)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Put						
give						
Bring						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO FIVE

Name of the student.....

2.5. Matching different things (utensils, types of clothes, parts of the body 20 & 30)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Types of clothes						
Utensils						
Parts of the body						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN two six

Name of the student.....

2.6. Matching similar thing (real objects)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL two

PLAN two Seven

Name of the student.....

2.7. Speech by different pictures and charts.

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Mouth movement						
Tongue movement						
Base on the words that they speak						
Amharic letter						
Amharic letter						
Amharic letter						
Speaking of words						
Song						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL THREE

PLAN THREE ONE

Name of the student.....

3.1. Social skill- attendance & calling names and knowing days.

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Respond to his or her names						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

LEVEL THREE

PLAN THREE ONE

Name of the student.....

3.2. Education or academics. Writing

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Scribbling						
Tracing vertical & horizontal lines						
Tracing different lines						
Tracing letters						
Tracing number						
Copying letters						
Copying numbers						
Copying names						
Copying letters from board						
Copying numbers from board						
Dictation of letters						
Dictation of numbers						

LEVEL THREE

PLAN THREE TWO

Name of the student.....

3.3. Play & Social skill solitary play

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

LEVEL THREE

PLAN THREE FOUR

Name of the student.....

3.4. Communication receiving instruction in the classroom

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The Swiss psychiatrist Eugene Bleaker first introduced the term autism in 1911. Autism and autistic stem from the Greek word "autos," meaning self. The term autism originally referred to a basic disturbance in schizophrenia, in short, an extreme withdrawal of oneself from the fabric of social life, but not excluding oneself (Koegel, Koegel & Dunlap, 1996). Subsequently, Autism Spectrum Disorder (ASD) was defined as a phenomenon consisting of a variety of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication and distinctive strengths and differences (Marzano, Pickering & Pollock, 2005). It is also characterized by impaired social interaction, impaired verbal, non-verbal communication and restricted and repetitive behavior. Symptoms range from very mild to quite severe and comprise of a lack or delay in spoken language, repetitive motor mannerisms like hand flapping and twirling objects, little or no eye contact, lack of interest in peer relationships, and the inability to deal with change. It ranges in severity from a handicap that somewhat restricts an otherwise normal life to a shocking disability that may need institutional care (Rutter, 1970).

There are in general three major characteristics applied to decide an ASD and are frequently present by age three. These characteristics are deficits in social interaction, verbal and nonverbal communication as well as repetitive behaviors and interests (National Institute of Child Health and Human Development, 2005).

Individuals with ASD were mostly unnoticed by the training and intervention service providing community until 1975 when the Education for all Handicapped Children Act (EHA) recognized the right of children with disabilities to get a free and suitable public education (MoE, 2012).

The limited number of children with autism who received special education services beginning in 1975 was often served below another disability such as intellectual disability. In 1990 a shift occurred when autism was particularly listed as a disability group in the Individuals with Disabilities Education Act (IDEA, 1990), a federal law that reauthorized and expanded EHA, ensuring the right to a public education including special education and related services for individuals with disabilities.

Studies on the long-term outcomes for persons with autism indicated a relatively desolate image (Dempsey & Foreman, 2001; Gill Berg, 1991; Howling, 2000). According to these authors, the majority of persons with autism have not developed the adaptive skills essential to function independently in society and many persist to exhibit considerable challenging behaviors that impede their inclusion in community environments. Due to these difficulties, many adults with autism are significantly dependent on family or third party resources for support in major life activities related to employment, adult living, leisure, and social relationships. Stein et al. (2001) reported that approximately 70% of persons with autism had poor outcomes in adulthood and continue reliant on others in almost all aspects of living. Fence and Emerson (2001) also stated that the existence of adaptive behavior deficits can put for the significant impact on person's quality of life and in great part defines his or her need for long-term support from service institutions. In spite of the considerable body of research indicating poor outcomes for the majority of persons with autism, there is lack of information currently showing the quality and

effectiveness of the adaptive behavior skills training and intervention programs implemented for children with autism that have a vital role when they become adults under the Ethiopian context.

Professionals and advocates in the field of special education believe that the primary objective of special education is to make possible children learn adaptive skills that facilitate adult independence (Brown et al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980). Children with ASD need to have experiences with and instruction in adaptive behavior skills which enable them to work, live and enjoy life in their community (Wehmeyer, 1991). Though the belief, the practice and its quality of special education services provided by special education training centers for individuals with autism remains unresearched in Ethiopia.

However, researches regarding the quality of special education programs for students with autism suggests that Individualized Education Programs (IEPs) are frequently not individualized in several service giving institutions based on student need (Fiedler & Knight, 1986; Reiher, 1992; Slavens, 1997; Smith, 1990; Smith & Simpson, 1989; Tymitz, 1981).

In Ethiopia, disability by and large is considered to be a curse, so families as well as communities discriminate against people with disabilities in general and children with ASD in particular. In the past, only 0.7 percent of persons with disabilities in Ethiopia have had access to education and training of any type. This situation has been changing as education and training for persons with disabilities in Ethiopia is becoming more and more inclusive (Sherer & Schriebman, 2005).

Sadly, there is no healing for autism. But, there are numerous treatment strategies identified for ASD. The continuous debate among researchers, professionals and parents of ASD are best to

the existing confusion. Many techniques guaranteed notable improvement. While some of these approaches are doing well for some, there is not one procedure that is successful for all individuals with ASD (Sanford School of Medicine, 2006).

Nevertheless, there is a diversity of treatment and educational approaches that may less different challenges associated with this pervasive developmental disability. Intervention may help to reduce disruptive behaviors while education can teach self-help skills that will allow the child to become more independent (National Research Council, 2001).

Even though a cure for autism is not yet available, WHO recommended that an evidence-based psychosocial intervention can reduce difficulties in communication and social behavior, with a positive impact on the person's well being and quality of life. However, the provisions of services for children with ASD are very minimal in public schools compared to other children with disabilities. As a result, many children with autism in Ethiopia get support and a rehabilitation service from non-governmental organization among others is Nehemiah Autism Center.

Studies indicated that one important barrier in the service provision for a child with ASD is fear of stigma of parents and siblings. Many parents and siblings of children with autism in Ethiopia are worried about other people finding out about their child's condition. Some parents feel the need to keep their child hidden at home (Siegel, 2003).

In addition, many parents and caregivers provide spiritual explanations for their child's condition, for example, attributing autism or developmental delays to a curse on the family or a punishment from God (Nia foundation, 2010).

Spiritual justifications for autism are common among parents in Ethiopia and this affects their cooperation with teachers and their perception about professional services provided for their children with autism. This negative perception and causal attribution is the cause of the vast majority of children with autism to remain undiagnosed, with no access to intervention or appropriate education (Mhrki, 2010).

Research also indicated that culture and socioeconomic circumstances can have a profound influence on autism families and the nature of treatment they provide and seek from others. Hence, service providers need a better understanding of these influences before they can truly serve children with autism in Ethiopian context. Although research from wealthy countries can inform interventions, adaptations to local culture and context are essential to make sure interventions meet the needs of local families and work in low-resource countries such as Ethiopia (Pozo, Sarria & Brioso, 2011).

Scholars in the field of Autism also suggested the several key elements as decisive when educating children with autism. These elements are entry into intervention programs as soon as an ASD diagnosis is being considered and active involvement in an intensive instructional program for a full school day, 5 days a week for a minimum of 25 hours a week, for the entire calendar year.

Moreover, instruction should be one-to-one or in a small group in order to meet each child's individualized goals with a low student to teacher ration of not more than two children with ASD per SNE teacher in the classroom. It is also significant to note that the scholars did not identify a specific treatment for autism as treatments must be individually customized to the child's behaviors and special needs. Just as there is no one single signs or behavior that identifies

children with autism, there lacks of single treatment that can be applied for all (Bakare, 2011; Pozo *et al.*, 2011).

Little is known about the appropriateness and effectiveness of adaptive behavior skills intervention programs for children with ASD in Ethiopia. Almost all autism research have been conducted in Western, high-income countries, resulting in a research gap concerning studies from low-income countries like Ethiopia. Due to a lack of studies, the prevalence of autism in Ethiopia is unknown. A recent report of an autism meeting attended by 47 delegates from 14 African countries indicated the lack of autism services throughout Africa and the need to raise awareness and develop autism screening, training and service strategies on the continent (Bakare, 2011).

In Ethiopia, the situation is even worse for there is serious shortage of service providers and researches conducted to know the nature of the training programs and intervention practices in the Ethiopian context. Hence, there is a need to investigate how the available training programs for children with autism are structured and practiced in Autism training Centers in Ethiopia.

Initiatives from local non-governmental organizations (NGOs) have contributed to an increase in autism awareness and service provision in Ethiopia. In this regard, Nehemiah and Joy Autism Centre take the lion share in educating these children. Some of the children with mild autism go to national and private schools. Otherwise, almost all children with ASD are deprived of education and rehabilitation due to lack of facilities, schools and trained teachers. In fact, the majority of parents do not know what autism is and those who know are pessimist regarding their children's change through education and training.

Although these developments are promising, existing services for children with autism have scarcely been documented. Moreover, little has been done to investigate opportunities and challenges to increase services and the most effective ways for future service development. Thus this study aims to assess the current adaptive behavior skills intervention/training practices for children with autism at Nehemiah Autism Centre.

1.2 Statement of the Problem

Even though autism is rising at an alarming rate, attention given by both government and the society is insignificant. Even the NGOs that are working with children, disability and women are not giving the required attention to autism. Bringing awareness to children's rights and women equality is important but addressing and supporting children who are currently suffering from autism needs prior attention than other issues. The limited information available suggests that adaptive behavior needs of children with ASD are typically not sufficiently addressed in educational programs for these children (Rotholz *et al.*, 1989; Slavens, 1997).

There are many techniques, strategies and interventions applied to treat adaptive behavior skills deficits in children with ASD. Numerous treatment methods have been designed to address the variety of social, language, sensory and behavioral difficulties. Some of the instructional and training strategies for teaching adaptive behavior skills to children with autism take a behavioral approach and others take an interactive approach. Both models have been revealed to be effective with children with ASD (Kaiser, 1993; Prizant & Wetherby, 1998). Hence, a range of strategies have been based on a mixture of these models.

Another worry when implementing adaptive behavior skills trainings for children with ASD is the duty of designing the accurate individualized education plan for each child. Each individual with ASD will display diverse characteristics and different extents of deficits. It is vital that professionals know the complexities of ASD in order to construct trainings that will best assist an individual in all aspects of adaptive behavior skills (Wilczynski *et al.*, 2007).

Adaptive behavior skills trainings are significant for all children to enhance success in training settings but are undersized for children with ASD under the current context of training centers in Ethiopia. Realizing adaptive behavior skills training and interventions being used in training settings to help children with ASD raise adaptive behavior skills training is very important. The effectiveness of the trainings should also be considered. Knowledge and understanding of effective adaptive behavior skills training and interventions can help to raise appropriate practices for individuals with ASD. Teachers in the school or training settings can help the center develop IEP for individuals with ASD. As very important team member, they can play a central role in the development and implementation of adaptive skill interventions for children with autism. One of the purposes of this study was to explore Special teachers at Nehemiah Autism Centre to get information on what adaptive behavior skills trainings they are using for children with autism.

In addition, no information is at present available concerning factors that affect team decisions to program for these needs or whether IEPs that address the adaptive behavior needs of children with autism affect daily instruction. While researchers have confirmed positive effects of a range of intervention methods in enhancing the independence of children with autism, it is uncertain whether the execution of such methods is taking place in applied settings.

Lovaas (1987) also indicated that professionals may unintentionally limit what a person with Autism can eventually achieve by waiting for adulthood to train for independence. By not targeting adaptive behavior needs and challenging behaviors in the training programs of children with autism, these children will remain dependent on others when they become adults. This practice has pervasive consequences in that it influences not only the individual with autism who is incapable to take part and function fully in his/her community but also families and society that must give long-term care and assume an important accountability for these individuals throughout their lives.

This research will be conducted to fill a gap in the local professional literature and to make possible positive outcomes for children with autism by documenting and evaluating the existing practices in designing and implementing adaptive behavior skills training programs and instructional activities for children with autism at Nehemiah Autism Centre. This research answered the following research questions.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the impact of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

1.3 Objectives of the Study

1.3.1. General Objective

The overall purpose of the study is to assess the practices of adaptive behavior skill training for children with ASD at Nehemiah Autism Centre.

1.3.2. Specific Objective

The study addressed the following specific objectives

- To describe the planning processes of ABST at Nehemiah Autism Centre.
- To explore the given of ABST at Nehemiah Autism Centre.
- To identify the impact of ABST on children with ASD.
- To portray the extent to which ABST provided at Nehemiah Autism Centre goes in line with the evidence based practices of ABST established in literature.

1.4. Theoretical Framework

Malcolm Proves' Discrepancy Model (Proves, 1969) is used as a theoretical framework for this study. This model of program evaluation helps the researcher to examine adaptive behavior skills training program and appraise whether its implementation is consistent with the program's design. He viewed evaluation as the process of approving upon program standards, deciding whether a discrepancy exists between the program and the principles governing that aspect of the program and using discrepancy information to know weaknesses of the program. His goal was to get adequate information about the function of new programs in order to make the essential changes in the planning of the programs. Proves believed in the importance of evaluation to systematically advance programs and guarantee educational benefit and fidelity.

Proves further explained programs will improve only when teachers, administrators, students and parents become concerned in a comprehensive effort to assess and improve their own work. Such an attempt needs careful examination by a school staff of their program operations, a detailed examination of program inputs and processes and the confirmation that the programs are in fact

working as people believe them to be operating. He developed an equation ($I(P) = O$) to review, implement and make the essential changes in the program under study.

In the equation, I equal to the input (I), P is the process (P) and O is the outcome (O). The Intervention plan (e.g. IEP), SNE teachers, students and administrators are considered the input (I). Their interaction in the classroom was defined as the process (P). The result of the input and process is the outcome (O). This series of steps was referred to as the IPO technique. Proves suggested that the disparity between the objective of the program and the outcome should be minimal. When program evaluators have the information of what inputs, processes, and outcomes are included, the program is better understood, defined, prepared and productive. For the purpose of this study, the IPO technique will be used to describe the adaptive behavior skills intervention program being applied.

1.5. Significance of the Study

This study thus added knowledge about the extent of effectiveness such adaptive behavior skills training for children with autism disorders has brought about in Ethiopia. Study results will help to fill the lack of local literature on the adaptive behavior skills service provision and the experiences of SNE teachers. The findings emerged from this research will also contributed a lot to strengthen the existing adaptive behavior skill training programs and services for children with ASD in the centers. The results can provide guidance for Autism Centers and schools as well as policy makers regarding ways to strengthen and improve education and training for children with ASD.

This study will show the significance of working teams among teachers and strong collaborative relationships that truly include parents as pivotal partners in planning and implementing adaptive behavior skills training plans for children with autism. Although this research will be conducted in a particular Autism Centre, the results will be useful for parents and SNE teachers and other educators in other Autism Centers and school systems and it will enhance or challenge their own practices concerning various adaptive behavior skills and educational interventions as well as instructional methods for children with ASD.

1.6. Delimitation of the Study

This study was delimited to one local organization called Nehemiah Autism Centre. The participants of this study were purposive samples of five facilitator teachers employed in the center. They have experience of providing adaptive behavior skills training for children with ASD at least for two years. In the center, they serve 40 students with ASD. The study was also focused on the scope of the service provided in the compound.

1.7. Operational Definition of Basic Terms

Assessment- in this research assessment refers checking or measuring the child's developmental history through day to day observation and with the use of checklists.

Adaptive Behavior Skills Training- refers the core training packages including self-help skills, receptive language skills training incorporates social skills, receiving instructions, and matching different things with realities and expressive language skills training refers communication skills, numeracy and literacy skills designed for children with ASD at Nehemiah Autism Centre.

Self help skills - includes personal and daily living skills like potty training, washing, and dressing.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of literature starts with a description of the general characteristics of children with autism spectrum disorders (ASD) and definitions, information about etiology and prevalence of ASD. The literature review also addresses adaptive behavior skills and educational interventions for children with autism. Such interventions include different forms of applied behavior analysis ranging from more traditional discrete trial training to naturalistic teaching methods such as incidental teaching, pivotal response training and milieu teaching.

2.1. Definition of Autism

According to IDEA:

"Autism means a developmental disability significantly affecting verbal and Nonverbal communication and social interaction generally evident before age Three that adversely affects a child's educational performance other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements resistance to environmental change in daily routines and unusual responses to sensory experience .The term autism does not apply if child's educational performance is adversely affected primarily because the child has an emotional disturbance .a child who shows the characteristics of autism after age three could be diagnosed as having autism if the criteria above are satisfied. " (NICHCY, 2009, p.3).

Autism is a neurobiological disorder that occurs from birth or early in a child's development (National Research Council, 2001). The disorder is typically diagnosed before age 3, continues through adulthood and has no specific etiology or cure (American Academy of Pediatrics, 2001; National Research Council, 2001). Autism is usually described as a spectrum of disorders that

differ in severity of impairment and association with other disorders (e.g., intellectual disability, seizures). Although symptoms differ from one child to the next, all autism spectrum disorders are manifested by major impairment in mutual social interaction and communication skills and the occurrence of repetitive and stereotyped behaviors and interests (DSM-IV-TR, 2000).

According to DSM-V published in 2013, autism manifests in two core areas including social communication and restricted, repetitive behaviors. That is, impairments in social interaction and impairments in communication grouped into a single domain of social communication. The work further categorized the severity level of ASD in to three levels. This is clearly presented in the table below.

Table 2.1: Severity Levels for Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 “Requiring very substantial support”	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interferes with functioning in all spheres. Great distress/difficulty changing focus or action.
Level 2 “Requiring substantial support”	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change or other restricted/ repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.
Level 1 “Requiring support”	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between Activities. Problems of organization and planning hamper independence.

but whose to-and-fro conversation with others fails,
and whose attempts to make friends are odd and
typically unsuccessful.

Source: American Psychiatric Association (2013)

2.2. The Characteristics of Autism

One of the central characteristics of autism spectrum disorders (ASD) is major impairment in the capability to begin and uphold reciprocal social interaction (Machalicek *et al.*, 2008; National Research Council, 2001). Children with ASD frequently avoid eye contact and appear detached and unconcerned in interaction with people. Their imitation skills and capability to engage in communal activities are usually impaired. Children with ASD have trouble learning to understand social cues (e.g., facial expressions, nonverbal gestures) and the feelings of others. Therefore, they have problems considering things from another person's viewpoint and engaging in reciprocal social conversation.

Children with ASD display major deficits in functional and symbolic play skills. Numerous have difficulty regulating their own emotions. They may become disruptive or physically aggressive or involve in self-injurious behavior. It can be difficult for them to comply with directions and keep in cooperative social behavior either as they do not fully understand the directions, rules or social expectations or because they have compulsive interests not shared by other children (Machalicek *et al.*, 2008; National Research Council, 2001). Children with autism spectrum disorders also display a central deficit in verbal and nonverbal communication skills (*DSM-IV-TR*, 2000; National Research Council, 2001). Several show significantly delayed language development and some stay nonverbal throughout their lives. A number of children learn to use alternative communication systems such as pictures or sign language (Schlosser & Wendt, 2008). Those who do obtain functional speech often merge normal language with idiosyncratic speech, echolalia (repeating the same words or phrase over and over) and stereotyped language.

2.3. Etiology of Autism

Autism is commonly believed to be a neuro-developmental disability with a physically powerful genetic basis but the precise reason remains unidentified for most children affected with an autism spectrum disorder (American Academy of Pediatrics, 2001).

The majority of the experts think both genes and the environment play a role and there may be multiple causes that lead to a variety of autism spectrum disorders (American Academy of Pediatrics, 2001). Strong confirmation for a genetic basis has also been found by twin studies conducted by Bailey, Le Courter, and Gottesman (1995). These researchers found that identical (monozygotic) twins had a concordance rate of 60% for children with autism disorder and 92% for the broader spectrum of ASD, while fraternal (dizygotic) twins had concordance rates of 0% for children with autism disorder and 10% to 30% for the broader spectrum. Siblings had a recurrence rate of 3% to 7% for the broader spectrum. Based on their twin research data these researchers calculated the heritability of autism to be approximately 90%.

Even though autism emerges to be largely genetic in origin, scholars in the field also believe that several environmental factors probably play a significant role in whether a child with a genetic predisposition in fact develops the disorder. Several researchers maintain a multi factorial mode of inheritance for autism based on a mixture of genetic and environmental factors (American Academy of Pediatrics, 2001).

For example congenital rubella and early first trimester thalidomide experience have both been connected with bigger risk for autism. More recently, widespread public controversy has raged over whether the measles-mumps-rubella (MMR) vaccine and other childhood immunizations

are connected with a high risk of autism. However, any connection between childhood immunizations and greater risk for autism has been repeatedly refuted by the research community (American Academy of Pediatrics, 2001).

The combination of causes of ASD is not fully known. There is growing evidence that ASD is a genetic condition and that there are likely severally different genes involved. The mode of genetic transmission appears complex and scientists are focusing their work on discovering which genes may be involved and how these genes are affected. So far, it appears that for at least a significant sub group of ASD, there is a genetic susceptibility that differs across family that is different genes may be responsibility in different families.

2.4. Prevalence of Autism

According to WHO report global median prevalence is 62/10 000, that is one child in 160 has autism in Europe, the median rate of Autism is 61.9/10 000 and in Australia half million individuals are affected with autism. A Survey which is done in Europe suggests that the prevalence of autism is 99 per 10000 (Baron-Cohen, et al., 2009).

At about the middle of the 20th century the prevalence of autism was projected to be only 4 to 5 in 10,000 children (American Academy of Pediatrics, 2001).

Such projection changed fundamentally by the end of the century. Currently it is estimated that an average of 1 in 110 children in the United States has an autism spectrum disorder (The Centers for Disease Control and Prevention (CDC), 2010). An estimated 1.5 million people in the United States are affected by autism data cost to the nation of \$35 billion annually and

additional children are diagnosed with autism each year than with diabetes, AIDS and cancer combined (Autism Speaks, 2010).

Another Study which was conducted in America in different states indicate that in average one in 68 children aged less than 8 years are affected with autism with a proportion of one from 42 boys and one from 189 females (CDC, 2010). Research result from Asia disclosed the prevalence of autism in China is 26.6 per 10000(Sun, Matthews & Sharp, 2013).

Report from Oman shows that the prevalence of autism is 1.2-1.7 per 10000 (Al-sharbati & Waly, 2009). Prevalence of autism in Africa is not well known (Bakare, 2011). But there is Research result from Arabic country which shows the prevalence of autism in Egypt and Tanzania is 33.6 % and 11.5 % respectively (Salhia, Taher & Al-khathaami, 2014).

In Ethiopia disability data is fragmentary, inconstant and covers only few categories of disabilities. So, in Ethiopia, there is no official data that show the prevalence of autism. Different studies have presented their own estimation. According to Joy Autism Center Foundation the prevalence rate of autism in Ethiopia is estimated to be the same as in other regions of the world. In United States of America, one in every 115 children is diagnosed with autism and in Ethiopia's population of more than 80 million a fair estimation of at least 530,000 children suffer from autism and related developmental disorders.

2.5. Services for Individuals with ASD at Autism Centers

Though individuals with ASD may struggle socially, they may not receive appropriate adaptive behavior skills trainings within various settings especially in developing countries such as Ethiopia where there is a lack of resources and trained man power.

However, in developed countries such as in the USA there is a law for individuals with a disability that grant them access to federally funded programs, such as public schools, and may comprise accommodations so the individuals with a disability can perform at the same level as their age mates.

In order to receive special education services and other related services, under IDEA, the student with a disability must show impairments in educational performance. If educational performance is revealed to be low for a student diagnosed with ASD, than related services such as adaptive behavior skills interventions could be provided (IDEA, 2004). An IEP must be prepared for a child getting services under IDEA.

The IEP is distinctive for each individual child and needs developed goals and objectives that can be measured. Typically the parent, principal, school psychologist, special needs education teacher, regular subject teacher and speech-language pathologist are present at the first IEP meeting.

IEP meetings as well contain any service providers such as an occupational therapist, nurse, therapist, adapted physical education therapist, and so forth that would be giving services for the child throughout the year. Goals and objectives on the IEP are decided and supervised during the child's training years (IDEA, 2004; Wilczynski *et al.*, 2007).

The concern with preparing IEPs for children with ASD is the variability of impairments and signs surrounding the diagnosis. Because of the heterogeneity of the population of individuals with ASD, it can be hard for school professionals to know what deficits to focus on and what skills require being adapted for each student (Wilczynski *et al.*, 2007).

Teachers that work in schools and Autism centers often feel they are not qualified or do not have sufficient training to work with children with ASD (Simpson *et al.*, 2003). Another concern is that there are not yet good inclusive guides for developing an IEP for children with ASD, as children with ASD have diverse needs (Iovannone, Dunlap, Huber & Kincaid, 2003; Wilczynski *et al.*, 2007; Williams *et al.*, 2005).

At least one of the IEP members should have good clinical decision and knowledge of autistic symptoms and impairments in order to best assist the team form goals and objectives (Wilczynski *et al.*, 2007). School psychologists are important members of the IEP team because they can put in psychological and clinical input (Skokut, Robinson, Openden, & Jimerson, 2008).

There is a need for SNE teachers and centers of Autism in general to use evidence-based practices and to obtain information on symptoms and treatments for children ASD. Because of their practice and knowledge, SNE teachers will continue to be involved in helping students with an ASD attain and maintain appropriate adaptive behavior skills within the center, family and in the community (Koegel, Koegel, & Carter, 1999; Skokut *et al.*, 2008; Williams *et al.*, 2005).

There are many important areas in which SNE teachers are beneficial as IEP team members for children with an ASD may be their abilities to design and implement interventions and intercede concerns between families and Autism Centre /school administration staff members. Teachers can play a key role in planning and designing proper interventions that they can use as they teach children with ASD.

They can also help team members decide if adaptive behavior skills interventions and training will benefit a child with ASD and then help determine what type of adaptive skills intervention is suitable and effective. SNE teacher can also serve as a good agent to smooth the progress of the

relationship between the center/school and parents of the student with ASD as training take place (Ivey, 2007).

2.6. Types of Adaptive Behavioral Skills Training for Children with ASD

The treatment of ASD differs from child to child. Research indicate that early intensive behavioral therapy of autism throughout toddlers or preschool years can considerably improve cognitive and language skills in young children with autism (NIMH, 2011). It is also indicated that early behavioral and therapeutic interventions have a significant contribution for the life of a child with autism through improving communication, forming relationships, decreasing maladaptive behavior and developing independence (Larsson as cited in Sharpe & Baker, 2007). The treatment options, showed by Ozonoff, Dawson and Mcpartland (2002) are applied behavior analysis, Treatment and Education of children with ASD, Denver and green span models, social skill groups, educational support, language and communication therapy functional behavioral analysis, medication, sensory integration therapy and individual psychotherapy.

2.6.1. Applied Behavior Analysis (ABA)

Since the early 1960s numerous researches have been conducted using ABA with children with ASD of all ages, and ABA remains one of the most popular and broadly used treatment methods for children with ASD. A wide variety of ABA-based interventions have been designed for use in structured conditions and in more “natural” daily situations and in one-to-one as well as group settings (National Research Council, 2001).

A number of researchers have conducted comprehensive reviews of a plethora of studies documenting the effectiveness of ABA-based interventions for developing communication, play,

social, academic, and adaptive skills in children with ASD and reducing problem behaviors (e.g. Matson *et al.*, 1996).

Behavior analysis is a scientific method to understanding behavior based upon the principles of respondent and operant conditioning as originally described by Skinner (1953). ABA includes the application of behavior analysis and principles of learning theory to reduce or eliminate problem behaviors and teach new skills. Antecedent conditions and results of behavior are analyzed and manipulated and principles of positive and negative reinforcement, shaping, and fading are used to enhance or reduce target behaviors (Heflin & Simpson, 1998).

Positive reinforcement is used to make stronger a behavior subsequent that behavior with something that is preferred or valued. Skills are broken down into small steps and the child is given frequent chances to learn new skills with reinforcement. The goals of intervention and types of reinforces applied are modified to meet the needs of the individual child whose performance is measured by direct observation and data tracking (Lovaas, 1987).

Even though ABA is now widely established among researchers as powerfully empirically supported and among the most effective interventions for children with autism, ABA remains among the most contentious and widely misunderstood treatment strategies (Heflin & Simpson, 1998).

In part this is as many mischaracterize ABA as synonymous with Discrete Trial Training (DTT) and the early work of Lovaas (1987) that describes only one type of applied behavior analysis (Tarbox & Najdowski, 2008).

DTT and the Lovaas Method have played a significant role in intensive ABA intervention programs mainly for very young children during the initial stages of treatment. However, the

field of applied behavior analysis has widened in the past 30 years to comprise numerous other applied behavioral approaches including “naturalistic” teaching procedures (e.g., “pivotal response training,” “incidental teaching,” and “milieu teaching”) and an array of other methods such as prompting, choice, priming, time delay, adult and peer modeling, and picture exchange systems (Allen & Cowan, 2008).

The field of ABA remains a long way from recognizing any one systematic approach that best fits the needs of an individual child (Lovaas, 1987) and educators are faced with an increasingly vast array of choices.

2.6.2. Social Skills Training (SST)

Significant impairment in social interaction is one of the core characteristics of children with autism spectrum disorders (*DSM-IV-TR*, 2000). Vital social skills such as sharing joint attention, initiating and maintaining social interaction, and engaging in cooperative play may be lacking or severely impaired (National Research Council, 2001).

