PERSONAL AND INTERPERSONAL FUNCTIONING OF CHILDREN WITH AUTISM IN JOY CENTER ADDIS ABABA

BY

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LIST OF ACRONYMS

AAU:	Addis Ababa University
ABA:	Applied Behavior Analysis
ADI-R:	Autism Diagnostic Interview-Revised
APA:	American Psychiatric Association
ASD:	Autism Spectrum Disorder
DIR:	Developmental Individual Difference
DSM:	Diagnostic and Statistical Manual for Mental Disorders
ICD:	International Classification of Diseases
MMR:	Mixed Method Research
PDD-NOS	Pervasive Developmental Disorder Not Otherwise Specified
PL-ADOS:	Prelinguistic Autism Diagnostic Observation Schedule
SPSS:	Statistical Package for Social Scientists
SSIS:	Selective Serotonin Reuptake Inhibitors
VBT:	Verbal Behavior Therapy
VMW:	Verbal Working Memory
WHO:	World Health Organization

ABSTRACT

This study was conducted to find out personal and interpersonal functioning of children with autism in Joy center. Both qualitative and quantitative methods were employed to collect and analyze the collected data. Accordingly, in-depth interviews were conducted with key informants 59 autistic children were part of the quantitative data collection. Both probability and non-probability sampling techniques were used, and data was collected using self-administered questionnaire, in-depth interview guide and Vineland Adaptive Behavior Scale – III. The collected data was analyzed using descriptive and narrative analysis techniques. The study started by investigating relevant theories on autisms. The study used the theory of mind and theory of executive dysfunction, and both theories validated the findings of the study. The study found out that Joy Center uses intervention therapies and it was also found that functioning of children in personal subdomain is significantly different across the stage. It was further found out that the mean functioning of at least one age group is different from the other. The study also reported that functioning in personal and interpersonal subdomains of children across different age group were significantly different between all age group except between some age group. Other results show that the children were performing more if they join intervention between 6-10 age groups. The mean functioning in interpersonal subdomain was not significantly different across different age group of starting intervention. In general, it would be better if parents send their children to autism centers at an early age, and the treatment would be more effective if they are treated by professional psychologist. The problem of Autism could be addressed effectively if more autistic centers are opened.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Autism is a developmental disorder that has not been attributed to any single cause. According to Tustin (1992), autism is a term reserved for a specific spectrum of disorders where there is an absence of human relationships and a gross impoverishment of mental and emotional life (Tustin, 1992).

Autism is a developmental disorder that was first described by Leo Kanner, an American psychiatrist, in 1943, in a classic article that included case studies of 11 children. Kanner, described autism as a "biologically provided disturbance of affective contact" (Trevarthen 2002). Before Kanner's specific description, people with autism were not recognized as separate from others who were considered "psychotic or mentally deficient". Since that time, the diagnostic criteria have evolved based on continued observations and research, resulting in the criteria in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition or DSM-IV (American Psychiatric Association, 2013) and the International Classification of Diseases or ICD-10 (World Health Organization, 1993).

Autism spectrum disorder (ASD) is a lifelong neurodevelopment condition that can impair an individual's social, verbal, cognitive and behavioral development and affect their daily functioning (American Psychiatric Association [APA], 2013). Symptoms include social communication impairments, restricted interests, and repetitive behaviors (APA, 2013).

Comorbidities are common and can include language impairment, intellectual disability, sensory deficits, seizure disorders, anxiety disorders, and attention deficit hyperactivity disorder (APA, 2013). The diversity of comorbidities that individuals diagnosed with ASD may experience, the

clinical presentation of ASD results in a wide range of challenges and abilities. Currently, there is no cure for ASD (APA, 2013), but an early intervention has shown to be an effective approach to improve language acquisition, cognitive abilities, and adaptive behaviors among children diagnosed with ASD (Interagency Autism Coordinating Committee [IACC], 2011).

It is estimated that worldwide 1 in 160 children has an ASD (WHO, 2017). This estimate represents an average figure, and reported prevalence varies substantially across studies. Some studies have, however, reported figures that are substantially higher. The prevalence of ASD in many low- and middle-income countries is so far unknown (Chawarska, Klin, and Volkmar, 2008).

Autism spectrum disorder (ASD) is a neurodevelopmental disorder with a prevalence of around 1-2% worldwide. Despite the fact that 90% of individuals with ASD live in low- and middle-income countries (lmics), less than 10% of all ASD research has been performed in these regions. In Africa, the research gap is even starker – a recent scoping review by Franz et al (2017) found that less than one percent of the global research output on ASD came from Africa. The review noted that few ASD prevalence studies had been performed in sub-Saharan Africa, and few of the studies had used standardized screening or diagnostic tools. The quality and size of existing studies were also limited. Remarkably, little early intervention studies or studies of educational systems for ASD had been performed before 2016. Furthermore, there is presently a need for more ASD research in African settings, as there is less known about the prevalence and treatment of ASD in Africa than on any other continent in the world, and there are people in Africa with ASD who urgently need services (Ametepee & Chitiyo, 2009).

Many 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.

Spiritual explanations for autism are by no means unique to Ethiopia but acknowledging them is key to understanding the treatment parents seek.

Perhaps more unique to a low-income setting such as Ethiopia are the severe unmet needs of families. The country has a population of more than 100 million people, of which 50 percent are children. However, there are only two state-funded child mental health clinics where a formal diagnosis can be made. Both clinics are in Addis Ababa — inaccessible to most Ethiopians, who reside in dispersed rural communities. The few autism schools that exist each have long waiting lists, meaning that most children with autism are without appropriate education. Most children with autism remain undiagnosed, with no access to intervention or appropriate education.

Early intensive intervention for young children diagnosed with ASD has been shown to reduce core ASD symptoms and has demonstrated significant long-term improvements in language acquisition, social skills, cognitive abilities, and adaptive behaviors (Estes et al., 2015). These include behavioral interventions, developmental interventions, and cognitive-behavioral interventions. Each program is based on a different philosophy and uses unique intervention strategies. According to the Interagency Autism Coordinating Committee (2011), the majority of evidence supporting the efficacy of early ASD intervention lies in the implementation of highly intensive, evidence-based programs that are delivered by specialized professionals for 40 hours a week.

There is also empirical evidence that children who enter programs at younger ages make greater gains than those who enter programs at older ages (Dawson, 1997). They also further discuss that intervention during early childhood is important to promote the optimal development and well-being of people with an ASD and it is highly recommended that monitoring of child development as part of routine maternal and child health care paramount importance.

These best practices pose substantial implementation costs and present sustainability and feasibility challenges in low-resource settings (Divan et al., 2015; Peters-Scheffer, Didden, Korzilius, & Matson, 2012).

In Ethiopia, except predictions provided by some non-governmental organizations, to the best of the researcher's knowledge, publications about the exact number of children affected by autism are non-existent. Although clear data regarding the prevalence are not yet available in Ethiopia, few private organizations are providing service to children affected by autism. There are two private organizations (centers) namely Nia Foundation (Joy center) and Nehemiah Autism Center both located in Addis Ababa, Ethiopia. These organizations have been functioning in Addis Ababa for the last few years providing various services to children with autism and their parents.

There are extensive works done on the area of autism and its impact on families, predictive factors that influence treatment choice for ASD, and parental involvement in children with ASD worldwide. Nevertheless, there is little well comprehensive research done which investigates the personal and interpersonal functioning of children with autism at Joy center. Therefore, this study aimed at investigating the personal and interpersonal functioning of children with autism in the case organization at joy center.

Joy center is an organization that aspires to seeing a concerned society whereby less privileged community groups enjoy quality of life to the best of their potentials in spite of their different abilities, disabilities and gender.

1.2 Statement of the problem

A large body of research regarding the prevalence of autism has been conducted in United States and other developed countries within the last decades. More research regarding autism contributed to

enhanced awareness about the condition in the developed countries (Elsabbagh, 2012). Specifically, research related with prevalence, clinical manifestations and individuals with autism and other psychiatric disorders has been conducted in the United States. However, most of the publications focus on individuals with the disorder and publications emphasizing early intervention practice among children with developmental disorders are still scarce compared to the individual studies (Dykens, 2015).

In the past few decades, autism was assumed to be a rare condition that specifically occurs in the western world and its prevalence in developing continents such as Africa was debatable. As a result, a clear figure regarding the prevalence and manifestation of the disorder in African countries is not yet accessible (Bakare &Munir, 2011). Although consideration about autism has been enhanced in African countries with in the last few years, cultural differences of defining autism in African context has not yet been addressed (Nyarambi & Enwefa, 2011). Even though some studies in Western and Northern part of Africa exist, a huge research gap still exists in Sub-Saharan Africa.

Samadi and mcconkey (2011) also highlights that there is limited information on the identification of children with autism in less affluent countries. Most research in autism has been conducted in affluent English-speaking countries. Being considered as less affluent country, Ethiopia is not an exception for this lack of research about childhood developmental disorders such as autism.

Some studies regarding autism are accessible in Ethiopian context. For instance, Master's thesis conducted by Aynalem (2014) viewed the challenges and coping mechanisms of families living with a child diagnosed with autism. Another similar study by Daniel (2014) explored psychosocial impacts of autism on families and their perceptions on the supports provided at Joy center. However, investigating the personal and interpersonal functioning of children with autism in the case organization is also another important issue. Ayele (2017) reported the prevalence rates of children

with developmental delays in each developmental domain and in global functioning were determined.

Hussein (2016) and Wolde (2017) reported that, by engaging a child with autism in creative art therapy intervention was an effective way to improving the social skills of children with autism spectrum disorder.

To the best of the researcher's knowledge, no research was done personal and interpersonal functioning of children with autism at Joy center. Filling this gap is believed to be the main contribution of this research. As a result, it is hoped that the finding would be useful for other studies as a secondary data.

Therefore, this research investigated the personal and interpersonal functioning of children with autism at Joy center. In doing this, the early intervention practices will be evaluated adaptive functioning.

1.3 Research objective

1.3.1. General Objective

The general objective of this study was to see the personal and interpersonal functioning of children with autism at Joy center.

1.3.2. Specific Objectives

The specific objectives of this research include:

1. To identify intervention types for children with Autism Spectrum Disorder at Joy Center and assess the implementation process.
2. To determine the personal and interpersonal functioning of children with ASD in Joy Center.

3. To determine the association between stage of intervention and the personal and interpersonal functioning of children with ASD in Joy Center.
4. To examine the relationship between chronological age and the personal and interpersonal functioning of children with ASD in Joy Center.
5. To determine the relationship between early intervention and personal and interpersonal functioning of children with ASD at Joy Center

1.4 Research Questions

In light of the research objectives stated in the above section, the research attempted to find out answers to the following basic questions:

1. What kinds of intervention are used to help the children with ASD? Does the organization have an implementation plan? How long does the implementation take in Joy center?
2. What is the level of personal and interpersonal functioning of children with ASD in Joy Center?
3. Is there a significant relationship between stage of intervention and personal and interpersonal functioning on children with ASD in Joy center?
4. Is there significant relationship between chronological age and personal and interpersonal functioning on children with ASD in Joy center?
5. Is there a significant relationship between early intervention and personal and interpersonal functioning of children with ASD at Joy center?

1.5 Significance of the Study

This study attempted to explore the functioning of children with autism. Mainly this study will be significant in contributing to the observed research gap in this specific area. In addition, this study will shed light by exploring the personal and interpersonal functioning of children with autism at Joy

center. Findings from the study can benefit the organization to focus on the gaps that are mentioned in this study. It can also benefit other organization to work for a better outcome by and future organization as a startup.

1.6 Scope of the study

The research was conducted in Nifas Silk Lafto Sub city, Kebele 06, Addis Ababa, Ethiopia, with the objective of investigating the personal and interpersonal functioning of children with autism at Joy center. The study tried to provide detailed information using both qualitative and quantitative approach. It only focuses on one center as a result, the finding cannot be generalized to the whole population of autistic children. For this reason, the study is limited to discuss and make critical evaluation based on the gathered data on joy center.

1.7 Definition of variables and terms

Autism- is a complex neurobehavioral condition that includes impairments in social interaction and developmental language and communication skills combined with rigid, repetitive behaviors.

Early intervention- In the current study, it refers to services targeted at young children (to deliver autism treatment and intervention to children starting from age five). The rationale behind taking the age of five is that the assumption of minimum starting age of treatment is five. The researcher assumes that, because of lack of awareness and ignorance of the disease in Ethiopia, the minimum age for taking treatment could at least be five.

Functioning of children- In the case of children with autism, it can particularly be used to demonstrate constructive ways for the child to display their personal and interpersonal skill.

Personal functioning-represents any skill that a person needs to do independently without others help.

Interpersonal functioning- means effect of a person's actions on another person or a function involving relationship between two or more person

1.8. Operationalization

Personal - Personal functioning was assessed by using vineland's measurement system. Each children's personal functioning was rated using six major personal subdomain content that measures children's ability of independent Eating and Drinking, Dressing and Undressing, Using Toilet, Washing and Bathing, Hygiene and Health

Interpersonal - Interpersonal was assessed by using vineland's measurement system. Each children's Interpersonal functioning was rated using six major interpersonal subdomain content that measures children's ability Beginning Social Behavior, Emotional Development, Friendships, Demonstrating Caring, Interpersonal Appropriateness and Conversational Skills.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter is a review of the research and literature aimed to investigate impact of early intervention on personal and interpersonal functioning of children with autism at Joy center. The topics in this literature review include History and definition of autism, Causes, Treatment and Interventions for ASD, theories of autism, Patterns of adaptive behavior and chronological Age of ASD, Review of Current Literature on Autism Spectrum Disorder in Africa, Studies in Ethiopia and Conceptual/ Theoretical frame work.

2.1 History and definition of autism

The word autism, derived from the Greek word 'autos,' refers to self. The word is reported to have been used since the 1900s. Various scholars used the concept of autism linking it to other mental health issues such as schizophrenia. However, the credit of introducing the concept of autism goes to Leo Kanner, who in 1943 conducted a study that marked the difference between autism and schizophrenia. The study Kanner conducted with children revealed clinical conditions such as being aloof and having a language difficulty manifested at an early age of 3 which he termed as infantile autism (Kita & Hosokawa, 2011).

2.2 Autism Spectrum Disorder

ASD is defined by the DSM-5 as a lifelong developmental disorder characterized by "persistent deficits in social communication and social interaction across contexts" and "restricted, repetitive patterns of behaviors, interests, or activities" (APA, 2013). Deficits in social communication and social interactions encompass difficulties in social-emotional reciprocity, nonverbal communication behaviors, and interpersonal relationships. Restricted and repetitive patterns of behavior include

stereotyped or repetitive motor movements, inflexibility in routines and difficulties with transitions, restricted and repetitive interests, and sensory impairments.

A diagnosis of ASD requires that symptoms: are present in early childhood, cause significant clinical impairments in functional areas, and are not better explained by intellectual disability or global developmental delays (APA, 2013). There is wide variability in diagnostic characteristics in individuals with ASD, including the specific symptoms demonstrated by an individual, when and how the symptoms emerge, the duration of symptoms, and which areas of functioning are impacted (Wozniak, Leezenbaum, Northrup, West, & Iverson, 2016).