Several excellent reviews of the literature have been conducted describing a variety of interventions used to teach social skills to children with autism (e.g. McConnell, 2002). Such studies have generally used single subject designs with pre-post, multiple baselines, or ABAB formats without ensuring researcher blindness or random assignment to treatment conditions (National Research Council, 2001).

In spite of these methodological limitations, a significant body of research has emerged providing empirical support for various types of social skills interventions. Machalicek *et al.* (2008) also identified four general categories of interventions used to teach social skills to children with autism including:

- (a) Adult mediated antecedent interventions (e.g., priming and social stories);
- (b) peer-mediated strategies;
- (c) Video modeling; and
- (d) Pivotal Response Training (PRT)

This method is a comprehensive teaching approach used to target a wider range of behaviors than just social skills. Examples from the research have already been cited describing the effectiveness of PRT in teaching children with autism social skills such as initiating social interactions and increasing joint attention, which are pivotal behaviors for developing more complex social skills (e.g. McConnell, 2002). A discussion of adult-mediated and peer-mediated strategies follows with examples from the research literature illustrating the effectiveness, strengths, and limitations of each strategy.

2.6.3. Discrete Trial Training (DTT)

DTT is ground on the perspective of ABA therapy and is now used in several educational and therapeutic centers for children with autism. The basic principles of DTT are one-to-one intervention, precise, succinct instructions, planned prompts and fading of prompts, and instantaneous praise for accurate responses.

When integrating the discrete trial methodology, teachers use a single cycle of a behaviorally-based training routine, meaning that the job is begin in small steps until the task is mastered. Mastery of a skill may be attained after a particular trial has been repeated numerous times in series, either many times a day or over numerous days. Skokut *et al.* (2008), describe four parts of discrete trial, with an optional fifth.

The first step consists of instituting a teaching relationship, involving the teacher using one-step instructions to reduce unsuitable behaviors. The second step is defined as teaching foundational skills, using the discrete trial method to teach academic and life skills. This includes matching and identifying objects, mimicking actions, suitable play skills and following and discerning between given instructions. The third step includes communication intervention. Expressive language skills such as verbal imitation, recognizing actions, objects and pictures are dealt with. The last two steps maintained to support the building of communication skills. The fourth and fifth steps focus on increasing communication by sustaining and encouraging verbal peer interaction while focusing on turn taking conversations.

2.7. Planning for Intervention of ASD

The aim of planning of adaptive skills is to obtain a measure of the child's typical functioning in familiar environments such as the home and the school. Such measures provide clinicians with an estimate of the degree to which the child can meet the demands of daily life and respond appropriately to environmental demands. A significant level of adaptive skills or between observed performance in a highly structured situation and in more typical situations indicates that an explicit focus on acquisition and generalization of adaptive behavior skills training is important.

Adaptive behavior skills training is a "less intensive" plan designed to enhance the individual's overall quality of life. Individual's age three to adult are able to access these services. The principles and procedures for analyzing and changing behavior (ABA) are used to target the following skill areas: Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management.

Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Behavioral interventions for toilet training have been based upon principles of the behavior the problem of nocturnal enuresis has been addressed with urine detection devices that serve to awaken children with ASD. So they can get out of bed when wet, as well as with systematic behavioral procedures involving practice, rewards, and clean-up requirements (National Research Council 2001).

In other words, many events for teaching self-help skills to adults with ASD have been extended to younger children with ASD. Yet there have been relatively few direct empirical tests of adaptations to young children with ASD. This situation may partially result from the lack of emphasis on publishing systematic replications, as well as from the cost- and time-efficiency of simply using existing procedures that prove to be clinically effective.

2.8. The impact of ABST for children

The impact of ABST for children is Increasing Independence for each individual with ASD. Plan monitoring is performed in the same environment the service is provided. The Clinical Program Coordinator will monitor data to decide the route of treatment, provide feedback to the instructors, and train continuity of care with the parents/caretakers.

All programs are implemented by instructor's who all receive an initial training on the principles and procedures for analyzing and changing behavior, in addition to, a program specific training prior to starting adaptive behavior skills training for children with ASD.

Parents and other family members can benefit from bringing the children to the center to address the various emotions and stress of having a child with ASD in the family and to ensure that their own needs are also met. This could include providing information about the children with ASD

daily living progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals.

2.9. The impact of ABST for parents with ASD

Parents whose child is diagnosed with ASD experience difficulties and it changes the dynamics of the family in that everyday activities need to be modified and the child with ASD will need extra attention from the parents. Children with ASD can result in scattered emotions for the parents. Each family handles the vision of their child differently. Just as the spectrum varies, so does each family's experience. Upon hearing their child's diagnosis, one study found that in parents, "52% felt relieved, 43% felt grief and loss, 29% felt shock or surprise, and 10% felt self-blame" (Banach, Iudice, Conway, & Couse, 2010). Often, parents are relieved that they were given an answer in regards to their child's symptoms but this does not erase the stress that they endure while raising a child with autism. Parents often experience stressful situations upon the initial diagnosis that relate to their child's behavior, adapting to this new lifestyle and the complexity of finding access to the appropriate services useful to the family (Banach *et al.*, 2010). Stressors from an ASD diagnosis can cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others.

2.10. Assessment of Adaptive Behavior Skills Training

An assessment is conducted using an adapted functional behavior assessment. Once the assessment is completed, a report is composed then submitted to the funding source (regional center). The assessment report will provide an overview of the individual's skill deficits, targeted goals, and behavior change procedures that will take program development and implementation.

All programs are structured to record quantitative and qualitative data, which are used to drive the decision making process. Skills are taught at home, center and community environments.

Assessment of adaptive behavior skills training is particularly important for children with ASD for several reasons.

First, measures of a child's typical patterns of functioning in familiar and representative environments, such as the home and the center, can be obtained.

Assessment of adaptive behavior skills training provides a measure of a child's ability to generalize teaching across settings; given the nature of the cognitive difficulties in generalization in ASD, such assessments are especially important. As with other children with ASD, acquisition of basic capacities for communication, socialization, and daily living skills are important determinants of outcome. Adaptive behavior skills training may be in marked contrast to a child's higher ability to perform in one-on-one teaching situations or in highly structured behavioral programs.

Second, assessment of adaptive behavior skills training can be used to target area for skills acquisition.

Third, there is some suggestion that relatively typical patterns of performance in ASD can be identified and that some aspects of adaptive assessment of social skills can contribute to a diagnostic evaluation.

Fourth, assessment of adaptive behavior skills training, as well as of intellectual ability, is essential in documenting the prevalence of associated intellectual disability and, thus, eligibility for some services (National Research Council 2001).

CHAPTER THREE

METHODS

This chapter presents the design used, the sampling techniques employed, the data collection instruments used, and the procedure of the study and the method of data analysis.

3.1. Research Design

A research design is a plan, structure and strategy of investigation conceived as to obtain answers to research question or problems. Hence, the design used in this particular research was qualitative, specifically case study. This is because it is useful to obtain in-depth data from the center facilitator teachers regarding the practice and implementation of adaptive behavior skill training programs.

3.2. Study Site

The study was conducted at Nehemiah Autism Center (NAC), found around Megenagna area, Addis Ababa City. NAC is a non-governmental local organization established for providing services for children with ASD since 2012. It also offers a family support group in addition to holistic rehabilitation services to children with autism spectrum disorders. It has also experience sharing and a family support meeting with parents and staff from other canthers of Autism. It is now growing its work to allow more children with autism spectrum disorders to obtain professional services. The center provides services in three level (level1: self-help skills, level 2: receptive skills, and level 3: expressive skills) by accommodating 40 children with ASD and facilitated by 20 teachers.

Nehemiah Autism Center has a license from Charities and Societies Agency, which is a concerned governmental office, and has rented a house to receive children with ASD. The center started work on June 16, 2011 after it got its license on August 31, 2010. At the moment the center is giving adaptive behavior skill training and treating children with ASD in its center. This NGO is non-profit and a non-governmental organization.

It also provides transportation free of charge for those families who cannot afford to send their children with ASD to the center due to the reason that it is difficult to use public transport for these kinds of children with ASD. Nehemiah Center aspires to see every ASD child is cared for, parents of ASD children are supported and awareness about ASD created in the society.

Nehemiah Autism Center's mission is to provide care, instruction and support for children with autism and related disabilities - promoting cognitive, emotional and relational growth through individualized programs, while providing counseling and support to parents, especially mothers as they deal with these particularly difficult challenges; teaching the parents to become active participants in their child's education and development; and finally, to raise public awareness of the nature and prevalence of ASD.

According to their starting story, they are a group of families of children with ASD. They were unable to send children with ASD to a school or a center to train and teach children with ASD due to lack of space in the then only available Autism center in Ethiopia.

So their option was, especially mothers, to abandon the job and stay at home to look after their child with no hope insight. When one of the mothers, Miss Rahel Abayneh, came with a vision to open another center for these kinds of children, they stand with her and managed to open this center. They are now trying to reach to so many children with ASD who are deprived of their rights for education and rehabilitation because of shortages of schools and society's lack of awareness.

They first started with 6 children with ASD. At those beginning days, due to lack of funds the board members were forced to discuss about the center sitting on the floor. They were in shortage of funds to pay salaries for the caregivers. Now, Nehemiah autism center has 40 children and 20 caregivers to train the children with ASD.

Based on their success story, they have some accomplishment in spite of the few years since they started the Nehemiah autism center. They see lots of change on the children with ASD they train including understanding what one says, able to eat independently, capable of toileting and clothing, completing puzzles, and able to speak.

They see hopes in the families' children with ASD, especially mothers are now able to work and add incomes to the family. Due to the awareness they created, they see understanding in more part of the society about autism. Consequently stigma and discrimination is slowly decreasing.

3.3. Participants of the Study

The researcher used parents of children with ASD and special needs education teachers working at Nehemiah Autism Centre as participants of this study. Six teachers of the center, two from each level were identified and took part in the study. In addition, two parents (one mother and

one father) who are educated and have relatively close connection with the center teachers were participants in this study.

Both groups (teachers and parents) of participants were selected using purposive sampling technique.

3.4. Data Collection Instruments

3.4.1. Semi-structured Interview

The researcher developed semi-structured interview guide after a through revision of relevant literature concerning the major areas of the study. The interview guide consisted of 10 questions designed to dig in-depth information related with the research objectives.

3.4.2. Observation Guide

Similar to the semi-structured interview guide, class room observation guide was prepared by the current researcher in consultation with the related literature. It is a kind of checklist consisting of 11 items structured into Yes or No options in order to strengthen the data collected by the interview.

3.4.3. Document Analysis Guide

For the sake of comparing the ABST practices in the current research site with the already established scientific literature, document analysis guide was developed by the present investigator. The tool incorporates basic criteria including training types, components, goals, and planning, implementation, and evaluation processes.

All items of the three instruments were first prepared in English. But for the sake of the effective communication, the interview guide was translated into Amharic.

3.5. Pilot Study

The purpose of the pilot study was to assess the relevance and clarity of the questions of the tools designed to collect data for the study in order to check clarity of the items of the tools. Thus all the preliminary semi-structure interview guide, observation guide and document analysis guide were presented to three participants found at Joy Autism Center. In addition, the advisor of the research and one language expert reviewed the tools. Based on their responses, necessary modifications were made on the data collection instruments and made ready for the main study.

3.6. Data Collection Procedure add

The data collection process was as follows. First, letter of permission was taken from special need department of Addis Ababa University. The letter was submitted to the heads of at Nehemiah Autism Center associations and then agreement was arrived on the objective of the study and they became willing to inform participants for the study. Then, participants were selected for the study and necessary rapport was established with frequent visits of the researcher and through phone calls.

Next, after agreement on using tape recorder was assured, interviews sessions were made with each respondent. The interviewees were made free to arrange the time and place of the interview session, as it was very comfortable for them. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use prompts to encourage the interviewee to consider the question further. The interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the

interviewee. In addition to use tape recorder and notes was recorded using note book during an intensive interview held with each case privately.

In order to reinforce the information obtained through interview, classroom observations were also made for about four months and during this period each of teachers/facilitators observed once in a week. Moreover, documents were reviewed side-by-side to the observation process.

3.7. Data Analysis

Thematic analysis was used to analyze the data in this study. As described previously varieties of data collection instruments were used to collect enormous amount of data. Accordingly, the major tasks during analysis made by researcher were as follows; organizing the data, generating categories, themes and patterns, coding the data, and reviewing the emergent ideas and searching for alternative explanations. It was done after all the data in Amharic were transcribed into written paper. Then, the investigator tried to identify themes by categorizing the transcribed data.

3.8. Ethical Considerations

When conducting this study, the researcher followed some ethical guidelines. Thus, the first activity of the researcher was getting permission from participants. Once permission was obtained, the researcher made the participants feel safe and secure regarding the information they provided on the issue of investigation. In other words, the researcher assured participants that the information they provide would be used only for research purpose. Moreover, to make

participants feel more confident about the information they provided, each informant was pre-informed that her/his real name will not be used while reporting the results.

All participants were also oriented to understand their rights to confidentiality and anonymity in the research process and the right to withdraw from the research at any time, without having to give their reasons.

CHAPTER FOUR

FINDINGS

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa. To achieve this research purpose, the data were collected based up on the basis of the research questions and specific objectives.

In order to answer the research questions and specific objectives, the data were collected through semi-structured interview, observation and document analysis. The participants of the current study were six caregivers, one educational leader and five parents of children with ASD who are undergoing training at NAC.

4.1. Demographic Characteristics of Respondents

4.1.1. Demographic Characteristics of Practitioners

Six practitioners and one center coordinator were interview participants. These practitioners have been working at NAC for one year up to three years. Most of the practitioners were females; among all five were female practitioners. Abbreviated names were used to present the information given by the respondents voluntarily and confidentially.

Table 4.1: Demographic Characteristics of practitioners

No	Name	Sex	Age	Marital status	Educational Level	Experience in the center
1	G	M	40	Married	Education	4
2	W1	F	30	Single	Psychology	1
3	A	F	29	Single	IT	3
4	Z	F	32	Married	ECCE	2
5	M	F	28	Single	Nurse	2
6	W2	F	30	Married	Building work	3
7	G	M	28	Single	Accounting	3

4.1.2. Demographic Characteristics of Parents with ASD

Five parent respondents were involved in this study. As indicated in Table 2 below, interview was conducted with one father and four mothers whose children were with ASD.

Table 4.2: Demographic Characteristics of Parents and their Children with ASD

No.	Category	Parents			Child Name	Children		
		Sex	Age	Educ. level		Sex	Age	Stay in the center
1	Mother	F	40	12	NA	M	8	3
2	Mother	F	39	12	YO	M	14	5
3	Mother	F	42	12	YE	F	11	4
4	Father	M	52	Degree	YH	M	10	3
5	Mother	F	38	12	KE	M	7	1

4.2. Planning Adaptive Behavior Skills Training

The goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance. Essential outcomes focus on improvements in social communication that affect the individual's ability to develop relationships, function effectively, and actively participate in everyday life.

Generally, the adaptive behavioral skills training are considered as intervention practices and/or programs in the center. The center provides need-based adaptive skills trainings at each level with children of different interest and potential.

In addressing this issue, observation was conducted at the center which revealed that the center has used scientifically proven ABST for children with ASD. It implements the training using organized training manuals, guidelines, real and/or local made objects, teaching aids and

structured schedules for the academic year. There are training aids and resources available for the training in the center. As an instance, pictures placed at the eye-level of each child. In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all children that can help them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

The data collected through semi-structured interview from practitioners of students with ASD about the planning processes of adaptive behavioral skills training indicated that the planning process will be determined after the center identifies the problem of each child by conducting assessment. Three of the respondents stated that each individual child has his/her own education plan in the training. All of the interviewees indicated that self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities ,especially for children with ASD at level one. The result from the document analysis also fits with this result. In addition, some respondents indicated that music and TV room refreshment activities are also considered in the plan.

In relation to the planning process, the data from document analysis pinpointed that receptive order and communication skills are the major focus areas of the plan for children at level two. Some of the major activities impinged in the plan include social interaction by calling days and names, giving and receiving properties, receiving directions, matching of materials, clothes, body structures with what they hear from the facilitators. The same source of data also shows that academic and expressive skills are the major areas of concern in the planning process for level

three children. These skills are expected to develop through social interactions, communications, and writing, playing, accepting and responding the directions from the facilitators.

Table 4.3: Examples of Schedules of Daily Activities

Self-help therapy	Social skills	Physical	Sensory skills
Going to toilet alone	Able to ask their needs	Sports	Smell
Holding the toilet handle	Mimicking	Relaxation	Sound
Going inside the toilet	Reply to command	Indoor play	Food interest
Taking off trouser and	Relating objects with name	Outdoor play	Identify objects
Using toilet properly	Responding to call		Keep self
Going back to class	Behaving in crowd		
	Playing alone		

A daily routine is designed to each level student on different types of daily activity. Practitioners have multiple tasks during daily activity in a center. They follow the protocol which is designed by the educational analyst in the center.

Activity schedules/visual supports include objects, photographs, drawings, or written words that act as cues or prompt to help individuals complete a sequence of tasks/activities attend to tasks, transition from one task to another, or behave appropriately in various settings. Written and/or visual prompts that initiate or sustain interaction are called scripts. Scripts are often used to promote social interaction, and they can also be used in a classroom setting to facilitate academic interactions and promote academic engagement.

NAC has used different objects, drawings, written words that help the children to teach and do tasks. These items are used in the center so that the children can learn by doing different activities and concentrate on things. As most of the children have a problem on concentration these activities will help them.

4.3. Types of Adaptive Behavior Skills Training

Generally, the data collected from the three instruments (interview, observation, and document analysis), revealed that the major purpose of ABST programs is teaching children functional living skills that would be helpful to live at home and in the community. Self-help adaptive skills (day-to-day activities like brush teeth independently, put clothes away, and wash own hair, has skills in the area of self-care); expressive and receptive communication skills (expressing wants and needs, able to follow directions, focus attention on things, conversation with another person or retell); writing and memorizing academic skills; gross (walking, running, and riding a bike) and fine motor skills (drawing, tracing and typing); and sense enrichment activities.

Based on the semi-structured data gathered from the practitioners, the types of trainings at NAC are categorized in to three levels: level 1, level 2 and level 3. Each category involves various components.

4.3.1. Self Help Skills Training

The level 1 training: *“This training is given for children come to the center, and these children have no experiential daily living skills at the home-environment.”* Based on the interview data, at this level, children with severe ASD are given various trainings such as self-help skill training and sensory enrichment such as five sensory senses like taste, smell, visual audio, tactile and vestibular, perceptive and other daily living skill training, potty training, hand washing, face washing, wearing of jacket, T-shirt, trousers and shoes. As part of the training at Nehemiah Autism Center, this category depends on social communication (friendship, residual language difficulties), functional regulation managing self-control and anger, anxiety and depression, work skills-personal and class room organization skills.

4.3.2. Receptive Language Skills Training

The level 2 training: *“level two receptive language skills training is provided if children successfully accomplish level I training.” The center has its own assessment mechanisms.*

Accordingly, it focuses on the receptive communication skill like to accept the direction, playing skill following the command the eye contact and attention. This training focuses on social communication interacts and making sense of people understanding and listening conversation and rigidity preparing for change; sensory motor difficulties; inappropriate reaction to sound touch and vision, and emotional difficulties encouraging motivation and limiting over dependency.

4.3.3. Expressive Language Skills Training

The level 3 training: *“This training is given for children who effectively achieved level I and Level II training components.”* The educational leader interviewee has favorably explained that this part of the training focuses on the expressive communication skills such as occupational therapy, speech therapy applied behavior analysis art, letter, number music and reading academic is another task of level three. Level three children with ASD the educational leader developed self-skill and receptive communication skill try to express their feeling and interest. The care givers treat them by different mechanisms such as ABA, DIR and DTT. And the children with ASD will go the inclusive class, and the students with ASD to be independent for each activity. In addition, this part of the training is intended in establishing joint attention, and communication, visual learning and structure, building communication, preparing for change and remembering. Auditory/Sensory Integration Training- Broadly speaking, sensory integration therapies are used to treat integration dysfunction in one or more sensory systems. Treatments can include physical exercise, sensory/tactile stimulation, and auditory integration training. NAC

gives a physical exercise daily to the children so that they can socialize and know how to socialize themselves. But they didn't give the formal therapy for sensory system.

Discrete Trial Training (DTT) - This is a one-to-one instructional approach utilizing behavioral methods to teach skills in small, incremental steps in a systematic, controlled fashion. The teaching opportunity is a discrete trial with a clearly identified antecedent and consequence (e.g., reinforcement in the form of praise or tangible rewards) for desired behaviors. DTT is most often used for skills that learners are not initiating on their own, have a clear, correct procedure, and can be taught in a one-to-one setting. DTT is informally been addressed at NAC, whenever students achieve one goal or do one daily task; they reinforce them in showing their support to the kids. For example, giving hug, allowing playing with toys and so on.

The data collected from observation and document analysis also confirmed the presence of some implementation of scientifically proven adaptive behavioral skills training for children with ASD at the center. These are ABA, DTT, DIR and other self-help skills, receptive language skills and expressive language skills in the all levels of sections for each individual child; however, it is not at the expected level.

In general, as it was witnessed by the researcher's observation, there are different adaptive behavior skills training aids and resources available for the training in the center. For instance, pictures placed at the eye-level of each child.

In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all that can help them adapt the social and physical environment; learn adaptive behavior skills training such as interpersonal and intrapersonal skills.

The practitioners and caregivers treat the children with ASD used the guidelines of center for each IEP and level. But, facilitators sometimes gave different trainings based on the individual performance and quality. The practitioner or care giver used different mechanisms of maintaining eye contact. Some pictures are also placed at the eye level of children at class room. According to the report of the center coordinator, Assessment of Basic Language and Learning Skills, music, occupational, physical and sensory integration therapies are also the common intervention mechanisms at the center.

4.4. The Impact of Adaptive Behavioral Skills Training

4.4.1. Impact on children:

According to the data collected from interview participants, the major impact of the implementation of different ABST programs is making children to be independent in order to handle various activities in their life at the center and out of it. More specifically, the respondents indicated that ABST programs are important to help children to be self-reliant manage, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications.

In addition, ABST contributed to develop children's sense enrichment including visual, auditory, tactile, taste, smell, and vestibular systems. All these help children to promote themselves from one level to the next. As it was reported by the center coordinator, 13 children out of the total 40 children were transferred from one level to the next. That is, four children from level one were promoted to level two, the other four children were promoted to level three, and five children with ASD got registered to grade one inclusive formal school systems due to the positive effect of ABST. On the other hand, around two-third (27 children) did not fulfill the standard/criteria to pass to the next level.

4.4.2. Impact on Parents

Interview was conducted with parents of children with ASD for the purpose of gathering data about the impact of ABST program provided to them. Parents reported that the training package prepared for the practitioners at the center is also organized for the parents in order to equip them to give the training to their children at home. Parents taught about how to manage and maintain their child's basic skills at home.

Almost all participants indicated that the primary importance of getting the training is to get relief and psychological stability. Especially, those parents with children at level one are highly happy when their children get improved in self-help skills such as potty training, dressing and undressing, eating, toileting, and washing. After the trainings the parents with ASD to changes behavior due to the training provided by practitioners at the center and parents at home.

Moreover, due to the awareness created by the training, two of the participants' mothers sometimes come to the center to give additional support to their children with ASD.

4.5. The Adaptive Behavioral Skills Training and Its Evidence Based Practices

According to the document analysis there were different types, goals, components, planning implementation and evaluation of training phase. In order to portray the extent to which ABST provided at NAC goes in line with its evidence-based practices of ABST established in the literature. For the purpose of achieving such issue, document analysis was conducted, and results are presented in the Table 4.4 below.

Table 4.4: Packages of ABST at NAC

	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's reflections
ABST provided at NAC	Level 1: Self-help skills Level 2: receptive language skills Level 3: expressive and academic skills	Level 1: Potty training, toileting, washing, dressing Level 2: play, following directions and instructions Level 3: expressive communication skills and academics	To make children self-independent	Assessment, consulting, preparing IEP, assessment, plan	Training, guiding, modeling, Eye-contact Speech therapy	Teachers evaluate each children based on the criteria set for each level.	The researcher has identified the presence of gaps with what is written on the document with the practice in the classroom.

Taking data from the document analysis and observation, the researcher have recognized the presence of linkages of the practices at the research center with the existed literature though it is not found at an expected level. Most of the practitioners of the center are not professionals who challenge implementation of ABST beginning from planning to the evaluation phases.

As it is expressed above, the implementation of the ABST at NAC is similar with the evidences in different literatures. However, there is one major difference in terms of leveling the problem of children. The leveling used by the NAC center is the reverse of what

is existed in the DSM-V. On the basis of the level of severity from most sever to less sever of the ASD, DSM-V the classification begins from level three and ends at level one. But for NAC the opposite is true (see Table 4.5 below).

Table 4.5: ASD Leveling of DSM-V and NAC

DSM -V	At Nehemiah Autism Center
Level- 3: Require high support	Level- 1: Require high support
Level- 2: Require moderate support	Level- 2: Require moderate support
Level- 1: Require less support	Level- 3: Require less support

The researcher posed a question for the center coordinator regarding the reason behind the inverse leveling of ASD. The coordinator responded that the center used such leveling in order to be congruent with the Ethiopian school system going from the least up to highest level.

The practitioners teach the children with ASD how to learn to interact with their environment as Social Learning Theory suggests. The primary goal of the educator is to serve as care givers that are teaching the children with ASD are serving as per their needs. As the children with ASD have difficult circumstances and needs support in every aspect of their activities, we have seen that the practioners serve and give support. They will support them to cope with the environment, teach them how to wash, wear clothes, use toilets, play and socialize. They engage the children to restore and enhance their cognitive ability.

One of the values is to respect human rights and committed to promote social justice. As the researcher have discussed with the director of the Nehemiah Autism center, she has told the researcher that she has tried to ensure the rights of the children with ASD and promote social justice by advocating that this disorder is a part of disability and get recognition from the government. One of the reasons why the center is doing this because parents whose children with ASD are afraid to bring their ASD child to public as they are considered as cursed. The other reason is that if autism is recognized as disability the children will benefit.

Practice has focused on meeting human needs and developing human potential so, the center is really working regarding this value. Even though the center lacks different resources we can say that it is trying hard to give access of resources for the children so that they will develop their skills. This is for example, by teaching with different materials, giving occupational therapy and so on.

The center is giving the intervention in one-to-one direction applied to each kid. ABA is the use of these techniques and principles to bring about meaningful and positive change in behavior.

This analysis is very helpful to work with young children with ASD and other related disorders.

The center has used ABA as the principle that explains how learning takes place. As mentioned, behavior analysts began working with young children with ASD and other related disorders. The techniques are used in structured situation in daily basis in all the three levels.

ABA helps kids to live happily and become productive in their day to day life. ABA principles and techniques can foster basic skills like looking, listening and imitating as well as complex skills as reading and understanding another person's perspective. ABA can produce improvement in communication, social interaction /relationship, play, self-care, school and employment. Intensive and early intervention program for children with ASD address full range of life skills from communication and sociability of self-care and readiness for school.

CHAPETR FIVE

DISSCUSION

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa. To achieve this research purpose, the data were discussed based up on the basis of the research questions and specific objectives.

5.1. How Adaptive Behavior Skills Training are planned for each child with ASD

The first question of this research was looking the planning process of adaptive behavior skills training children with ASD at NAC. The findings revealed that the goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance. The investigation result of the current research exposed that the center has used scientifically proven ABST for children with ASD implemented with the help of training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year. There are training aids and resources available for the training in the center. The center provided the training in a way that helped them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children. This result is almost consistent with the research conducted by the National Research Council (2001); which indicated that adaptive skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life. Functional academics, self-help skills, safety

skills, community access, communication, social skills, job prerequisites, and self-management are the planning areas.

5.2. What Adaptive Behavior Skills Training is given for Children with ASD

According to Hansen as cited in National Research Council (2001), Potty training and related issues have been the center of attention of a broad range of early behavioral interventions.

Similarly, at Nehemiah Autism center for ASD, the potty training is an integral part of the initial phase of the consecutive trainings. Children who are legible for the initial or level one training scheme are those who usually suffer from controlling urine.

As the research report by Hansen such problem has been addressed with urine detection devices that serve to awaken children with ASD; whereas, at Nehemiah Autism Center offers diaper for the children until they successfully complete the training and achieve the skill of urine control.

The self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities, especially for children with ASD at level one in NAC.

According to the practice of NAC receptive and expressive language skills training are the common forms of training packages for children with ASD at level two and level three respectively. This result is also similar the existed literature identified by National Research Council (2001) which pinpointed that functional academics, safety skills, community access,

communication, social skills, and self-management skills should be the focus areas of intervention for helping children with ASD. Similar to the literature written by Heflin and Simpson, (1998); Lovaas (1987); Machalicek *et al.* (2008); Matson *et al.* (1996); McConnell (2002); Mcpartland (2002); National Research Council (2001); Tarbox and Najdowski, (2008) all the interventions at NAC includes discrete trial training, applied behavior analysis, and social skills training. However, as to the present research findings NAC has one additional type of training packages that is DIR.

5.3. The Impact of ABST

According to the present research finding ABST has positive contribution both on children and their parents. As reported by the participants the primary and major impact of ABST was making children independent that can be visible in handling various activities in their life in and out of the center. That means, ABST programs help children to be self-reliant, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications which is congruent with the National Research Council (2001) where ABST has utmost importance to foster children independence skills in the journey to their development. However, there is still one contradictory finding in the current study; children of the center did not pass to the next level as to their expectation. Since, children are independent in handling different activities; they are expected to go to the next level. This contradiction may be attributed to the small number of the participants and their bias to the questions posed during data collection. Therefore, this needs further in-depth investigation by other researchers.