In the newest edition of the American Psychiatric Association's guidelines for diagnosis, known as the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), they have added the following disorders to the category of ASD:

- Asperger syndrome
- Childhood disintegrative disorder
- Pervasive developmental disorders not otherwise specified (APA, 2013).

While different types of ASD occur, common experiences among people with the condition include impairment in social situations and the adoption of repetitive behaviors.

Some children with autism might seem to show symptoms from birth, while others may develop more obvious signs as they become older. Autism also has links to other medical conditions, such as epilepsy and tuberous sclerosis complex. According to the National Institute of Neurological Disorders and Stroke (NINDS), an estimated 20 to 30 percent of people with ASD develop epilepsy by the time they reach childhood.

2.3 Risk factors of ASD

Several situations or factors are associated with increased prevalence of ASD, though a direct causation is difficult to prove. The reason for many of these associations is not fully understood. However, these associations can be viewed as risks for autism, though unfortunately, there is also a lot of misinformation about these risks, particularly regarding vaccines.

The major cited risk factors associated with ASD is Genetic risk factors. Genetic risk factor can be classified as environmental risk factors, which is further classified in to potential mechanisms and Critical periods of susceptibility. The other cited risk factor related with ASD is maternal nutrition, which is related with Medicines taken during pregnancy. The last category associated with ASD risk factor is Environmental chemicals (Jason et al., 2016; Lyall et al., 2014 and Newschaffer et al., 2017).

2.4 Intervention types of ASD

There is no uniform treatment for autism, as every person with the condition presents differently.

Treatments and strategies are available for managing the health issues that often accompany autism. These issues can include epilepsy, depression, obsessive-compulsive disorder (OCD), and sleep disturbances. While not all of these treatments will be effective for all people with ASD, there are many options to consider that may help people cope. Autism specialists or psychologists can refer a person for a treatment that reflects their presentation of autism (Autism spectrum disorder fact sheet, 2018). Thus, it can be said that there are many interventions.

Intervention for autism is given with a wide array of components including educational, nutritional, childcare, and family support programs that reduce and prevent the risk of disabilities adversely affecting the lives of children (Heward, 2003). Among the treatment interventions that

may be beneficial are Applied Behavior Analysis (ABA), Occupational therapy (OT), Early Start Denver Model (ESDM), Relationship development intervention (RDI), Speech therapy Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) and Verbal behavior therapy (VBT).

In ABA, an instructor at first tries to learn about the particular behaviors of a person with ASD. They will also want to know about the effects of their environment on this behavior, and how the person learns. ABA aims to increase desirable behaviors and reduce harmful or isolating ones by using positive reinforcement (Autism Speaks, 2019). ABA has many interventions such as Floor time, Pivotal response treatment (PRT), discrete trial Training (DTT), Functional communication training (FCT) and Antecedent based intervention.

According to a study by producing about 47% of users to be mainstreamed into a general education program once entering school (Stahmer, Collings & Palinkas, 2005). This supports the claim that if a child with autism is presented with an ABA style of program, he or she will increase areas of delay.

A study published by (Jason et al., 2016) involved two years of intensive, 40-hour/week behavioral intervention by trained graduate students working with 19 young autistic children ranging from 35 to 41 months of age. Almost half of the children improved so much that they were indistinguishable from typical children, and these children went on to lead fairly normal lives. Of the other half, most had significant improvements, but a few did not improve much.

On the other hand, occupational therapy helps a person with autism develop the skills for everyday living and learn independence. These skills include dressing without assistance, grooming

and hygiene, and fine motor skills. People with ASD then practice these skills outside of the therapy sessions, which are usually between 30 and 60 minutes long (Autism Speaks, 2019).

According to Schreibman, Kaneko, and Koegel, 1991 (as cited in Stahmer & Aarons, 2009) research has shown that children have a greater chance of learning new material in a natural setting, which also allows for more generalization of new learned skills. On top of a higher success rate, this type of program is also easier for parents or caregivers to implement in natural environments, due to the ease of use.

The other cited treatment type is early start Denver model which is a type of behavioral therapy occurs during play and helps children between the ages of one and four years old. A psychologist, behavioral specialist, or occupational therapist uses joint activities and play to help a child with autism build positive relationships with a sense of fun. Parents can then continue the therapy at home (Autism Speaks, 2019). ESDM supports communication skills and cognitive abilities.

Speech therapy helps to address the challenges in communication that people with autism might experience. Assistance might include matching emotions with facial expressions, learning how to interpret body language, and responding to questions. A speech therapist might also try to teach the nuances of vocal tone and help the individual strengthen their speech and clarity (Autism Speaks, 2019).

In a study performed by Rickards, Walstab, Wright-Rossi, Simpson, Reddihough, (2009), children with autism were presented with pre and post assessment along with a home-based intervention program to test the effectiveness of this type of program in regards to early intervention skills. In this study a total of 59 children between the ages of 3-5 attended therapy session at two different centers, while half of the participants received an additional 40 weekly visits within the

home environment (Rickards et al., 2009). The parents of the intervention group that received additional home visits from a speech language pathologist and an occupational therapist, had the opportunity to ask questions about therapy and were given direct instruction as to what they were to do during therapy sessions. Parents were the main source of instruction for the child, but siblings were introduced if able, and the professionals were strictly there to guide the parents (Rickards et al., 2009). Each participant was assessed prior to any intervention, immediately after therapy and then was reassessed one year after therapy ended; results showed that early intervention has a positive impact on individuals with autism as well as improvement particularly in the area of cognitive development in those individuals who received an extra home based program.

Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) is another program helps to integrate the needs of children with autism into a classroom environment, with an emphasis on visual learning and support for the attention and communication difficulties that might arise (Autism Speaks, 2019).

Special education providers and social workers, as well as medical professionals providing other treatments, such as psychologists and speech therapists, can use this system to support children with ASD (Autism Speaks, 2019).

Dunst and Dempsey, (2007), looked at parent-professional involvement and how the if there was a poor partnership how the impact might hinder how much a family is involved in their child's interventions. According to Dunst and Dempsey (2007), 150 parents/ caregivers of infants, toddlers, and preschoolers presented with disabilities or developmental delays that participate in an early intervention program in western North Carolina. Parents were given the Enabling Practice Scale, Everyday Parenting Scale, and personal control and self-efficacy measures, to assess their family involvement within the early intervention program. Each participant was sent a letter including

details of the study and copies of the scales. They were asked to complete the scales and to return them when finished for analysis by the authors (Dunst & Dempsey, 2007).

Results indicated small but statistical relevance in regards to those with poor family-professional partnership. Results indicated that with greater family-professional partnership, parents are more likely to feel empowered and in return are involved in the intervention process more so than those who do not feel as if they have any responsibility in the plan of care as well as treatment for their child (Dunst & Dempsey, 2007).

2.5 Personal and interpersonal functioning

A growing body of longitudinal research identifies predictors of interpersonal functioning throughout the life course in ASD. Researches indicated that individuals with ASD have marked deficits in both the ability to think about another person's thoughts about an objective event and the ability to think about another person's thoughts about a third person's thoughts about an objective event (Bailey, 2011).

Of note, deficits in interpersonal functioning may be central to the social impairment that is a hallmark of ASD (Baron-Cohen, 1989). A large body of research supports the finding that the majority of individuals with ASD have marked impairments in Theory of Mind (ToM), or the ability to attribute beliefs to others (Butter, 2003). A study by (Dawson, 2010) suggests that individuals with ASD experience delay in interpersonal functioning that may be particularly pronounced in early development.

When interpersonal behavior in autism is tracked using daily diaries, findings indicate that individuals with Autism have more difficulties in everyday interpersonal interactions. Rosa (2017) found that patients with autism were found to be more on disagreements and more confusion during

their social interactions when compared to patients with other personality disorders and psychiatric patients without personality disorders. Patients with autism were also found to be affected by emptiness, and ambivalence during social interactions compared to patients in the other psychiatric groups.

Another researcher found low to modest associations of autistic children's interpersonal functioning. Other studies have also found low convergence among measures of conceptually similar constructs, including affective instability in patients with autism and behavioral activation in patients with autism (Bailey, 2011).

Other than Interpersonal functioning, other researchers investigating personal functioning in children and adolescents with ASD, mean age 9 years, with varying IQ sores. They found that Vineland Composite was negatively associated with age; older individuals have a greater gap between IQ and adaptive skills and that the gap between IQ and adaptive impairments decreased in lower functioning individuals with ASD, while adaptive behavior scores in the high IQ group were below the standard IQ score. They concluded that IQ was a strong predictor of adaptive behavior (Newschaffer, 2007).

Several studies have found a positive correlation between intellectual functioning (typically measured as Verbal IQ, Performance IQ, or Full Scale IQ) and personal functioning among children with ASD (Michael, 2006). Newschaffer, (2007) found a positive correlation between adaptive functioning and age and intellectual functioning in children and adolescents (mean age 8.20) with Autistic Disorder. Another study found that standard scores on the second edition of the Vineland were positively correlated with intellectual abilities and that age and intellectual functioning significantly predicted personal functioning in their sample of toddlers (ages 23–39 months) with ASD (Newschaffer, 2007).

Catherine (2011) investigated developmental trajectories of standard scores on the Vineland, demonstrating growth in communication, daily living, and social skills over time; critically, gains in communication and daily living skills were also related to IQ, with children with higher Performance IQs demonstrating faster growth rates in these areas. In a study by (Michael, 2006), children who were initially tested before the age of six showed significant declines in their intellectual functioning. The older children (i.e., those initially tested at or after the age of 6) did not show significant changes in intellectual functioning. Thus, for the older children, intellectual functioning remained relatively stable but personal functioning declined, suggesting that age and IQ interact to predict adaptive functioning over time.

Some studies have found strong negative associations between personal functioning and ASD symptom severity. For example, one study found that ASD symptom severity, measured using the Childhood Autism Rating Scale was moderately to strongly negatively correlated with most Vineland standard scores of a large group of children (aged 22–71 months) with ASD. The researchers also found a strong positive correlation between intellectual functioning and personal functioning (Michael, 2006 and Newschaffer, 2007).

Bailey (2011) found that children with Autistic Disorder showed improvements in both personal and interpersonal functioning of daily living and communication skills from early childhood to adulthood, though no changes were noted in the children's social skills from middle childhood to adolescence.

2.6 The relationship of functioning with age

Early diagnosis of autism spectrum disorders (ASD) is critical for a number of reasons, perhaps most important because interventions to improve the functioning of children with ASD may be more effective with younger children. Evidence suggests that early treatment optimizes long-term

prognosis, and treatment yields diminishing returns as children get older (Meyer-Bahlburg, Dolezal, Baker, 2008). Several studies have estimated that the gains in functioning associated with early treatment will result in considerable cost savings to both families of children with ASD and the systems in which they are served. Other research also suggest improvements over time in decreasing the age at which children with ASD, especially higher functioning children, receive a diagnosis (Auyeung , Taylor, Hackett, Baron-Cohen S, 2010).

A growing body of evidence supports the value of early diagnosis and treatment with evidence-based interventions, which can significantly improve the quality of life of individuals with ASD as well as of their careers and families. Particularly noteworthy are early interventions that occur in natural surroundings and can be modified to address age-related goals throughout the lifespan (Baron-Cohen, Knickmeyer, Belmonte, 2005).

2.7 Impact of early diagnosis on ASD diagnosis on functioning

A few definitions have been provided to explain the principles of early intervention (EI) for improving developmental outcomes in young children (Heward, 2003). For instance, EI has been defined as a wide array of components including educational, nutritional, childcare, and family support programs that reduce and prevent the risk of disabilities adversely influencing the lives of children (Heward, 2003).

A research shows that early intensive behavioral intervention for young children diagnosed with ASD has been shown to reduce core ASD symptoms and has demonstrated significant long-term improvements in language acquisition, social skills, cognitive abilities, and adaptive behaviors (Estes et al., 2015; IACC, 2011). According to the Interagency Autism Coordinating Committee of the NIH, the majority of evidence supporting the efficacy of early ASD intervention lies in the implementation of high intensive, evidence-based programs that are delivered by specialized

professionals for 40 hours a week (IACC, 2011). These best practices pose substantial implementation costs and present sustainability and feasibility challenges in low-resource settings (Divan et al., 2015; Peters-Scheffer, Didden, Korzilius, & Matson, 2012).

The general importance of early intervention for autism is widely recognized. ASD is the fastest growing neurodevelopment disorder in childhood, affecting 1 in 160 children (Centers for Disease Control and Prevention, 2014). According to Myers and Johnson (2007), the primary goals of intervention are to maximize the child's ultimate functional independence and quality of life by minimizing the core autism characteristics, facilitating development and learning, promoting socialization, increasing adaptive behaviors, and educating and supporting families. Adaptive functioning has been associated with positive outcomes in ASD, irrespective of cognitive ability (Farley et al., 2009). Development of functional adaptive skills is critical because they prepare children for increased independence in the real world.

The importance of receiving an early diagnosis of ASD and subsequent early intervention is well-established in the literature. However, in surveying 1,420 parents of children with ASD, Oswald et al found that, despite early parental concerns, children in the ASD group were diagnosed later than children in the developmentally delayed group. Late diagnosis is associated with increased parental stress and delays early intervention, which is critical to positive outcomes over time. This is particularly important because studies have found that interventions implemented before age 4 (eg, 12–48 months) are associated with significant gains in cognition, language, and adaptive behavior. Similarly, researchers have linked the implementation of early interventions in ASD with improvements in daily living skills and social behavior. Collectively, this evidence suggests that early diagnosis and intervention are imperative in the long-term trajectories and quality of life for children with ASD (Dawson, 2010).

Children with variety of impairments and risk factors, including those with autism, benefit from early, intensive intervention with trained providers using comprehensive, individualized, and ecologically relevant intervention approaches (Ramey, 1998). Lord (1995) found that over the past few years, children with ASD are diagnosing in the early 2 years of age. Treatments for autism include behavioral intervention, developmental intervention, and cognitive-behavioral intervention; and these have unique intervention strategies and also have some overlap within these interventions (Corsello 2005). Although symptoms often persist through adulthood, timely detection and appropriate treatment are important factors in improving both short and long-term outcomes (Bryson et al., 2003; Marnie, 2005).

Recent research suggests that the most effective results stem from early intensive behavioral interventions (Howlin , 2005). Evidence suggested that early intervention with autism is more effective than later treatment; specifically, children entering intervention programs as young preschoolers tend to have better outcomes than those entering programs as school-age children (Harris & Handleman, 2000; Sheinkopf & Siegel, 1998). Early identification has increased in importance because children with ASDs who receive services prior to 48 months of age make greater improvements than those receive services after 48 months of age (Harris & Weiss, 1998). Early intervention programs are indeed beneficial for children with autism, often improving developmental functioning and decreasing maladaptive behaviors and symptom severity at the level of group analysis (Rogers & Vismara, 2008). An intensive early intervention is critical to maximizing outcomes for children with autism spectrum disorder (ASD), and evidence suggests that the earlier intervention can begin, the better the outcome (Woods & Wetherby 2003).