A substantial body of research (eg. Banach, Iudice, Conway and Couse, 2010) pointed out that parents experience different psychological (grief and loss, felt shock, self-blame, stress, etc.) and social (cause a strain on parent's marital relationship, increase financial burdens in the family

and result in parents socially isolating themselves from others) problems. However, parents benefit a lot when they bring their children to the center; get informed about daily progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals and these helps to address the various emotions and stress, and maintain social ties.

In similar line as to the present research finding ABST has also positive contribution for parents of children ASD. It helped parents to get relief to some extent, though they were not satisfied at the expected level with may be due to a lack of professional competence.

5.4. The Adaptive Behavior Skills Training Practice and its Evidence based Practices

In order to describe the extent to which ABST provided at NAC goes in line with its evidence – based practices of ABST established in the literature, the result was compared with DSM-V. According to The DSM-V published in 2013 concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard. The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM-V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent. As to the knowledge of the present researcher, there are no previous research findings that support or contradict with this finding. Therefore, is special to the current investigation.

CHAPTER SIX

SUMMERY, CONCLUSIONS AND RECOMMENDATIONS

6.1. SUMMERY

The purpose of the study was investigating the situations of the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. There were four main research questions and specific objectives.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the impact of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

This study has mainly aimed at assessing the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. For this purpose, the samples have been drawn from one non-profit and a non-governmental organization located at Addis Ababa, Bole Sub- City around Megenagna. The Societal Agency, which is not a concerned governmental office, has rented a house to receive Road called Nehemiah Autism Center. It has a license from Charities and children with ASD. The center has started working since 16th June, 2011 after it got its license on

31th August 31, 2010. At the moment, the center is giving adaptive behavior skills training and treating forty children with ASD. It has 20 caregivers to train them.

Among these total populations, the data collection has been started from March 2 up to April 10, 2018 E.C. Among the 20 practitioners, six caregivers, one educational leader, and five parents were selected. Because, in the under graduate level the researcher was some voluntary activities and research paper about the children with ASD.

The research was a qualitative design; the data were collected through semi-structured interview and non-participant observation and document analysis, which were analyzed qualitatively using **thematic analysis method**.

The findings of the research indicated that the NAC designed the ABST plan for children at each level based on the result of the assessment. The focus areas of the planning differ from level to level. That is, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively.

In addition to these, discrete trial training, applied behavior analysis and developmental individual relationship are ingredients of the training. ABST has positive impact on both children and parents in improving basic skills of life, though it is not found at the expected level. Except leveling the problem of children, the implementation of the ABST at NAC is similar with the previous evidences. Based on the results of the study, major conclusions were made and important recommendations were made.

6.2. Conclusions

Based on the results of the research, the following conclusions have been made:

- The process of planning ABST at NAC is determined by the result of the assessment conducted on children. The focus of the training content differs in relation to the levels of children where self- helps skills, receptive order, communication skills, academic and expressive skills are common in level one, level two, and level three respectively.
- The most common types of ABST intervention at NAC are discrete trial training, applied behavior analysis, developmental individual relationship, assessment basic language skills, music, and occupational, physical and sensory integration therapies.
- Though ABST programs had positive impacts on some children to be independent by improving their daily life skills including social, communication skills and behavioral manifestations. It is not found at the expected level, since many children are repeating the same level for many years. On the other hand, the ABST training organized by the center for parents on how to manage and maintain their child's basic skills at home helped them to get relief and psychological stability by equipping them the necessary self-help

skills to train their children though parents were not much satisfied by the change observed on their children with ASD.

- The implementation of ABST at NAC is similar with what is existed in the literature. But the inverse is true at NAC in terms of categorizing the problem of children as compared with DSM-V.

6.3. Recommendations

Based on the results of the research and the conclusions made, the following recommendations are forwarded.

- The center prepares a plan for intervention based on the assessment for the overall children categorized at each level. Therefore, it is more advisable for NAC to prepare educational plan for each individual child based on the results of the assessment.
- There are many types of training interventions impinged in implementing ABST. However, there are limited numbers of well-trained, skilled and qualified professionals and the necessary skills to practice them properly. Hence, the center should employ social workers from Special Needs, Psychology, Education and related fields. Moreover, it will be better for the center if it organizes different capacity enhancement trainings for the existed staffs.
- Large numbers of children are still repeating the same level many times. Thus, the center should conduct program evaluation for ABST in order to check its effectiveness in bringing fundamental changes on children and parents.

- Many of the practices in the implementation of ABST are congruent with the evidence documented before. The major difference of what was found in this research and in the earlier evidence was leveling. The DSM -V concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard. The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM -V from level 3 up to level 1 to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.
- Theoretically, the level of support extent required will get increased while the level of training increased in DSM-V; whereas, the level of support required will decreased at Nehemiah Autism center for ASD when the level of training increased.

References

- Al-Faiz, H. S. (2007). Attitudes of elementary school teachers in Riyadh, Saudi Arabia toward the inclusion of children with autism in public education. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 68 (4-A), 1403.
- Allen, K. D., & Cowan, R. J. (2008). Naturalistic teaching procedures. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 213-240). New York: Oxford University Press.
- Al-Shammari, Z. A. (2006). Special education teachers' attitudes toward autistic students in the autism school in the State of Kuwait: A case study. *Journal of Instructional Psychology*, 33, 170-178.
- American Academy of Pediatrics (2001). Committee on children with disabilities. Technical report: The pediatrician's role in the diagnosis and management of autistic spectrum disorder in childhood. *Pediatrics*, 107(5), e85. Retrieved from <http://pediatrics.aappublications.org>
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders*

- (4th ed., text revision, *DSM-IV-TR*). Washington, DC: Author.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* DSM V. Washington, DC: Author.
- Autism Speaks. (2010). Facts about autism. Retrieved from <http://www.autismspeaks.org>.
- Bakare, M., O. (2011). Autism spectrum disorders (ASD) in Africa: a perspective. *African Journal of Psychiatry*; 14:208-10.
- Banach, M., Iudice, J., Conway, L. & Couse, L. (2010). *Family Support and Empowerment: Post Autism Diagnosis Support Group for Parents*; Pages 69-83.
- Baron-cohen, S., S., Allison, C., Williams, J., Bolton, P. (2009). *British Journal of psychiatry*. Prevalence of autism-spectrum conditions: UK school -based population study. 10: 500-9.
- Bailey, A., Le Couteur, A., & Gottesman, I. (1995). Autism as a strongly genetic disorder: Evidence from a British twin study. *Psychology of Medicine*, 25, 63-77.
- Centers for Disease Control and Prevention (CDC). (2010). Autism spectrum disorders. Data and statistics. Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>.
- Glashan, L., Mackay, G., & Grieve, A. (2004). Teachers' experience of support in the mainstream education of pupils with autism. *Improving Schools*, 7, 49-60.
- Heflin, L. J., & Simpson, R. L. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part I: Intervention and treatment option review. *Focus on Autism and Other Developmental Disabilities*, 13,194-211.
- Individuals with Disabilities Education Act of 1990, 20 U.S.C. §1400 *et seq.* (1990).
- Individuals with Disabilities Education Act (IDEA) Data. (2007). Data tables for OSEP state reported data. Part B child count 2007. Table 1-11. Children and students served under IDEA, Part B, in the U.S. and outlying areas by age group, year, and disability category: Fall 1998 through fall 2007. Retrieved from <https://www.ideadata.org>.

- Kaiser, A. P. (1993). Functional language. In M. E. Snell (Ed.), *Instruction of students with severe disabilities*. New York: Macmillan.
- Koegel, L. K., Koegel, R. L., & Dunlap, G. (Eds.). (1996). *Positive behavioral support: Including people with difficult behavior in the community*. Baltimore: Paul H. Brookes.
- Lorna selfe (2013) *All that matters autism spectrum disorder*
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55, 3-9.
- Machalicek, W., Davis, T., O'Reilly, M., Beretvas, N., Sigafoos, J., Lancioni G., et al. (2008). Teaching social skills in school settings. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 269-298). New York: Oxford University Press.
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2005). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Upper Saddle River, NJ: Pearson.
- Mavropoulou, S., & Padelidiu, S. (2000). Greek teachers' perceptions of autism and implications for educational practice: A preliminary analysis. *Autism*, 4, 173-183.
- Mhrki, A., P. (2010). Knowledge and Attitude of General Practitioners Regarding Autism in Karachi, Pakistan. *Journal of Autism Dev Disorder*.
- Matson, J. L., Benavidez, D. A., Compton, L. S., Paclawsky, T., & Baglio, C. (1996). Behavioral treatment of autistic persons: A review of research from 1980 to the present. *Research in Developmental Disabilities*, 17, 433-465.
- McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention

- and future research. *Journal of Autism and Developmental Disorders*, 32, 351-372.
- Machalicek, J. J., Smith, T., & Lovaas, O. I. (2008). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation*, 97, 359-372.
- Ministry of Education (MOE, 2012). *Reference material for special needs/inclusive/ education courses*. Addis Ababa, Ethiopia.
- Morgan, W. R. (2010). *Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years*. New York: McGraw Hill.
- NICHCY (2009). Categories of disability under IDEA. *National Dissemination Center for Children with Disabilities*. Retrieved from www.nichcy.org.
- National Institute of Child Health and Human Development (2005). *Autism research at the NICHD*. NIH Publication No. 05-5592.
- National Research Council. (2001). *Educating children with autism*. Committee on Educational Interventions for Children with Autism, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academies Press.
- Nia Foundation Autism in Ethiopia (2010). Retrieved from www.niafoundation.wordpress.com/autism/ accessed on Nov. 27, 2017.
- Ozonoff, S., Dawson, G., & Mcpartland, J. (2002). *A parent's guide to Aspergers syndrome and high functioning autism*. The Guilford Press, New York, London.
- Pozo, P., Sarria, E., Brioso, A. (2011). *Psychological Adaptation in Parents of Children with*

- Autism Spectrum Disorders. In Mohammadi, M.R(Ed.), A Comprehensive Book on Autism Spectrum Disorders (pp.107-130).
- Prizant, B. M. &Wetherby, A. M. (1998). Understanding the continuum of discrete trial traditional behavioral to social pragmatic developmental approaches in communication enhancement for young children with autism PDD. *Seminars in Speech and Language*, 19(4), 329-353.
- Rutter, M. (1970). Autistic children: Infancy to adulthood. *Seminars in Psychiatry*, 26, 435-450.
- Salhia, H., O., Taher, L., S., Al-khathaami, A., M. (2014) . Systemic review of the epidemiology of autism in Arab. *Neurosciences*;19(4):291-6.
- Sanford School of Medicine. (2006). *The University of South Dakota Center for Disabilities Autism spectrum disorders handbook*. Retrieved Nov 3, 2017, from <http://www.usd.edu>.
- Schlosser, R. W., & Wendt, O. (2008). Augmentative and alternative communication intervention for children with autism. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 325-389). New York: Oxford University Press.
- Sherer, M. R., & Schreibman, L. (2005). Individual behavior profiles and predictors of treatment effectiveness for children with autism. *Journal of Consulting and Clinical Psychology*, 73, 525-538.
- Siegel, B.(2003).Treatment approaches for parents and professional. London: Oxford university press.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.
- Tarbox, R. S. F., & Najdowski, A. C. (2008). Discrete trial training as a teaching paradigm. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices*

for children with autism (pp. 181-194). New York: Oxford University Press.

Skokut, M., Robinson, S., Openden, D., & Jimerson, S. (2008). Promoting the social and cognitive competence of children with autism: Interventions at school. *California School Psychologist*, 13, 93-108.

Whitaker, P. (2007). Provision for youngsters with autistic spectrum disorders in mainstream schools: What parents say – and what parents want. *British Journal of Special Education*, 34, 170-178.

Wilczynski, S. M., Menousek, K., Hunter, M., & Mudgal, D. (2007). Individualized education programs for youth with autism spectrum disorders. *Psychology in the Schools*, 44, 653-666.

Abstract

This study was aimed at assessing the practices of adaptive behavior skills training for children with Autism Spectrum Disorder (ASD) at Nehemiah Autism Center (NAC). The center was established after it has got licensed on 31st August 2010 as a nonprofit and a non-governmental organization. NAC rendered its training services for about 53 children with ASD so far; and currently (as of April, 2018) 40 children with ASD are actually engaged for their fulltime in three consecutive levels of the center's adaptive behavior skills training program. The training program was running by 20, in total, practitioners and caregivers 6 of whom were samples of the study. The center's principal as well as 5 parents of children with ASD were also sampled, and then involved in the data collection process. The overall data collection process took 2 months; and guided interviews, structured observations, and document analysis were utilized. Then after, the data, gathered, were analyzed employing the case study approach. The results of the study what show the practices of Adaptive Behavior Skills Training undertaking in NAC narrated thoroughly, discussed, and concluded Accordingly. Finally, recommendations were forwarded based on the findings achieved as well as the gaps observed.

Abstract

This study was aimed at assessing the practices of adaptive behavior skills training for children with Autism Spectrum Disorder (ASD) at Nehemiah Autism Center (NAC). NAC rendering its training services for 40 children with ASD engaged for their fulltime in three consecutive levels of the center's adaptive behavior skills training program with the help of 20 practitioners. The study followed qualitative, particularly case study design. Data were collected from 12 (seven teachers, one coordinator and five parents) respondents selected through, purposive sampling technique. The data were collected through semi-structured interview, observation and document analysis, and analyzed by employing qualitative approach case study design. The results of the study revealed that the center designed the plan for children based on the result of the assessment. The focus areas of the planning differ from level to level. That means, activities capacitating self-help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively. In addition to these, discrete trial training, applied behavior analysis and developmental individual relationship are ingredients of the training. ABST has positive impact on both children and parents in improving basic skills of life, though it is not found at the expected level. Except leveling the problem of children, the implementation of the ABST at NAC is similar with the previous evidences. It is concluded that the content of training differs against the level of children, provided variety types of evidence based ABST targeted to impact life skills of children and parents of the center. Lastly, individual child based planning approach, employment of well trained professionals, and ABST program evaluation, were forwarded as the major recommendations of the study.



ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

DEPARTMENT OF SPECIAL NEEDS EDUCATION

MA THESIS

**THE PRACTICE OF ADAPTIVE BEHAVIOR SKILLS FOR CHILDREN WITH AUTISM
SPECTRUM DISORDER: THE CASE AT NEHEMIAH AUTISM CENTER**

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NOVEBER, 2018

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Disorder: The Case at Nehemiah Autism Center**

BY:

Fasil AsmamawZewdu

**A Thesis Submitted to the School of Graduate Studies in Partial Fulfillment of the
Requirements for the Degree of Master`s of Art in Special Needs Education**

Addis Ababa University
School of Graduate Studies
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The Practice of Adaptive Behavior Skills Training for Children with Autism Spectrum Disorder: The Case at Nehemiah Autism Center

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Acknowledgements

First and for most, I thank the Almighty God for his wisdom and protection of me in every single movement and work of this research. I am greatly indebted to my advisor, Dr. R.S. Kumar for his constructive, critical and immeasurable comments and feedback. He is really very punctual, impartial, enthusiastic, energetic, man of action, knowledgeable, and open-minded. He rose me up from zero interest, and he has been a source of inspiration, encouragement as well as the key to the accomplishment of my research work.

My sincere thanks go to the participants of the study for what they have become successful and sharing of all their personal histories.

I am also grateful to Ato Getaneh Abera, Head of Nehemiah Autism Center who has given information, his document and his subordinates for their cooperation in the selection of the participants of the study as well.

My gratitude also goes to my father, Ato Asmamaw Zewdu and my mother, Tsegiye Tilahun. I do not have words to express their devotion, commitment and love for me to reach at this level.

I would to thank the Special Needs Education Department at Kotebe Metropolitan University and Addis Ababa University for their knowledge and the insightful feedback I gained.

I also thank Laureate, Prof. TirussewTeferra, Dr. Belay Hagos,Dr.TilahunAchaw,Dr.Dameabera, Simegn Sendek(PhD Candidate),Mr.Fisha Teklu, Mrs. Keralem Getaneh, and Mr. Belesti Abawa for their psychological support and companionship.

My sincere appreciation extends to my friend, Mr. Bitwded worku and Gezahnngn Silamofor all the year along.

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List of Abbreviations

ABA	Applied Behavior Analysis
ABST	Adaptive Behavioral Skill Training
ASD	Autism Spectrum Disorder
CDCP	Centers for Disease Control and Prevention
DIR	Developmental Individual Relationship
DSM	Diagnostic Statistical Manual Four
DSM	Diagnostic Statistical Manual Five
DTT	Discrete Trial Training
EIHA	Education for All Handicapped Children Act
FASP	Free and Suitable Public Education
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Plan
IPO	Input Process and Outcome
MMR	Measles-Mumps-Rubella
NGO	Nongovernmental Organization
PRT	Pivotal Response Training
SNE	Special Needs Education
SST	Social Skills Training
USA	United States America
WHO	World Health Organization

Abstract

This study was aimed at assessing the practices of adaptive behavior skills training for children with Autism Spectrum Disorder (ASD) at Nehemiah Autism Center (NAC). NAC rendering its training services for 40 children with ASD engaged for their fulltime in the self help skills receptive skills expressive and academics consecutive levels of the center's adaptive behavior skills training program with the help of 20 practitioners. The study followed qualitative, particularly case study design. Data were collected from 12 (six practitioners, one coordinator and five parents with ASD respondents) were directly related to the children with ASD selected through, purposive sampling technique. The data were collected through semi-structured interview, observation and document analysis, and analyzed by employing qualitative specifically case study design. The results of the study revealed that the center designed the plan for children based on the result of the assessment. The focus areas of the planning differ from level to level. That means, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively. In addition to these, discrete trial training (DDT), applied behavior analysis (ABA) and developmental individual relationship (DIR) are ingredients of the training. Adaptive behavior skills training (ABST) has positive perceived on both children and parents with ASD in improving basic skills of life, though it is not found at the expected level. Except leveling the problem of children, the implementation of the adaptive behavior skills training (ABST) at NAC is similar with the previous evidences. It is concluded that the content of training differs against the level of children, provided variety types of evidence based ABST targeted to perceived life skills of children with ASD and parents with ASD in the center. Lastly, individual child based planning approach, employment of well trained professionals, and ABST program evaluation, were forwarded as the major recommendations of the study.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The Swiss psychiatrist Eugene Bleaker first introduced the term autism in 1911. Autism and autistic stem from the Greek word "autos," meaning self. The term autism originally referred to a basic disturbance in schizophrenia, in short, an extreme withdrawal of oneself from the fabric of social life, but not excluding oneself (Koegel, Koegel & Dunlap, 1996). Subsequently, Autism Spectrum Disorder (ASD) was defined as a phenomenon consisting of a variety of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication and distinctive strengths and differences (Marzano, Pickering & Pollock, 2005). It is also characterized by impaired social interaction, impaired verbal, non-verbal communication and restricted and repetitive behavior. Symptoms range from very mild to quite severe and comprise of a lack or delay in spoken language, repetitive motor mannerisms like hand flapping and twirling objects, little or no eye contact, lack of interest in peer relationships, and the inability to deal with change. It ranges in severity from a handicap that somewhat restricts an otherwise normal life to a shocking disability that may need institutional care (Rutter, 1970).

There are in general three major characteristics applied to decide an ASD and are frequently present by age three. These characteristics are deficits in social interaction, verbal and nonverbal communication as well as repetitive behaviors and interests (National Institute of Child Health and Human Development, 2005).

Individuals with ASD were mostly unnoticed by the training and intervention service providing community until 1975 when the Education for all Handicapped Children Act (EHA) recognized the right of children with disabilities to get a free and suitable public education (MoE, 2012). The limited number of children with autism who received special education services beginning in 1975 was often served below another disability such as intellectual disability. In 1990 a shift occurred when autism was particularly listed as a disability group in the Individuals with Disabilities Education Act (IDEA, 1990), a federal law that reauthorized and expanded EHA, ensuring the right to a public education including special education and related services for individuals with disabilities.

Studies on the long-term outcomes for persons with autism indicated a relatively desolate image (Dempsey & Foreman, 2001; Gill Berg, 1991; Howling, 2000). According to these authors, the majority of persons with autism have not developed the adaptive skills essential to function independently in society and many persist to exhibit considerable challenging behaviors that impede their inclusion in community environments. Due to these difficulties, many adults with autism are significantly dependent on family or third party resources for support in major life activities related to employment, adult living, leisure, and social relationships. Stein et al. (2001) reported that approximately 70% of persons with autism had poor outcomes in adulthood and continue reliant on others in almost all aspects of living. Fence and Emerson (2001) also stated that the existence of adaptive behavior deficits can put for the significant impact on person's quality of life and in great part defines his or her need for long-term support from service institutions.

In spite of the considerable body of research indicating poor outcomes for the majority of persons with autism, there is lack of information currently showing the quality and effectiveness of the adaptive behavior skills training and intervention programs implemented for children with autism that have a vital role when they become adults under the Ethiopian context.

Professionals and advocates in the field of special education believe that the primary objective of special education is to make possible children learn adaptive skills that facilitate adult independence (Brown et al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980). Children with ASD need to have experiences with and instruction in adaptive behavior skills which enable them to work, live and enjoy life in their community (Wehmeyer, 1991). Though the belief, the practice and its quality of special education services provided by special education training centers for individuals with autism remains unresearched in Ethiopia.

However, researches regarding the quality of special education programs for students with autism suggests that Individualized Education Programs (IEPs) are frequently not individualized in several service giving institutions based on student need (Fiedler & Knight, 1986; Reiher, 1992; Slavens, 1997; Smith, 1990; Smith & Simpson, 1989; Tymitz, 1981). In Ethiopia, disability by and large is considered to be a curse, so families as well as communities discriminate against people with disabilities in general and children with ASD in particular. In the past, only 0.7 percent of persons with disabilities in Ethiopia have had access to education and training of any type. This situation has been changing

as education and training for persons with disabilities in Ethiopia is becoming more and more inclusive (Sherer & Schreiber, 2005).

Sadly, there is no healing for autism. But, there are numerous treatment strategies identified for ASD. The continuous debate among researchers, professionals and parents of ASD are best to the existing confusion.

Many techniques guaranteed notable improvement. While some of these approaches are doing well for some, there is not one procedure that is successful for all individuals with ASD (Sanford School of Medicine, 2006). Nevertheless, there is a diversity of treatment and educational approaches that may less different challenges associated with this pervasive developmental disability. Intervention may help to reduce disruptive behaviors while education can teach self-help skills that will allow the child to become more independent (National Research Council, 2001).

Even though a cure for autism is not yet available, WHO recommended that an evidence-based psychosocial intervention can reduce difficulties in communication and social behavior, with a positive impact on the person's well being and quality of life? However, the provisions of services for children with ASD are very minimal in public schools compared to other children with disabilities. As a result, many children with autism in Ethiopia get support and a rehabilitation service from non-governmental organization among others is Nehemiah Autism Center.

Studies indicated that one important barrier in the service provision for a child with ASD is fear of stigma of parents and siblings. Many parents and siblings of children with

autism in Ethiopia are worried about other people finding out about their child's condition. Some parents feel the need to keep their child hidden at home (Siegel, 2003). In addition, many parents and caregivers provide spiritual explanations for their child's condition, for example, attributing autism or developmental delays to a curse on the family or a punishment from God (Nia foundation, 2010). Spiritual justifications for autism are common among parents in Ethiopia and this affects their cooperation with teachers and their perception about professional services provided for their children with autism. This negative perception and causal attribution is the cause of the vast majority of children with autism to remain undiagnosed, with no access to intervention or appropriate education (Mhrki, 2010).

Research also indicated that culture and socioeconomic circumstances can have a profound influence on autism families and the nature of treatment they provide and seek from others. Hence, service providers need a better understanding of these influences before they can truly serve children with autism in Ethiopian context. Although research from wealthy countries can inform interventions, adaptations to local culture and context are essential to make sure interventions meet the needs of local families and work in low-resource countries such as Ethiopia (Pozo, Sarria & Brioso, 2011).

Scholars in the field of Autism also suggested the several key elements as decisive when educating children with autism. These elements are entry into intervention programs as soon as an ASD diagnosis is being considered and active involvement in an intensive instructional program for a full school day, 5 days a week for a minimum of 25 hours a week, for the entire calendar year. Moreover, instruction should be one-to-one or in a

small group in order to meet each child's individualized goals with a low student to teacher ration of not more than two children with ASD per SNE teacher in the classroom.

It is also significant to note that the scholars did not identify a specific treatment for autism as treatments must be individually customized to the child's behaviors and special needs. Just as there is no one single signs or behavior that identifies children with autism, there lacks of single treatment that can be applied for all (Bakare, 2011; Pozo *et al.*, 2011).

Little is known about the appropriateness and effectiveness of adaptive behavior skills intervention programs for children with ASD in Ethiopia. Almost all autism research have been conducted in Western, high-income countries, resulting in a research gap concerning studies from low-income countries like Ethiopia. Due to a lack of studies, the prevalence of autism in Ethiopia is unknown. A recent report of an autism meeting attended by 47 delegates from 14 African countries indicated the lack of autism services throughout Africa and the need to raise awareness and develop autism screening, training and service strategies on the continent (Bakare, 2011). In Ethiopia, the situation is even worse for there is serious shortage of service providers and researches conducted to know the nature of the training programs and intervention practices in the Ethiopian context. Hence, there is a need to investigate how the available training programs for children with autism are structured and practiced at Autism training Centers in Ethiopia.

Initiatives from local non-governmental organizations (NGOs) have contributed to an increase in autism awareness and service provision in Ethiopia. In this regard, Nehemiah and Joy Autism Centre take the lion share in educating these children. Some of the

children with mild autism go to national and private schools. Otherwise, almost all children with ASD are deprived of education and rehabilitation due to lack of facilities, schools and trained teachers. In fact, the majority of parents do not know what autism is and those who know are pessimist regarding their children's change through education and training.

Although these developments are promising, existing services for children with autism have scarcely been documented. Moreover, little has been done to investigate opportunities and challenges to increase services and the most effective ways for future service development. Thus this study aims to assess the current adaptive behavior skills intervention/training practices for children with autism at Nehemiah Autism Centre.

1.2. Statement of the Problem

Even though autism is rising at an alarming rate, attention given by both government and the society is insignificant. Even the NGOs that are working with children, disability and women are not giving the required attention to autism. Bringing awareness to children's rights and women equality is important but addressing and supporting children who are currently suffering from autism needs prior attention than other issues. The limited information available suggests that adaptive behavior needs of children with ASD are typically not sufficiently addressed in educational programs for these children (Rotholz *et al.*, 1989; Slavens, 1997).

There are many techniques, strategies and interventions applied to treat adaptive behavior skills deficits in children with ASD. Numerous treatment methods have been designed to address the variety of social, language, sensory and behavioral difficulties.

Some of the instructional and training strategies for teaching adaptive behavior skills to children with autism take a behavioral approach and others take an interactive approach. Both models have been revealed to be effective with children with ASD (Kaiser, 1993; Prizant & Wetherby, 1998). Hence, a range of strategies have been based on a mixture of these models.

Another worry when implementing adaptive behavior skills trainings for children with ASD is the duty of designing the accurate individualized education plan for each child. Each individual with ASD will display diverse characteristics and different extents of deficits.

It is vital that professionals know the complexities of ASD in order to construct trainings that will best assist an individual in all aspects of adaptive behavior skills (Wilczynski *et al.*, 2007).

Adaptive behavior skills trainings are significant for all children to enhance success in training settings but are undersized for children with ASD under the current context of training centers in Ethiopia. Realizing adaptive behavior skills training and interventions being used in training settings to help children with ASD raise adaptive behavior skills training is very important.

The effectiveness of the trainings should also be considered. Knowledge and understanding of effective adaptive behavior skills training and interventions can help to raise appropriate practices for individuals with ASD.

Teachers in the school or training settings can help the center develop IEP for individuals with ASD. As very important team member, they can play a central role in the development and implementation of adaptive skill interventions for children with autism.

One of the purposes of this study was to explore Special teachers at Nehemiah Autism Centre to get information on what adaptive behavior skills trainings they are using for children with autism.

In addition, no information is at present available concerning factors that affect team decisions to program for these needs or whether IEPs that address the adaptive behavior needs of children with autism affect daily instruction. While researchers have confirmed positive effects of a range of intervention methods in enhancing the independence of children with autism, it is uncertain whether the execution of such methods is taking place in applied settings.

Lovaas (1987) also indicated that professionals may unintentionally limit what a person with Autism can eventually achieve by waiting for adulthood to train for independence. By not targeting adaptive behavior needs and challenging behaviors in the training programs of children with autism, these children will remain dependent on others when they become adults.

This practice has pervasive consequences in that it influences not only the individual with autism who is incapable to take part and function fully in his/her community but also families and society that must give long-term care and assume an important accountability for these individuals throughout their lives.

This research will be conducted to fill a gap in the local professional literature and to make possible positive outcomes for children with autism by documenting and evaluating the existing practices in designing and implementing adaptive behavior skills training programs and instructional activities for children with autism at Nehemiah Autism Centre.

This research answered the following research questions.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the perceived of adaptive behavior skill training on children with ASD and their parents with ASD?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

1.3. Objectives of the Study

1.3.1. General Objective

The overall purpose of the study is to assess the practices of adaptive behavior skill training for children with ASD at Nehemiah Autism Centre.

1.3.2. Specific Objective

The study addressed the following specific objectives.

- To describe the planning processes of ABST at Nehemiah Autism Centre.
- To explore the given of ABST at Nehemiah Autism Centre.
- To identify the perceived of ABST on children with ASD and their parents.

- To portray the extent to which ABST provided at Nehemiah Autism Centre goes in line with the evidence based practices of ABST established in literature.

1.4. Theoretical Framework

Malcolm Proves' Discrepancy Model (Proves, 1969) is used as a theoretical framework for this study. This model of program evaluation helps the researcher to examine adaptive behavior skills training program and appraise whether its implementation is consistent with the program's design.

He viewed evaluation as the process of approving upon program standards, deciding whether a discrepancy exists between the program and the principles governing that aspect of the program and using discrepancy information to know weaknesses of the program.

His goal was to get adequate information about the function of new programs in order to make the essential changes in the planning of the programs.

Proves believed in the importance of evaluation to systematically advance programs and guarantee educational benefit and fidelity.

Proves further explained programs will improve only when teachers, administrators, students and parents become concerned in a comprehensive effort to assess and improve their own work.

Such an attempt needs careful examination by a school staff of their program operations, a detailed examination of program inputs and processes and the confirmation that the programs are in fact working as people believe them to be operating.

He developed an equation ($I (P) = O$) to review, implement and make the essential changes in the program under study.

In the equation, I equal to the input (I), P is the process (P) and O is the outcome (O). The Intervention plan (e.g. IEP), SNE teachers, students and administrators are considered the input (I). Their interaction in the classroom was defined as the process (P).

The result of the input and process is the outcome (O). This series of steps was referred to as the IPO technique.

Proves suggested that the disparity between the objective of the program and the outcome should be minimal.

When program evaluators have the information of what inputs, processes, and outcomes are included, the program is better understood, defined, prepared and productive.

For the purpose of this study, the IPO technique will be used to describe the adaptive behavior skills intervention program being applied.

1.5. Significance of the Study

This study thus added knowledge about the extent of effectiveness such adaptive behavior skills training for children with autism disorders has brought about in Ethiopia. Study results will help to fill the lack of local literature on the adaptive behavior skills service provision and the experiences of SNE teachers.

The findings emerged from this research will also contributed a lot to strengthen the existing adaptive behavior skill training programs and services for children with ASD in the centers.

The results can provide guidance for Autism Centers and schools as well as policy makers regarding ways to strengthen and improve education and training for children with ASD.

This study will show the significance of working teams among teachers and strong collaborative relationships that truly include parents as pivotal partners in planning and implementing adaptive behavior skills training plans for children with autism.

Although this research will be conducted in a particular Autism Centre, the results will be useful for parents and SNE teachers and other educators in other Autism Centers and school systems and it will enhance or challenge their own practices concerning various adaptive behavior skills and educational interventions as well as instructional methods for children with ASD.

1.6. Delimitation of the Study

This study was delimited to one local organization called Nehemiah Autism Centre. The participants of this study were purposive samples by the target group of six facilitator practitioners, one educational leader employed in the center.

They have experience of providing adaptive behavior skills training for children with ASD at least for two years and five parents with ASD.

In the center, they serve 40 students with ASD. The study was also focused on the scope of the service provided in the compound.

1.7. Operational Definition of Basic Terms

Adaptive Behavior Skills Training- refers the core training packages including self-help skills, receptive language skills training incorporates social skills, receiving instructions, and matching different things with realities and expressive language skills training refers communication skills, numeracy and literacy skills designed for children with ASD at Nehemiah Autism Centre.

Assessment- in this research assessment refers checking or measuring the child's developmental history through day to day observation and with the use of checklists.

Self help skills - includes personal and daily living skills like potty training, washing, and dressing.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of literature starts with a description of the general characteristics of children with autism spectrum disorders (ASD) and definitions, information about etiology and prevalence of ASD.

The literature review also addresses adaptive behavior skills and educational interventions for children with ASD.

Such interventions include different forms of applied behavior analysis ranging from more traditional discrete trial training to naturalistic teaching methods such as incidental teaching, pivotal response training and milieu teaching.

2.1. Definition of Autism

According to IDEA:

"Autism means a developmental disability significantly affecting verbal and Nonverbal communication and social interaction generally evident before age Three that adversely affects a child's educational performance other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements resistance to environmental change in daily routines and unusual responses to sensory experience .The term autism does not apply if child's educational performance is adversely affected primarily because the child has an emotional disturbance .a child who shows the characteristics of autism after age three could be diagnosed as having autism if the criteria above are satisfied. " (NICHCY, 2009, p.3).

Autism is a neurobiological disorder that occurs from birth or early in a child’s development (National Research Council, 2001). The disorder is typically diagnosed before age 3, continues through adulthood and has no specific etiology or cure (American Academy of Pediatrics, 2001; National Research Council, 2001). Autism is usually described as a spectrum of disorders that differ in severity of impairment and association with other disorders (e.g., intellectual disability, seizures). Although symptoms differ from one child to the next, all autism spectrum disorders are manifested by major impairment in mutual social interaction and communication skills and the occurrence of repetitive and stereotyped behaviors and interests (DSM-IV-TR, 2000).

According to DSM-V published in 2013, autism manifests in two core areas including social communication and restricted, repetitive behaviors. That is, impairments in social interaction and impairments in communication grouped into a single domain of social communication. The work further categorized the severity level of ASD in to three levels.

This is clearly presented in the table below.

Table 2.1: Severity Levels for Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 “Requiring very substantial support”	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interferes with functioning in all spheres. Great distress/difficulty changing focus or action.

	only and responds to only very direct social approaches.	
Level 2 “Requiring substantial support”	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change or other restricted/ repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.
Level 1 “Requiring support”	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between Activities. Problems of organization and planning hamper independence.

Source: American Psychiatric Association (2013)

2.2. The Characteristics of Autism

One of the central characteristics of autism spectrum disorders (ASD) is major impairment in the capability to begin and uphold reciprocal social interaction (Machalicek *et al.*, 2008; National Research Council, 2001).

Children with ASD frequently avoid eye contact and appear detached and unconcerned in interaction with people. Their imitation skills and capability to engage in communal activities are usually impaired.

Children with ASD have trouble learning to understand social cues (e.g., facial expressions, nonverbal gestures) and the feelings of others.

Therefore, they have problems considering things from another person's viewpoint and engaging in reciprocal social conversation.

Children with ASD display major deficits in functional and symbolic play skills.

Numerous have difficulty regulating their own emotions. They may become disruptive or physically aggressive or involve in self-injurious behavior.

It can be difficult for them to comply with directions and keep in cooperative social behavior either as they do not fully understand the directions, rules or social expectations or because they have compulsive interests not shared by other children (Machalicek *et al.*, 2008; National Research Council, 2001).

Children with autism spectrum disorders also display a central deficit in verbal and nonverbal communication skills (*DSM-IV-TR*, 2000; National Research Council, 2001).

Several show significantly delayed language development and some stay nonverbal throughout their lives.

A number of children learn to use alternative communication systems such as pictures or sign language (Schlosser & Wendt, 2008).

Those who do obtain functional speech often merge normal language with idiosyncratic speech, echolalia (repeating the same words or phrase over and over) and stereotyped language.

2.3. Etiology of Autism

Autism is commonly believed to be a neuro-developmental disability with a physically powerful genetic basis but the precise reason remains unidentified for most children affected with an autism spectrum disorder (American Academy of Pediatrics, 2001).

The majority of the experts think both genes and the environment play a role and there may be multiple causes that lead to a variety of autism spectrum disorders (American Academy of Pediatrics, 2001).

Strong confirmation for a genetic basis has also been found by twin studies conducted by Bailey, Le Courter, and Gottesman (1995).

These researchers found that identical (monozygotic) twins had a concordance rate of 60% for children with autism disorder and 92% for the broader spectrum of ASD, while fraternal (dizygotic) twins had concordance rates of 0% for children with autism disorder and 10% to 30% for the broader spectrum.

Siblings had a recurrence rate of 3% to 7% for the broader spectrum. Based on their twin research data these researchers calculated the heritability of autism to be approximately 90%.

Even though autism emerges to be largely genetic in origin, scholars in the field also believe that several environmental factors probably play a significant role in whether a child with a genetic predisposition in fact develops the disorder. Several researchers maintain a multi factorial mode of inheritance for autism based on a mixture of genetic and environmental factors (American Academy of Pediatrics, 2001).

For example congenital rubella and early first trimester thalidomide experience have both been connected with bigger risk for autism. More recently, widespread public controversy has raged over whether the measles-mumps-rubella (MMR) vaccine and other childhood immunizations are connected with a high risk of autism.

However, any connection between childhood immunizations and greater risk for autism has been repeatedly refuted by the research community (American Academy of Pediatrics, 2001).

The combination of causes of ASD is not fully known. There is growing evidence that ASD is a genetic condition and that there are likely severally different genes involved.

The mode of genetic transmission appears complex and scientists are focusing their work on discovering which genes may be involved and how these genes are affected. So far, it appears that for at least a significant sub group of ASD, there is a genetic susceptibility that differs across family that is different genes may be responsibility in different families.

2.4. Prevalence of Autism

According to WHO report global median prevalence is 62/10 000, that is one child in 160 has autism in Europe, the median rate of Autism is 61.9/10 000 and in Australia half million individuals are affected with autism.

A Survey which is done in Europe suggests that the prevalence of autism is 99 per 10000 (Baron-Cohen, et al., 2009).

At about the middle of the 20th century the prevalence of autism was projected to be only 4 to 5 in 10,000 children (American Academy of Pediatrics, 2001).

Such projection changed fundamentally by the end of the century. Currently it is estimated that an average of 1 in 110 children in the United States has an autism spectrum disorder (The Centers for Disease Control and Prevention (CDC), 2010).

An estimated 1.5 million people in the United States are affected by autism data cost to the nation of \$35 billion annually and additional children are diagnosed with autism each year than with diabetes, AIDS and cancer combined (Autism Speaks, 2010).

Another Study which was conducted in America in different states indicate that in average one in 68 children aged less than 8 years are affected with autism with a proportion of one from 42 boys and one from 189 females (CDC, 2010).

Research result from Asia disclosed the prevalence of autism in China is 26.6 per 10000(Sun, Matthews & Sharp, 2013).

Report from Oman shows that the prevalence of autism is 1.2-1.7 per 10000 (Al-sharbaty & Waly, 2009). Prevalence of autism in Africa is not well known (Bakare, 2011).

But there is Research result from Arabic country which shows the prevalence of autism in Egypt and Tanzania is 33.6 % and 11.5 % respectively (Salhia, Taher & Al-khathaami, 2014).

In Ethiopia disability data is fragmentary, inconstant and covers only few categories of disabilities. So, in Ethiopia, there is no official data that show the prevalence of autism. Different studies have presented their own estimation.

According to Joy Autism Center Foundation the prevalence rate of autism in Ethiopia is estimated to be the same as in other regions of the world. In United States of America, one in every 115 children is diagnosed with autism and in Ethiopia's population of more than 80 million a fair estimation of at least 530,000 children suffer from autism and related developmental disorders.

2.5. Services for Individuals with ASD at Autism Centers

Though individuals with ASD may struggle socially, they may not receive appropriate adaptive behavior skills trainings within various settings especially in developing countries such as Ethiopia where there is a lack of resources and trained man power.

However, in developed countries such as in the USA there is a law for individuals with a disability that grant them access to federally funded programs, such as public schools, and may comprise accommodations so the individuals with a disability can perform at the same level as their age mates.

In order to receive special education services and other related services, under IDEA, the student with a disability must show impairments in educational performance. If educational performance is revealed to be low for a student diagnosed with ASD, than related services such as adaptive behavior skills interventions could be provided (IDEA, 2004). An IEP must be prepared for a child getting services under IDEA.

The IEP is distinctive for each individual child and needs developed goals and objectives that can be measured. Typically the parent, principal, school psychologist, special needs education teacher, regular subject teacher and speech-language pathologist are present at the first IEP meeting.

IEP meetings as well contain any service providers such as an occupational therapist, nurse, therapist, adapted physical education therapist, and so forth that would be giving services for the child throughout the year.

Goals and objectives on the IEP are decided and supervised during the child's training years (IDEA, 2004; Wilczynski *et al.*, 2007).

The concern with preparing IEPs for children with ASD is the variability of impairments and signs surrounding the diagnosis. Because of the heterogeneity of the population of individuals with ASD, it can be hard for school professionals to know what deficits to focus on and what skills require being adapted for each student (Wilczynski *et al.*, 2007).

Teachers that work in schools and Autism centers often feel they are not qualified or do not have sufficient training to work with children with ASD (Simpson *et al.*, 2003).

Another concern is that there are not yet good inclusive guides for developing an IEP for children with ASD, as children with ASD have diverse needs (Iovannone, Dunlap, Huber & Kincaid, 2003; Wilczynski et al., 2007; Williams *et al.*, 2005).

At least one of the IEP members should have good clinical decision and knowledge of autistic symptoms and impairments in order to best assist the team form goals and objectives (Wilczynski *et al.*, 2007).

School psychologists are important members of the IEP team because they can put in psychological and clinical input (Skokut, Robinson, Openden, & Jimerson, 2008).

There is a need for SNE teachers and centers of Autism in general to use evidence-based practices and to obtain information on symptoms and treatments for children ASD.

Because of their practice and knowledge, SNE teachers will continue to be involved in helping students with an ASD attain and maintain appropriate adaptive behavior skills within the center, family and in the community (Koegel, Koegel, & Carter, 1999; Skokut *et al.*, 2008; Williams *et al.*, 2005).

There are many important areas in which SNE teachers are beneficial as IEP team members for children with an ASD may be their abilities to design and implement interventions and intercede concerns between families and Autism Centre /school administration staff members.

Teachers can play a key role in planning and designing proper interventions that they can use as they teach children with ASD.

They can also help team members decide if adaptive behavior skills interventions and training will benefit a child with ASD and then help determine what type of adaptive skills intervention is suitable and effective.

SNE teacher can also serve as a good agent to smooth the progress of the relationship between the center/school and parents of the student with ASD as training take place (Ivey, 2007).

2.6. Types of Adaptive Behavioral Skills Training for Children with ASD

The treatment of ASD differs from child to child. Research indicate that early intensive behavioral therapy of autism throughout toddlers or preschool years can considerably improve cognitive and language skills in young children with autism (NIMH, 2011).

It is also indicated that early behavioral and therapeutic interventions have a significant contribution for the life of a child with autism through improving communication, forming relationships, decreasing maladaptive behavior and developing independence (Larsson as cited in Sharpe & Baker, 2007).

The treatment options, showed by Ozonoff, Dawson and Mcpartland (2002) are applied behavior analysis, Treatment and Education of children with ASD, Denver and green span models, social skill groups, educational support, language and communication therapy functional behavioral analysis, medication, sensory integration therapy and individual psychotherapy.

2.6.1. Applied Behavior Analysis (ABA)

Since the early 1960s numerous researches have been conducted using ABA with children with ASD of all ages, and ABA remains one of the most popular and broadly used treatment methods for children with ASD.

A wide variety of ABA-based interventions have been designed for use in structured conditions and in more “natural” daily situations and in one-to-one as well as group settings (National Research Council, 2001).

A number of researchers have conducted comprehensive reviews of a plethora of studies documenting the effectiveness of ABA-based interventions for developing communication, play, social, academic, and adaptive skills in children with ASD and reducing problem behaviors (e.g. Matson *et al.*, 1996).

Behavior analysis is a scientific method to understanding behavior based upon the principles of respondent and operant conditioning as originally described by Skinner (1953). ABA includes the application of behavior analysis and principles of learning theory to reduce or eliminate problem behaviors and teach new skills.

Antecedent conditions and results of behavior are analyzed and manipulated and principles of positive and negative reinforcement, shaping, and fading are used to enhance or reduce target behaviors (Heflin & Simpson, 1998).

Positive reinforcement is used to make stronger a behavior subsequent that behavior with something that is preferred or valued. Skills are broken down into small steps and the child is given frequent chances to learn new skills with reinforcement.

The goals of intervention and types of reinforcers applied are modified to meet the needs of the individual child whose performance is measured by direct observation and data tracking (Lovaas, 1987).

Even though ABA is now widely established among researchers as powerfully empirically supported and among the most effective interventions for children with autism, ABA remains among the most contentious and widely misunderstood treatment strategies (Heflin & Simpson, 1998).

In part this is as many mischaracterize ABA as synonymous with Discrete Trial Training (DTT) and the early work of Lovaas (1987) that describes only one type of applied behavior analysis (Tarbox & Najdowski, 2008).

DTT and the Lovaas method have played a significant role in intensive ABA intervention programs mainly for very young children during the initial stages of treatment.

However, the field of applied behavior analysis has widened in the past 30 years to comprise numerous other applied behavioral approaches including “naturalistic” teaching procedures (e.g., “pivotal response training,” “incidental teaching,” and “milieu teaching”) and an array of other methods such as prompting, choice, priming, time delay, adult and peer modeling, and picture exchange systems (Allen & Cowan, 2008).

The field of ABA remains a long way from recognizing any one systematic approach that best fits the needs of an individual child (Lovaas, 1987) and educators are faced with an increasingly vast array of choices.

2.6.2. Social Skills Training (SST)

Significant impairment in social interaction is one of the core characteristics of children with autism spectrum disorders (*DSM-IV-TR*, 2000). Vital social skills such as sharing joint attention, initiating and maintaining social interaction, and engaging in cooperative play may be lacking or severely impaired (National Research Council, 2001).

Several excellent reviews of the literature have been conducted describing a variety of interventions used to teach social skills to children with autism (e.g. McConnell, 2002).

Such studies have generally used single subject designs with pre-post, multiple baselines, or ABAB formats without ensuring researcher blindness or random assignment to treatment conditions (National Research Council, 2001).

In spite of these methodological limitations, a significant body of research has emerged providing empirical support for various types of social skills interventions. Machalicek *et al.* (2008) also identified four general categories of interventions used to teach social skills to children with autism including:

- (a) Adult mediated antecedent interventions (e.g., priming and social stories);
- (b) peer-mediated strategies;
- (c) Video modeling; and
- (d) Pivotal Response Training (PRT)

This method is a comprehensive teaching approach used to target a wider range of behaviors than just social skills.

Examples from the research have already been cited describing the effectiveness of PRT in teaching children with autism social skills such as initiating social interactions and increasing joint attention, which are pivotal behaviors for developing more complex social skills (e.g. McConnell, 2002).

A discussion of adult-mediated and peer-mediated strategies follows with examples from the research literature illustrating the effectiveness, strengths, and limitations of each strategy.

2.6.3. Discrete Trial Training (DTT)

DTT is ground on the perspective of ABA therapy and is now used in several educational and therapeutic centers for children with autism.

The basic principles of DTT are one-to-one intervention, precise, succinct instructions, planned prompts and fading of prompts, and instantaneous praise for accurate responses.

When integrating the discrete trial methodology, teachers use a single cycle of a behaviorally-based training routine, meaning that the job is begin in small steps until the task is mastered.

Mastery of a skill may be attained after a particular trial has been repeated numerous times in series, either many times a day or over numerous days. Skokut *et al.* (2008), describe four parts of discrete trial, with an optional fifth.

The first step consists of instituting a teaching relationship, involving the teacher using one-step instructions to reduce unsuitable behaviors.

The second step is defined as teaching foundational skills, using the discrete trial method to teach academic and life skills. This includes matching and identifying objects, mimicking actions, suitable play skills and following and discerning between given instructions.

The third step includes communication intervention. Expressive language skills such as verbal imitation, recognizing actions, objects and pictures are dealt with. The last two steps maintained to support the building of communication skills.

The fourth and fifth steps focus on increasing communication by sustaining and encouraging verbal peer interaction while focusing on turn taking conversations.

2.7. Planning for Intervention of ASD

The aim of planning of adaptive skills is to obtain a measure of the child's typical functioning in familiar environments such as the home and the school.

Such measures provide clinicians with an estimate of the degree to which the child can meet the demands of daily life and respond appropriately to environmental demands.

A significant level of adaptive skills or between observed performance in a highly structured situation and in more typical situations indicates that an explicit focus on acquisition and generalization of adaptive behavior skills training is important.

Adaptive behavior skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life. Individual’s age three to adult are able to access these services.

The principles and procedures for analyzing and changing behavior (ABA) are used to target the following skill areas: Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management.

Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Behavioral interventions for toilet training have been based upon principles of the behavior the problem of nocturnal enuresis has been addressed with urine detection devices that serve to awaken children with ASD.

So they can get out of bed when wet, as well as with systematic behavioral procedures involving practice, rewards, and clean-up requirements (National Research Council 2001).

In other words, many events for teaching self-help skills to adults with ASD have been extended to younger children with ASD. Yet there have been relatively few direct empirical tests of adaptations to young children with ASD.

This situation may partially result from the lack of emphasis on publishing systematic replications, as well as from the cost- and time-efficiency of simply using existing procedures that prove to be clinically effective.

2.8. The impact of ABST for children with ASD

The impact of ABST for children is increasing independence for each individual with ASD.

Plan monitoring is performed in the same environment the service is provided. The Clinical program coordinator will monitor data to decide the route of treatment, provide feedback to the instructors, and train continuity of care with the parents/caretakers.

All programs are implemented by instructor's who all receive an initial training on the principles and procedures for analyzing and changing behavior.

In addition to this, a program specific training prior to starting adaptive behavior skills training for children with ASD (National Research Council 2001).

2.9. The impact of ABST for parents with ASD

Parents and other family members can benefit from bringing the children to the center to address the various emotions and stress of having a child with ASD in the family and to ensure that their own needs are also met.

This could include providing information about the children with ASD daily living progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals (National Research Council 2001).

Parents whose child is diagnosed with ASD experience difficulties and it changes the dynamics of the family in that everyday activities need to be modified and the child with ASD will need extra attention from the parents.

Children with ASD can result in scattered emotions for the parents. Each family handles the vision of their child differently. Just as the spectrum varies, so does each family's experience. Upon hearing their child's diagnosis, one study found that in parents, "52% felt relieved, 43% felt grief and loss, 29% felt shock or surprise, and 10% felt self-blame" (Banach, Iudice, Conway, & Couse, 2010). Often, parents are relieved that they were given an answer in regards to their child's symptoms but this does not erase the stress that they endure while raising a child with autism. Parents often experience stressful situations upon the initial diagnosis that relate to their child's behavior, adapting to this new lifestyle and the complexity of finding access to the appropriate services useful to the family (Banach *et al.*, 2010). Stressors from an ASD diagnosis can cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others.

2.10. Assessment of Adaptive Behavior Skills Training

An assessment is conducted using an adapted functional behavior assessment. Once the assessment is completed, a report is composed then submitted to the funding source (regional center).

The assessment report will provide an overview of the individual's skill deficits, targeted goals, and behavior change procedures that will take program development and implementation.

All programs are structured to record quantitative and qualitative data, which are used to drive the decision making process.

Skills are taught at home, center and community environments.

Assessment of adaptive behavior skills training is particularly important for children with ASD for several reasons.

First, measures of a child's typical patterns of functioning in familiar and representative environments, such as the home and the center, can be obtained.

Assessment of adaptive behavior skills training provides a measure of a child's ability to generalize teaching across settings; given the nature of the cognitive difficulties in generalization in ASD, such assessments are especially important. As with other children with ASD, acquisition of basic capacities for communication, socialization, and daily living skills are important determinants of outcome. Adaptive behavior skills training may be in marked contrast to a child's higher ability to perform in one-on-one teaching situations or in highly structured behavioral programs.

Second, assessment of adaptive behavior skills training can be used to target area for skills acquisition.

Third, there is some suggestion that relatively typical patterns of performance in ASD can be identified and that some aspects of adaptive assessment of social skills can contribute to a diagnostic evaluation.

Fourth, assessment of adaptive behavior skills training, as well as of intellectual ability, is essential in documenting the prevalence of associated intellectual disability and, thus, eligibility for some services (National Research Council 2001).

CHAPTER THREE

METHODS

This chapter presents the design used, the sampling techniques employed, the data collection instruments used, and the procedure of the study and the method of data analysis.

3.1. Research Design

A research design is a plan, structure and strategy of investigation conceived as to obtain answers to research question or problems.

Hence, the design used in this particular research was qualitative, specifically case study. This is because it is useful to obtain in-depth data from the center facilitator teachers regarding the practice and implementation of adaptive behavior skill training programs.

3.2. Study Site

The study was conducted at Nehemiah Autism Center (NAC), found around Megegnagna area, Addis Ababa City. NAC is a non-governmental local organization established for providing services for children with ASD since 2012.

It also offers a family support group in addition to holistic rehabilitation services to children with autism spectrum disorders. It has also experience sharing and a family support meeting with parents and staff from other canthers of Autism.

It is now growing its work to allow more children with autism spectrum disorders to obtain professional services.

The center provides services in three level (level1: self-help skills, level 2: receptive skills, and level 3: expressive skills) by accommodating 40 children with ASD and facilitated by 20 teachers.

Nehemiah Autism Center has a license from Charities and Societies Agency, which is a concerned governmental office, and has rented a house to receive children with ASD.

The center started work on June 16, 2011 after it got its license on 31 August 31, 2010.

At the moment the center is giving adaptive behavior skill training and treating children with ASD in its center. This NGO is non-profit and a non-governmental organization.

It also provides transportation free of charge for those families who cannot afford to send their children with ASD to the center due to the reason that it is difficult to use public transport for these kinds of children with ASD.

Nehemiah Center aspires to see every ASD child is cared for, parents of ASD children are supported and awareness about ASD created in the society.

Nehemiah Autism Center's mission is to provide care, instruction and support for children with autism and related disabilities - promoting cognitive, emotional and relational growth through individualized programs, while providing counseling and support to parents, especially mothers as they deal with these particularly difficult challenges; teaching the parents to become active participants in their child's education and development; and finally, to raise public awareness of the nature and prevalence of ASD.

According to their starting story, they are a group of families of children with ASD.

They were unable to send children with ASD to a school or a center to train and teach children with ASD due to lack of space in the then only available Autism center in Ethiopia.

So their option was, especially mothers, to abandon the job and stay at home to look after their child with no hope insight. When one of the mothers, Miss Rahel Abayneh, came with a vision to open another center for these kinds of children, they stand with her and managed to open this center.

They are now trying to reach to so many children with ASD who are deprived of their rights for education and rehabilitation because of shortages of schools and society's lack of awareness.

They first started with 6 children with ASD. At those beginning days, due to lack of funds the board members were forced to discuss about the center sitting on the floor.

They were in shortage of funds to pay salaries for the caregivers.

Now, Nehemiah autism center has 40 children and 20 caregivers to train the children with ASD.

Based on their success story, they have some accomplishment in spite of the few years since they started the Nehemiah autism center. They see lots of change on the children with ASD they train including understanding what one says, able to eat independently, capable of toileting and clothing, completing puzzles, and able to speak.

They see hopes in the families' children with ASD, especially mothers are now able to work and add incomes to the family.

Due to the awareness they created, they see understanding in more part of the society about autism. Consequently stigma and discrimination is slowly decreasing.

3.3. Participants of the Study

The researcher used parents of children with ASD and special needs education teachers working at Nehemiah Autism Centre as participants of this study.

Six teachers of the center, two from each level were identified and took part in the study.

In addition, two parents (one mother and one father) who are educated and have relatively close connection with the center teachers were participants in this study.

Both groups (teachers and parents) of participants were selected using purposive sampling technique.

The criteria of the purposive sampling technique help for the target of the participants' direct relationships between the children with ASD.

3.4. Data Collection Instruments

In order to get the desired and relevant information on the level of participation of students with autism spectrum disorder gathered in three instruments: interview, observation and document analysis were used.

The study has been classify the research questions that are needed to be addressed in the scientific study and to make decisions who should be studied what source of file should be involved and what kind of tools should be employed.

The data for this study were obtained from both primary and secondary sources. The primary data sources have been prepared and checked within piloting by semi structure interview and observation.

The secondary data were relevant document analysis and child profiles.

3.4.1. Semi-structured Interview

The researcher developed semi-structured interview guide after a through revision of relevant literature concerning the major areas of the study.

The interview guide consisted of 10 questions designed to dig in-depth information related with the research objectives.

Interview is found to prepared important instruments to understand people's perception, awareness and feeling. Therefore, in this study semi-structure interview was conducted with classroom teachers and school principals to know the level of participation of students with ASD at NAC. A semi-structured interview were employed as it is allows wider freedom to ask further questions and it also helps to control the direction of the interview to elicit the desired data.

Moreover it enables the interviewees to express their ideas and yet its semi-structured nature saves them being off the point .There were five type of interview prepared for both teachers and school principal.

The interview was conducted in Amharic language and it were tape recorded and transcribed immediately.

3.4.2. Observation Guide

Similar to the semi-structured interview guide, class room observation guide was prepared by the current researcher in consultation with the related literature.

It is a kind of checklist consisting of 11 items structured into Yes or No options in order to strengthen the data collected by the interview.

The practitioners and parents participants were selected because they were the only available and identified by their strong relationships and may expected to give more and detailed information about children with ASD.

Observation is a type of data collection where the researcher is involved in direct investigation of the on going activities in classroom. For the investigator to examine the real situation about the participation of students with visual disabilities in cooperative learning observation was chosen because it is useful in discovering whether the teacher and students were doing what they were supposed to do or behave in ways that were appropriate for the inclusive practices. In order to get actual information, the researcher physically conducted observation within the inclusive classes.