2.8 Review of Current Literature on Autism Spectrum Disorder in Africa

Autism spectrum disorder was previously perceived and documented to occur only in the well-resourced countries with high technological development. A few decades ago, some questioned the universality of autism spectrum disorder (sauna, 1983). There has since been evidence of an increase in the prevalence of autism spectrum disorder and knowledge about the disorder in other parts of the world (Fombonne, 2001). However, there remains a major gap in what is known about the global burden of autism spectrum disorder, in particular little is known about autism spectrum disorder in Africa. Bakare and Munir (2011), conducted a literature review of autism spectrum disorder in Africa. They found 12 relevant articles, but only 2 reviewed epidemiological data.

The publications were broad studies of autism spectrum disorder including reports of African immigrants in Sweden (Barnevik-, Gillberg and Fernell, 2008), and a study of (Seif, Habib, Noufal, 2008), Arabic speaking countries, which included data from Tunisia and Egypt. In their review, Bakare and Munir (2011), reported that children with autism spectrum disorder in Africa were diagnosed relatively late compared to those in high-income countries. The age of diagnosis was reported to range from 8 years through to adolescence. Moreover, two of these studies revealed that over half of children with autism spectrum disorder in their cohorts did not have any expressive language and/or had severe intellectual disability, which may indicate that only the more impaired cases were identified (Belhadj, Mrad, Halayem, 2006). This delay in diagnosis may also contribute to the lack of appropriate language skills in many of the children with autism spectrum disorder, in part because they did not have access to early interventions.

One of the major practical as well as ethical difficulties in identifying children with autism spectrum disorder in Africa lies in the general lack of appropriate services and inadequate standard of available educational and medical infrastructures (Mung'ala-Odera, Newton, 2006). The lack of

awareness of autism spectrum disorder was not only apparent in the general population in Africa, but also among the medical community. In a survey by Bakare for his workshop presentation, psychiatrists and pediatricians in Nigeria were asked about the causes of Autism. Many regarded autism spectrum disorder to have supernatural causes precipitated by angered ancestral spirits, sinful wrongdoing, predominantly by the mother, or the action of the devil. They reported that it is a common pathway in Africa for a child with a neurodevelopmental disorder to be taken first to a traditional healer, before a parent seeks mainstream medical assistance. This potential delay in seeking mainstream medical assistance may contribute to a late diagnosis and could be a further exacerbating factor in the more severe cognitive and expressive language outcomes reported in children with autism spectrum disorder.

These findings highlight a need for earlier recognition and diagnosis of autism spectrum disorder in Africa. Although in well-resourced countries there are many ‘‘gold standard’’ tools available to screen and diagnose autism spectrum disorder, there are no available validated tools from Africa. The perception of abnormal behavior may be mediated by culture, and screening measures need to take into account contextual factors. Although major global advances in understanding the genetic and developmental aspects of autism spectrum disorder have been made, many aspects of the condition are still poorly understood.

More specifically, there is no research to date exploring risk factors for autism spectrum disorder in Africa. There are reports of increased prevalence of autism spectrum disorder in children of Somali origin living in Stockholm, maternal birth outside the Nordic countries living in Sweden, and mothers of African origin living in the United Kingdom (Bakare and Munir, 2011). These findings suggest that autism spectrum disorder in Africa may be more common than is recognized and emphasize the need for epidemiological research in Africa.

2.9 Studies in Ethiopia

As discussed by Hussein (2016), in his research conducted through qualitative study in order to examine issues related with multiculturalism to effectively intervene with autistic children found in care centers of autism. The study focuses on three autism centers namely Joy center for children with autism and related developmental disorders, Nehemiah autism center and Ryan autism center. This study has essentially examined those interventions that are helpful when working with multicultural children diagnosed with autism spectrum disorder the clandestine affecting such interventions. Findings of this study produced themes separated into three categories: language, accessibility and culture as barriers affecting multi-cultural intervention.

According to Wolde (2017), in his research he strived to answered the research hypothesis he has developed: creative art interventions have a positive effect on eye contact, turn taking, and imitation, recognizing self, following instruction and engaging in social interaction. The results indicate that by engaging a child with autism in creative art therapy intervention was an effective way to improving the social skills of children with autism spectrum disorder.

Master's Thesis conducted by Aynalem (2014) viewed the challenges and coping mechanisms of families living with a child with ASD. Another study by Daniel (2014) explored psychosocial impacts of autism on families and their perceptions on the supports provided at joy center.

Ayele (2014), attempted to test and analyze the data proper statistical procedures were used such as frequency distributions, percentages, t-tests, multivariate analysis of variance and logistic regression analysis. Through these procedures the prevalence rates of children with developmental delays in each developmental domain and in global functioning were determined.

For this age group predictor variables such as level of maternal education, use or non-use of physical punishment, availability or unavailability of playing materials and level of family income

were found to significantly contribute on the outcome scores of children in developmental domains such as gross motor, fine motor and personal social domains of development.

The results of the investigation revealed that 28.13% of infants and young children involved in this research revealed global developmental delay and more delayed development was observed in fine motor domain as 30.53% of children showed delayed development in this domain. From the risk factors evaluated in this research maternal age, low birth weight, physical punishment, unavailability of playing materials, exposure to illness and family size were found to be significantly associated with global developmental delay. However, when predictor variables entered the statistical model the proportion of variance explained by the variables examined was very small in most cases and the largest one was 19.9%, which was the explained variance on communication scores for infants of 18 months age interval. The results of the intervention study showed that infants and young children in comparison group performed better than those in the treatment group.

2.10 theories on autism

The theory of mind

The theory of mind was created by Simon Baron-Cohen, Alan Leslie and Uta Frith in 1985 and is the explanatory theory of the first symptom criteria (A) of the DSM-5 and it tries to explain the persistent deficits in communication and social interaction in various contexts with people with ASD.

The theory of mind is the ability that neurotypical people (people with no apparent mental disorder) have to represent the mental states of others. This ability appears innately during the first stages of child development and is established at around 4-5 years old. Thanks to this ability, we look at social cues in our development and we develop socially. People with ASD have this capacity

impaired (there are different degrees of affect), which is why it is necessary to work on it to strengthen it.

This mental ability not only deals with anticipating behavior in terms of intentions (understanding what they think and/or want another person to do), but it also includes more profound mental states: thinking, believing, knowing, dreaming, cheating, etc. With this ability, we can explain and anticipate the social behavior of other people around us the people who surround us.

Moving in a mentalist terrain is very difficult for people with ASD, since the people with normal development infer information that is not explicit, but a person with autism has a lot of difficulties doing it. People with autism need to break social behaviour down into small pieces in order to understand and learn gradually.

The theory of executive dysfunction

The theory of executive dysfunction was created by Pennington and Ozonoff, 1996; Russell, 1997, and others, and it is the explanatory theory of the second symptom criteria (B) of the DSM-5, and it tries to explain the restricted and stereotyped patterns of behavior, interests and activities of people with ASD(Lisa Jo Rudy, 2018).

Executive functions (EF) are a set of cognitive skills that are put into practice through autonomous activities. These skills, which are also innate, allow us to organise ourselves, be flexible, anticipate, plan, set objectives and goals, control our impulses, etc. These are a set of cognitive processes that act in new situations where we don't have a previous plan of action (Lisa Jo Rudy, 2018).

These are located in the prefrontal cortex. It is the last part of the brain to mature, which occurs from 12 months to 18 years of age, with two notable peaks at 4 and 18 years old.

According to Ozonoff, (1996) and Russell, (1997) there are various neuropsychological functions of EF:

1. Response control. It is the skill to inhibit (not respond voluntarily) immediate motor and emotional responses to a stimulus, event or incident, postponing immediate satisfaction for more important goals in the long term. For example, avoiding crying in a job interview, or shouting when we are angry, since we are capable of anticipating that not doing it, even if we want to, would be better. Another skill also forms part of the capacity for response control: resistance to distraction. This allows us to avoid stimuli that could interfere in the monitoring of a process (distracting us) (Ozonoff, 1996 & Russell, 1997).

2. Working memory. We use this to store information as a pre-requisite or tool to solve future problems. Authors divide them into two types: on the one hand, we find Verbal Working Memory (VWM) which is self-directed talk that allows us to regulate our behaviour independently, that is to say, give ourselves instructions to follow rules and direct our behaviour towards a certain goal (Ozonoff, 1996 & Russell, 1997).

On the other hand, we have Nonverbal Working Memory (NVWM), which is thinking in visual images of the past to guide us in the present. In order to be able to develop NVWM, we need to have retrospective perception, prediction capacity, consciousness and command of times, and the capacity to mimic new behavior (Ozonoff, 1996 & Russell, 1997).

3. Self-regulation of alertness, emotions and motivations. According to Ozonoff, (1996) and Russell (1997), this is another skill that people have to change our behavior (conduct) depending on the context. We do not behave in the same way when we are with the family as we do with work colleagues, even though we continue to be the same person. In order to self-regulate, these aspects require:

- Modulating responses to situations
- Containing and understanding emotional reactions
- Changing emotional reactions if they distract us from the ultimate goal
- Generating new emotions or motivations (Ozonoff, 1996 & Russell, 1997)

4. Efs are necessary for conflict resolution. It is the skill to anticipate and predict the results of an action, activity, etc. It involves:
    - Establishing goals and identifying objectives
    - Planning actions
    - Putting steps in a time and space sequence
    - Prioritizing needs and tasks
    - Starting a task
    - Flexibility in moving from one focus of attention to another, tolerating changes, etc. (Ozonoff, 1996 & Russell, 1997)

Executive Functioning Deficit in Autism

Most kids — by the time they are in middle school — are capable of managing such complex, multi-faceted, time-sensitive, collaborative projects. They may not be perfect, but they understand what is needed to be successful. At a simpler level, younger children are capable of managing the complex process and can respond to the big-picture goal by thinking through the steps required and then by putting those steps into action. They have developed (or are in the process of developing) the set of skills known as "executive functioning" (Ozonoff, 1996 & Russell, 1997).

Why Is Executive Functioning So Tough for People With Autism?

Autism spectrum disorder is characterized by certain personal abilities and deficits. Most (though not all) people with autism:

- Are great at seeing details clearly, but have a hard time seeing a big picture and understanding which details are most relevant to that big picture.
- Are good at following schedules and routines, but have a difficult time flexibly changing those schedules or routines.
- Can understand and follow rules, but get upset when rules are broken or bent.
- May have difficulty in sustaining focus and motivation when engaged in something that is not intrinsically interesting to them.
- Have a hard time switching from one activity to the next.
- Have a difficult time effectively communicating wants and needs to others.
- May not imitate others' behaviors without being directly instructed to do so
- Have challenges with "working memory"
- Can work with concrete objects and expectations more readily than with abstract ideas.
- Have difficulty with "theory of mind" (understanding that others' do not know, share, feel, or understand what is inside your own mind) (Ozonoff, 1996 & Russell, 1997).

Looking at this list, you will probably notice that most of these qualities are in direct conflict with the qualities required for good executive functioning.

Some people with autism will never have good executive functioning skills. however, it is possible to build and work around the need for such skills — in some case making it possible to manage complex situations without much difficulty (Ozonoff, 1996 & Russell, 1997).

Building Executive Functioning Skills

Below are a few techniques that can help to increase and strengthen executive functioning:

- Direct Instruction: Certain aspects of executive function can be taught through ordinary instruction and drilling. While most people seem to internalize these skills without direct

instruction, there are plenty of people — autistic or not — who can benefit from ordinary time management instruction.

- Role Play: By role-playing and talking through such challenges, many autistic people can practice and become more skilled at planning and take logical action.
- Setting up Practice Challenges: At home or in the classroom, it is possible to set up low-stress situations that require executive functioning skills. Ordinary tasks like washing, drying, folding, and putting away clothes require multi-step planning, time management, and tenacity.
- Developing Social Stories for Flexibility: Social stories, particularly when written together, can provide answers to such questions so that anxiety does not interfere with getting the task done.

Workarounds

While it's possible to build some executive functioning skills, chances are that people with autism will find such skills tough to master. For that, there are workarounds like these:

- Use applications to manage time. Alarms, visual timekeepers, and other tools can keep autistic people on track, even when they are not thinking about time.
- Use visual reminders and schedules. A laminated photo-based step-by-step poster can keep you on task.
- Break it down. Consider breaking tasks into smaller chunks
- Try carrots rather than sticks. Consider offering small, tangible rewards for a job done well and completely.
- Use a buddy system. It can be hard to stay on track when you are easily distracted or not especially focused on the task. With a friend, especially one who is focused on the process, you may be more successful.

- Simplify the process. Cut two steps out of the process and still arrive at the same goal (Ozonoff, 1996 & Russell, 1997).

2.11 Theoretical Framework of the Study

This study has employed a theoretical framework to shape the data collection and analysis. Lisa (2008:873) defined theoretical framework as any empirical or quasi-empirical theory of social and/or psychological processes, at a variety of levels (e.g., grand, mid-range, and explanatory), that can be applied to the understanding the impact of *early intervention on personal and interpersonal functioning of children with autism found in joy center*. Thus, the researcher used a theoretical framework for the guidance of the study and tried to provide a simplified model regarding impact of *early intervention on personal and interpersonal functioning of children with autism*. The model attempts to integrate the different assumptions of the theories indicated in the forgoing discussions.

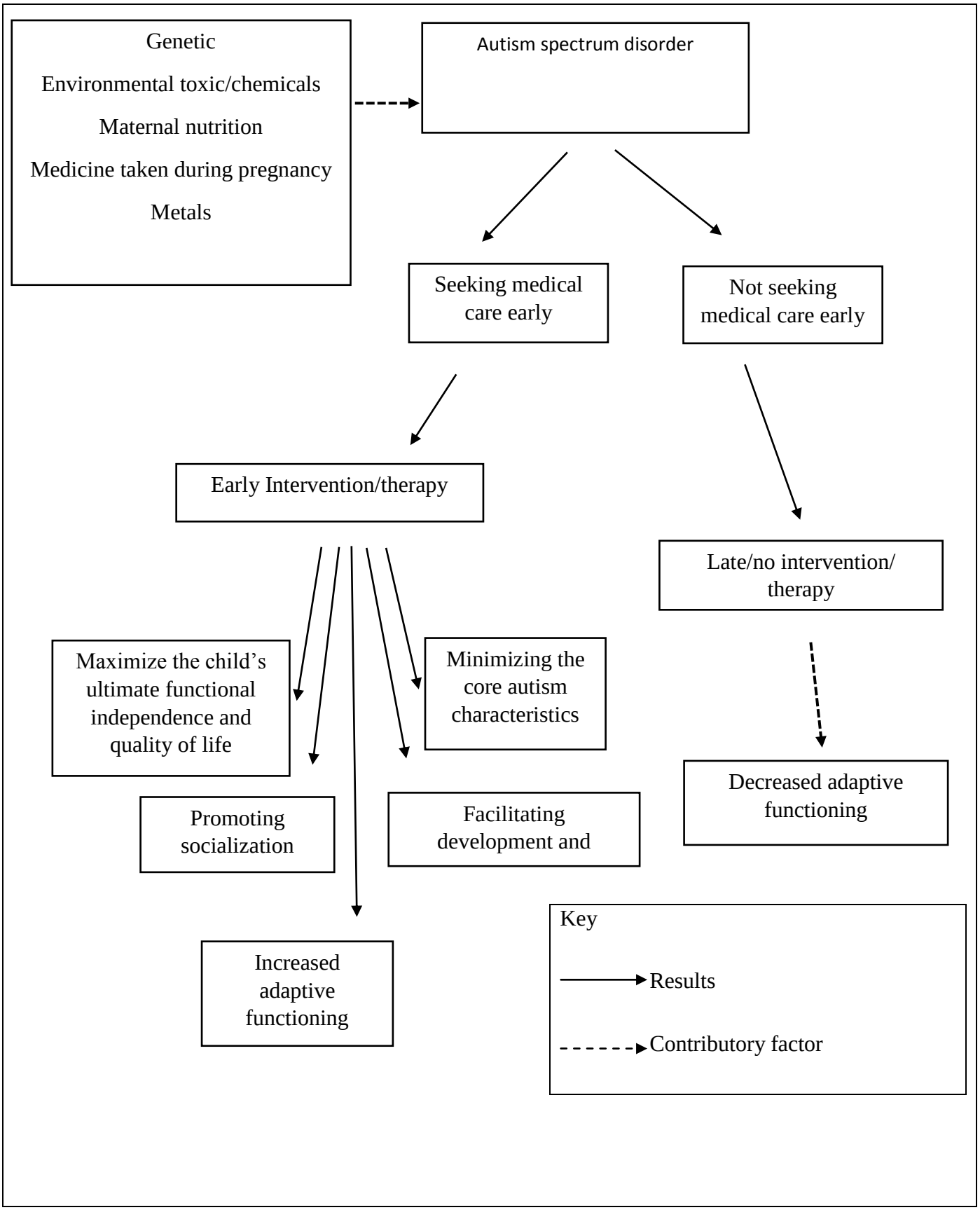

Figure 1 personal and interpersonal functioning of children with autism found in joy center.