The researcher was able to examine and investigate the reality in the class room how students with and without visual disabilities can participate when cooperative learning method is employed. Lastly observation was used to collect the data on classroom activities and classroom accessibilities. There were three types of observational checklists: these are observing teachers' activities, observing students' different activities during practice of cooperative learning in classroom and observing classroom accessibilities.

3.4.3. Document Analysis Guide

For the sake of comparing the ABST practices in the current research site with the already established scientific literature, document analysis guide was developed by the present investigator.

The tool incorporates basic criteria including training types, components, goals, and planning, implementation, and evaluation processes.

All items of the three instruments were first prepared in English. But for the sake of the effective communication, the interview guide was translated into Amharic.

3.5. Pilot Study

The purpose of the pilot study was to assess the relevance and clarity of the questions of the tools designed to collect data for the study in order to check clarity of the items of the tools.

Thus all the preliminary semi-structure interview guide, observation guide and document analysis guide were presented to three participants found at Joy Autism Center.

In addition, the advisor of the research and one language expert reviewed the tools. Based on their responses, necessary modifications were made on the data collection instruments and made ready for the main study.

3.6. Data Collection Procedure

The data collection process was as follows. First, letter of permission was taken from special need department of Addis Ababa University.

The letter was submitted to the heads of at Nehemiah Autism Center associations and then agreement was arrived on the objective of the study and they became willing to inform participants for the study.

Then, participants were selected for the study and necessary rapport was established with frequent visits of the researcher and through phone calls.

Next, after agreement on using tape recorder was assured, interviews sessions were made with each respondent.

The interviewees were made free to arrange the time and place of the interview session, as it was very comfortable for them.

If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can used prompts to encourage the interviewee to consider the question further.

The interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee.

In addition to use tape recorder and notes was recorded using note book during an intensive interview held with each case privately.

In order to reinforce the information obtained through interview, classroom observations were also made for about four months and during this period each of teachers/facilitators observed once in a week. Moreover, the documents were reviewed side-by-side to the observation process.

Then, the three data instruments triangulated in the finding process. After that the findings discussed.

Finally, summarized, concluded and recommended based on the findings and discussions.

3.7. Data Analysis

Thematic analysis was used to analyze the data in this study. As described previously varieties of data collection instruments were used to collect enormous amount of data.

Accordingly, the major tasks during analysis made by researcher were as follows; organizing the data, generating categories, themes and patterns, coding the data, and reviewing the emergent ideas and searching for alternative explanations.

It was done after all the data in Amharic were transcribed into written paper. Then, the investigator tried to identify themes by categorizing the transcribed data.

3.8. Ethical Considerations

When conducting this study, the researcher followed some ethical guidelines. Thus, the first activity of the researcher was getting permission from participants.

Once permission was obtained, the researcher made the participants feel safe and secure regarding the information they provided on the issue of investigation.

In other words, the researcher assured participants that the information they provide would be used only for research purpose.

Moreover, to make participants feel more confident about the information they provided, each informant was pre-informed that her/his real name will not be used while reporting the results.

All participants were also oriented to understand their rights to confidentiality and anonymity in the research process and the right to withdraw from the research at any time, without having to give their reasons.

CHAPTER FOUR

FINDINGS

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa.

To achieve this research purpose, the data were collected based up on the basis of the research questions and specific objectives.

In order to answer the research questions and specific objectives, the data were collected through semi-structured interview, observation and document analysis.

The participants of the current study were six caregivers, one educational leader and five parents of children with ASD who are undergoing training at NAC.

4.1. Demographic Characteristics of Respondents

4.1.1. Demographic Characteristics of Practitioners

Six practitioners and one center coordinator were interview participants. These practitioners have been working at NAC for one year up to three years.

Most of the practitioners were females; among all five were female practitioners.

Abbreviated names were used to present the information given by the respondents voluntarily and confidentially.

Table 4.1: Demographic Characteristics of practitioners

No	Name	Sex	Age	Marital	Educational Level	Experience in the center
1	G	M	40	Married	Education	4
2	W1	F	30	Single	Psychology	1
3	A	F	29	Single	IT	3
4	Z	F	32	Married	ECCE	2
5	M	F	28	Single	Nurse	2
6	W2	F	30	Married	Building work	3
7	G	M	28	Single	Accounting	3

4.1.2. Demographic Characteristics of Parents with ASD

Five parent respondents were involved in this study. As indicated in Table 2 below, interview was conducted with one father and four mothers whose children were with ASD.

Table 4.2: Demographic Characteristics of Parents and their Children with ASD

No.	Parents			Children				
	Category	Sex	Age	Educationa l level.	Child Name	Sex	Age	Stay in the center
1	Mother	F	40	12	NA	M	8	3
2	Mother	F	39	12	YO	M	14	5
3	Mother	F	42	12	YE	F	11	4
4	Father	M	52	Degree	YH	M	10	3
5	Mother	F	38	12	KE	M	7	1

4.2. Planning Adaptive Behavior Skills Training

The goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and

increase social acceptance. Essential outcomes focus on improvements in social communication that affect the individual's ability to develop relationships, function effectively, and actively participate in everyday life.

Generally, the adaptive behavioral skills training are considered as intervention practices and/or programs in the center. The center provides need-based adaptive skills trainings at each level with children of different interest and potential.

In addressing this issue, observation was conducted at the center which revealed that the center has used scientifically proven ABST for children with ASD. It implements the training using organized training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

There are training aids and resources available for the training in the center. As an instance, pictures placed at the eye-level of each child. In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all children that can help them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

The data collected through semi-structured interview from practitioners of students with ASD about the planning processes of adaptive behavioral skills training indicated that the planning process will be determined after the center identifies the problem of each child

by conducting assessment. Three of the respondents stated that each individual child has his/her own education plan in the training.

All of the interviewees indicated that self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities ,especially for children with ASD at level one. The result from the document analysis also fits with this result.

In addition, some respondents indicated that music and TV room refreshment activities are also considered in the plan.

In relation to the planning process, the data from document analysis pinpointed that receptive order and communication skills are the major focus areas of the plan for children at level two.

Some of the major activities impinged in the plan include social interaction by calling days and names, giving and receiving properties, receiving directions, matching of materials, clothes, body structures with what they hear from the facilitators.

The same source of data also shows that academic and expressive skills are the major areas of concern in the planning process for level three children.

These skills are expected to develop through social interactions, communications, and writing, playing, accepting and responding the directions from the facilitators.

Table 4.3: Examples of Schedules of Daily Activities

Self-help therapy	Social skills	Physical	Sensory skills
Going to toilet alone	Able to ask their needs	Sports	Smell
Holding the toilet handle	Mimicking	Relaxation	Sound
Going inside the toilet	Reply to command	Indoor play	Food interest
Taking off trouser and	Relating objects with name	Outdoor play	Identify objects
Using toilet properly	Responding to call		Keep self
Going back to class	Behaving in crowd		
	Playing alone		

A daily routine is designed to each level student on different types of daily activity.

Practitioners have multiple tasks during daily activity in a center. They follow the protocol which is designed by the educational analyst in the center.

Activity schedules/visual supports include objects, photographs, drawings, or written words that act as cues or prompt to help individuals complete a sequence of tasks/activities attend to tasks, transition from one task to another, or behave appropriately in various settings.

Written and/or visual prompts that initiate or sustain interaction are called scripts. Scripts are often used to promote social interaction, and they can also be used in a classroom setting to facilitate academic interactions and promote academic engagement.

NAC has used different objects, drawings, written words that help the children to teach and do tasks. These items are used in the center so that the children can learn by doing different activities and concentrate on things. As most of the children have a problem on concentration these activities will help them.

4.3. Types of Adaptive Behavior Skills Training

Generally, the data collected from the three instruments (interview, observation, and document analysis), revealed that the major purpose of ABST programs is teaching children functional living skills that would be helpful to live at home and in the community.

Self-help adaptive skills (day-to-day activities like brush teeth independently, put clothes away, and wash own hair, has skills in the area of self-care); expressive and receptive communication skills (expressing wants and needs, able to follow directions, focus attention on things, conversation with another person or retell); writing and memorizing academic skills; gross (walking, running, and riding a bike) and fine motor skills (drawing, tracing and typing); and sense enrichment activities.

Based on the semi-structured data gathered from the practitioners, the types of trainings at NAC are categorized in to three levels: level 1, level 2 and level 3. Each category involves various components.

4.3.1. Self Help Skills Training

The level 1 training: *“This training is given for children come to the center, and these children have no experiential daily living skills at the home-environment.”* Based on the interview data, at this level, children with severe ASD are given various trainings such as self-help skill training and sensory enrichment such as five sensory senses like taste, smell, visual audio, tactile and vestibular, perceptive and other daily living skill training, potty training, hand washing, face washing, wearing of jacket, T-shirt, trousers and shoes.

As part of the training at Nehemiah Autism Center, this category depends on social communication (friendship, residual language difficulties), functional regulation managing self-control and anger, anxiety and depression, work skills-personal and class room organization skills.

4.3.2. Receptive Language Skills Training

The level 2 training: *“level two receptive language skills training is provided if children successfully accomplish level I training.” The center has its own assessment mechanisms.*

Accordingly, it focuses on the receptive communication skill like to accept the direction, playing skill following the command the eye contact and attention.

This training focuses on social communication interacts and making sense of people understanding and listening conversation and rigidity preparing for change; sensory motor difficulties; inappropriate reaction to sound touch and vision, and emotional difficulties encouraging motivation and limiting over dependency.

4.3.3. Expressive Language Skills Training

The level 3 training: *“This training is given for children who effectively achieved level I and Level II training components.”* The educational leader interviewee has favorably explained that this part of the training focuses on the expressive communication skills such as occupational therapy, speech therapy applied behavior analysis art, letter, number music and reading academic is another task of level three.

Level three children with ASD the educational leader developed self-skill and receptive communication skill try to express their feeling and interest. The care givers treat them

by different mechanisms such as ABA, DIR and DTT. And the children with ASD will go to the inclusive class, and the students with ASD to be independent for each activity.

In addition, this part of the training is intended in establishing joint attention, and communication, visual learning and structure, building communication, preparing for change and remembering.

Auditory/Sensory Integration Training- Broadly speaking, sensory integration therapies are used to treat integration dysfunction in one or more sensory systems.

Treatments can include physical exercise, sensory/tactile stimulation, and auditory integration training. NAC gives a physical exercise daily to the children so that they can socialize and know how to socialize themselves. But they didn't give the formal therapy for sensory system.

Discrete Trial Training (DTT) - This is a one-to-one instructional approach utilizing behavioral methods to teach skills in small, incremental steps in a systematic, controlled fashion. The teaching opportunity is a discrete trial with a clearly identified antecedent and consequence (e.g., reinforcement in the form of praise or tangible rewards) for desired behaviors.

DTT is most often used for skills that learners are not initiating on their own, have a clear, correct procedure, and can be taught in a one-to-one setting.

DTT is informally been addressed at NAC, whenever students achieve one goal or do one daily task; they reinforce them in showing their support to the kids. For example, giving hug, allowing playing with toys and so on.

The data collected from observation and document analysis also confirmed the presence of some implementation of scientifically proven adaptive behavioral skills training for children with ASD at the center.

These are ABA, DTT, DIR and other self-help skills, receptive language skills and expressive language skills in the all levels of sections for each individual child; however, it is not at the expected level.

In general, as it was witnessed by the researcher's observation, there are different adaptive behavior skills training aids and resources available for the training in the center. For instance, pictures placed at the eye-level of each child.

In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all that can help them adapt the social and physical environment; learn adaptive behavior skills training such as interpersonal and intrapersonal skills.

The practitioners and caregivers treat the children with ASD used the guidelines of center for each IEP and level. But, facilitators sometimes gave different trainings based on the individual performance and quality. The practitioner or care giver used different mechanisms of maintaining eye contact. Some pictures are also placed at the eye level of children at class room.

According to the report of the center coordinator, Assessment of Basic Language and Learning Skills, music, occupational, physical and sensory integration therapies are also the common intervention mechanisms at the center.

4.4. The Impact of Adaptive Behavior Skills Training

4.4.1. Impact on children with ASD:

According to the data collected from interview participants, the major impact of the implementation of different ABST programs is making children to be independent in order to handle various activities in their life at the center and out of it.

More specifically, the respondents indicated that ABST programs are important to help children to be self-reliant manage, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications.

In addition, ABST contributed to develop children's sense enrichment including visual, auditory, tactile, taste, smell, and vestibular systems. All these help children to promote themselves from one level to the next. As it was reported by the center coordinator, 13 children out of the total 40 children were transferred from one level to the next.

That is, four children from level one were promoted to level two, the other four children were promoted to level three, and five children with ASD got registered to grade one inclusive formal school systems due to the positive effect of ABST.

On the other hand, around two-third (27 children) did not fulfill the standard/criteria to pass to the next level.

4.4.2. Impact on Parents

Interview was conducted with parents of children with ASD for the purpose of gathering data about the impact of ABST program provided to them. Parents reported that the training package prepared for the practitioners at the center is also organized for the parents in order to equip them to give the training to their children at home. Parents taught about how to manage and maintain their child's basic skills at home.

Almost all participants indicated that the primary importance of getting the training is to get relief and psychological stability. Especially, those parents with children at level one are highly happy when their children get improved in self-help skills such as potty training, dressing and undressing, eating, toileting, and washing.

After the trainings the parents with ASD to changes behavior due to the training provided by practitioners at the center and parents at home. Moreover, due to the awareness created by the training, two of the participants' mothers sometimes come to the center to give additional support to their children with ASD.

4.5. The Adaptive Behavioral Skills Training and Its Evidence Based Practices

According to the document analysis there were different types, goals, components, planning implementation and evaluation of training phase.

In order to portray the extent to which ABST provided at NAC goes in line with its evidence-based practices of ABST established in the literature.

For the purpose of achieving such issue, document analysis was conducted, and results are presented in the Table 4.4 below.

Table 4.4: Packages of ABST at NAC

	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's reflections
ABST provide d at NAC	<p>Level 1: Self-help skills</p> <p>Level 2: receptive language skills</p> <p>Level 3: expressive and academic skills</p>	<p>Level 1: Potty training, toileting, washing, dressing</p> <p>Level 2: play, following directions and instructions</p> <p>Level 3: expressive communication skills and academics</p>	To make children self-independent	Assessment, consulting, preparing IEP, assessment, plan	<p>Training, guiding, modeling, Eye-contact</p> <p>Speech therapy and sensory enrichment</p>	Teachers evaluate each children based on the criteria set for each level.	The researcher has identified the presence of gaps with what is written on the document with the practice in the classroom.

Taking data from the document analysis and observation, the researcher have recognized the presence of linkages of the practices at the research center with the existed literature though it is not found at an expected level. Most of the practitioners of the center are not professionals who challenge implementation of ABST beginning from planning to the evaluation phases.

As it is expressed above, the implementation of the ABST at NAC is similar with the evidences in different literatures. However, there is one major difference in terms of leveling the problem of children. The leveling used by the NAC center is the reverse of what is existed in the DSM-V. On the basis of the level of severity from most sever to less sever of the ASD, DSM-V the classification begins from level three and ends at level one. But for NAC the opposite is true (see Table 4.5 below).

Table 4.5: ASD Leveling of DSM-V and NAC

DSM -V	At Nehemiah Autism Center
Level- 3: Require high support	Level- 1: Require high support
Level- 2: Require moderate support	Level- 2: Require moderate support
Level- 1: Require less support	Level- 3: Require less support

The researcher posed a question for the center coordinator regarding the reason behind the inverse leveling of ASD. The coordinator responded that the center used such leveling in order to be congruent with the Ethiopian school system going from the least up to highest level.

The practitioners teach the children with ASD how to learn to interact with their environment as Social Learning Theory suggests. The primary goal of the educator is to serve as care givers that are teaching the children with ASD are serving as per their needs.

As the children with ASD have difficult circumstances and needs support in every aspect of their activities, we have seen that the practioners serve and give support. They will support them to cope with the environment, teach them how to wash, wear clothes, use toilets, play and socialize. They engage the children to restore and enhance their cognitive ability.

One of the values is to respect human rights and committed to promote social justice. As the researcher have discussed with the director of the Nehemiah Autism center, she has told the researcher that she has tried to ensure the rights of the children with ASD and promote social justice by advocating that this disorder is a part of disability and get recognition from the government and one of the reasons why the center is doing this because parents whose children with ASD are afraid to bring their ASD child to public as they are considered as cursed or punished by God.

The other reason is that if autism is recognized as disability the children will benefit.

Practice has focused on meeting human needs and developing human potential so, the center is really working regarding this value. Even though the center lacks different resources we can say that it is trying hard to give access of resources for the children so that they will develop their skills. This is for example, by teaching with different materials, giving occupational therapy and so on.

The center is giving the intervention in one-to-one direction applied to each kid. ABA is the use of these techniques and principles to bring about meaningful and positive change in behavior. This analysis is very helpful to work with young children with ASD and other related disorders.

The center has used ABA as the principle that explains how learning takes place. As mentioned, behavior analysts began working with young children with ASD and other related disorders. The techniques are used in structured situation in daily basis in all the three levels.

ABA helps kids to live happily and become productive in their day to day life. ABA principles and techniques can foster basic skills like looking, listening and imitating as well as complex skills as reading and understanding another person's perspective.

ABA can produce improvement in communication, social interaction /relationship, play, self-care, school and employment. Intensive and early intervention program for children with ASD address full range of life skills from communication and sociability of self-care and readiness for school.

CHAPTER FIVE

DISSCUSION

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa.

To achieve this research purpose, the data and the literature were discussed based up on the basis of the research questions and specific objectives.

5.1. Planning Adaptive Behavior Skills Training

The first question of this research was looking the planning process of adaptive behavior skills training children with ASD at NAC.

The findings revealed that the goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance.

The center provided the training in a way that helped them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

This result is almost consistent with the research conducted by the National Research Council (2001); which indicated that adaptive skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life.

Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management are the planning areas.

The activities that are planned in ABST for children with ASD at NAC implemented with the help of training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

5.2. Types Adaptive Behavior Skills Training given for Children with ASD

According to Hansen as cited in National Research Council (2001), Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Similarly, at Nehemiah Autism center for ASD, the potty training is an integral part of the initial phase of the consecutive trainings.

Children who are legible for the initial or level one training scheme are those who usually suffer from controlling urine.

As the research report by Hansen such problem has been addressed with urine detection devices that serve to awaken children with ASD; whereas, at Nehemiah Autism Center offers diaper for the children until they successfully complete the training and achieve the skill of urine control.

The self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities, especially for children with ASD at level one at NAC.

According to the practice of NAC receptive and expressive language skills training are the common forms of training packages for children with ASD at level two and level three respectively.

This result is also similar the existed literature identified by National Research Council (2001) which pinpointed that functional academics, safety skills, community access, communication, social skills, and self-management skills should be the focus areas of intervention for helping children with ASD.

Similar to the literature written by Heflin and Simpson, (1998); Lovaas (1987); Machalicek *et al.* (2008); Matson *et al.* (1996); McConnell (2002); Mcpartland (2002); National Research Council (2001); Tarbox and Najdowski, (2008) all the interventions at NAC includes discrete trial training, applied behavior analysis, and social skills training.

However, as to the present research findings NAC has one additional type of training packages that is DIR. In similar line Ozonoff, Dawson and Mcpartland (2002) pinpointed that applied behavior analysis, social skill groups, educational support, language and communication therapy, functional behavioral analysis, and sensory integration therapy are the treatment options for improving the overall developments of children with ASD.

5.3. The Impact of ABST

As is it is supported and advocated by many research out comes, the primary objective of special education like in the form of ABST is to make possible children with ASD learn adaptive behavior skills that facilitate independent functioning in the society (Brown et

al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980) which specifically enable them to work, live and enjoy life in their community (Wehmeyer, 1991).

According to the present research finding ABST has positive contribution both on children and their parents. As reported by the participants the primary and major impact of ABST was making children independent that can be visible in handling various activities in their life in and out of the center.

That means, ABST programs help children to be self-reliant, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications which is congruent with the National Research Council (2001) where ABST has utmost importance to foster children independence skills in the journey to their development.

However, there is still one contradictory finding in the current study; children of the center did not pass to the next level as to their expectation. Since, children are independent in handling different activities; they are expected to go to the next level.

This contradiction may be attributed to the small number of the participants and their bias to the questions posed during data collection. Therefore, this needs further in-depth investigation by other researchers.

A substantial body of research (e.g. Banach, Iudice, Conway and Couse, 2010) pointed out that parents experience different psychological (grief and loss, felt shock, self-blame, stress, etc.) and social (cause a strain on parent's marital relationship, increase financial

burdens in the family and result in parents socially isolating themselves from others) problems.

However, parents benefit a lot when they bring their children to the center; get informed about daily progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals and these helps to address the various emotions and stress, and maintain social ties.

In similar line as to the present research finding ABST has also positive contribution for parents of children ASD. It helped parents to get relief to some extent, though they were not satisfied at the expected level with may be due to a lack of professional competence.

5.4. The Adaptive Behavior Skills Training Practice and its Evidence based Practices

In order to describe the extent to which ABST provided at NAC goes in line with its evidence –based practices of ABST established in the literature, the result was compared with DSM-V.

According to The DSM-V published in 2013 concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard.

The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM-V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.

As to the knowledge of the present researcher, there are no previous research findings that support or contradict with this finding. Therefore, is special to the current investigation.

CHAPTER SIX

SUMMERY, CONCLUSIONS AND RECOMMENDATIONS

This section summarizes the overall process of the study, draws, and conclusion on the basic of key finding and forwarded recommendation on of all children with ASD and how to implement adaptive behavior skills training at NAC effectively.

6.1. SUMMERY

The purpose of the study was investigating the situations of the practices of adaptive behavior skills training for children with ASD at NAC.

There were four main research questions and specific objectives.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the impact of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

This study has mainly aimed at assessing the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. For this purpose, the samples have been drawn from one non-profit and a non-governmental organization located at Addis Ababa, Bole Sub- City around Megenagna.

The Societal Agency, which is not a concerned governmental office, has rented a house to receive Road called Nehemiah Autism Center.

It has a license from Charities and children with ASD. The center has started working since 16th June, 2011 after it got its license on 31th August 31, 2010. At the moment, the center is giving adaptive behavior skills training and treating forty children with ASD. It has 20 caregivers to train them.

Among these total populations, the data collection has been started from March 2 up to April 10, 2018 E.C.

Among the 20 practitioners, six caregivers, one educational leader, and five parents were selected. Because, in the under graduate level the researcher was some voluntary activities and research paper about the children with ASD.

The research was a qualitative approach, case study design; the data were collected through semi-structured interview and non-participant observation and document analysis, which were analyzed qualitatively using the thematic analysis.

The findings of the research indicated that the NAC designed the ABST plan for children at each level based on the result of the assessment.

The focus areas of the planning differ from level to level. That is, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively.

In addition to these, discrete trial training, applied behavior analysis and developmental individual relationship are ingredients of the training.

ABST has positive impact on both children and parents in improving basic skills of life, though it is not found at the expected level.

Except leveling the problem of children with ASD, the implementation of the ABST at NAC is similar with the previous evidences.

Finally, based on the results of the study, major conclusions were made and important recommendations were made.

6.2. Conclusions

Based on the findings and discussion of the research, the following conclusions have been made:

- The process of planning ABST at NAC is determined by the result of the assessment conducted on children. The focus of the training content differs in relation to the levels of children where self- helps skills, receptive order, communication skills, academic and expressive skills are common in level one, level two, and level three respectively.
- The most common types of ABST intervention at NAC are discrete trial training, applied behavior analysis, developmental individual relationship, assessment basic language skills, music, and occupational, physical and sensory integration therapies.
- Though ABST programs had positive impacts on some children to be independent by improving their daily life skills including social, communication skills and behavioral manifestations. It is not found at the expected level, since many children are repeating the same level for many years.
- On the other hand, the ABST training organized by the center for parents on how to manage and maintain their child's basic skills at home helped them to get relief and psychological stability by equipping them the necessary self-help skills to train their children though parents were not much satisfied by the change observed on their children with ASD.

- The implementation of ABST at NAC is similar with what is existed in the literature. But the inverse is true at NAC in terms of categorizing the problem of children with ASD as compared with DSM-V.

6.3. Recommendations

Based on the findings of the research and the conclusions made, the following recommendations are forwarded.

- The center prepares a plan for intervention based on the assessment for the overall children categorized at each level. Therefore, it is more advisable for NAC to prepare educational plan for each individual child based on the results of the assessment.
- There are many types of training interventions impinged in implementing ABST. However, there are limited numbers of well-trained, skilled and qualified professionals and the necessary skills to practice them properly. Hence, the center should employ social workers from Special Needs, Psychology, Education and related fields. Moreover, it will be better for the center if it organizes different capacity enhancement trainings for the existed staffs.
- Large numbers of children are still repeating the same level many times. Thus, the center should conduct program evaluation for ABST in order to check its effectiveness in bringing fundamental changes on children and parents.
- Many of the practices in the implementation of ABST are congruent with the evidence documented before. The major difference of what was found in this research and in the earlier evidence was leveling.
- The DSM -V concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard.

- The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM -V from level 3 up to level 1 to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.
- Theoretically, the level of support extent required will get increased while the level of training increased in DSM-V; whereas, the level of support required will decreased at Nehemiah Autism center for ASD when the level of training increased.

References

- Al-Faiz, H. S. (2007). Attitudes of elementary school teachers in Riyadh, Saudi Arabia toward the inclusion of children with autism in public education. Dissertation Abstracts International Section A: *Humanities and Social Sciences*, 68 (4-A), 1403.
- Allen, K. D., & Cowan, R. J. (2008). Naturalistic teaching procedures. In J. K. Luiselli, D. C.
- Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 213-240). New York: Oxford University Press.
- Al-Shammari, Z. A. (2006). Special education teachers' attitudes toward autistic students in the autism school in the State of Kuwait: A case study. *Journal of Instructional Psychology*, 33, 170-178.
- American Academy of Pediatrics (2001). Committee on children with disabilities. Technical report: The pediatrician's role in the diagnosis and management of autistic spectrum disorder in childhood. *Pediatrics*, 107(5), e85. Retrieved from <http://pediatrics.aappublications.org>
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision, *DSM-IV-TR*). Washington, DC: Author.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* DSM V. Washington, DC: Author.
- Autism Speaks. (2010). Facts about autism. Retrieved from <http://www.autismspeaks.org>.
- Bakare, M., O. (2011). Autism spectrum disorders (ASD) in Africa: a perspective. *African Journal of Psychiatry*; 14:208-10.
- Banach, M., Iudice, J., Conway, L. & Couse, L. (2010). *Family Support and Empowerment: Post Autism Diagnosis Support Group for Parents*; Pages 69-83.
- Baron-cohen, S., Allison, C., Williams, J., Bolton, P. (2009). *British Journal of psychiatry*. Prevalence of autism-spectrum conditions: UK school -based population study. 10: 500-9.

- Bailey, A., Le Courteur, A., & Gottesman, I. (1995). Autism as a strongly genetic disorder: Evidence from a British twin study. *Psychology of Medicine, 25*, 63-77.
- Centers for Disease Control and Prevention (CDC). (2010). Autism spectrum disorders. Data and statistics. Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>.
- Glashan, L., Mackay, G., & Grieve, A. (2004). Teachers' experience of support in the mainstream education of pupils with autism. *Improving Schools, 7*, 49-60.
- Heflin, L. J., & Simpson, R. L. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part I: Intervention and treatment option review. *Focus on Autism and Other Developmental Disabilities, 13*, 194-211.
- Individuals with Disabilities Education Act of 1990, 20 U.S.C. §1400 *et seq.* (1990).
- Individuals with Disabilities Education Act (IDEA) Data. (2007). Data tables for OSEP state reported data. Part B child count 2007. Table 1-11. Children and students served under IDEA, Part B, in the U.S. and outlying areas by age group, year, and disability category: Fall 1998 through fall 2007. Retrieved from <https://www.ideadata.org>.
- Kaiser, A. P. (1993). Functional language. In M. E. Snell (Ed.), *Instruction of students with severe disabilities*. New York: Macmillan.
- Koegel, L. K., Koegel, R. L., & Dunlap, G. (Eds.). (1996). *Positive behavioral support: Including people with difficult behavior in the community*. Baltimore: Paul H. Brookes.
- Lorna Selfe (2013) *All that matters autism spectrum disorder*
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*, 3-9.
- Machalicek, W., Davis, T., O'Reilly, M., Beretvas, N., Sigafos, J., Lancioni G., et al. (2008).
- Teaching social skills in school settings. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 269-298). New York: Oxford University Press.

- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2005). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Upper Saddle River, NJ: Pearson.
- Mavropoulou, S., & Padeliadu, S. (2000). Greek teachers' perceptions of autism and implications for educational practice: A preliminary analysis. *Autism, 4*, 173-183.
- Mhrki, A., P. (2010). Knowledge and Attitude of General Practitioners Regarding Autism in Karachi, Pakistan. *Journal of Autism Dev Disorder*.
- Matson, J. L., Benavidez, D. A., Compton, L. S., Paclawsky, T., & Baglio, C. (1996). Behavioral treatment of autistic persons: A review of research from 1980 to the present. *Research in Developmental Disabilities, 17*, 433-465.
- McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention and future research. *Journal of Autism and Developmental Disorders, 32*, 351-372.
- Machalicek, J. J., Smith, T., & Lovaas, O. I. (2008). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation, 97*, 359-372.
- Ministry of Education (MOE, 2012). *Reference material for special needs/inclusive/ education courses*. Addis Ababa, Ethiopia.
- Morgan, W. R. (2010). *Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years*. New York: McGraw Hill.
- NICHCY (2009). Categories of disability under IDEA. *National Dissemination Center for Children with Disabilities*. Retrieved from www.nichcy.org.
- National Institute of Child Health and Human Development (2005). *Autism research at the NICHD. NIH Publication No. 05-5592*.
- National Research Council. (2001). *Educating children with autism*. Committee on Educational Interventions for Children with Autism, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academies Press.

- Nia Foundation Autism in Ethiopia (2010). Retrieved from www.niafoundation.wordpress.com/autism/ accessed on Nov. 27, 2017.
- Ozonoff, S., Dawson, G., & Mcpartland, J. (2002). A parent's guide to Aspergers syndrome and high functioning autism. The Guilford Press, New York, London.
- Pozo, P., Sarria, E., Brioso, A. (2011). Psychological Adaptation in Parents of Children with Autism Spectrum Disorders. In Mohammadi, M.R (Ed.), A Comprehensive Book on Autism Spectrum Disorders (pp.107-130).
- Prizant, B. M. & Wetherby, A. M. (1998). Understanding the continuum of discrete traditional behavioral to social pragmatic developmental approaches in communication enhancement for young children with autism PDD. *Seminars in Speech and Language*, 19(4), 329-353.
- Rutter, M. (1970). Autistic children: Infancy to adulthood. *Seminars in Psychiatry*, 26, 435-450.
- Salhia, H., O., Taher, L., S., Al-khathaami, A., M. (2014) . Systemic review of the epidemiology of autism in Arab. *Neurosciences*;19(4):291-6.
- Sanford School of Medicine. (2006). *The University of South Dakota Center for Disabilities Autism spectrum disorders handbook*. Retrieved Nov 3, 2017, from <http://www.usd.edu>.
- Schlosser, R. W., & Wendt, O. (2008). Augmentative and alternative communication intervention for children with autism. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 325-389). New York: Oxford University Press.
- Sherer, M. R., & Schreibman, L. (2005). Individual behavior profiles and predictors of treatment effectiveness for children with autism. *Journal of Consulting and Clinical Psychology*, 73, 525-538.
- Siegel, B. (2003). *Treatment approaches for parents and professional*. London: Oxford university press.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.

- Tarbox, R. S. F., & Najdowski, A. C. (2008). Discrete trial training as a teaching paradigm. In J.K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 181-194). New York: Oxford University Press.
- Skokut, M., Robinson, S., Openden, D., & Jimerson, S. (2008). Promoting the social and cognitive competence of children with autism: Interventions at school. *California School Psychologist*, 13, 93-108.
- Whitaker, P. (2007). Provision for youngsters with autistic spectrum disorders in mainstream Schools: What parents say – and what parents want. *British Journal of Special Education*, 34, 170-178.
- Wilczynski, S. M., Menousek, K., Hunter, M., & Mudgal, D. (2007). Individualized education programs for youth with autism spectrum disorders. *Psychology in the Schools*, 44, 653-666.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The Swiss psychiatrist Eugene Bleaker first introduced the term autism in 1911. Autism and autistic stem from the Greek word "autos," meaning self. The term autism originally referred to a basic disturbance in schizophrenia, in short, an extreme withdrawal of oneself from the fabric of social life, but not excluding oneself (Koegel, Koegel & Dunlap, 1996). Subsequently, Autism Spectrum Disorder (ASD) was defined as a phenomenon consisting of a variety of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication and distinctive strengths and differences (Marzano, Pickering & Pollock, 2005).

It is also characterized by impaired social interaction, impaired verbal, non-verbal communication and restricted and repetitive behavior.

Symptoms range from very mild to quite severe and comprise of a lack or delay in spoken language, repetitive motor mannerisms like hand flapping and twirling objects, little or no eye contact, lack of interest in peer relationships, and the inability to deal with change. It ranges in severity from a handicap that somewhat restricts an otherwise normal life to a shocking disability that may need institutional care (Rutter, 1970).

There are in general three major characteristics applied to decide an ASD and are frequently present by age three. These characteristics are deficits in social interaction, verbal and nonverbal communication as well as repetitive behaviors and interests (National Institute of Child Health and Human Development, 2005).

Individuals with ASD were mostly unnoticed by the training and intervention service providing community until 1975 when the Education for all Handicapped Children Act (EHA) recognized the right of children with disabilities to get a free and suitable public education (MoE, 2012).

The limited number of children with autism who received special education services beginning in 1975 was often served below another disability such as intellectual disability. In 1990 a shift occurred when autism was particularly listed as a disability group in the Individuals with Disabilities Education Act (IDEA, 1990), a federal law that reauthorized and expanded EHA, ensuring the right to a public education including special education and related services for individuals with disabilities.

Studies on the long-term outcomes for persons with autism indicated a relatively desolate image (Dempsey & Foreman, 2001; Gill Berg, 1991; Howling, 2000).

According to these authors, the majority of persons with autism have not developed the adaptive skills essential to function independently in society and many persist to exhibit considerable challenging behaviors that impede their inclusion in community environments.

Due to these difficulties, many adults with autism are significantly dependent on family or third party resources for support in major life activities related to employment, adult living, leisure, and social relationships.

Stein et al. (2001) reported that approximately 70% of persons with autism had poor outcomes in adulthood and continue reliant on others in almost all aspects of living.

Fence and Emerson (2001) also stated that the existence of adaptive behavior deficits can put for the significant impact on person's quality of life and in great part defines his or her need for long-term support from service institutions.

In spite of the considerable body of research indicating poor outcomes for the majority of persons with autism, there is lack of information currently showing the quality and effectiveness of the adaptive behavior skills training and intervention programs implemented for children with autism that have a vital role when they become adults under the Ethiopian context.

Professionals and advocates in the field of special education believe that the primary objective of special education is to make possible children learn adaptive skills that facilitate adult independence (Brown et al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980).

Children with ASD need to have experiences with and instruction in adaptive behavior skills which enable them to work, live and enjoy life in their community (Wehmeyer, 1991). Though the belief, the practice and its quality of special education services provided by special education training centers for individuals with autism remains unresearched in Ethiopia.

However, researches regarding the quality of special education programs for students with autism suggests that Individualized Education Programs (IEPs) are frequently not individualized in several service giving institutions based on student need (Fiedler &

Knight, 1986; Reiher, 1992; Slavens, 1997; Smith, 1990; Smith & Simpson, 1989; Tymitz, 1981).

In Ethiopia, disability by and large is considered to be a curse, so families as well as communities discriminate against people with disabilities in general and children with ASD in particular. In the past, only 0.7 percent of persons with disabilities in Ethiopia have had access to education and training of any type.

This situation has been changing as education and training for persons with disabilities in Ethiopia is becoming more and more inclusive (Sherer & Schriebman, 2005).

Sadly, there is no healing for autism. But, there are numerous treatment strategies identified for ASD. The continuous debate among researchers, professionals and parents of ASD are best to the existing confusion.

Many techniques guaranteed notable improvement. While some of these approaches are doing well for some, there is not one procedure that is successful for all individuals with ASD (Sanford School of Medicine, 2006).

Nevertheless, there is a diversity of treatment and educational approaches that may less different challenges associated with this pervasive developmental disability. Intervention may help to reduce disruptive behaviors while education can teach self-help skills that will allow the child to become more independent (National Research Council, 2001).

Even though a cure for autism is not yet available, WHO recommended that an evidence-based psychosocial intervention can reduce difficulties in communication and social

behavior, with a positive impact on the person's well being and quality of life. However, the provisions of services for children with ASD are very minimal in public schools compared to other children with disabilities.

As a result, many children with autism in Ethiopia get support and a rehabilitation service from non-governmental organization among others is Nehemiah Autism Center.

Studies indicated that one important barrier in the service provision for a child with ASD is fear of stigma of parents and siblings. Many parents and siblings of children with autism in Ethiopia are worried about other people finding out about their child's condition. Some parents feel the need to keep their child hidden at home (Siegel, 2003).

In addition, many parents and caregivers provide spiritual explanations for their child's condition, for example, attributing autism or developmental delays to a curse on the family or a punishment from God (Nia foundation, 2010).

Spiritual justifications for autism are common among parents in Ethiopia and this affects their cooperation with teachers and their perception about professional services provided for their children with autism.

This negative perception and causal attribution is the cause of the vast majority of children with autism to remain undiagnosed, with no access to intervention or appropriate education (Mhrki, 2010).

Research also indicated that culture and socioeconomic circumstances can have a profound influence on autism families and the nature of treatment they provide and seek

from others. Hence, service providers need a better understanding of these influences before they can truly serve children with autism in Ethiopian context.

Although research from wealthy countries can inform interventions, adaptations to local culture and context are essential to make sure interventions meet the needs of local families and work in low-resource countries such as Ethiopia (Pozo, Sarria & Brioso, 2011).

Scholars in the field of Autism also suggested the several key elements as decisive when educating children with autism. These elements are entry into intervention programs as soon as an ASD diagnosis is being considered and active involvement in an intensive instructional program for a full school day, 5 days a week for a minimum of 25 hours a week, for the entire calendar year.

Moreover, instruction should be one-to-one or in a small group in order to meet each child's individualized goals with a low student to teacher ration of not more than two children with ASD per SNE teacher in the classroom.

It is also significant to note that the scholars did not identify a specific treatment for autism as treatments must be individually customized to the child's behaviors and special needs. Just as there is no one single signs or behavior that identifies children with autism, there lacks of single treatment that can be applied for all (Bakare, 2011; Pozo *et al.*, 2011).

Little is known about the appropriateness and effectiveness of adaptive behavior skills intervention programs for children with ASD in Ethiopia. Almost all autism research

have been conducted in Western, high-income countries, resulting in a research gap concerning studies from low-income countries like Ethiopia. Due to a lack of studies, the prevalence of autism in Ethiopia is unknown. A recent report of an autism meeting attended by 47 delegates from 14 African countries indicated the lack of autism services throughout Africa and the need to raise awareness and develop autism screening, training and service strategies on the continent (Bakare, 2011).

In Ethiopia, the situation is even worse for there is serious shortage of service providers and researches conducted to know the nature of the training programs and intervention practices in the Ethiopian context.

Hence, there is a need to investigate how the available training programs for children with autism are structured and practiced at Autism training Centers in Ethiopia.

Initiatives from local non-governmental organizations (NGOs) have contributed to an increase in autism awareness and service provision in Ethiopia. In this regard, Nehemiah and Joy Autism Centre take the lion share in educating these children. Some of the children with mild autism go to national and private schools.

Otherwise, almost all children with ASD are deprived of education and rehabilitation due to lack of facilities, schools and trained teachers. In fact, the majority of parents do not know what autism is and those who know are pessimist regarding their children's change through education and training.

Although these developments are promising, existing services for children with autism have scarcely been documented. Moreover, little has been done to investigate

opportunities and challenges to increase services and the most effective ways for future service development. Thus this study aims to assess the current adaptive behavior skills intervention/training practices for children with autism at Nehemiah Autism Centre.

1.2. Statement of the Problem

Even though autism is rising at an alarming rate, attention given by both government and the society is insignificant. Even the NGOs that are working with children, disability and women are not giving the required attention to autism.

Bringing awareness to children's rights and women equality is important but addressing and supporting children who are currently suffering from autism needs prior attention than other issues.

The limited information available suggests that adaptive behavior needs of children with ASD are typically not sufficiently addressed in educational programs for these children (Rotholz *et al.*, 1989; Slavens, 1997).

There are many techniques, strategies and interventions applied to treat adaptive behavior skills deficits in children with ASD. Numerous treatment methods have been designed to address the variety of social, language, sensory and behavioral difficulties.

Some of the instructional and training strategies for teaching adaptive behavior skills to children with autism take a behavioral approach and others take an interactive approach.

Both models have been revealed to be effective with children with ASD (Kaiser, 1993; Prizant & Wetherby, 1998). Hence, a range of strategies have been based on a mixture of these models.

Another worry when implementing adaptive behavior skills trainings for children with ASD is the duty of designing the accurate individualized education plan for each child. Each individual with ASD will display diverse characteristics and different extents of deficits.

It is vital that professionals know the complexities of ASD in order to construct trainings that will best assist an individual in all aspects of adaptive behavior skills (Wilczynski *et al.*, 2007).

Adaptive behavior skills trainings are significant for all children to enhance success in training settings but are undersized for children with ASD under the current context of training centers in Ethiopia.

Realizing adaptive behavior skills training and interventions being used in training settings to help children with ASD raise adaptive behavior skills training is very important.

The effectiveness of the trainings should also be considered. Knowledge and understanding of effective adaptive behavior skills training and interventions can help to raise appropriate practices for individuals with ASD.

Teachers in the school or training settings can help the center develop IEP for individuals with ASD. As very important team member, they can play a central role in the development and implementation of adaptive skill interventions for children with autism.

One of the purposes of this study was to explore Special teachers at Nehemiah Autism Centre to get information on what adaptive behavior skills trainings they are using for children with autism.

In addition, no information is at present available concerning factors that affect team decisions to program for these needs or whether IEPs that address the adaptive behavior needs of children with autism affect daily instruction.

While researchers have confirmed positive effects of a range of intervention methods in enhancing the independence of children with autism, it is uncertain whether the execution of such methods is taking place in applied settings.

Lovaas (1987) also indicated that professionals may unintentionally limit what a person with Autism can eventually achieve by waiting for adulthood to train for independence. By not targeting adaptive behavior needs and challenging behaviors in the training programs of children with autism, these children will remain dependent on others when they become adults.

This practice has pervasive consequences in that it influences not only the individual with autism who is incapable to take part and function fully in his/her community but also families and society that must give long-term care and assume an important accountability for these individuals throughout their lives.

This research will be conducted to fill a gap in the local professional literature and to make possible positive outcomes for children with autism by documenting and evaluating the existing practices in designing and implementing adaptive behavior skills training programs and instructional activities for children with autism at Nehemiah Autism Centre.

This research answered the following research questions.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the impact of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

1.3. Objectives of the Study

1.3.1. General Objective

The overall purpose of the study is to assess the practices of adaptive behavior skill training for children with ASD at Nehemiah Autism Centre.

1.3.2. Specific Objective

The study addressed the following specific objectives.

- To describe the planning processes of ABST at Nehemiah Autism Centre.
- To explore the given of ABST at Nehemiah Autism Centre.
- To identify the impact of ABST on children with ASD and their parents.

- To portray the extent to which ABST provided at Nehemiah Autism Centre goes in line with the evidence based practices of ABST established in literature.

1.4. Theoretical Framework

Malcolm Proves' Discrepancy Model (Proves, 1969) is used as a theoretical framework for this study. This model of program evaluation helps the researcher to examine adaptive behavior skills training program and appraise whether its implementation is consistent with the program's design.

He viewed evaluation as the process of approving upon program standards, deciding whether a discrepancy exists between the program and the principles governing that aspect of the program and using discrepancy information to know weaknesses of the program.

His goal was to get adequate information about the function of new programs in order to make the essential changes in the planning of the programs.

Proves believed in the importance of evaluation to systematically advance programs and guarantee educational benefit and fidelity.

Proves further explained programs will improve only when teachers, administrators, students and parents become concerned in a comprehensive effort to assess and improve their own work.

Such an attempt needs careful examination by a school staff of their program operations, a detailed examination of program inputs and processes and the confirmation that the programs are in fact working as people believe them to be operating.

He developed an equation ($I (P) = O$) to review, implement and make the essential changes in the program under study.

In the equation, I equal to the input (I), P is the process (P) and O is the outcome (O). The Intervention plan (e.g. IEP), SNE teachers, students and administrators are considered the input (I). Their interaction in the classroom was defined as the process (P).

The result of the input and process is the outcome (O). This series of steps was referred to as the IPO technique.

Proves suggested that the disparity between the objective of the program and the outcome should be minimal.

When program evaluators have the information of what inputs, processes, and outcomes are included, the program is better understood, defined, prepared and productive.

For the purpose of this study, the IPO technique will be used to describe the adaptive behavior skills intervention program being applied.

1.5. Significance of the Study

This study thus added knowledge about the extent of effectiveness such adaptive behavior skills training for children with autism disorders has brought about in Ethiopia. Study results will help to fill the lack of local literature on the adaptive behavior skills service provision and the experiences of SNE teachers.

The findings emerged from this research will also contributed a lot to strengthen the existing adaptive behavior skill training programs and services for children with ASD in the centers.

The results can provide guidance for Autism Centers and schools as well as policy makers regarding ways to strengthen and improve education and training for children with ASD.

This study will show the significance of working teams among teachers and strong collaborative relationships that truly include parents as pivotal partners in planning and implementing adaptive behavior skills training plans for children with autism.

Although this research will be conducted in a particular Autism Centre, the results will be useful for parents and SNE teachers and other educators in other Autism Centers and school systems and it will enhance or challenge their own practices concerning various adaptive behavior skills and educational interventions as well as instructional methods for children with ASD.

1.6. Delimitation of the Study

This study was delimited to one local organization called Nehemiah Autism Centre. The participants of this study were purposive samples by the target group of six facilitator practitioners, one educational leader employed in the center.

They have experience of providing adaptive behavior skills training for children with ASD at least for two years and five parents with ASD.

In the center, they serve 40 students with ASD. The study was also focused on the scope of the service provided in the compound.

1.7. Operational Definition of Basic Terms

Adaptive Behavior Skills Training- refers the core training packages including self-help skills, receptive language skills training incorporates social skills, receiving instructions, and matching different things with realities and expressive language skills training refers communication skills, numeracy and literacy skills designed for children with ASD at Nehemiah Autism Centre.

Assessment- in this research assessment refers checking or measuring the child's developmental history through day to day observation and with the use of checklists.

Self help skills - includes personal and daily living skills like potty training, washing, and dressing.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of literature starts with a description of the general characteristics of children with autism spectrum disorders (ASD) and definitions, information about etiology and prevalence of ASD.

The literature review also addresses adaptive behavior skills and educational interventions for children with ASD.

Such interventions include different forms of applied behavior analysis ranging from more traditional discrete trial training to naturalistic teaching methods such as incidental teaching, pivotal response training and milieu teaching.

2.1. Definition of Autism

According to IDEA:

"Autism means a developmental disability significantly affecting verbal and Nonverbal communication and social interaction generally evident before age Three that adversely affects a child's educational performance other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements resistance to environmental change in daily routines and unusual responses to sensory experience .The term autism does not apply if child's educational performance is adversely affected primarily because the child has an emotional disturbance .a child who shows the characteristics of autism after age three could be diagnosed as having autism if the criteria above are satisfied. " (NICHCY, 2009, p.3).

Autism is a neurobiological disorder that occurs from birth or early in a child’s development (National Research Council, 2001). The disorder is typically diagnosed before age 3, continues through adulthood and has no specific etiology or cure (American Academy of Pediatrics, 2001; National Research Council, 2001). Autism is usually described as a spectrum of disorders that differ in severity of impairment and association with other disorders (e.g., intellectual disability, seizures). Although symptoms differ from one child to the next, all autism spectrum disorders are manifested by major impairment in mutual social interaction and communication skills and the occurrence of repetitive and stereotyped behaviors and interests (DSM-IV-TR, 2000).

According to DSM-V published in 2013, autism manifests in two core areas including social communication and restricted, repetitive behaviors. That is, impairments in social interaction and impairments in communication grouped into a single domain of social communication. The work further categorized the severity level of ASD in to three levels.

This is clearly presented in the table below.

Table 2.1: Severity Levels for Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 “Requiring very substantial support”	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interferes with functioning in all spheres. Great distress/difficulty changing focus or action.

	only and responds to only very direct social approaches.	
Level 2 “Requiring substantial support”	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change or other restricted/ repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.
Level 1 “Requiring support”	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between Activities. Problems of organization and planning hamper independence.

Source: American Psychiatric Association (2013)

2.2. The Characteristics of Autism

One of the central characteristics of autism spectrum disorders (ASD) is major impairment in the capability to begin and uphold reciprocal social interaction (Machalicek *et al.*, 2008; National Research Council, 2001).

Children with ASD frequently avoid eye contact and appear detached and unconcerned in interaction with people. Their imitation skills and capability to engage in communal activities are usually impaired.

Children with ASD have trouble learning to understand social cues (e.g., facial expressions, nonverbal gestures) and the feelings of others.

Therefore, they have problems considering things from another person's viewpoint and engaging in reciprocal social conversation.

Children with ASD display major deficits in functional and symbolic play skills.

Numerous have difficulty regulating their own emotions. They may become disruptive or physically aggressive or involve in self-injurious behavior.

It can be difficult for them to comply with directions and keep in cooperative social behavior either as they do not fully understand the directions, rules or social expectations or because they have compulsive interests not shared by other children (Machalicek *et al.*, 2008; National Research Council, 2001).

Children with autism spectrum disorders also display a central deficit in verbal and nonverbal communication skills (*DSM-IV-TR*, 2000; National Research Council, 2001).

Several show significantly delayed language development and some stay nonverbal throughout their lives.

A number of children learn to use alternative communication systems such as pictures or sign language (Schlosser & Wendt, 2008).

Those who do obtain functional speech often merge normal language with idiosyncratic speech, echolalia (repeating the same words or phrase over and over) and stereotyped language.

2.3. Etiology of Autism

Autism is commonly believed to be a neuro-developmental disability with a physically powerful genetic basis but the precise reason remains unidentified for most children affected with an autism spectrum disorder (American Academy of Pediatrics, 2001).

The majority of the experts think both genes and the environment play a role and there may be multiple causes that lead to a variety of autism spectrum disorders (American Academy of Pediatrics, 2001).

Strong confirmation for a genetic basis has also been found by twin studies conducted by Bailey, Le Courter, and Gottesman (1995).

These researchers found that identical (monozygotic) twins had a concordance rate of 60% for children with autism disorder and 92% for the broader spectrum of ASD, while fraternal (dizygotic) twins had concordance rates of 0% for children with autism disorder and 10% to 30% for the broader spectrum.

Siblings had a recurrence rate of 3% to 7% for the broader spectrum. Based on their twin research data these researchers calculated the heritability of autism to be approximately 90%.

Even though autism emerges to be largely genetic in origin, scholars in the field also believe that several environmental factors probably play a significant role in whether a child with a genetic predisposition in fact develops the disorder. Several researchers maintain a multi factorial mode of inheritance for autism based on a mixture of genetic and environmental factors (American Academy of Pediatrics, 2001).

For example congenital rubella and early first trimester thalidomide experience have both been connected with bigger risk for autism. More recently, widespread public controversy has raged over whether the measles-mumps-rubella (MMR) vaccine and other childhood immunizations are connected with a high risk of autism.

However, any connection between childhood immunizations and greater risk for autism has been repeatedly refuted by the research community (American Academy of Pediatrics, 2001).

The combination of causes of ASD is not fully known. There is growing evidence that ASD is a genetic condition and that there are likely severally different genes involved.

The mode of genetic transmission appears complex and scientists are focusing their work on discovering which genes may be involved and how these genes are affected. So far, it appears that for at least a significant sub group of ASD, there is a genetic susceptibility that differs across family that is different genes may be responsibility in different families.

2.4. Prevalence of Autism

According to WHO report global median prevalence is 62/10 000, that is one child in 160 has autism in Europe, the median rate of Autism is 61.9/10 000 and in Australia half million individuals are affected with autism.

A Survey which is done in Europe suggests that the prevalence of autism is 99 per 10000 (Baron-Cohen, et al., 2009).

At about the middle of the 20th century the prevalence of autism was projected to be only 4 to 5 in 10,000 children (American Academy of Pediatrics, 2001).

Such projection changed fundamentally by the end of the century. Currently it is estimated that an average of 1 in 110 children in the United States has an autism spectrum disorder (The Centers for Disease Control and Prevention (CDC), 2010).

An estimated 1.5 million people in the United States are affected by autism data cost to the nation of \$35 billion annually and additional children are diagnosed with autism each year than with diabetes, AIDS and cancer combined (Autism Speaks, 2010).

Another Study which was conducted in America in different states indicate that in average one in 68 children aged less than 8 years are affected with autism with a proportion of one from 42 boys and one from 189 females (CDC, 2010).

Research result from Asia disclosed the prevalence of autism in China is 26.6 per 10000(Sun, Matthews & Sharp, 2013).

Report from Oman shows that the prevalence of autism is 1.2-1.7 per 10000 (Al-sharbaty & Waly, 2009). Prevalence of autism in Africa is not well known (Bakare, 2011).

But there is Research result from Arabic country which shows the prevalence of autism in Egypt and Tanzania is 33.6 % and 11.5 % respectively (Salhia, Taher & Al-khathaami, 2014).

In Ethiopia disability data is fragmentary, inconstant and covers only few categories of disabilities. So, in Ethiopia, there is no official data that show the prevalence of autism. Different studies have presented their own estimation.

According to Joy Autism Center Foundation the prevalence rate of autism in Ethiopia is estimated to be the same as in other regions of the world. In United States of America, one in every 115 children is diagnosed with autism and in Ethiopia's population of more than 80 million a fair estimation of at least 530,000 children suffer from autism and related developmental disorders.

2.5. Services for Individuals with ASD at Autism Centers

Though individuals with ASD may struggle socially, they may not receive appropriate adaptive behavior skills trainings within various settings especially in developing countries such as Ethiopia where there is a lack of resources and trained man power.

However, in developed countries such as in the USA there is a law for individuals with a disability that grant them access to federally funded programs, such as public schools, and may comprise accommodations so the individuals with a disability can perform at the same level as their age mates.

In order to receive special education services and other related services, under IDEA, the student with a disability must show impairments in educational performance. If educational performance is revealed to be low for a student diagnosed with ASD, than related services such as adaptive behavior skills interventions could be provided (IDEA, 2004). An IEP must be prepared for a child getting services under IDEA.

The IEP is distinctive for each individual child and needs developed goals and objectives that can be measured. Typically the parent, principal, school psychologist, special needs education teacher, regular subject teacher and speech-language pathologist are present at the first IEP meeting.

IEP meetings as well contain any service providers such as an occupational therapist, nurse, therapist, adapted physical education therapist, and so forth that would be giving services for the child throughout the year.

Goals and objectives on the IEP are decided and supervised during the child's training years (IDEA, 2004; Wilczynski *et al.*, 2007).

The concern with preparing IEPs for children with ASD is the variability of impairments and signs surrounding the diagnosis. Because of the heterogeneity of the population of individuals with ASD, it can be hard for school professionals to know what deficits to focus on and what skills require being adapted for each student (Wilczynski *et al.*, 2007).

Teachers that work in schools and Autism centers often feel they are not qualified or do not have sufficient training to work with children with ASD (Simpson *et al.*, 2003).

Another concern is that there are not yet good inclusive guides for developing an IEP for children with ASD, as children with ASD have diverse needs (Iovannone, Dunlap, Huber & Kincaid, 2003; Wilczynski et al., 2007; Williams *et al.*, 2005).

At least one of the IEP members should have good clinical decision and knowledge of autistic symptoms and impairments in order to best assist the team form goals and objectives (Wilczynski *et al.*, 2007).

School psychologists are important members of the IEP team because they can put in psychological and clinical input (Skokut, Robinson, Openden, & Jimerson, 2008).

There is a need for SNE teachers and centers of Autism in general to use evidence-based practices and to obtain information on symptoms and treatments for children ASD.

Because of their practice and knowledge, SNE teachers will continue to be involved in helping students with an ASD attain and maintain appropriate adaptive behavior skills within the center, family and in the community (Koegel, Koegel, & Carter, 1999; Skokut *et al.*, 2008; Williams *et al.*, 2005).

There are many important areas in which SNE teachers are beneficial as IEP team members for children with an ASD may be their abilities to design and implement interventions and intercede concerns between families and Autism Centre /school administration staff members.

Teachers can play a key role in planning and designing proper interventions that they can use as they teach children with ASD.

They can also help team members decide if adaptive behavior skills interventions and training will benefit a child with ASD and then help determine what type of adaptive skills intervention is suitable and effective.

SNE teacher can also serve as a good agent to smooth the progress of the relationship between the center/school and parents of the student with ASD as training take place (Ivey, 2007).

2.6. Types of Adaptive Behavioral Skills Training for Children with ASD

The treatment of ASD differs from child to child. Research indicate that early intensive behavioral therapy of autism throughout toddlers or preschool years can considerably improve cognitive and language skills in young children with autism (NIMH, 2011).

It is also indicated that early behavioral and therapeutic interventions have a significant contribution for the life of a child with autism through improving communication, forming relationships, decreasing maladaptive behavior and developing independence (Larsson as cited in Sharpe & Baker, 2007).

The treatment options, showed by Ozonoff, Dawson and Mcpartland (2002) are applied behavior analysis, Treatment and Education of children with ASD, Denver and green span models, social skill groups, educational support, language and communication therapy functional behavioral analysis, medication, sensory integration therapy and individual psychotherapy.

2.6.1. Applied Behavior Analysis (ABA)

Since the early 1960s numerous researches have been conducted using ABA with children with ASD of all ages, and ABA remains one of the most popular and broadly used treatment methods for children with ASD.

A wide variety of ABA-based interventions have been designed for use in structured conditions and in more “natural” daily situations and in one-to-one as well as group settings (National Research Council, 2001).

A number of researchers have conducted comprehensive reviews of a plethora of studies documenting the effectiveness of ABA-based interventions for developing communication, play, social, academic, and adaptive skills in children with ASD and reducing problem behaviors (e.g. Matson *et al.*, 1996).

Behavior analysis is a scientific method to understanding behavior based upon the principles of respondent and operant conditioning as originally described by Skinner (1953). ABA includes the application of behavior analysis and principles of learning theory to reduce or eliminate problem behaviors and teach new skills.