CHAPTER THREE

METHOD

The study was conducted with the aim of examining the personal and interpersonal functioning of children with autism. Hence, in order to better achieve its objective, the study employed both qualitative and quantitative study. Initially, it employed a qualitative research using primary data sources. The researcher employed developed standard tool to measure the personal and interpersonal functioning of the children after the intervention. Detail description of the entire processes of the study is presented as follows.

3.1 Research Design

Both qualitative and quantitative, frequently referred to as the 'third methodological orientation' (Teddlie and Tashakkori, 2008), draws on the strengths of both qualitative and quantitative research. Both qualitative and quantitative study design was conducted from April to June 2019 to broadly explore and understand the impact of early intervention on personal and interpersonal functioning of children with autism. This research was guided by research questions. This type of model focuses on the holistic perspective of the person and environment, which is more compatible with an integrative approach (Weaver & Olson, 2006).

Because the nature of the research required the researcher to use both qualitative and quantitative approaches, the researcher used quantitative and qualitative method. The researcher used Vineland model as a questionnaire to asses functioning of children. Besides, in order to measure intervention type and implementation the researcher also used key informant interview.

3.2 Study setting (study area)

This research focused on Nia Foundation (Joy Center for Autism). The researcher chose this site for the reason that it was the only centers that allowed the researcher to conduct the research on the children.

Initiated in May 2002, Nia Foundation (joy center) is an indigenous, nonprofit and non-governmental humanitarian organization established from the outset to alleviating the all rounded challenges faced by persons with autism and other related developmental disorders, and young men and women living in challenging socio-economic circumstances. Joy center has a compound located in a peaceful neighborhood in Addis Ababa. The compound consists of therapy rooms where various forms of therapies are provided for the children. There is also a playground in the compound for the children to use. The staff is highly dedicated in training the children to be capable in daily life skills such as toilet training, communication and self-feeding. As mentioned, the organization is nongovernmental organization founded by self- initiated individual, Zemi Yenus, who have a child with autism and is striving to reach for parents that are in a similar situation (nia foundation, 2015).

3.3 Population, sample and sampling technique

3.3.1 Population

The researcher took 59 autistic children from joy center. Twenty-five of them were female and 34 of them were male. Ten children were found above the age of 11. From among the participants, twenty-one of them were in the age range 12 to 15. On the other hand, 23 participants were between the ages of 16 to 20. Lastly, five students were found above 20.

Since the number of children with autism in the center is very few (59), all of them were included in the research. The researcher also intended to investigate the experiences of the staff in the organization as the staff work closely with children. As a result, it was necessary to recruit the

staff as participants to provide crucial information. Participants were selected with assistance from the founder of the organization. Two key informant interviews were conducted and 59 autistic children were part of the quantitative data collection. The unit of analysis in the study is that the autistic children's functioning and the observation units were the nurses and care givers.

3.3.2 Sampling technique

While collecting the qualitative data, the researcher used non-probability sampling. A purposive sample, is a nonprobability sample that is selected based on characteristics of a population and the objective of the study. Based on that, with the help of the founder of the organization, Zemi Yenus, two key informant interviews were conducted from the head of the organization, Mr. Yonas and the head of the staff, Mrs. Helen.

For the quantitative data, the sample size was not predetermined as well. This was done for the reason that Joy center has only 59 children, all which are diagnosed with autism spectrum disorder. Hence, the data was collected from each stage/class that the children are enrolled in. The unit analyses were the children with autism, and the observation units were, the nurses, and the staff who work close with the children.

Table 1

Dependent and independent variable

Dependent variable

- ✓ Personal and interpersonal Functioning of children with autism

Independent variables

- ✓ Early intervention

Other variables (Socio demographic)

- ✓ Child
  - Age
  - Gender
  - Age of beginning intervention

3.4 Sources of data collection

3.4.1 Primary data

The study relied on qualitative and quantitative data. Therefore, key informant interview and structured questionnaire was employed to collect and analyze the data needed to address the objectives of the study. Employing these methods can help the researcher to produce appropriate and in-depth information by collecting information from the target population and knowledgeable individuals about the subject under study using both etic and emic perspectives. In order to show the emic perspective, the researcher narrates the words of participants verbatim. The researcher also uses personal interpretations and gives meanings to what is said by the participants.

3.5. Data collection instruments

The study used structured questionnaire and Key informant interview using interview guide.

3.5.1 Key informant interview

Key Informant Interviews involve interviewing people who have particularly informed perspectives on an aspect of the program being evaluated (Creswell 2014). The purpose of key informant interviews was to collect information from a variety of people. In order to assess type of intervention and its implementation process, the researcher interviewed two key informant interviews from Nia foundation. The focus of this was on identifying the kinds of intervention program that are given by the organization and to assess the implementation of intervention. Intervention management planning (e.g. Objectives of the intervention, the theory behind, the characteristic of different interventions), the implementation of activities (such as the duration, follow up and evaluation of program) and factors associated with early intervention on personal and interpersonal functioning of children with autism and related challenges and issues of institution was explored.

One of the key informant was the head of the organization, Mr. Yonas, who has majored in special needs and the other head of the staff, Mrs. Helen, who has majored in social work. The key informants were chosen with the help of the founder of the organization, MRS Zemi Yenus.

3.5.2. Structured questionnaires

Surveys or questionnaires are instruments used for collecting data in survey research. They usually include a set of standardized questions that explore a specific topic and collect information about demographics, opinions, attitudes, or behaviors (Creswell 2014). The researcher used developed instrument by other researchers to further explore the research question, personal and interpersonal functioning of the children after the intervention was given in each and every stage (room).

3.5.2.1 Vineland Adaptive Behavior Scale – III

The Vineland-3 is a standardized measure of adaptive behavior--the things that people do to function in their everyday lives. Whereas ability measures focus on what the examinee can do in a testing situation, the Vineland-3 focuses on what he or she actually does in daily life. Because it is a norm-based instrument, the examinee's adaptive functioning is compared to that of others his or her age.

Purpose

- Measure of personal and social funtioning (adaptive behaviors) needed for everyday living
- Ages 0 through 90
- Intellectual disabilities, developmental delays, autism spectrum disorders, and other impairments of p ersonal care and social skills functioning.
- Assesses adaptive behaviors and function in the school environment.

Response option of vineland-3

Table 2

Response option of vineland 3

0	Never	In this context never is to mean that an action is not done (0 days a week).
1	Sometimes	In this context sometimes is to mean that and action is done 1-3 days a week
2	Usually	In this context usually is to mean that an action is done more than 4 days a week
4	IDK (I don't know)	In this context IDK is to mean that an action isn't recognized by the caregiver

Domains

- Communication Skills: speaks, understands others, and uses written language.
- Daily Living Skills: practical skills and behaviors that are needed to take care of oneself.
- Socialization Skills: skills and behaviors needed to get along with others and use in free-time activities.
- Motor Skills: uses arms, legs, hands, and fingers for movement, coordination, and to manipulate objects (Ages 3 –6 years old)

There are three types of ways to conduct this data; Interview, Parent/Caregiver and Teacher fill out form. In addition, there are four adaptive domains namely, Communication, Daily Living Skills, Socialization, Motor Skills Maladaptive Sections. The domain has 11 Subdomains, Receptive, Personal, Interpersonal, Gross Motor, Expressive, Domestic, Play/Leisure, Fine Motor, Written, Community, and Coping Skills.

From the above subdomains, the researcher only used two subdomains, personal and interpersonal sub domains. The justification behind this are two. The first reason is the instrument actually has questions that are not relevant for the study purpose or for the context of Ethiopia; the

second reason is that it is not practical to use all the questions due to the fact that this study focuses on functioning, which is a wide topic that needs to be narrowed down.

Reliability

Reliability of the instrument

The Internal Consistency Reliability of the instrument is found to be above 0.8

Table 3

Reliability of vineland adaptive behavioral scale 3

Domain	Interview	Parent	Teacher
Communication	.95	.97	.97
Daily Living Skills	.94	.97	.96
Socialization	.96	.98	.98
Adaptive Behavior Composite	.98	.99	.99
Motor Skills	.90	.96	.96
Communication	.93	.94	.93
Daily Living Skills	.92	.93	.92
Socialization	.94	.95	.95
Adaptive Behavior Composite	.97	.97	.97
Motor Skills	.86	.91	.91

Reliability of personal and interpersonal domain.

Table 4

Reliability of personal and interpersonal domain.

Variable	Cronbach's Alpha	Item items
Personal subdomain	0.985	51
Interpersonal subdomain	0.956	43
Total	0.987	94

Reliability is the extent to which results of a study are consistent over time and there is an accurate representation of the total population understudy. The aim of reliability analysis is to find

the extent to which a measurement procedure produced the same result if the process is repeated under the same conditions. The most common technique used in the literature to assess the scales reliability and stability is use of the Chronbach Alpha Statistics. Chronbach Alpha should be over 0.70 to produce a reliable scale and any scale with Chronbach Alpha less than this standard should be eliminated**.** The researcher conducted pilot survey on the questionnaire the researcher conducted the Pilot study on March 2019 in Joy autistic center. Six questionnaires were distributed for nurses and care givers to fill the questionnaire for six students in each class. The result of this reliability statistics is 0.987 this is acceptable and instrument is reliable.

3.6 Procedure of data collection

Prior to the data collection step, the proposal for this study was submitted to Addis Ababa University School of Psychology. The proposal passed through all the necessary requirements and permission provided ahead of the data collection step. For the purpose of this study, proper oral consent was acquired from the organization through submitting the proposals, AAU permission paper and official letter from the supervisor to the organization. The founder and concerned body at the organization carefully observed the proposal and AAU permission letter before allowing the researcher to conduct the study. In addition, proper discussion regarding the type of research procedure to be conducted was discussed between the researcher and the founder at the organization.

After getting to the organization, the researcher was invited to visit the compound. The researcher had been working as an intern the past 5 months before collecting the data. Int the first phase of collecting the data, interview was conducted with selected participants in one of the classes. Because children's voice was disturbing the researcher and affected the recorded audio, the researcher asked another place for interview. Based on the researcher's request, following interviews were conducted at the manager's office. The second phase of collecting the data, the researcher had a

session with the caregiver on the producer of the instruments and necessary explanation were given before filling them out. Each caregiver was given an instrument according to the number of children they took care of. This part took about 3 days, as the care givers had to work, and they do this in their extra time or during break.

3.7 Data Analysis

The researcher used both quantitative and qualitative method was used. Qualitative data was first collected, and quantitative instrument were used to further explore the research problem. Data analysis for a research generally proceeds from data collection to organizing data in some meaningful form, understanding, and analyzing data to interpreting and presenting (Creswell, 2003).

3.7.1 Qualitative data analysis

In this study, data was collected from the people who work in the organization. Primary qualitative data included key informant interview with the organization staff, Interviews and questioners were arranged and organized into files and folders. Then, the researcher grouped the data and presented based on the objectives (Riessman, 2008).

3.7.2 Quantitative Data Analysis

Data scoring and analysis

This study attempted to see the functioning of children with autism spectrum disorder. The quantitative data was entered into statistical package for social scientists (SPSS) version 20 software. Frequencies and distribution were examined to check for out of range values and other errors in the data. The functioning level of the children was computed by adding the values of all items of personal and interpersonal subdomain and dividing for total number of items. Likewise, functioning of children in personal and interpersonal subdomain was computed by calculating the average of all items under personal and interpersonal subdomain respectively. After data cleaning, data was

presented by statistical tools (graph and tables) and descriptive analysis by using frequency, percentage, mean, standard deviation was performed. Multiple linear regressions and one-way Analysis of Variance (ANOVA) were used. To determine the significance level p value and 95% confidence interval (CI) were used. Variables with $P \leq 0.05$ were considered as statistically significant.

3.8 Ethical Consideration

In relation to ethical consideration of participants, the researcher prepared an organized informed consent form. The informed consent form clarified the goals of the study and the nature and duration of activities that was performed during the study. It clearly stated that the data participants provide will only be gathered by the researcher. No attempt will be made to coerce participants to be part of the study. The written consent ensured the confidentiality and anonymity of participants. However, it clearly stated to the owner of the organization that anonymity cannot be insured for them since they can easily be identified due to their position at the organization. The consent form was prepared both in the English and Amharic languages. The participants were allowed to sign using their language of preference names of the participants has been changed for reasons of confidentiality.

CHAPTER 4

DATA ANALYSIS

This chapter presents both qualitative and quantitative data analysis. Quantitative data such as descriptive and inferential statistics of the general information, Stage of intervention, Intervention and implementation process, Functioning of children on each subdomain items, Relationship between stage of intervention and functioning on children with ASD, Relationship between chronological age and functioning of children with ASD, and Relationship between early intervention and personal and Interpersonal functioning of children with autism are presented. In addition, to support the quantitative data, key informant and in-depth interview results on intervention, function, personal and interpersonal functioning is presented.

4.1 Descriptive statistics of general information of participants

Table 5

Socio demographic characteristics of children

Variables	Frequency	Percent	Valid Percent	Cumulative Percent
Sex				
Male	34	57.6	57.6	57.6
Female	25	42.4	42.4	100.0
Age of child				
Below 11	10	16.9	16.9	16.9
11- 15	21	35.6	35.6	52.5
16-20	23	39.0	39.0	91.5
Above 20	5	8.5	8.5	100.0
Age at starting intervention				
Below 7	36	61.0	61.0	61.0

7 and above	23	39.0	39.0	100.0
Total years in intervention				
1-5	16	27.1	27.1	27.1
6-10	26	44.1	44.1	71.2
11-15	17	28.8	28.8	100.0

Majority of the children were male 34(57.6%) and 23(39%) of the children were between 16-20 age group. Most 36 (61%) of the children started intervention below seven years old and about 26(44.1%) of the children stayed in intervention for six to ten years. About 12(20.3%) of the children were in the academic stage (table 5).

Table 5 also indicates the number of female children is lower than the number of male children, which is 42.4% and 57.6% respectively. Children below the age of 11 are 16.95%, children between the age of 11 and 15 are 35.59%, children between the age of 16 and 20 is found to be the highest percent which is 38.98% and children who are above the age of 20 are 8.5% which indicates that they are the lowest in number. It also shows that children who started intervention below the age of 7 are 61.02% and children who started intervention at 7 and above are 38.98%. It also points out that there are 27.12% students who have been following the intervention for 1-5 years, 44.07% of the students for 6-10 years and 28.81% for 11-15 years.

4.2 Stages of intervention

Table 6

Descriptive statistics of stage of intervention

	Frequency (%)	Mean	Rank in descending
Academic	12(20.3)	1.17	1
Pre academic	8(13.6)	0.74	2
Occupation	11(18.6)	0.70	3
Speech	11(18.6)	0.38	4
Attending 2	10(16.9)	0.27	5
Attending 1	7(11.9)	0.19	6
Total	59(100)	0.61	

Table 6 indicated that majority of the children were in academic 12(20.3%), occupation 11(18.6%) and speech 11(18.6%). Children in academic stage were best performing (1.17) as compared to the others. The second and the third stage in which the children were more functional were pre academic (0.74) and occupation (0.7) respectively. The functioning of the children was low and below the mean in speech (0.38), attending 2 (0.27) and attending 1 (0.19) respectively.

4.3 Intervention and implementation process

4.3.1 Intervention

The findings obtained from the interview participants revealed the nature of the intervention in the Center under consideration. For example,

"In the past 17 years, there have been many treatments developed for children with autism, evolving from different philosophies in joy center." Says MR. Yonas.

"These include behavioral interventions, developmental interventions, and cognitive behavioral interventions. While each program is based on a different philosophy and uses unique intervention strategies, there is also considerable overlap in components of the programs."

As the data from key informant interview indicates most interventions are designed to do one or more of the following things. It can increase adaptive behaviors, such as social skills, communication skills or imaginative behaviors, it can reduce or eliminate problematic behaviors, such as self-harm or aggression towards others, it can treat co-existing conditions, such as epilepsy or gastro-intestinal problems, it also Improve or enhance the quality of life of the person on the autism spectrum.

Joy Center is aware of the growing number of interventions being associated with the treatment and management of Autism Spectrum Disorder. Individuals with Autism, each with their own

unique personalities, will require access to a menu of specialized strategies, interventions and support throughout their lifetime. The following quotation supports this idea.

"*Joy center is therefore committed to the provision of information on current interventions and has responsibility to enable parents, professionals and individuals with Autism to make informed choices."* MR Yonas

4.3.1.1 Steps in the intervention process

Results from the key informant interview shows that, treatment is likely to be most effective when it is individualized and when it is conducted as soon as possible after concerns are noted. The key informant further reported that it is important to conduct a comprehensive assessment of the child's developmental status before treatment.

Key members of the assessment team often include a developmental pediatrician or other healthcare provider with expertise in autism, a speech and language pathologist, a psychologist, and an educational consultant." MR. Yonas

MR. Yonas also mentioned that parents and the members can use results from the evaluation to develop a treatment program that is tailored to the child's strengths and needs. Basic steps that Joy center follows are listed below.

Step1. Conduct Assessment

Conducting assessment may take one or more appointments with a team of different professionals.

"The first step is conducting an assessment. For children the assessment team may ask parents about their child's development, such as when they started talking, watch how parent and child

interact, and how the child plays, read any reports sent by the GP (if available).” MR Yonas further added

“Diagnostic Assessment will be made using three things, The Autism Diagnostic Interview-Revised (ADI-R) which is a semi-structured, investigator-based interview for caregivers of children and adults. The Prelinguistic Autism Diagnostic Observation Schedule (PL-ADOS) is a semi-structured observation scale for diagnosing children who are not yet using phrase speech and who are suspected of having autism. And the Childhood Autism Rating Scale (CARS) to formalize observations of the child's behavior throughout the day.”

Step 2. Develop intervention plan

There are many approaches, therapies and interventions for improving the lives of autistic people that were made throughout the years, which joy center uses.

“No two people are the same, so choosing the right ones for you or the person you support can be a challenge. There is a huge range of interventions for ASD. They range from those based on behavior and development to those based on medicine or alternative therapy. Some interventions combine several different types – for example, a mix of behavioral and developmental approaches. MR. Yonas

Step 3. Determine Progress Monitoring Procedures

When an intervention is implemented, it is important for families and providers to determine whether the intervention is working. Intervention plans include an explicit description of the data collection procedures that will be used to monitor the individual’s progress in response to the intervention. As stated by the head of the organization, MR. Yonas

"Data from the initial assessment for intervention planning or other data collected prior to beginning the intervention serve as a baseline – the standard by which progress is measured. Comparison between baseline data and progress monitoring data helps families and providers determine if the intended changes in behavior are occurring".

4.3.1.2 Types of Intervention Used in Joy center

Put simply, an intervention is any kind of activity that is designed to improve child's quality of life. Treatments, therapies and provision of services are typical examples of an intervention, but there are many different kinds, and the number increases all the time.

The Head of the staff, MRS Helen says

"The programs that Joy center provides are, the Denver model, Family Involvement, applied behavioral analysis programs, speech therapy, occupational therapy and Medication".

1. **The Denver model**

The Denver model, which was created, by Rogers & Lewis, 1989 is also based on a developmental model of intervention.

"In joy center this program is delivered within a classroom setting that is on a 12-month calendar and meets 4 to 5 hours a day, 5 days a week. The focus is on positive affect, and interpersonal interactions within a structured environment. Almost all activities and therapies are conducted within a play situation." MRS Helen

Children demonstrated significant developmental improvements in cognition, language, social/ emotional development, perceptual/fine motor development, and gross motor development after 6 to 8 months in the program, after accounting for expected developmental progress.

2. Family centered approach

A family centered approach is characterized by practices that treat families with dignity and respect; information sharing so families can make informed decisions; family choice regarding their involvement in and provision of services; and parent/professional collaborations and partnerships as the context for family program relations.

In line with this, joy center believes that Parent involvement is crucial in implementing strategies and new techniques into the daily lives of children with autism. MRS Helen said

"The amount of parent involvement could possibly be the most important of all strategies to allow for carry over. The reason for this is that it allows for more family support due to the focus of the caregivers needs. By allowing this, parents and guardians are able to understand how to teach their child while also being able to sustain challenging behaviors that might be exhibited."

As Mr Yonas and Mrs Helen said, Intervention that focuses exclusively on child's changes without meaningful family involvement may, in fact, compromise outcomes because, in addition to lower levels of parental depression, higher levels of parental involvement are associated with their increased knowledge of ASD, increased parent-child interaction, and improved outcomes for children with ASD.

By allowing for a strong family-professional partnership, Joy Center believes that confidence is gained paired with a sense of empowerment within family members or caregivers. Results of parental empowerment are increased in likelihood that the caregiver will communicate with professionals about concerns. Family and caregivers will also feel comfortable in continuing to incorporate newly learned skill with their child.

3. Applied behavioral analysis programs

ABA is defined as the process of applying behavioral principles to change specific behaviors and simultaneously evaluating the effectiveness of the intervention. ABA emphasizes both prevention and remediation of problem behavior. In joy center, as similar as the ABA program, significant attention is given to the social and physical environment, including the antecedent conditions and consequences that elicit and maintain behavior.

"*Numerous empirical studies have documented the effectiveness of ABA with individuals with ASD. These interventions should typically be provided under the supervision of a trained behavioral psychologist or behavior analyst. Research suggests that the best outcomes occur when ABA is initiated early in development, preferably prior to 5 years of age, which is opposed to what is being done in the center. This is due to Lack of awareness and fear of stigmatization the parents hold from going out and looking for help."* MR Yonas

There is an ongoing debate about the amount of ABA needed in order for it to be optimally effective, with recommendations typically ranging from 15 to 40 hours per week, depending on whether ABA is being applied to comprehensive educational programming in the schools or to a targeted behavioral treatment program.

"Training caregivers to provide ABA in the home or community settings is an important part of most ABA programs, and teleconsultation is proving to be a useful and effective strategy for providing ABA different areas, which is one of the long term plans of joy center. MR Yonas.

This intervention can be used with all ages and ability levels, and ABA principles are often included as part of effective early intensive intervention programs. The following specific ABA interventions, which are being practiced in the center, are described in greater detail.

A. Pivotal Response Training (PRT).

PRT as a systematic method for applying the scientific principles of ABA. PRT builds on a child's initiative and interests, which makes it particularly effective in developing communication, play, and social behaviors. This strategy, as mentioned by MR Yonas,

"Enhances the pivotal learning variables of motivation, responding to multiple cues, self-management, and self-initiation, which serves to influence target behaviors within a natural setting. The effectiveness of PRT is increasing in motivating and improving language and play skills."

It is recommended that PRT be implemented by caregivers and teachers in natural contexts; it is considered cost- and time-efficient considering Ethiopia's situation in general and joy center in specific. This intervention can be used with children through adults with mild cognitive impairments and with those who have at least a minimal level of receptive and expressive language.

"Joy center uses this model and often incorporates the use of errorless learning, shaping, modeling, prompting, facing, correction, and reinforcement to encourage skill acquisition. It is especially well-suited for skills that can be taught in small, repeated steps. PRT can produce powerful behavioral outcomes in the areas of language, motor skills, imitation and play, emotional expression, academics, and the reduction of self-stimulatory and aggressive behaviors." MRS Helen

4. Speech Therapy (Abogida phonetics)

Speech therapy emphasizes improving spontaneous language and maximizing the child's communication skills. In this case, the development of speech is very important in order to help the child to communicate his needs with the help of speech therapy.

"Abogida phonetics, which is created by the owner herself, is a form of speech therapy that helps to improve language and maximize children's' ability to speak their mother tongue, i.e. Amharic". MRS Helen

5. Occupational Therapy

An age appropriate task basis is assessed first and then addressed the areas that interfere with the child's ability to function in such tasks. As MR Yonas speaks

"this t*herapy is provided to the children in the form of play activities which are used to improve the fine motor co-ordination, which helps the children to use pencil for writing, catch the ball, cut papers, buttoning, picture books to naming animals, engage in play activities, and it also help to enhance and maintain play, self-help and school readiness skills."*

6. Medication

The use of pharmacological treatments for symptoms of ASD is both common and challenging. Several psychiatric disorders in children are successfully treated by medications, and many of these disorders have symptoms that overlap with those seen in children with ASD (e.g., hyperactivity, inattention, tics, obsessive-compulsive behaviors, depression, anxiety, sleep problems, etc.). MR Yonas further stated that

"Although, there are no medications that directly treat characteristics of individuals with ASD, the medications used most frequently for children and adults with ASD, in joy center, include antipsychotics, selective serotonin reuptake inhibitors (SSRIs) to treat mood and repetitive behaviors, and stimulants and other medications used to treat attention deficits and hyperactivity."

The evidence base is good for using atypical antipsychotics (e.g., risperidone and aripiprazole) to treat challenging and repetitive behaviors, but there are also significant side effects associated with

the use of these drugs. There are some well-designed studies supporting the use of SSRIs and stimulants with patients with ASD, but the evidence base is not as strong as for the antipsychotic medications.

4.3.2 The implementation process Across Service Delivery Systems

When intervention is implemented into the daily life of a child with autism, there are certain guidelines as to which programs are to be used. Guidelines are based on programs used in evidence-based practice in which researchers, which have produced overwhelming success in the therapy process when working with several different individuals diagnosed with autism.

"Two aspects of intervention that are common to most intervention programs designed for ASDs and have empirical support include the intensity of the program and the age at which children should begin intervention." MR Yonas and MRS Helen

4.3.2.1 Intensity

Days per week - The question regarding number of days per week proved somewhat difficult to answer for the interviewees, as the number of days per week depends on the student. The interventions took 5 days per week, followed by 4 days per week, then 3 days per week.

Hours per week - Regarding the number of hours per week most students receive, responses reflect the wide range of our options currently being provided for students with ASD. The highest hours of responding program directors indicated students receive is 40hrs per week, followed by 35hrs per week. Programs providing 25-30.

Student-to-staff ratio - Interviewees also had difficulty providing information regarding student-to-staff ratio. In most classes the student-to-staff ratio is 1:3, while a few classes had ratio of 1:6. This is due to the fact that, in different stages, different approaches are being used.

4.3.3 Trainings given in each stage

4.3.3.1 Attending room one and two

According to Joy center, a child needs basic training. The focuses of these rooms are on toilet training and controlling themselves. MRS Helen articulates

> "*These rooms are the most important rooms in the center as they are the ones that children get in when they are enrolled."*

The basic but hardest work rely in this room, where the students learn to control themselves, sit in one place for minutes, start to make an eye contact, and unlearn to hurt themselves.

4.3.3.2 Occupational room

The therapist observes children to see if they can do tasks that, they are expected to do at their ages, getting dressed or playing a game, for example. Sometimes, the therapist will have the child videotaped during the day in order to see how the child interacts with his or her environment so that he or she can better assess the kind of care the child needs. Once a therapist has gathered information, he or she can develop a program for the child. MRS Helen stated that

"There is no single ideal treatment program. However, early, structured, individualized care has been shown to work best. The therapists do, of course, work on physical skills. Since people with autism often lack some of the basic social and personal skills required for independent living, therapists have developed techniques for working on all of these needs."

Provide sensory integration interventions to help a child appropriately respond to light, sound, touch, smells, and other input. Intervention may include swinging, brushing, playing in a ball pit and a whole gamut of other activities aimed at helping a child better manage his body in space.

4.3.3.3 Speech Room

Almost anyone diagnosed with an autism spectrum disorder will be recommended for speech therapy. In some cases, this makes perfect sense: many autistic children have limited or compromised speech, and clearly need help in forming words and sentences. Nevertheless, even verbal people with high functioning autism are likely to receive speech therapy. That is because, while they can form words and sentences, they are likely to misuse and misunderstand language on a regular basis.

Abugida phonetics, created by Zemi Yenus, involves the treatment of speech and communication disorders, which means it is a very wide-ranging field. Abugida phonetics can help children with stutters or lisps to pronounce the Amharic words correctly, but they can also help children with developmental disorders to understood and use spoken language in a social context.