Antecedent conditions and results of behavior are analyzed and manipulated and principles of positive and negative reinforcement, shaping, and fading are used to enhance or reduce target behaviors (Heflin & Simpson, 1998).

Positive reinforcement is used to make stronger a behavior subsequent that behavior with something that is preferred or valued. Skills are broken down into small steps and the child is given frequent chances to learn new skills with reinforcement.

The goals of intervention and types of reinforcers applied are modified to meet the needs of the individual child whose performance is measured by direct observation and data tracking (Lovaas, 1987).

Even though ABA is now widely established among researchers as powerfully empirically supported and among the most effective interventions for children with autism, ABA remains among the most contentious and widely misunderstood treatment strategies (Heflin & Simpson, 1998).

In part this is as many mischaracterize ABA as synonymous with Discrete Trial Training (DTT) and the early work of Lovaas (1987) that describes only one type of applied behavior analysis (Tarbox & Najdowski, 2008).

DTT and the Lovaas method have played a significant role in intensive ABA intervention programs mainly for very young children during the initial stages of treatment.

However, the field of applied behavior analysis has widened in the past 30 years to comprise numerous other applied behavioral approaches including “naturalistic” teaching procedures (e.g., “pivotal response training,” “incidental teaching,” and “milieu teaching”) and an array of other methods such as prompting, choice, priming, time delay, adult and peer modeling, and picture exchange systems (Allen & Cowan, 2008).

The field of ABA remains a long way from recognizing any one systematic approach that best fits the needs of an individual child (Lovaas, 1987) and educators are faced with an increasingly vast array of choices.

2.6.2. Social Skills Training (SST)

Significant impairment in social interaction is one of the core characteristics of children with autism spectrum disorders (*DSM-IV-TR*, 2000). Vital social skills such as sharing joint attention, initiating and maintaining social interaction, and engaging in cooperative play may be lacking or severely impaired (National Research Council, 2001).

Several excellent reviews of the literature have been conducted describing a variety of interventions used to teach social skills to children with autism (e.g. McConnell, 2002).

Such studies have generally used single subject designs with pre-post, multiple baselines, or ABAB formats without ensuring researcher blindness or random assignment to treatment conditions (National Research Council, 2001).

In spite of these methodological limitations, a significant body of research has emerged providing empirical support for various types of social skills interventions. Machalicek *et al.* (2008) also identified four general categories of interventions used to teach social skills to children with autism including:

- (a) Adult mediated antecedent interventions (e.g., priming and social stories);
- (b) peer-mediated strategies;
- (c) Video modeling; and
- (d) Pivotal Response Training (PRT)

This method is a comprehensive teaching approach used to target a wider range of behaviors than just social skills.

Examples from the research have already been cited describing the effectiveness of PRT in teaching children with autism social skills such as initiating social interactions and increasing joint attention, which are pivotal behaviors for developing more complex social skills (e.g. McConnell, 2002).

A discussion of adult-mediated and peer-mediated strategies follows with examples from the research literature illustrating the effectiveness, strengths, and limitations of each strategy.

2.6.3. Discrete Trial Training (DTT)

DTT is ground on the perspective of ABA therapy and is now used in several educational and therapeutic centers for children with autism.

The basic principles of DTT are one-to-one intervention, precise, succinct instructions, planned prompts and fading of prompts, and instantaneous praise for accurate responses.

When integrating the discrete trial methodology, teachers use a single cycle of a behaviorally-based training routine, meaning that the job is begin in small steps until the task is mastered.

Mastery of a skill may be attained after a particular trial has been repeated numerous times in series, either many times a day or over numerous days. Skokut *et al.* (2008), describe four parts of discrete trial, with an optional fifth.

The first step consists of instituting a teaching relationship, involving the teacher using one-step instructions to reduce unsuitable behaviors.

The second step is defined as teaching foundational skills, using the discrete trial method to teach academic and life skills. This includes matching and identifying objects, mimicking actions, suitable play skills and following and discerning between given instructions.

The third step includes communication intervention. Expressive language skills such as verbal imitation, recognizing actions, objects and pictures are dealt with. The last two steps maintained to support the building of communication skills.

The fourth and fifth steps focus on increasing communication by sustaining and encouraging verbal peer interaction while focusing on turn taking conversations.

2.7. Planning for Intervention of ASD

The aim of planning of adaptive skills is to obtain a measure of the child's typical functioning in familiar environments such as the home and the school.

Such measures provide clinicians with an estimate of the degree to which the child can meet the demands of daily life and respond appropriately to environmental demands.

A significant level of adaptive skills or between observed performance in a highly structured situation and in more typical situations indicates that an explicit focus on acquisition and generalization of adaptive behavior skills training is important.

Adaptive behavior skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life. Individual’s age three to adult are able to access these services.

The principles and procedures for analyzing and changing behavior (ABA) are used to target the following skill areas: Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management.

Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Behavioral interventions for toilet training have been based upon principles of the behavior the problem of nocturnal enuresis has been addressed with urine detection devices that serve to awaken children with ASD.

So they can get out of bed when wet, as well as with systematic behavioral procedures involving practice, rewards, and clean-up requirements (National Research Council 2001).

In other words, many events for teaching self-help skills to adults with ASD have been extended to younger children with ASD. Yet there have been relatively few direct empirical tests of adaptations to young children with ASD.

This situation may partially result from the lack of emphasis on publishing systematic replications, as well as from the cost- and time-efficiency of simply using existing procedures that prove to be clinically effective.

2.8. The impact of ABST for children with ASD

The impact of ABST for children is increasing independence for each individual with ASD.

Plan monitoring is performed in the same environment the service is provided. The Clinical program coordinator will monitor data to decide the route of treatment, provide feedback to the instructors, and train continuity of care with the parents/caretakers.

All programs are implemented by instructor's who all receive an initial training on the principles and procedures for analyzing and changing behavior.

In addition to this, a program specific training prior to starting adaptive behavior skills training for children with ASD (National Research Council 2001).

2.9. The impact of ABST for parents with ASD

Parents and other family members can benefit from bringing the children to the center to address the various emotions and stress of having a child with ASD in the family and to ensure that their own needs are also met.

This could include providing information about the children with ASD daily living progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals (National Research Council 2001).

Parents whose child is diagnosed with ASD experience difficulties and it changes the dynamics of the family in that everyday activities need to be modified and the child with ASD will need extra attention from the parents.

Children with ASD can result in scattered emotions for the parents. Each family handles the vision of their child differently. Just as the spectrum varies, so does each family's experience. Upon hearing their child's diagnosis, one study found that in parents, "52% felt relieved, 43% felt grief and loss, 29% felt shock or surprise, and 10% felt self-blame" (Banach, Iudice, Conway, & Couse, 2010). Often, parents are relieved that they were given an answer in regards to their child's symptoms but this does not erase the stress that they endure while raising a child with autism. Parents often experience stressful situations upon the initial diagnosis that relate to their child's behavior, adapting to this new lifestyle and the complexity of finding access to the appropriate services useful to the family (Banach *et al.*, 2010). Stressors from an ASD diagnosis can cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others.

2.10. Assessment of Adaptive Behavior Skills Training

An assessment is conducted using an adapted functional behavior assessment. Once the assessment is completed, a report is composed then submitted to the funding source (regional center).

The assessment report will provide an overview of the individual's skill deficits, targeted goals, and behavior change procedures that will take program development and implementation.

All programs are structured to record quantitative and qualitative data, which are used to drive the decision making process.

Skills are taught at home, center and community environments.

Assessment of adaptive behavior skills training is particularly important for children with ASD for several reasons.

First, measures of a child's typical patterns of functioning in familiar and representative environments, such as the home and the center, can be obtained.

Assessment of adaptive behavior skills training provides a measure of a child's ability to generalize teaching across settings; given the nature of the cognitive difficulties in generalization in ASD, such assessments are especially important. As with other children with ASD, acquisition of basic capacities for communication, socialization, and daily living skills are important determinants of outcome. Adaptive behavior skills training may be in marked contrast to a child's higher ability to perform in one-on-one teaching situations or in highly structured behavioral programs.

Second, assessment of adaptive behavior skills training can be used to target area for skills acquisition.

Third, there is some suggestion that relatively typical patterns of performance in ASD can be identified and that some aspects of adaptive assessment of social skills can contribute to a diagnostic evaluation.

Fourth, assessment of adaptive behavior skills training, as well as of intellectual ability, is essential in documenting the prevalence of associated intellectual disability and, thus, eligibility for some services (National Research Council 2001).

CHAPTER THREE

METHODS

This chapter presents the design used, the sampling techniques employed, the data collection instruments used, and the procedure of the study and the method of data analysis.

3.1. Research Design

A research design is a plan, structure and strategy of investigation conceived as to obtain answers to research question or problems.

Hence, the design used in this particular research was qualitative, specifically case study. This is because it is useful to obtain in-depth data from the center facilitator teachers regarding the practice and implementation of adaptive behavior skill training programs.

3.2. Study Site

The study was conducted at Nehemiah Autism Center (NAC), found around Megegnagna area, Addis Ababa City. NAC is a non-governmental local organization established for providing services for children with ASD since 2012.

It also offers a family support group in addition to holistic rehabilitation services to children with autism spectrum disorders. It has also experience sharing and a family support meeting with parents and staff from other canthers of Autism.

It is now growing its work to allow more children with autism spectrum disorders to obtain professional services.

The center provides services in three level (level1: self-help skills, level 2: receptive skills, and level 3: expressive skills) by accommodating 40 children with ASD and facilitated by 20 teachers.

Nehemiah Autism Center has a license from Charities and Societies Agency, which is a concerned governmental office, and has rented a house to receive children with ASD.

The center started work on June 16, 2011 after it got its license on 31 August 31, 2010.

At the moment the center is giving adaptive behavior skill training and treating children with ASD in its center. This NGO is non-profit and a non-governmental organization.

It also provides transportation free of charge for those families who cannot afford to send their children with ASD to the center due to the reason that it is difficult to use public transport for these kinds of children with ASD.

Nehemiah Center aspires to see every ASD child is cared for, parents of ASD children are supported and awareness about ASD created in the society.

Nehemiah Autism Center's mission is to provide care, instruction and support for children with autism and related disabilities - promoting cognitive, emotional and relational growth through individualized programs, while providing counseling and support to parents, especially mothers as they deal with these particularly difficult challenges; teaching the parents to become active participants in their child's education and development; and finally, to raise public awareness of the nature and prevalence of ASD.

According to their starting story, they are a group of families of children with ASD.

They were unable to send children with ASD to a school or a center to train and teach children with ASD due to lack of space in the then only available Autism center in Ethiopia.

So their option was, especially mothers, to abandon the job and stay at home to look after their child with no hope insight. When one of the mothers, Miss Rahel Abayneh, came with a vision to open another center for these kinds of children, they stand with her and managed to open this center.

They are now trying to reach to so many children with ASD who are deprived of their rights for education and rehabilitation because of shortages of schools and society's lack of awareness.

They first started with 6 children with ASD. At those beginning days, due to lack of funds the board members were forced to discuss about the center sitting on the floor.

They were in shortage of funds to pay salaries for the caregivers.

Now, Nehemiah autism center has 40 children and 20 caregivers to train the children with ASD.

Based on their success story, they have some accomplishment in spite of the few years since they started the Nehemiah autism center. They see lots of change on the children with ASD they train including understanding what one says, able to eat independently, capable of toileting and clothing, completing puzzles, and able to speak.

They see hopes in the families' children with ASD, especially mothers are now able to work and add incomes to the family.

Due to the awareness they created, they see understanding in more part of the society about autism. Consequently stigma and discrimination is slowly decreasing.

3.3. Participants of the Study

The researcher used parents of children with ASD and special needs education teachers working at Nehemiah Autism Centre as participants of this study. Six teachers of the center, two from each level were identified and took part in the study.

In addition, two parents (one mother and one father) who are educated and have relatively close connection with the center teachers were participants in this study. Both groups (teachers and parents) of participants were selected using purposive sampling technique.

The criteria of the purposive sampling technique help for the target of the participants' direct relationships between the children with ASD.

3.4. Data Collection Instruments

The study has been classify the research questions that are needed to be addressed in the scientific study and to make decisions who should be studied what source of file should be involved and what kind of tools should be employed.

The data for this study were obtained from both primary and secondary sources. The primary data sources have been prepared and checked without piloting by semi structure interview and observation.

The secondary data were relevant document analysis and child profiles.

3.4.1. Semi-structured Interview

The researcher developed semi-structured interview guide after a through revision of relevant literature concerning the major areas of the study.

The interview guide consisted of 10 questions designed to dig in-depth information related with the research objectives.

3.4.2. Observation Guide

Similar to the semi-structured interview guide, class room observation guide was prepared by the current researcher in consultation with the related literature.

It is a kind of checklist consisting of 11 items structured into Yes or No options in order to strengthen the data collected by the interview.

The practitioners and parents participants were selected because they were the only available and identified by their strong relationships and may expected to give more and detailed information about children with ASD.

3.4.3. Document Analysis Guide

For the sake of comparing the ABST practices in the current research site with the already established scientific literature, document analysis guide was developed by the present investigator.

The tool incorporates basic criteria including training types, components, goals, and planning, implementation, and evaluation processes.

All items of the three instruments were first prepared in English. But for the sake of the effective communication, the interview guide was translated into Amharic.

3.5. Pilot Study

The purpose of the pilot study was to assess the relevance and clarity of the questions of the tools designed to collect data for the study in order to check clarity of the items of the tools.

Thus all the preliminary semi-structure interview guide, observation guide and document analysis guide were presented to three participants found at Joy Autism Center.

In addition, the advisor of the research and one language expert reviewed the tools. Based on their responses, necessary modifications were made on the data collection instruments and made ready for the main study.

3.6. Data Collection Procedure

The data collection process was as follows. First, letter of permission was taken from special need department of Addis Ababa University.

The letter was submitted to the heads of at Nehemiah Autism Center associations and then agreement was arrived on the objective of the study and they became willing to inform participants for the study.

Then, participants were selected for the study and necessary rapport was established with frequent visits of the researcher and through phone calls.

Next, after agreement on using tape recorder was assured, interviews sessions were made with each respondent.

The interviewees were made free to arrange the time and place of the interview session, as it was very comfortable for them.

If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can used prompts to encourage the interviewee to consider the question further.

The interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee.

In addition to use tape recorder and notes was recorded using note book during an intensive interview held with each case privately.

In order to reinforce the information obtained through interview, classroom observations were also made for about four months and during this period each of teachers/facilitators observed once in a week. Moreover, the documents were reviewed side-by-side to the observation process.

Then, the three data instruments triangulated in the finding process. After that the findings discussed.

Finally, summarized, concluded and recommended based on the findings and discussions.

3.7. Data Analysis

Thematic analysis was used to analyze the data in this study. As described previously varieties of data collection instruments were used to collect enormous amount of data.

Accordingly, the major tasks during analysis made by researcher were as follows; organizing the data, generating categories, themes and patterns, coding the data, and reviewing the emergent ideas and searching for alternative explanations.

It was done after all the data in Amharic were transcribed into written paper. Then, the investigator tried to identify themes by categorizing the transcribed data.

3.8. Ethical Considerations

When conducting this study, the researcher followed some ethical guidelines. Thus, the first activity of the researcher was getting permission from participants.

Once permission was obtained, the researcher made the participants feel safe and secure regarding the information they provided on the issue of investigation.

In other words, the researcher assured participants that the information they provide would be used only for research purpose.

Moreover, to make participants feel more confident about the information they provided, each informant was pre-informed that her/his real name will not be used while reporting the results.

All participants were also oriented to understand their rights to confidentiality and anonymity in the research process and the right to withdraw from the research at any time, without having to give their reasons.

CHAPTER FOUR

FINDINGS

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa.

To achieve this research purpose, the data were collected based up on the basis of the research questions and specific objectives.

In order to answer the research questions and specific objectives, the data were collected through semi-structured interview, observation and document analysis.

The participants of the current study were six caregivers, one educational leader and five parents of children with ASD who are undergoing training at NAC.

4.1. Demographic Characteristics of Respondents

4.1.1. Demographic Characteristics of Practitioners

Six practitioners and one center coordinator were interview participants. These practitioners have been working at NAC for one year up to three years.

Most of the practitioners were females; among all five were female practitioners.

Abbreviated names were used to present the information given by the respondents voluntarily and confidentially.

Table 4.1: Demographic Characteristics of practitioners

No	Name	Sex	Age	Marital	Educational Level	Experience in the center
1	G	M	40	Married	Education	4
2	W1	F	30	Single	Psychology	1
3	A	F	29	Single	IT	3
4	Z	F	32	Married	ECCE	2
5	M	F	28	Single	Nurse	2
6	W2	F	30	Married	Building work	3
7	G	M	28	Single	Accounting	3

4.1.2. Demographic Characteristics of Parents with ASD

Five parent respondents were involved in this study. As indicated in Table 2 below, interview was conducted with one father and four mothers whose children were with ASD.

Table 4.2: Demographic Characteristics of Parents and their Children with ASD

No.	Parents			Children				
	Category	Sex	Age	Educationa l level.	Child Name	Sex	Age	Stay in the center
1	Mother	F	40	12	NA	M	8	3
2	Mother	F	39	12	YO	M	14	5
3	Mother	F	42	12	YE	F	11	4
4	Father	M	52	Degree	YH	M	10	3
5	Mother	F	38	12	KE	M	7	1

4.2. Planning Adaptive Behavior Skills Training

The goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and

increase social acceptance. Essential outcomes focus on improvements in social communication that affect the individual's ability to develop relationships, function effectively, and actively participate in everyday life.

Generally, the adaptive behavioral skills training are considered as intervention practices and/or programs in the center. The center provides need-based adaptive skills trainings at each level with children of different interest and potential.

In addressing this issue, observation was conducted at the center which revealed that the center has used scientifically proven ABST for children with ASD. It implements the training using organized training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

There are training aids and resources available for the training in the center. As an instance, pictures placed at the eye-level of each child. In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all children that can help them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

The data collected through semi-structured interview from practitioners of students with ASD about the planning processes of adaptive behavioral skills training indicated that the planning process will be determined after the center identifies the problem of each child

by conducting assessment. Three of the respondents stated that each individual child has his/her own education plan in the training.

All of the interviewees indicated that self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities ,especially for children with ASD at level one. The result from the document analysis also fits with this result.

In addition, some respondents indicated that music and TV room refreshment activities are also considered in the plan.

In relation to the planning process, the data from document analysis pinpointed that receptive order and communication skills are the major focus areas of the plan for children at level two.

Some of the major activities impinged in the plan include social interaction by calling days and names, giving and receiving properties, receiving directions, matching of materials, clothes, body structures with what they hear from the facilitators.

The same source of data also shows that academic and expressive skills are the major areas of concern in the planning process for level three children.

These skills are expected to develop through social interactions, communications, and writing, playing, accepting and responding the directions from the facilitators.

Table 4.3: Examples of Schedules of Daily Activities

Self-help therapy	Social skills	Physical	Sensory skills
Going to toilet alone	Able to ask their needs	Sports	Smell
Holding the toilet handle	Mimicking	Relaxation	Sound
Going inside the toilet	Reply to command	Indoor play	Food interest
Taking off trouser and	Relating objects with name	Outdoor play	Identify objects
Using toilet properly	Responding to call		Keep self
Going back to class	Behaving in crowd		
	Playing alone		

A daily routine is designed to each level student on different types of daily activity.

Practitioners have multiple tasks during daily activity in a center. They follow the protocol which is designed by the educational analyst in the center.

Activity schedules/visual supports include objects, photographs, drawings, or written words that act as cues or prompt to help individuals complete a sequence of tasks/activities attend to tasks, transition from one task to another, or behave appropriately in various settings.

Written and/or visual prompts that initiate or sustain interaction are called scripts. Scripts are often used to promote social interaction, and they can also be used in a classroom setting to facilitate academic interactions and promote academic engagement.

NAC has used different objects, drawings, written words that help the children to teach and do tasks. These items are used in the center so that the children can learn by doing different activities and concentrate on things. As most of the children have a problem on concentration these activities will help them.

4.3. Types of Adaptive Behavior Skills Training

Generally, the data collected from the three instruments (interview, observation, and document analysis), revealed that the major purpose of ABST programs is teaching children functional living skills that would be helpful to live at home and in the community.

Self-help adaptive skills (day-to-day activities like brush teeth independently, put clothes away, and wash own hair, has skills in the area of self-care); expressive and receptive communication skills (expressing wants and needs, able to follow directions, focus attention on things, conversation with another person or retell); writing and memorizing academic skills; gross (walking, running, and riding a bike) and fine motor skills (drawing, tracing and typing); and sense enrichment activities.

Based on the semi-structured data gathered from the practitioners, the types of trainings at NAC are categorized in to three levels: level 1, level 2 and level 3. Each category involves various components.

4.3.1. Self Help Skills Training

The level 1 training: *“This training is given for children come to the center, and these children have no experiential daily living skills at the home-environment.”* Based on the interview data, at this level, children with severe ASD are given various trainings such as self-help skill training and sensory enrichment such as five sensory senses like taste, smell, visual audio, tactile and vestibular, perceptive and other daily living skill training, potty training, hand washing, face washing, wearing of jacket, T-shirt, trousers and shoes.

As part of the training at Nehemiah Autism Center, this category depends on social communication (friendship, residual language difficulties), functional regulation managing self-control and anger, anxiety and depression, work skills-personal and class room organization skills.

4.3.2. Receptive Language Skills Training

The level 2 training: *“level two receptive language skills training is provided if children successfully accomplish level I training.” The center has its own assessment mechanisms.*

Accordingly, it focuses on the receptive communication skill like to accept the direction, playing skill following the command the eye contact and attention.

This training focuses on social communication interacts and making sense of people understanding and listening conversation and rigidity preparing for change; sensory motor difficulties; inappropriate reaction to sound touch and vision, and emotional difficulties encouraging motivation and limiting over dependency.

4.3.3. Expressive Language Skills Training

The level 3 training: *“This training is given for children who effectively achieved level I and Level II training components.”* The educational leader interviewee has favorably explained that this part of the training focuses on the expressive communication skills such as occupational therapy, speech therapy applied behavior analysis art, letter, number music and reading academic is another task of level three.

Level three children with ASD the educational leader developed self-skill and receptive communication skill try to express their feeling and interest. The care givers treat them

by different mechanisms such as ABA, DIR and DTT. And the children with ASD will go to the inclusive class, and the students with ASD to be independent for each activity. In addition, this part of the training is intended in establishing joint attention, and communication, visual learning and structure, building communication, preparing for change and remembering.

Auditory/Sensory Integration Training- Broadly speaking, sensory integration therapies are used to treat integration dysfunction in one or more sensory systems.

Treatments can include physical exercise, sensory/tactile stimulation, and auditory integration training. NAC gives a physical exercise daily to the children so that they can socialize and know how to socialize themselves. But they didn't give the formal therapy for sensory system.

Discrete Trial Training (DTT) - This is a one-to-one instructional approach utilizing behavioral methods to teach skills in small, incremental steps in a systematic, controlled fashion. The teaching opportunity is a discrete trial with a clearly identified antecedent and consequence (e.g., reinforcement in the form of praise or tangible rewards) for desired behaviors.

DTT is most often used for skills that learners are not initiating on their own, have a clear, correct procedure, and can be taught in a one-to-one setting.

DTT is informally been addressed at NAC, whenever students achieve one goal or do one daily task; they reinforce them in showing their support to the kids. For example, giving hug, allowing playing with toys and so on.

The data collected from observation and document analysis also confirmed the presence of some implementation of scientifically proven adaptive behavioral skills training for children with ASD at the center.

These are ABA, DTT, DIR and other self-help skills, receptive language skills and expressive language skills in the all levels of sections for each individual child; however, it is not at the expected level.

In general, as it was witnessed by the researcher's observation, there are different adaptive behavior skills training aids and resources available for the training in the center. For instance, pictures placed at the eye-level of each child.

In addition, the center is safe and environmentally friendly for the child. In relation to this, the center is built in a physical environment which is accessible for all that can help them adapt the social and physical environment; learn adaptive behavior skills training such as interpersonal and intrapersonal skills.

The practitioners and caregivers treat the children with ASD used the guidelines of center for each IEP and level. But, facilitators sometimes gave different trainings based on the individual performance and quality. The practitioner or care giver used different mechanisms of maintaining eye contact. Some pictures are also placed at the eye level of children at class room.

According to the report of the center coordinator, Assessment of Basic Language and Learning Skills, music, occupational, physical and sensory integration therapies are also the common intervention mechanisms at the center.

4.4. The Impact of Adaptive Behavior Skills Training

4.4.1. Impact on children with ASD:

According to the data collected from interview participants, the major impact of the implementation of different ABST programs is making children to be independent in order to handle various activities in their life at the center and out of it.

More specifically, the respondents indicated that ABST programs are important to help children to be self-reliant manage, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications.

In addition, ABST contributed to develop children's sense enrichment including visual, auditory, tactile, taste, smell, and vestibular systems. All these help children to promote themselves from one level to the next. As it was reported by the center coordinator, 13 children out of the total 40 children were transferred from one level to the next.

That is, four children from level one were promoted to level two, the other four children were promoted to level three, and five children with ASD got registered to grade one inclusive formal school systems due to the positive effect of ABST.

On the other hand, around two-third (27 children) did not fulfill the standard/criteria to pass to the next level.

4.4.2. Impact on Parents

Interview was conducted with parents of children with ASD for the purpose of gathering data about the impact of ABST program provided to them. Parents reported that the training package prepared for the practitioners at the center is also organized for the

parents in order to equip them to give the training to their children at home. Parents taught about how to manage and maintain their child's basic skills at home.

Almost all participants indicated that the primary importance of getting the training is to get relief and psychological stability. Especially, those parents with children at level one are highly happy when their children get improved in self-help skills such as potty training, dressing and undressing, eating, toileting, and washing.

After the trainings the parents with ASD to changes behavior due to the training provided by practitioners at the center and parents at home. Moreover, due to the awareness created by the training, two of the participants' mothers sometimes come to the center to give additional support to their children with ASD.

4.5. The Adaptive Behavioral Skills Training and Its Evidence Based Practices

According to the document analysis there were different types, goals, components, planning implementation and evaluation of training phase.

In order to portray the extent to which ABST provided at NAC goes in line with its evidence-based practices of ABST established in the literature.

For the purpose of achieving such issue, document analysis was conducted, and results are presented in the Table 4.4 below.

Table 4.4: Packages of ABST at NAC

	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's reflections
ABST provide d at NAC	<p>Level 1: Self-help skills</p> <p>Level 2: receptive language skills</p> <p>Level 3: expressive and academic skills</p>	<p>Level 1: Potty training, toileting, washing, dressing</p> <p>Level 2: play, following directions and instructions</p> <p>Level 3: expressive communication skills and academics</p>	To make children self-independent	Assessment, consulting, preparing IEP, assessment, plan	<p>Training, guiding, modeling, Eye-contact</p> <p>Speech therapy and sensory enrichment</p>	Teachers evaluate each children based on the criteria set for each level.	The researcher has identified the presence of gaps with what is written on the document with the practice in the classroom.

Taking data from the document analysis and observation, the researcher have recognized the presence of linkages of the practices at the research center with the existed literature though it is not found at an expected level. Most of the practitioners of the center are not professionals who challenge implementation of ABST beginning from planning to the evaluation phases.

As it is expressed above, the implementation of the ABST at NAC is similar with the evidences in different literatures. However, there is one major difference in terms of leveling the problem of children. The leveling used by the NAC center is the reverse of what is existed in the DSM-V. On the basis of the level of severity from most sever to less sever of the ASD, DSM-V the classification begins from level three and ends at level one. But for NAC the opposite is true (see Table 4.5 below).

Table 4.5: ASD Leveling of DSM-V and NAC

DSM -V	At Nehemiah Autism Center
Level- 3: Require high support	Level- 1: Require high support
Level- 2: Require moderate support	Level- 2: Require moderate support
Level- 1: Require less support	Level- 3: Require less support

The researcher posed a question for the center coordinator regarding the reason behind the inverse leveling of ASD. The coordinator responded that the center used such leveling in order to be congruent with the Ethiopian school system going from the least up to highest level.

The practitioners teach the children with ASD how to learn to interact with their environment as Social Learning Theory suggests. The primary goal of the educator is to serve as care givers that are teaching the children with ASD are serving as per their needs.

As the children with ASD have difficult circumstances and needs support in every aspect of their activities, we have seen that the practioners serve and give support. They will support them to cope with the environment, teach them how to wash, wear clothes, use toilets, play and socialize. They engage the children to restore and enhance their cognitive ability.

One of the values is to respect human rights and committed to promote social justice. As the researcher have discussed with the director of the Nehemiah Autism center, she has told the researcher that she has tried to ensure the rights of the children with ASD and promote social justice by advocating that this disorder is a part of disability and get recognition from the government and one of the reasons why the center is doing this because parents whose children with ASD are afraid to bring their ASD child to public as they are considered as cursed or punished by God.

The other reason is that if autism is recognized as disability the children will benefit.

Practice has focused on meeting human needs and developing human potential so, the center is really working regarding this value. Even though the center lacks different resources we can say that it is trying hard to give access of resources for the children so that they will develop their skills. This is for example, by teaching with different materials, giving occupational therapy and so on.

The center is giving the intervention in one-to-one direction applied to each kid. ABA is the use of these techniques and principles to bring about meaningful and positive change in behavior. This analysis is very helpful to work with young children with ASD and other related disorders.

The center has used ABA as the principle that explains how learning takes place. As mentioned, behavior analysts began working with young children with ASD and other related disorders. The techniques are used in structured situation in daily basis in all the three levels.