"The therapists can play a major role in helping an autistic child learn to communicate and engage with other people. Depending on the setting (school, home, office), therapist may work 1:1 or in groups; depending on the child's functional level the therapist may work on one or all these skills, Nonverbal communication, Body language, Asking and answering questions, Speech pragmatics, Prosody, Grammar, Conversation skill, Concept skill and Social skill." MRS Helen

4.3.3.4 Pre academic room

"In pre academic class different concepts will be thought. This is a class where the children are able to learn different concepts and ideas" MRS Helen

In this room, skills, which will help the child to learn the basic concepts, like shape, size, color, alphabets, and numbers. The children will be taught by different techniques by using drawing,

painting to learn the color concepts, shape and size concepts. Then slowly the alphabets and numbers will be taught.

4.3.3.5 Academic Room

Academic room is the last room an autistic child can join in joy center. This is the class where the children learn slightly challenging skills than the rest of the rooms. Different training are given to the children. Trainings includes simple Activities on the Computer, solving different mathematics problems and equations, and language/speech therapy in higher level.

"In addition to those, self-skill training is also given to the children in which they can use in their day-to-day lives. Children go out for walking and learn to walk on their left side using sidewalks; they go to cafes and order what they want. They even go for shopping and buy what they are asked to buy which helps them to understand the value and currency of money, and afterward they use what they bought to cook simple meals and serve the staff." MRS Helen

4.3.3.6 Other Shared Rooms

A. Television/music room

Music therapy is a well-established and risk-free technique for using musical interaction to help individuals with a wide range of cognitive and emotional challenges to improve their ability to function.

"By interacting with adults and children on the autism spectrum, therapists can build skills, lower anxiety, and even develop new communication skills. Music therapy can help people with autism to improve skills in areas such as communication, social skills, sensory issues, behavior, cognition, perceptual/motor skills, and self-reliance or self-determination." MRS Helen

People on the autism spectrum are often especially interested in and responsive to music. Because music is motivating and engaging, it may be used as a natural "reinforcer" for desired responses. Music therapy can also help those with sensory aversions to certain sounds to cope with sound sensitivities or individual differences in auditory processing. Weekly music therapy sessions can have a positive effect on behavior in children with autism.

B. Sensory integration room

Sensory integration is a term that has been used to describe processes in the brain that allow us to take information we receive from our five senses, organize it, and respond appropriately.

Autistic children often have sensory integrative dysfunction, problems with their sense of touch, smell, hearing, taste, sight, body coordination, and movement against gravity. Along with this might possibly be difficulties in movement, coordination and sensing where one's body is in a given space.

"Sensory integration also uses therapies such as deep pressure, brushing, weighted vests, and swinging. These therapies appear to sometimes be able to calm an anxious child. In addition, sensory integration therapy is believed to increase a child's threshold for tolerating sensory-rich environments, make transitions less disturbing, and reinforce positive behaviors." MRS Helen

C. Toilet training room

Teaching a child to use the toilet correctly can be a difficult task, whether they are on the autism spectrum or not. However, when a child is autistic, the process of developing a toilet routine can take longer, and involve its own particular challenges. Independent toileting is the ultimate aim and may take many months but there will be many small steps and successes along the way.

"*As well as physical factors associated with toilet training, there are social factors to consider. Joy centers guide for Toilet training includes Developing a toileting routine, Dressing and undressing,*

Hand washing, Boys - sit or stand, Bowel control, Habit training, Environment, and Night-time trainings." MRS Helen

4.5 functioning of children on personal and interpersonal subdomain

4.5.1 Personal subdomain

Table 7:

Lowest to highest functioning of children on personal subdomain items

No	Personal subdomain Items	N	Sum	Mean	Status
1	Selects appropriate clothing for wet/cold weather	59	0	0.000	✕
2	Chooses to exercise for health and/or enjoyment	59	0	0.000	✕
3	Makes healthy eating choices	59	0	0.000	✕
4	Plans for changes in weather before going out	59	0	0.000	✕
5	Shows awareness that exercise is good for people	59	1	0.017	✕
6	Fastens snaps	59	3	0.051	✕
7	Covers mouth and nose when coughing or sneezing	59	4	0.068	✕
8	Shows awareness of healthy and unhealthy foods	59	7	0.119	✕
9	Finds and uses a restroom when away from home	59	8	0.136	✕
10	Changes clothing that has become dirty/wet/smelly	59	10	0.170	✕
11	Wipes/blows her nose using tissue, napkin, etc.	59	13	0.220	✕
12	Puts clothing on right side forward/correct side out	59	25	0.424	✕
13	Turns faucets on and adjusts the water temperature	59	26	0.441	✕
14	Uses the toilet when needed without help	59	27	0.458	✕
15	Bathes or showers and dries herself	59	30	0.509	✕
16	Uses the toilet before going out when needed	59	30	0.509	!!
17	Puts on pullover garments	59	34	0.576	!!
18	Takes off pullover garments	59	34	0.576	!!
19	Takes off clothing that opens in the front	59	35	0.593	!!
20	Puts on clothing that opens in the front	59	35	0.593	!!
21	Lets someone know when he/she needs changing	59	37	0.627	!!
22	Cuts easy-to-cut food with a table knife	59	38	0.644	!!
23	Cuts harder-to-cut food with a sharp knife	59	38	0.644	!!
24	Washes and rinses her hair	59	39	0.661	!!
25	Spreads food with a table knife	59	41	0.695	!!
26	Puts shoes on the correct feet and ties or fastens	59	42	0.712	!!
27	Buttons small buttons in the correct buttonholes	59	45	0.763	!!
28	Buttons large buttons in the correct buttonholes	59	51	0.864	!!
29	Connects and zips zippers	59	52	0.881	!!
30	Pulls up clothing with elastic waistbands	59	54	0.915	!!
31	Feeds herself with a spoon without spilling	59	55	0.932	!!
32	Puts on shoes; may be on the wrong feet and untied	59	56	0.949	!!
33	Drinks from a regular cup or glass without spilling	59	57	0.966	!!
34	Wipes/cleans face and hands as needed when eating	59	58	0.983	!!
35	Washes and dries her hands	59	60	1.017	✓
36	Brushes her teeth	59	61	1.034	✓
37	Washes and dries her face	59	62	1.051	✓
38	Is toilet-trained during the night	59	70	1.186	✓
39	Takes off her shoes and socks	59	71	1.203	✓
40	Cooperates in washing of her hands and face	59	72	1.220	✓
41	Cooperates in undressing and dressing	59	73	1.237	✓

42	Eats solid foods	59	75	1.271	✓
43	Sucks or chews on finger foods	59	78	1.322	✓
44	Defecates in a toilet or potty chair	59	81	1.373	✓
45	Urinates in a toilet or potty chair	59	82	1.390	✓
46	Drinks from a bottle or spill-proof drinking cup	59	84	1.424	✓
47	Is toilet-trained during the day	59	84	1.424	✓
48	Opens her mouth when food is offered	59	85	1.441	✓
49	Feeds herself with a spoon; may spill	59	86	1.458	✓
50	Drinks from a regular cup or glass; may spill	59	86	1.458	✓
51	Feeds herself with a fork; may spill	59	86	1.458	✓

Items were listed from lowest to highest mean or sum score. Items with lowest mean or sum score (selects appropriate clothing for wet/cold weather chooses to exercise for health and/or enjoyment and makes healthy eating choices) were listed first and second (shows awareness that exercise is good for people = 1).The subdomain for which the items received children's lowest *sum or mean* score is one of the general areas most in need of attention. The area's most in need of attention on the first are: Selects appropriate clothing for wet/cold weather chooses to exercise for health and/or enjoyment and makes healthy eating choices (sum = 0 and mean = 0). This indicates that, the children are never functioning these items. So these items should be considered first for immediate action. Second and third are showing the awareness that exercise is good for people (sum = 1 and mean = 0.017) and fastens snaps (sum = 3 and mean = 0.051) respectively. The result is presented based on their lowest to highest mean or sum score which can be used for deciding items which needs immediate action (table 7).

4.5.2 Interpersonal Relationships Subdomain

Table 8

Lowest to highest functioning of children on interpersonal subdomain items

No	**Interpersonal Relationships Subdomain**	N	Sum	Mean	Status
1	Maintains culturally appropriate eye contact	59	0	0.000	✕
2	Has a best friend or a few good friends	59	0	0.000	✕
3	Maintains an acceptable personal space	59	0	0.000	✕
4	Treats her friends well	59	0	0.000	✕
5	Talks with others about shared interests	59	0	0.000	✕
6	Maintains friendships over time	59	0	0.000	✕
7	Knows that others may have different likes/dislikes	59	0	0.000	✕
8	Chooses friends with good qualities	59	0	0.000	✕
9	Congratulates others when good things happen	59	0	0.000	✕
10	Gives cards/gifts on family members' birthdays, etc.	59	0	0.000	✕
11	Will do non-preferred activities suggested by friends	59	0	0.000	✕
12	Starts conversations about things that interest others	59	0	0.000	✕
13	Participates in conversations on non-preferred topics	59	0	0.000	✕
14	Responds to hints or indirect cues in conversation	59	0	0.000	✕
15	Provides additional explanation when others need it	59	0	0.000	✕
16	Tries to make friends with others her age	59	1	0.017	✕
17	Talks with others without interrupting or being rude	59	1	0.017	✕
18	Stays on topic in conversations when needed	59	1	0.017	✕
19	Moves easily between topics in conversation	59	1	0.017	✕
20	Shows happiness, sympathy, or concern for others	59	3	0.051	✕
21	18. Says how family members are related to her	59	12	0.203	✕
22	Does things to try to please others	59	12	0.203	✕
23	Modulates her speech to fit the conversation	59	14	0.237	✕
24	Tells others what she is thinking and feeling	59	19	0.322	✕
25	Tries to interact with others	59	29	0.492	✕
26	Imitates another's actions several hours later	59	29	0.492	!!
27	Shows interest in children her age	59	31	0.525	!!
28	Imitates another's actions as they are being done	59	32	0.542	!!
29	When adults make small talk, answers politely	59	33	0.559	!!
30	Uses words to express her emotions	59	35	0.593	!!

31	Recognizes emotions in others	59	44	0.746	!!
32	Recognizes herself in a mirror or photo	59	47	0.797	!!
33	Imitates parent/caregiver's facial expressions	59	47	0.797	!!
34	Starts small talk when meeting familiar people	59	48	0.814	!!
35	Checks to make sure parent/familiar other is nearby	59	54	0.915	!!
36	Smiles in response to praise or compliments	59	58	0.983	✓
37	Reaches back when a familiar person holds out arms	59	70	1.186	✓
38	Looks at the face of parent/caregiver	59	75	1.271	✓
39	Shows affection to familiar people	59	76	1.288	✓
40	Smiles in response to a smile or friendly voice	59	77	1.305	✓
41	Recognizes family members or familiar others	59	79	1.339	✓
42	Smiles/vocalizes when someone familiar approaches	59	80	1.356	✓
43	Shows at least three different emotions	59	83	1.407	✓

Interpersonal relationships subdomain items are one of the factor to determine whether the children are functioning well or not. Items of interpersonal relationships subdomain were listed from lowest to highest mean or sum score. Interpersonal relationships subdomain items with lowest mean or sum score were ranked from number 1-15 with sum = 0 and mean = 0 (table 8). This shows that, the children are never functioning these items. So these items should be considered first for immediate action. The result is presented based on their lowest to highest mean or sum score which can be used for deciding items which needs immediate action (table 8).

4.6 Relationship between stage of intervention and functioning on children with ASD

To address this research objective/question the appropriate research method was applied. To see whether the functioning of children is different in different stage or to see the effect of stage on the functioning of children one-way ANOVA was used.

One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable by a single factor (independent) variable. Analysis of variance is used to test the hypothesis that several means are equal.

Assumptions One-Way Anova: - The groups should come from populations with equal variances. This assumption can be tested using Levene's homogeneity-of-variance test by stating the hypothesis as:

HO: mean of functioning in: Attending 1 = Attending 2 = Speech = Pre academic = Academic= Occupation

H1: At least the mean of functioning of one group is different from the other

4.6.1 Relationship between stage of intervention and Personal functioning

The mean of functioning of the children was compared in in four stages (Attending 1, attending 2, speech, pre-academic, academic and occupation) in order to see whether the stages have significant effect on functioning of the children or not by using ANOVA. One-way ANOVA was used to compare the functioning of children in personal subdomain

Table 9

ANOVA Functioning of children in personal Subdomain across different stage

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	11.918	5	2.384	197.673	.000
Within Groups	.639	53	.012		
Total	12.557	58			

The ANOVA table indicates that, functioning of children in personal subdomain is significantly ($F=197.6$, $P<0.001$) different across the stage. From the test result, the null hypothesis is rejected, and it is possible to say the, at least the mean of functioning of one stage is different from the other ANOVA is a global test which cannot indicate the group in which the significant difference is exist. So, to identify the stage in which the functioning of the children in personal subdomain is different post hoc test was conducted (Table 10).

Post Hoc Tests

Table 10

Multiple Comparisons Dependent Variable: Personal subdomain LSD

(I) Stages	(J) Stages	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Attending 1	Attending 2	-.12912*	.05411	.021	-.2377	-.0206
	Speech	-.19206*	.05309	.001	-.2985	-.0856
	Pre-academic	-.77335*	.05683	.000	-.8873	-.6594
	Academic	-1.25893*	.05222	.000	-1.3637	-1.1542
	Occupation	-.68157*	.05309	.000	-.7881	-.5751
Attending 2	Attending 1	.12912*	.05411	.021	.0206	.2377
	Speech	-.06294	.04798	**.195**	-.1592	.0333
	Pre-academic	-.64423*	.05209	.000	-.7487	-.5398
	Academic	-1.12981*	.04702	.000	-1.2241	-1.0355
	Occupation	-.55245*	.04798	.000	-.6487	-.4562
Speech	Attending 1	.19206*	.05309	.001	.0856	.2985
	Attending 2	.06294	.04798	**.195**	-.0333	.1592
	Pre-academic	-.58129*	.05102	.000	-.6836	-.4790
	Academic	-1.06687*	.04584	.000	-1.1588	-.9749
	Occupation	-.48951*	.04682	.000	-.5834	-.3956
Pre-academic	Attending 1	.77335*	.05683	.000	.6594	.8873

	Attending 2	.64423*	.05209	.000	.5398	.7487
	Speech	.58129*	.05102	.000	.4790	.6836
	Academic	-.48558*	.05012	.000	-.5861	-.3850
	Occupation	.09178	.05102	**.078**	-.0106	.1941
Academic	Attending 1	1.25893*	.05222	.000	1.1542	1.3637
	Attending 2	1.12981*	.04702	.000	1.0355	1.2241
	Speech	1.06687*	.04584	.000	.9749	1.1588
	Pre-academic	.48558*	.05012	.000	.3850	.5861
	Occupation	.57736*	.04584	.000	.4854	.6693
Occupation	Attending 1	.68157*	.05309	.000	.5751	.7881
	Attending 2	.55245*	.04798	.000	.4562	.6487
	Speech	.48951*	.04682	.000	.3956	.5834
	Pre-academic	-.09178	.05102	**.078**	-.1941	.0106
	Academic	-.57736*	.04584	.000	-.6693	-.4854

*. The mean difference is significant at the 0.05 level.

The post hoc test or multiple comparisons shows that, the functioning of the children in personal subdomain is significantly different between all stages except between some consecutive stages [occupation and pre-academic] similarly between [speech and attending2].

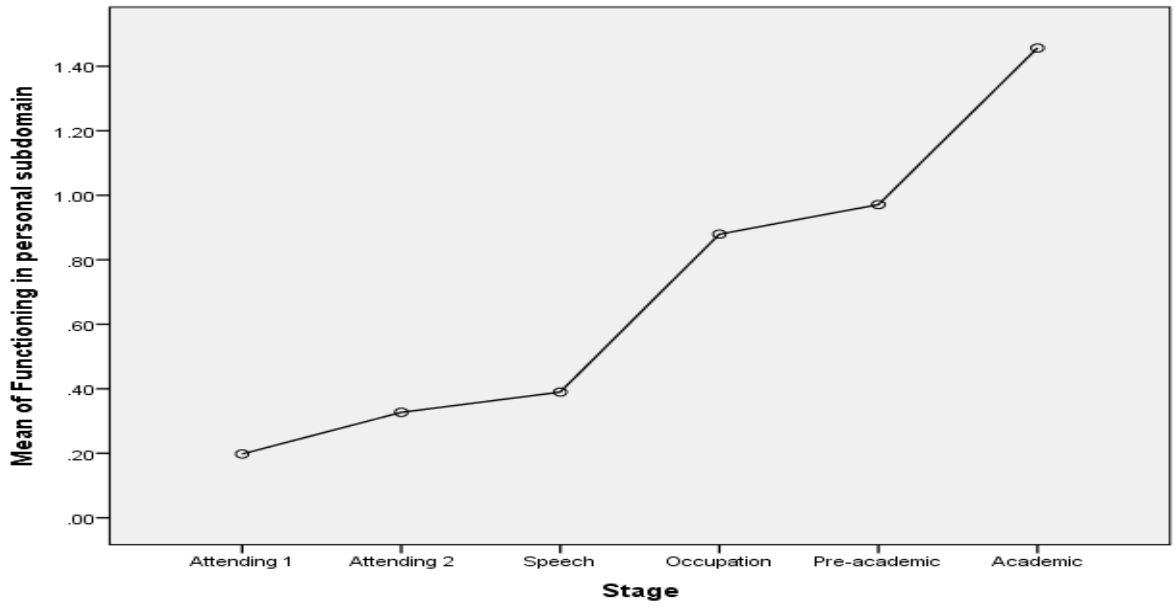

Figure 2: Functioning of children in personal subdomain across different stage

4.6.2 Relationship between stage of intervention and Interpersonal functioning

Table 11 ANOVA

Functioning of children in interpersonal Subdomain across different stage

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.688	5	.538	69.089	.000
Within Groups	.412	53	.008		
Total	3.100	58			

The ANOVA table indicates that, functioning of children in personal subdomain is significantly ($F=69.6$, $P<0.001$) different across the stage (table 11). To identify the stage in which the functioning of the children in interpersonal subdomain is different post hoc test was conducted (table 12).

Post Hoc Tests

Table 12

Multiple Comparisons of functioning of children in interpersonal Subdomain across different stages

(I) Stages	(J) Stages	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Attending 1	Attending 2	-.02824	.04347	**.519**	-.1154	.0590
	Speech	-.18997*	.04265	.000	-.2755	-.1044
	Pre-academic	-.26661*	.04565	.000	-.3582	-.1750
	Academic	-.62514*	.04195	.000	-.7093	-.5410
	Occupation	-.30625*	.04265	.000	-.3918	-.2207
Attending 2	Attending 1	.02824	.04347	**.519**	-.0590	.1154
	Speech	-.16173*	.03854	.000	-.2390	-.0844
	Pre-academic	-.23837*	.04184	.000	-.3223	-.1544
	Academic	-.59690*	.03777	.000	-.6727	-.5211
	Occupation	-.27801*	.03854	.000	-.3553	-.2007
Speech	Attending 1	.18997*	.04265	.000	.1044	.2755
	Attending 2	.16173*	.03854	.000	.0844	.2390

	Pre-academic	-.07664	.04099	**.067**	-.1589	.0056
	Academic	-.43517*	.03682	.000	-.5090	-.3613
	Occupation	-.11628*	.03761	.003	-.1917	-.0408
Pre-academic	Attending 1	.26661*	.04565	.000	.1750	.3582
	Attending 2	.23837*	.04184	.000	.1544	.3223
	Speech	.07664	.04099	**.067**	-.0056	.1589
	Academic	-.35853*	.04026	.000	-.4393	-.2778
	Occupation	-.03964	.04099	**.338**	-.1219	.0426
Academic	Attending 1	.62514*	.04195	.000	.5410	.7093
	Attending 2	.59690*	.03777	.000	.5211	.6727
	Speech	.43517*	.03682	.000	.3613	.5090
	Pre-academic	.35853*	.04026	.000	.2778	.4393
	Occupation	.31889*	.03682	.000	.2450	.3927
Occupation	Attending 1	.30625*	.04265	.000	.2207	.3918
	Attending 2	.27801*	.03854	.000	.2007	.3553
	Speech	.11628*	.03761	.003	.0408	.1917
	Pre-academic	.03964	.04099	**.338**	-.0426	.1219
	Academic	-.31889*	.03682	.000	-.3927	-.2450

*. The mean difference is significant at the 0.05 level.

The post hoc test or multiple comparison shows that, the functioning of the children in interpersonal subdomain is significantly different between all stages ($p<0.05$) except between Occupation and Pre-academic ($p=0.338$), speech and pre academic ($p=0.069$), attending 1 and attending 2($p=0.519$).

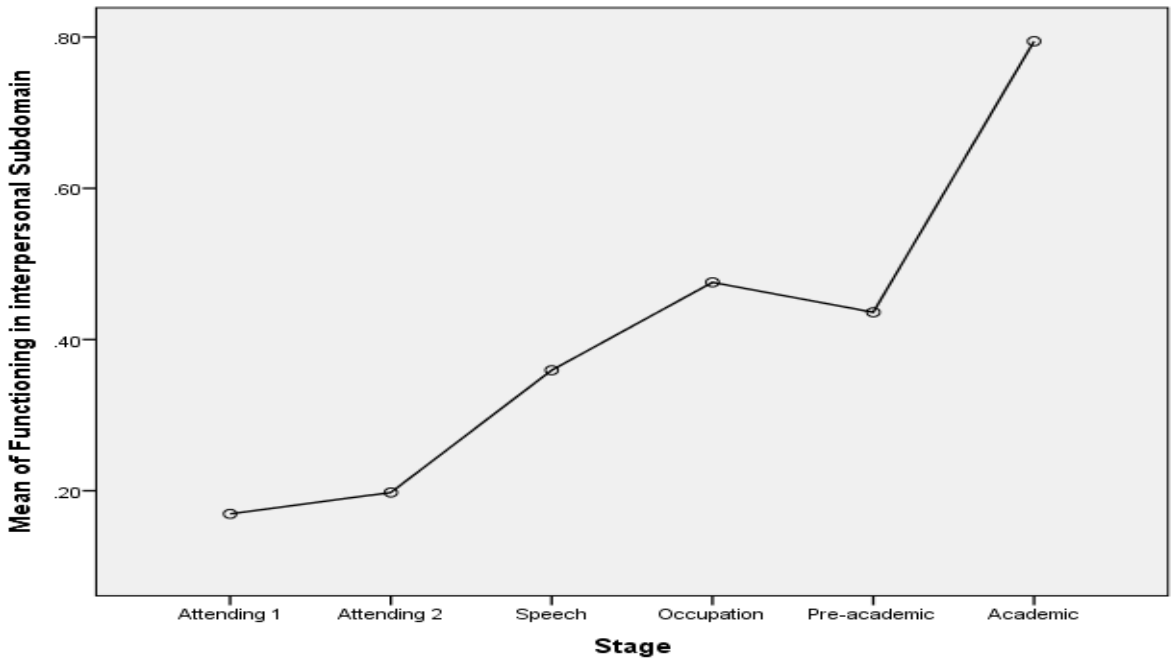

Figure 3. Functioning of children in interpersonal subdomain across different stage

4.6.3 Relationship between stage of intervention and Personal and interpersonal functioning

The ANOVA table is used to determine whether the functioning of children is significantly different between the existing stages or not.

Table 13

ANOVA table for equality of functioning mean score

	Sum of Squares	Df	Mean Square	F	Sig. (P)
Between Groups	6.917	5	1.383	180.152	0.000
Within Groups	.407	53	.008		
Total	7.324	58			

Significant P value ($P = 0.00 \leq 0.05$) in the ANOVA table implies that, at least one of the mean scores of functioning for one stage is different from the other. The significance value of the F test in the ANOVA table is 0.000. Thus, the hypothesis that mean scores are equal across stage groups was rejected. Now that it is observed the groups differ in some way, it is good to see more about the

structure of the differences (table 13). Since ANOVA is the global test meaning it tells whether the difference exist between the group or not but it can't shows the group which is different from the other. Post hoc tests of multiple comparisons by least significance difference (LSD) was used to identify the group/s, which is different from the other (table 14).

Post Hoc Tests

Table 14

Multiple Comparisons of functioning of children across different stages

(I) Stages	(J) Stages	Mean Difference (I-J)	Std. Error	Sig. (P value)	95% Confidence Interval	
					Lower Bound	Upper Bound
Attending 1	Attending 2	-0.077	0.043	**0.081**	-0.163	0.010
	Speech	-.18555*	0.042	0.000	-0.271	-0.101
	Pre academic	-.54217*	0.045	0.000	-0.633	-0.451
	Academic	-.97480*	0.042	0.000	-1.058	-0.891
	Occupation	-.50953*	0.042	0.000	-0.595	-0.425
Attending 2	Attending 1	0.077	0.043	**0.081**	-0.010	0.163
	Speech	-.10880*	0.038	0.006	-0.186	-0.032
	Pre academic	-.46543*	0.042	0.000	-0.549	-0.382
	Academic	-.89805*	0.038	0.000	-0.973	-0.823
	Occupation	-.43279*	0.038	0.000	-0.510	-0.356
Speech	Attending 1	.18555*	0.042	0.000	0.101	0.271
	Attending 2	.10880*	0.038	0.006	0.032	0.186
	Pre academic	-.35662*	0.041	0.000	-0.438	-0.275
	Academic	-.78925*	0.037	0.000	-0.863	-0.716
	Occupation	-.32398*	0.037	0.000	-0.399	-0.249
Pre academic	Attending 1	.54217*	0.045	0.000	0.451	0.633
	Attending 2	.46543*	0.042	0.000	0.382	0.549
	Speech	.35662*	0.041	0.000	0.275	0.438
	Academic	-.43262*	0.040	0.000	-0.513	-0.352
	Occupation	0.033	0.041	**0.426**	-0.049	0.114
Academic	Attending 1	.97480*	0.042	0.000	0.891	1.058
	Attending 2	.89805*	0.038	0.000	0.823	0.973
	Speech	.78925*	0.037	0.000	0.716	0.863
	Pre academic	.43262*	0.040	0.000	0.352	0.513
	Occupation	.46526*	0.037	0.000	0.392	0.539
Occupation	Attending 1	.50953*	0.042	0.000	0.425	0.595
	Attending 2	.43279*	0.038	0.000	0.356	0.510
	Speech	.32398*	0.037	0.000	0.249	0.399
	Pre academic	-0.033	0.041	**0.426**	-0.114	0.049
	Academic	-.46526*	0.037	0.000	-0.539	-0.392

*. The mean difference is significant at the 0.05 level. All **bold P values** are insignificant at 0.05 level

Table 14 shows that, the mean functioning of the children in different academic stage is significantly high and it is followed by pre academic and occupation. Multiple comparison shows that, the functioning level of children was significantly different in each stage except between: {[Attending 1 and attending 2 (P= 0.081> 0.05)] as well as [pre academic and occupation attending 2(P= 0.426> 0.05)}. It was observed that the children in the academic stage have the highest functioning as compared to the rest of the stage (Table 14).

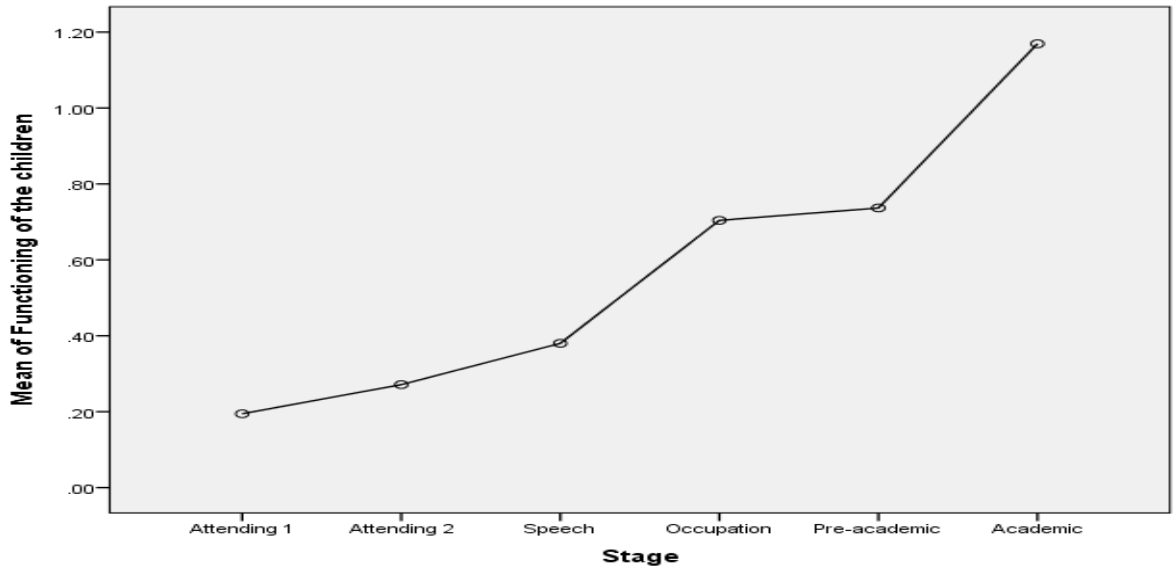

Figure 4 Mean functioning of the children in different stage

4.7 Relationship between chronological age and functioning of children with ASD

4.7.1 Relationship between chronological age and Personal functioning

Table 15

Descriptive statistics of functioning in personal subdomain among different current age group

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
1-10	10	.3538	.21514	.06803	.1999	.5077	.13	.87

11-15	21	.6154	.39086	.08529	.4375	.7933	.08	1.46
16-20	23	.8946	.45033	.09390	.6999	1.0894	.23	1.62
More than 20	5	1.3654	.27433	.12269	1.0248	1.7060	.88	1.58
Total	59	.7435	.46529	.06058	.6222	.8647	.08	1.62

The result of Table 15 shows that, those children who are in higher age group (more than 20) are best performing as compared to the other age group.