ABA helps kids to live happily and become productive in their day to day life. ABA principles and techniques can foster basic skills like looking, listening and imitating as well as complex skills as reading and understanding another person's perspective.

ABA can produce improvement in communication, social interaction /relationship, play, self-care, school and employment. Intensive and early intervention program for children with ASD address full range of life skills from communication and sociability of self-care and readiness for school.

CHAPTER FIVE

DISSCUSION

The main purpose of the present study was to assess the practice of adaptive behavior skills training for children with autism spectrum disorder at NAC, Addis Ababa.

To achieve this research purpose, the data and the literature were discussed based up on the basis of the research questions and specific objectives.

5.1. Planning Adaptive Behavior Skills Training

The first question of this research was looking the planning process of adaptive behavior skills training children with ASD at NAC.

The findings revealed that the goal of planning ABA intervention is to improve social communication and other language impairments and modify behaviors to improve an individual's quality of life and increase social acceptance.

The center provided the training in a way that helped them to adapt the social and physical environment and to learn adaptive skills such as interpersonal and intrapersonal skills. The education schedule of the children at the center is as per the training standards and in relation to individual differences of children.

This result is almost consistent with the research conducted by the National Research Council (2001); which indicated that adaptive skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life.

Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management are the planning areas.

The activities that are planned in ABST for children with ASD at NAC implemented with the help of training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

5.2. Types Adaptive Behavior Skills Training given for Children with ASD

According to Hansen as cited in National Research Council (2001), Potty training and related issues have been the center of attention of a broad range of early behavioral interventions. Similarly, at Nehemiah Autism center for ASD, the potty training is an integral part of the initial phase of the consecutive trainings.

Children who are legible for the initial or level one training scheme are those who usually suffer from controlling urine.

As the research report by Hansen such problem has been addressed with urine detection devices that serve to awaken children with ASD; whereas, at Nehemiah Autism Center offers diaper for the children until they successfully complete the training and achieve the skill of urine control.

The self- help skills activities such as potty training, wearing clothes and shoes, toileting, eating, hand washing, face washing, and teeth washing are the most common daily activities, especially for children with ASD at level one at NAC.

According to the practice of NAC receptive and expressive language skills training are the common forms of training packages for children with ASD at level two and level three respectively.

This result is also similar the existed literature identified by National Research Council (2001) which pinpointed that functional academics, safety skills, community access, communication, social skills, and self-management skills should be the focus areas of intervention for helping children with ASD.

Similar to the literature written by Heflin and Simpson, (1998); Lovaas (1987); Machalicek *et al.* (2008); Matson *et al.* (1996); McConnell (2002); Mcpartland (2002); National Research Council (2001); Tarbox and Najdowski, (2008) all the interventions at NAC includes discrete trial training, applied behavior analysis, and social skills training.

However, as to the present research findings NAC has one additional type of training packages that is DIR. In similar line Ozonoff, Dawson and Mcpartland (2002) pinpointed that applied behavior analysis, social skill groups, educational support, language and communication therapy, functional behavioral analysis, and sensory integration therapy are the treatment options for improving the overall developments of children with ASD.

5.3. The Impact of ABST

As is it is supported and advocated by many research out comes, the primary objective of special education like in the form of ABST is to make possible children with ASD learn adaptive behavior skills that facilitate independent functioning in the society (Brown et

al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980) which specifically enable them to work, live and enjoy life in their community (Wehmeyer, 1991).

According to the present research finding ABST has positive contribution both on children and their parents. As reported by the participants the primary and major impact of ABST was making children independent that can be visible in handling various activities in their life in and out of the center.

That means, ABST programs help children to be self-reliant, self-control, self-care, minimizing hyperactivity, develop basic life skills like social and communications which is congruent with the National Research Council (2001) where ABST has utmost importance to foster children independence skills in the journey to their development.

However, there is still one contradictory finding in the current study; children of the center did not pass to the next level as to their expectation. Since, children are independent in handling different activities; they are expected to go to the next level.

This contradiction may be attributed to the small number of the participants and their bias to the questions posed during data collection. Therefore, this needs further in-depth investigation by other researchers.

A substantial body of research (e.g. Banach, Iudice, Conway and Couse, 2010) pointed out that parents experience different psychological (grief and loss, felt shock, self-blame, stress, etc.) and social (cause a strain on parent's marital relationship, increase financial

burdens in the family and result in parents socially isolating themselves from others) problems.

However, parents benefit a lot when they bring their children to the center; get informed about daily progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals and these helps to address the various emotions and stress, and maintain social ties.

In similar line as to the present research finding ABST has also positive contribution for parents of children ASD. It helped parents to get relief to some extent, though they were not satisfied at the expected level with may be due to a lack of professional competence.

5.4. The Adaptive Behavior Skills Training Practice and its Evidence based Practices

In order to describe the extent to which ABST provided at NAC goes in line with its evidence –based practices of ABST established in the literature, the result was compared with DSM-V.

According to The DSM-V published in 2013 concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard.

The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM-V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.

As to the knowledge of the present researcher, there are no previous research findings that support or contradict with this finding. Therefore, is special to the current investigation.

CHAPTER SIX

SUMMERY, CONCLUSIONS AND RECOMMENDATIONS

This section summarizes the overall process of the study, draws, and conclusion on the basic of key finding and forwarded recommendation on of all children with ASD and how to implement adaptive behavior skills training at NAC effectively.

6.1. SUMMERY

The purpose of the study was investigating the situations of the practices of adaptive behavior skills training for children with ASD at NAC.

There were four main research questions and specific objectives.

- How adaptive behavior skill trainings are planned for each child with ASD?
- What adaptive behavior skill training is given for children with ASD?
- What is the impact of adaptive behavior skill training on children with ASD and their parents?
- How far ABST practiced go in line with its evidence based practices of ABST established in literature?

This study has mainly aimed at assessing the practices of adaptive behavior skills training for children with ASD at Nehemiah Autism Center. For this purpose, the samples have been drawn from one non-profit and a non-governmental organization located at Addis Ababa, Bole Sub- City around Megenagna.

The Societal Agency, which is not a concerned governmental office, has rented a house to receive Road called Nehemiah Autism Center.

It has a license from Charities and children with ASD. The center has started working since 16th June, 2011 after it got its license on 31th August 31, 2010. At the moment, the center is giving adaptive behavior skills training and treating forty children with ASD. It has 20 caregivers to train them.

Among these total populations, the data collection has been started from March 2 up to April 10, 2018 E.C.

Among the 20 practitioners, six caregivers, one educational leader, and five parents were selected. Because, in the under graduate level the researcher was some voluntary activities and research paper about the children with ASD.

The research was a qualitative approach, case study design; the data were collected through semi-structured interview and non-participant observation and document analysis, which were analyzed qualitatively using the thematic analysis.

The findings of the research indicated that the NAC designed the ABST plan for children at each level based on the result of the assessment.

The focus areas of the planning differ from level to level. That is, activities capacitating self- help skills, receptive order and communication skills, and academic and expressive skills are the major areas of concern in the planning process for level one, level two and level three respectively.

In addition to these, discrete trial training, applied behavior analysis and developmental individual relationship are ingredients of the training.

ABST has positive impact on both children and parents in improving basic skills of life, though it is not found at the expected level.

Except leveling the problem of children with ASD, the implementation of the ABST at NAC is similar with the previous evidences.

Finally, based on the results of the study, major conclusions were made and important recommendations were made.

6.2. Conclusions

Based on the findings and discussion of the research, the following conclusions have been made:

- The process of planning ABST at NAC is determined by the result of the assessment conducted on children. The focus of the training content differs in relation to the levels of children where self- helps skills, receptive order, communication skills, academic and expressive skills are common in level one, level two, and level three respectively.
- The most common types of ABST intervention at NAC are discrete trial training, applied behavior analysis, developmental individual relationship, assessment basic language skills, music, and occupational, physical and sensory integration therapies.
- Though ABST programs had positive impacts on some children to be independent by improving their daily life skills including social, communication skills and behavioral manifestations. It is not found at the expected level, since many children are repeating the same level for many years.
- On the other hand, the ABST training organized by the center for parents on how to manage and maintain their child's basic skills at home helped them to get relief and psychological stability by equipping them the necessary self-help skills to train their children though parents were not much satisfied by the change observed on their children with ASD.

- The implementation of ABST at NAC is similar with what is existed in the literature. But the inverse is true at NAC in terms of categorizing the problem of children with ASD as compared with DSM-V.

6.3. Recommendations

Based on the findings of the research and the conclusions made, the following recommendations are forwarded.

- The center prepares a plan for intervention based on the assessment for the overall children categorized at each level. Therefore, it is more advisable for NAC to prepare educational plan for each individual child based on the results of the assessment.
- There are many types of training interventions impinged in implementing ABST. However, there are limited numbers of well-trained, skilled and qualified professionals and the necessary skills to practice them properly. Hence, the center should employ social workers from Special Needs, Psychology, Education and related fields. Moreover, it will be better for the center if it organizes different capacity enhancement trainings for the existed staffs.
- Large numbers of children are still repeating the same level many times. Thus, the center should conduct program evaluation for ABST in order to check its effectiveness in bringing fundamental changes on children and parents.
- Many of the practices in the implementation of ABST are congruent with the evidence documented before. The major difference of what was found in this research and in the earlier evidence was leveling.
- The DSM -V concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard.

- The all levels have chronological differences, but they do not have practical work. The theoretical difference in DSM -V from level 3 up to level 1 to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the support extent.
- Theoretically, the level of support extent required will get increased while the level of training increased in DSM-V; whereas, the level of support required will decreased at Nehemiah Autism center for ASD when the level of training increased.

References

- Al-Faiz, H. S. (2007). Attitudes of elementary school teachers in Riyadh, Saudi Arabia toward the inclusion of children with autism in public education. Dissertation Abstracts International Section A: *Humanities and Social Sciences*, 68 (4-A), 1403.
- Allen, K. D., & Cowan, R. J. (2008). Naturalistic teaching procedures. In J. K. Luiselli, D. C.
- Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 213-240). New York: Oxford University Press.
- Al-Shammari, Z. A. (2006). Special education teachers' attitudes toward autistic students in the autism school in the State of Kuwait: A case study. *Journal of Instructional Psychology*, 33, 170-178.
- American Academy of Pediatrics (2001). Committee on children with disabilities. Technical report: The pediatrician's role in the diagnosis and management of autistic spectrum disorder in childhood. *Pediatrics*, 107(5), e85. Retrieved from <http://pediatrics.aappublications.org>
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision, *DSM-IV-TR*). Washington, DC: Author.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* DSM V. Washington, DC: Author.
- Autism Speaks. (2010). Facts about autism. Retrieved from <http://www.autismspeaks.org>.
- Bakare, M., O. (2011). Autism spectrum disorders (ASD) in Africa: a perspective. *African Journal of Psychiatry*; 14:208-10.
- Banach, M., Iudice, J., Conway, L. & Couse, L. (2010). *Family Support and Empowerment: Post Autism Diagnosis Support Group for Parents*; Pages 69-83.
- Baron-cohen, S., Allison, C., Williams, J., Bolton, P. (2009). *British Journal of psychiatry*. Prevalence of autism-spectrum conditions: UK school -based population study. 10: 500-9.

- Bailey, A., Le Courteur, A., & Gottesman, I. (1995). Autism as a strongly genetic disorder: Evidence from a British twin study. *Psychology of Medicine, 25*, 63-77.
- Centers for Disease Control and Prevention (CDC). (2010). Autism spectrum disorders. Data and statistics. Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>.
- Glashan, L., Mackay, G., & Grieve, A. (2004). Teachers' experience of support in the mainstream education of pupils with autism. *Improving Schools, 7*, 49-60.
- Heflin, L. J., & Simpson, R. L. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part I: Intervention and treatment option review. *Focus on Autism and Other Developmental Disabilities, 13*, 194-211.
- Individuals with Disabilities Education Act of 1990, 20 U.S.C. §1400 *et seq.* (1990).
- Individuals with Disabilities Education Act (IDEA) Data. (2007). Data tables for OSEP state reported data. Part B child count 2007. Table 1-11. Children and students served under IDEA, Part B, in the U.S. and outlying areas by age group, year, and disability category: Fall 1998 through fall 2007. Retrieved from <https://www.ideadata.org>.
- Kaiser, A. P. (1993). Functional language. In M. E. Snell (Ed.), *Instruction of students with severe disabilities*. New York: Macmillan.
- Koegel, L. K., Koegel, R. L., & Dunlap, G. (Eds.). (1996). *Positive behavioral support: Including people with difficult behavior in the community*. Baltimore: Paul H. Brookes.
- Lorna Selfe (2013) *All that matters autism spectrum disorder*
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*, 3-9.
- Machalicek, W., Davis, T., O'Reilly, M., Beretvas, N., Sigafos, J., Lancioni G., et al. (2008).
- Teaching social skills in school settings. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 269-298). New York: Oxford University Press.

- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2005). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Upper Saddle River, NJ: Pearson.
- Mavropoulou, S., & Padeliadu, S. (2000). Greek teachers' perceptions of autism and implications for educational practice: A preliminary analysis. *Autism, 4*, 173-183.
- Mhrki, A., P. (2010). Knowledge and Attitude of General Practitioners Regarding Autism in Karachi, Pakistan. *Journal of Autism Dev Disorder*.
- Matson, J. L., Benavidez, D. A., Compton, L. S., Paclawsky, T., & Baglio, C. (1996). Behavioral treatment of autistic persons: A review of research from 1980 to the present. *Research in Developmental Disabilities, 17*, 433-465.
- McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention and future research. *Journal of Autism and Developmental Disorders, 32*, 351-372.
- Machalicek, J. J., Smith, T., & Lovaas, O. I. (2008). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation, 97*, 359-372.
- Ministry of Education (MOE, 2012). *Reference material for special needs/inclusive/ education courses*. Addis Ababa, Ethiopia.
- Morgan, W. R. (2010). *Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years*. New York: McGraw Hill.
- NICHCY (2009). Categories of disability under IDEA. *National Dissemination Center for Children with Disabilities*. Retrieved from www.nichcy.org.
- National Institute of Child Health and Human Development (2005). *Autism research at the NICHD. NIH Publication No. 05-5592*.
- National Research Council. (2001). *Educating children with autism*. Committee on Educational Interventions for Children with Autism, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academies Press.

- Nia Foundation Autism in Ethiopia (2010). Retrieved from www.niafoundation.wordpress.com/autism/ accessed on Nov. 27, 2017.
- Ozonoff, S., Dawson, G., & Mcpartland, J. (2002). A parent's guide to Aspergers syndrome and high functioning autism. The Guilford Press, New York, London.
- Pozo, P., Sarria, E., Brioso, A. (2011). Psychological Adaptation in Parents of Children with Autism Spectrum Disorders. In Mohammadi, M.R (Ed.), A Comprehensive Book on Autism Spectrum Disorders (pp.107-130).
- Prizant, B. M. & Wetherby, A. M. (1998). Understanding the continuum of discrete traditional behavioral to social pragmatic developmental approaches in communication enhancement for young children with autism PDD. *Seminars in Speech and Language*, 19(4), 329-353.
- Rutter, M. (1970). Autistic children: Infancy to adulthood. *Seminars in Psychiatry*, 26, 435-450.
- Salhia, H., O., Taher, L., S., Al-khathaami, A., M. (2014) . Systemic review of the epidemiology of autism in Arab. *Neurosciences*;19(4):291-6.
- Sanford School of Medicine. (2006). *The University of South Dakota Center for Disabilities Autism spectrum disorders handbook*. Retrieved Nov 3, 2017, from <http://www.usd.edu>.
- Schlosser, R. W., & Wendt, O. (2008). Augmentative and alternative communication intervention for children with autism. In J. K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 325-389). New York: Oxford University Press.
- Sherer, M. R., & Schreibman, L. (2005). Individual behavior profiles and predictors of treatment effectiveness for children with autism. *Journal of Consulting and Clinical Psychology*, 73, 525-538.
- Siegel, B. (2003). *Treatment approaches for parents and professional*. London: Oxford university press.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.

- Tarbox, R. S. F., & Najdowski, A. C. (2008). Discrete trial training as a teaching paradigm. In J.K. Luiselli, D. C. Russo, W. P. Christian, & S. M. Wilczynski (Eds.), *Effective practices for children with autism* (pp. 181-194). New York: Oxford University Press.
- Skokut, M., Robinson, S., Openden, D., & Jimerson, S. (2008). Promoting the social and cognitive competence of children with autism: Interventions at school. *California School Psychologist*, 13, 93-108.
- Whitaker, P. (2007). Provision for youngsters with autistic spectrum disorders in mainstream Schools: What parents say – and what parents want. *British Journal of Special Education*, 34, 170-178.
- Wilczynski, S. M., Menousek, K., Hunter, M., & Mudgal, D. (2007). Individualized education programs for youth with autism spectrum disorders. *Psychology in the Schools*, 44, 653-666.

CHAPETR FIVE

DISSCUSION

5.1. Planning Adaptive Behavior Skills Training

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This result is almost consistent with the research conducted by the National Research Council (2001); which indicated that adaptive skills training is a “less intensive” plan designed to enhance the individual’s overall quality of life. Functional academics, self-help skills, safety skills, community access, communication, social skills, job prerequisites, and self-management are the planning areas.

The activities that are planned in ABST for children with ASD at NAC implemented with the help of training manuals, guidelines, real and/or local made objects, teaching aids and structured schedules for the academic year.

5.2. Types Adaptive Behavior Skills Training given for Children with ASD

According to Hansen as cited in National Research Council (2001), Potty training and related issues have been the center of attention of a broad range of early behavioral interventions.

Similarly, at Nehemiah Autism center for ASD, the potty training is an integral part of the initial phase of the consecutive trainings. Children who are legible for the initial or level one training scheme are those who usually suffer from controlling urine.

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According to the practice of NAC receptive and expressive language skills training are the common forms of training packages for children with ASD at level two and level three respectively. This result is also similar the existed literature identified by National Research Council (2001) which pinpointed that functional academics, safety skills, community access, communication, social skills, and self-management skills should be the focus areas of intervention for helping children with ASD. Similar to the literature written by Heflin and Simpson, (1998); Lovaas (1987); Machalicek *et al.* (2008); Matson *et al.* (1996); McConnell (2002); Mcpartland (2002); National Research Council (2001); Tarbox and Najdowski, (2008) all the interventions at NAC includes discrete trial training, applied behavior analysis, and social skills training.

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5.3. The Impact of ABST

As it is supported and advocated by many research outcomes, the primary objective of special education like in the form of ABST is to make possible children with ASD learn adaptive skills that facilitate independent functioning in the society (Brown et al., 1979; Dunnellon, Maestros, & Anderson, 1985; Hughes & Agra, 1993; Simpson & Sasso, 1992; Wehmeyer, 1991; Wheeler, Ford, Nietupski, Loomis & Brown, 1980) which specifically enable them to work, live and enjoy life in their community (Wehmeyer, 1991).

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This contradiction may be attributed to the small number of the participants and their bias to the questions posed during data collection.

Therefore, this needs further in-depth investigation by other researchers.

A substantial body of research (eg. Banach, Iudice, Conway and Couse, 2010) pointed out that parents experience different psychological (grief and loss, felt shock, self-blame, stress, etc.) and social (cause a strain on parent's marital relationship, increase financial burdens in the family and result in parents socially isolating themselves from others) problems.

However, parents benefit a lot when they bring their children to the center; get informed about daily progress, emotions, needs, and even health problem to family, and working together to assist the child with ASD to meet their goals and these helps to address the various emotions and stress, and maintain social ties.

In similar line as to the present research finding ABST has also positive contribution for parents of children ASD. It helped parents to get relief to some extent, though they were not satisfied at the expected level with may be due to a lack of professional competence.

5.4. The Adaptive Behavior Skills Training Practice and its Evidence based Practices

In order to describe the extent to which ABST provided at NAC goes in line with its evidence – based practices of ABST established in the literature, the result was compared with DSM-V. According to The DSM-V published in 2013 concerns with the status of requiring support, but the Nehemiah Autism Center concerns with the Ethiopian Curriculum Standard. The all levels have chronological differences, but they do not have practical work.

The theoretical difference in DSM-V from level three up to level one to increase the support extent, but at Nehemiah Autism Center, it is from level one up to level three to decrease the

support extent.

As to the knowledge of the present researcher, there are no previous research findings that support or contradict with this finding. Therefore, is special to the current investigation.

APPENDIX A

Observation protocol

The general aim of this observation is to collect data to identify the types of adaptive behavior skill trainings in the centre. To do so, the data will be recorded on the following checklist.

	Types of adaptive behavior skill trainings in Nehemiah Autism centre	Yes	No	Observation comments
1	Does the centre implement scientifically proven adaptive behavior skills training for children with autism?			
2	Are there organized adaptive skills training manuals in the training centre?			
3	Do the trainers use real objects and locally made media during the training?			
4	Does the centre have education schedule based on the training standards?			
5	Do teachers and care givers treat children with ASD following the adaptive behavior skills training guidelines of the centre?			
6	Are there training aids and resources in the centre			
7	Are pictures placed at the eye level of children?			
8	Is the centre safe and friendly enough for children with ASD to be involved in the adaptive behavior skills training?			
9	Is the centre's built in physical environment accessible for children with ASD to learn interpersonal skills from other members of the center			
10	Are the adaptive behavior skills training considered as intervention program in the centre?			
11	Does the centre provide need-driven adaptive behavior skills trainings for children with ASD?			

APPENDIX B

Interview guide for teachers

First of all, I would like to thank you very much for your precious time to respond the questions provided below. The main purpose of this interview is to collect data from the teachers of children with ASD at Nehemiah Centre in order to describe the planning processes of adaptive behavior skill training; to explore the types of adaptive behavior skill trainings, to identify the impact of adaptive behavior skill training on children with ASD at Nehimia Autism Centre, and also to portray the extent to which adaptive behavior skill training provided at Nehimia Autism Centre goes in line with its evidence based practices of adaptive behavior skill training established in literature. Thus, I need to ensure you that the data collected from you will be used to achieve these objectives, not for other purpose. Therefore, your responses are the valuable input to improving the quality of the research study.

Key interview questions

1. As a teacher, how do you undergo the planning processes of adaptive behavior skill training at Nehemiah autism centre?
2. Explain how ABST is planned for each child with ASD?
3. Would you, please, explain the types of trainings in the entre? What are the objectives of training children with ASD?
4. What is the impact of providing ABST on children with ASD in the centre? What tangible improvements can you tell me as a result of the trainings?
5. What types of skills and competences are planned to be developed in the ABST?
6. What do you think is the perceived of the training on parents of children with ASD?
7. Who developed the ABST manual in the centre?
8. To provide the ABST, is the existence of adaptive behavior deficits proven through training ass
9. Are there training manuals and packages prepared for the implementation of ABST? Who is responsible to develop the manuals?
10. What challenges impede the implementation of ABST in the NAC ?

APPENDIX C
Document Analysis Protocol

The main aim of the document analysis is to portray the extent to which adaptive behavior skill training provided at Nehemiah Autism Centre goes in line with its evidence based practices of adaptive behavior skill training established in literature.

ABST at Nehemiah Centre (Ethiopia) vis-à-vis the training practices established in scientific literatures	Types of the training packages	Components of the training	Goal(s) of the training	Planning phase	Implementation phase	Evaluation phase	The researcher's final comments and reflection
Adaptive behavior skill trainings provided at Nehemiah Autism centre							
The Researcher's analysis of evidence based practices of ABST established in scientific literatures							

APPENDIX D
Documents of the Center
Nehemiah Autism Center
Level one Education Training
Checklist

Checklist

Section one

Problem solving skill

Name of students with ASD

Topic to solve out the problem challenge

Objective to solve the problem and to do the small work skill

Type of activity	Starting date	Skill full date
To practice the different		
To open an lock the toilet and class door/gate		
To open the windows on the top		
To practice the wearing of thresher		
To sit the chairs around the table		
To support the sitting on the table		
To practice the wearing cloth		
To use the purple		
To support the open door		

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Eating and drinking

Objective Before feeding during feeding and after feeding to

Type of activity	Starting date	Capability	Comment
To use spoon			
To eat feeding			
To drink the			
To drink the cup			
To drink tea			
To use the sugar with spoon			
To drink from pun			

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Topic to use cloth and shoes

Objective To independent without support to use the cloth and shoes

Types of activity	Starting date	capability	comment
Shoes			
Shoes			
Stock			
Stock			
Jacket down			
Jacket			
T –shirt			
T –shirt			
Zip lock			
Zip open			
Open the cloth			
Lock the cloth			
Shoes			
Shoes			

Level one student with ASD education training

Checklist

Section two

Self help skill

Name of the students

Topic to use cloth and shoes

Objective To independent without support the personal hygiene and????

Types of activity	Starting date	capability	comment
To clean hand wash			
To use soap			
To use tawl			
To wash face			
To use tawl			
To clean teech			
To clean nose			
To use comp			
To use toilet			
To use the soap			
To clean after toileting to use water			
To clean after hand the toileting to wash			

Cognitive Development skill

Name of the students with ASD

Concentration and remember

Objective To give concentration remember and develop the hand movement and cognitive development

Types of activity	Starting date	Capability	Comment
Concentration			
To grasp the hidden objects			
To ask the hidden object			
Eye contact block and purples			
To order the blocks from the small no			
To comment the purples			
To work different block			
Circle training rectangle			
To identify			
Three colours matching			
Match the similar pictures			

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section one

Physical exercise and movement activity skill

Name of students with ASD

Body structure performance and movement

Objective gross motor and fine motor

Type of Activity	Starting Date	Capability	Comment
Physical movement			
To easy finger movement			
To			
To repeat the hand movement			
To repeat the hand movement			
To repeat the simple hand			
To grasp by hand			
To take the door			
To fill the d/t objects			
To order the blocks			
To work the			
To use the door key			
To connect the cloth with			
To move the object & other object			
To eat Enjera			
To drink by spoon			
To fill the ball on the basket			
To fill 1 meter the ball on the basket			
To work eye contact and hand			
Tracing			
Shade the color			
To cut the line			

Nehemiah Autism center

Level one student with ASD education training

Checklist

Section one

Physical exercise and movement activity skill

Name of students with ASD

Body structure performance and movement

Objective gross motor and fine motor

Type of Activity	Starting Date	Capability	Comment
Feet movement			
Back 1-5			
Run 2-5			
Jump half meter			
Jump			
Ball 1m			
Ball 2m			
Hand movement			
Ball-half basket			
Ball-1meter			
Ball 1.5			
Ball 1/2			

Nehemiah Autism center

Level One

Plan One

Name of the student.....

1.1 Self help skill – washing faces & hands

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism center

Level One

Plan One Two

Name of the student.....

1.2 Self help skill – Dressing & Undressing top clothes

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism center

LEVEL ONE

PLAN ONE THREE

Name of the student.....

1.3 Self help skill – Dressing & undressing bottom clothes

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL ONE

PLAN ONE FOUR

Name of the student.....

1.4 Self help skill –Putting on & off shoes & socks

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center
LEVEL ONE

PLAN ONE FIVE

Name of the student.....

1.5 Self help skill – Potty training

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center
LEVEL TWO

PLAN TWO ONE

Name of the student.....

2.1. Social skill – Attendance & calendared

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Attendance						
Raise hand with prompt						
Raise hand without prompt						
Raise hand & respond verbally (yes)						
Calends						
Indicate the day date & year with prompt						
Verbally repeat the day, date & year						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO

Name of the student.....

2.2. Self-help skill clothes shirt and jacket

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO THREE

Name of the student.....

2.3. Self-help skill – wearing clothes and socks

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL two

PLAN two three

Name of the student.....

2.3. Receptive instruction for basic needs

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Go to toilet						
Wash your hand						
Wash your face						
Brush your teeth						
Bring your food						
Eat						
Drink						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO FOUR

Name of the student.....

2.4. Receptive instruction different instruction (utensils, body parts, types of clothes)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Put						
give						
Bring						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN TWO FIVE

Name of the student.....

2.5. Matching different things (utensils, types of clothes, parts of the body 20 & 30)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Types of clothes						
Utensils						
Parts of the body						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL TWO

PLAN two six

Name of the student.....

2.6. Matching similar thing (real objects)

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL two

PLAN two Seven

Name of the student.....

2.7. Speech by different pictures and charts.

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Mouth movement						
Tongue movement						
Base on the words that they speak						
Amharic letter						
Amharic letter						
Amharic letter						
Speaking of words						
Song						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

Nehemiah Autism Center

LEVEL THREE

PLAN THREE ONE

Name of the student.....

3.1. Social skill- attendance & calling names and knowing days.

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Respond to his or her names						

Note: M= Meet – NI Needs improvement –NY – Not yet improved

LEVEL THREE

PLAN THREE ONE

Name of the student.....

3.2. Education or academics. Writing

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010
Scribbling						
Tracing vertical & horizontal lines						
Tracing different lines						
Tracing letters						
Tracing number						
Copying letters						
Copying numbers						
Copying names						
Copying letters from board						
Copying numbers from board						
Dictation of letters						
Dictation of numbers						

LEVEL THREE

PLAN THREE TWO

Name of the student.....

3.3. Play & Social skill solitary play

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

LEVEL THREE

PLAN THREE FOUR

Name of the student.....

3.4. Communication receiving instruction in the classroom

List of activities	Date started	March 30/2010	April 30/2010	May 30/2010	June 30/2010	July 30/2010

Note: M= Meet – NI Needs improvement –NY – Not yet improved

DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been produced and presented in any other academic institutions. All sources of materials used for the study have been properly acknowledged.

Name: Fasil Asmamaw

Signature: _____

Date: _____