Table 16

ANOVA table for functioning in personal subdomain among different current age group

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.322	3	1.441	9.623	.000
Within Groups	8.235	55	.150		
Total	12.557	58			

The ANOVA table 16 indicated the mean functioning of at least one age group is different from the other and to identify the age group in which the difference of functioning exist post hoc test was conducted (Table 17)

Post Hoc Tests

Table 17

Multiple Comparisons of functioning in personal subdomain of children across different age group by using least significance difference

(I) Current age group	(J) Current age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1-10	11-15	-.26154	.14867	.084	-.5595	.0364
	16-20	-.54080*	.14657	.001	-.8345	-.2471
	More than 20	-1.01154*	.21193	.000	-1.4363	-.5868
11-15	1-10	.26154	.14867	.084	-.0364	.5595
	16-20	-.27926*	.11679	.020	-.5133	-.0452
	More than 20	-.75000*	.19254	.000	-1.1359	-.3641
16-20	1-10	.54080*	.14657	.001	.2471	.8345
	11-15	.27926*	.11679	.020	.0452	.5133

	More than 20	-.47074*	.19093	.017	-.8534	-.0881
More than 20	1-10	1.01154*	.21193	.000	.5868	1.4363
	11-15	.75000*	.19254	.000	.3641	1.1359
	16-20	.47074*	.19093	.017	.0881	.8534

*. The mean difference is significant at the 0.05 level.

Table 17 indicated that, the functioning in personal subdomain of children across different age group were significantly different between all age group except between 1-10 age group and 11-15 age group.

Means Plots

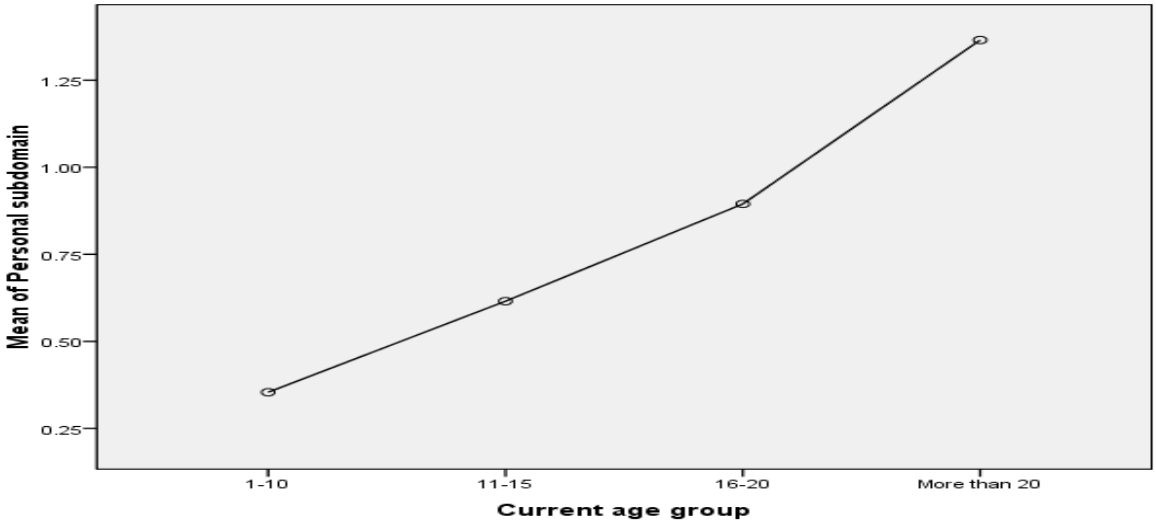

Figure 5 Mean functioning of personal subdomain in different stage

Figure 5 indicated that, as the age of the participant's increase, their functioning in personal subdomain also increases.

4.7.2 Relationship between chronological age and Interpersonal functioning

Table 18

Descriptive statistics of functioning in Interpersonal Subdomain among different current age group

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum
1-10	10	.2140	.08757	.02769	.1513	.2766	.12	.44
11-15	21	.3854	.20027	.04370	.2942	.4765	.14	.93
16-20	23	.4894	.20328	.04239	.4015	.5773	.21	.84
More than 20	5	.7767	.17984	.08043	.5534	1.0000	.47	.93
Total	59	.4300	.23121	.03010	.3698	.4903	.12	.93

The result of Table 18 shows that, those children who are in higher age group (more than 20) are best performing as compared to the other age group

Table 19

ANOVA of functioning in interpersonal subdomain among different current age group

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.191	3	.397	11.433	.000
Within Groups	1.910	55	.035		
Total	3.100	58			

Table 19 shows that, the mean functioning in interpersonal subdomain is significantly different at least in one age group. This means age has significant impact on functioning in interpersonal subdomain. To determine age group in which the mean functioning is different post hoc test was conducted (table 20).

Table 20

Multiple Comparisons of functioning in interpersonal subdomain among different current age group

(I) Current age group	(J) Current age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
1-10	11-15	-.17143*	.07159	.020	-.3149	-.0280
	16-20	-.27543*	.07058	.000	-.4169	-.1340
	More than 20	-.56279*	.10206	.000	-.7673	-.3583
11-15	1-10	.17143*	.07159	.020	.0280	.3149

	16-20	-.10400	.05624	.070	-.2167	.0087
	More than 20	-.39136*	.09272	.000	-.5772	-.2055
16-20	1-10	.27543*	.07058	.000	.1340	.4169
	11-15	.10400	.05624	.070	-.0087	.2167
	More than 20	-.28736*	.09194	.003	-.4716	-.1031
More than 20	1-10	.56279*	.10206	.000	.3583	.7673
	11-15	.39136*	.09272	.000	.2055	.5772
	16-20	.28736*	.09194	.003	.1031	.4716

*. The mean difference is significant at the 0.05 level.

The functioning in interpersonal subdomain among different current age group were significantly different except among the two consecutive age group namely 11-15 and 16-20.

Means Plots

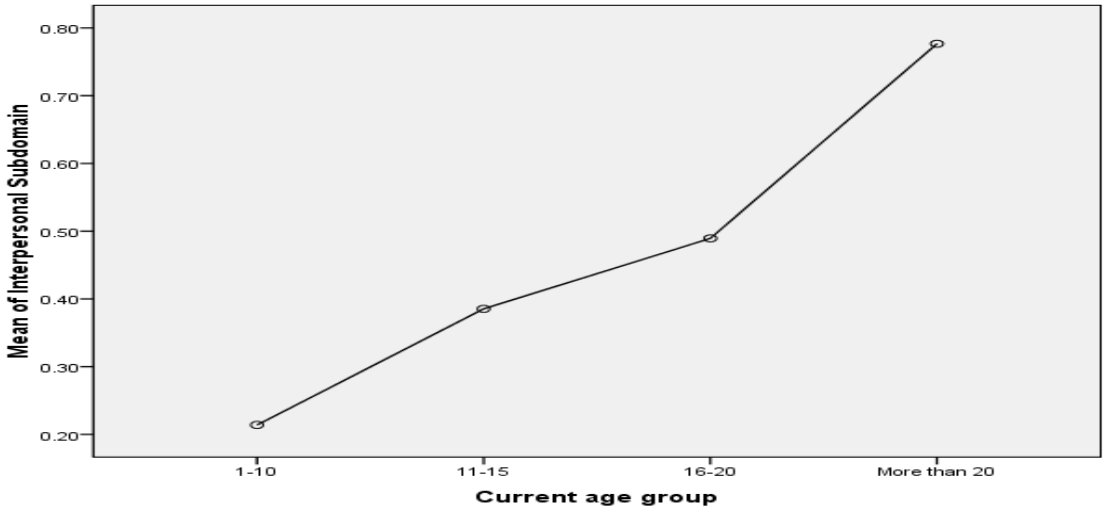

Figure 6 functioning of children in interpersonal subdomain among different current age group

Figure 6 indicated that, as the age of the participant's increase their functioning in interpersonal subdomain also increases.

4.7.3 Relationship between chronological age and Personal and interpersonal functioning

Table 21

Descriptive statistics of functioning among different current age group

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1-10	10	.2968	.15799	.04996	.1838	.4098	.13	.68
11-15	21	.5177	.29265	.06386	.3845	.6509	.13	1.23
16-20	23	.7188	.33639	.07014	.5733	.8642	.22	1.28
More than 20	5	1.1106	.23022	.10296	.8248	1.3965	.70	1.26
Total	59	.6089	.35535	.04626	.5163	.7015	.13	1.28

Again, the functioning of children among 20 current age group are performing well (mean = 1.11) as compared to other age group (table 21).

Table 22 ANOVA

functioning among different current age group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.685	3	.895	10.611	.000
Within Groups	4.639	55	.084		
Total	7.324	58			

ANOVA table of 22 shows that, the mean functioning of children is different at least in one age group and to identify the age group in which the mean functioning is different post hoc test was conducted(table 23). And the result of post hoc test or multiple comparisons shows that the mean functioning in all current age group is significantly different. This implies that the age of child is significantly affecting the functioning of children(table 23).

Table 23

Multiple Comparisons of functioning among different current age group

(I) Current age group	(J) Current age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1-10	11-15	-.22092	.11158	.053	-.4445	.0027

	16-20	-.42197*	.11001	.000	-.6424	-.2015
	More than 20	-.81383*	.15907	.000	-1.1326	-.4950
11-15	1-10	.22092	.11158	.053	-.0027	.4445
	16-20	-.20105*	.08766	.026	-.3767	-.0254
	More than 20	-.59291*	.14452	.000	-.8825	-.3033
16-20	1-10	.42197*	.11001	.000	.2015	.6424
	11-15	.20105*	.08766	.026	.0254	.3767
	More than 20	-.39186*	.14331	.008	-.6790	-.1047
More than 20	1-10	.81383*	.15907	.000	.4950	1.1326
	11-15	.59291*	.14452	.000	.3033	.8825
	16-20	.39186*	.14331	.008	.1047	.6790

*. The mean difference is significant at the 0.05 level.

Means Plots

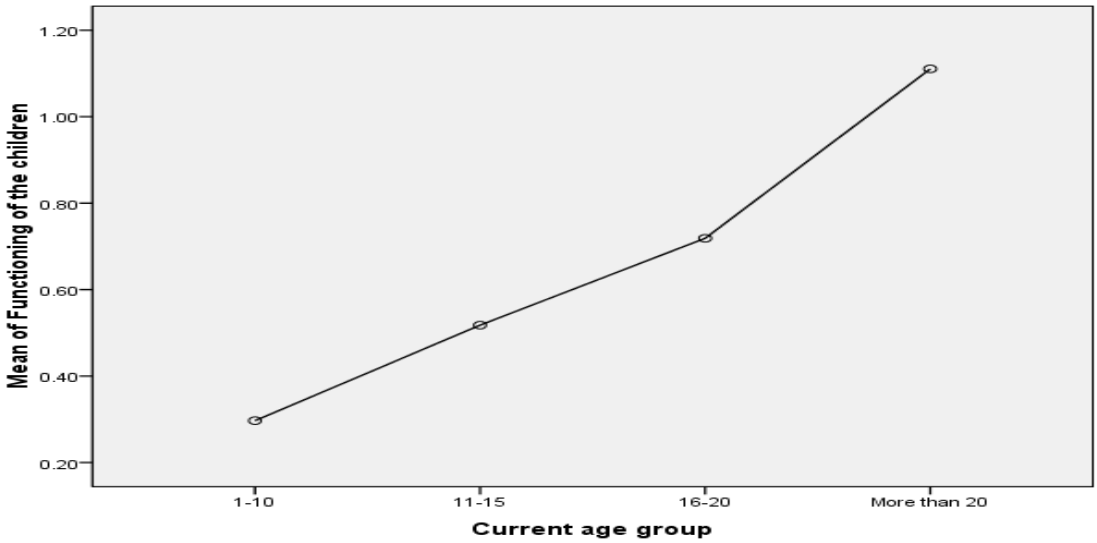

Figure 7 Means functioning of children among different current age group

Figure 7 indicated that, as the age of the participant's increase the functioning of children also increases.

4.8 Relationship between Early Intervention and Functioning

4.8.1 Relationship between early intervention Personal functioning

Table 24

Descriptive statistic of age and personal functioning

					95% Confidence Interval for Mean		
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
0-5	19	.6943	.39081	.08966	.5060	.8827	.19	1.46
6-10	34	.7738	.49405	.08473	.6014	.9461	.08	1.62
11-15	6	.7276	.57864	.23623	.1203	1.3348	.23	1.44
Total	59	.7435	.46529	.06058	.6222	.8647	.08	1.62

The descriptive statistics table shows that, the mean of personal functioning of children were higher in 6-10 age group (table 24).

Table 25. ANOVA

functioning of children in Personal subdomain

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.079	2	.039	.176	.839
Within Groups	12.478	56	.223		
Total	12.557	58			

Table 25 shows that, the mean functioning in personal subdomain is not significantly different. This may be because of the effect of confounding which can be controlled by multiple linear

regressions in the last section of this chapter. Since all groups are equal, no need of conducting post hoc test.

Means Plots

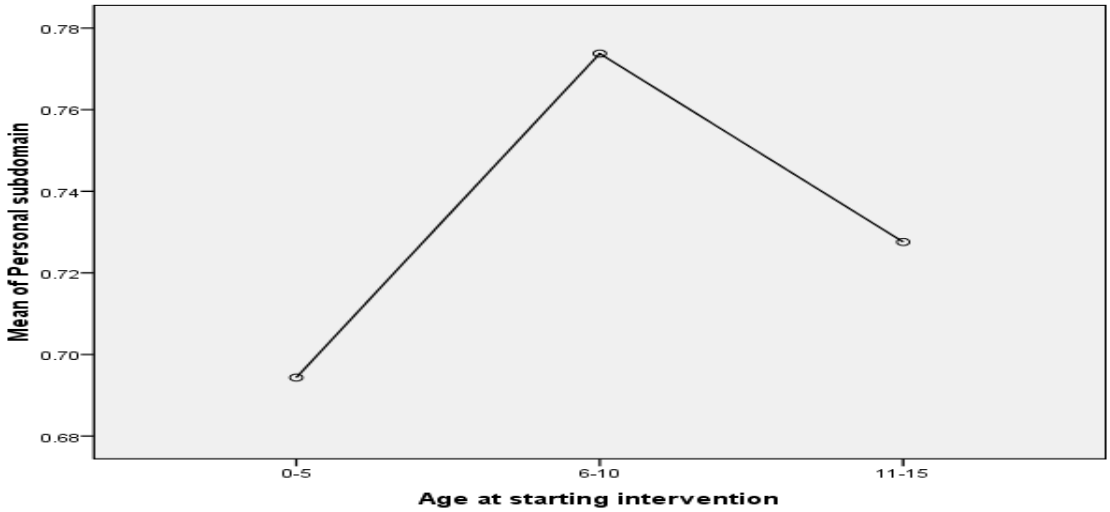

Figure 8 personal subdomain across different age group at starting intervention

Figure 8 indicated that, those children who join intervention between the age of 6-10 years are advantageous.

4.8.2 Relationship between early intervention Interpersonal functioning

Table 26.

Descriptive statistic of age and interpersonal subdomain

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
0-5	19	.3966	.17080	.03918	.3142	.4789	.16	.67

6-10	34	.4473	.24101	.04133	.3632	.5314	.12	.93
11-15	6	.4380	.35404	.14454	.0664	.8095	.14	.93
Total	59	.4300	.23121	.03010	.3698	.4903	.12	.93

The descriptive statistics table shows that, the mean of personal functioning of children were higher in 6-10 age group (table 26).

Table 27. ANOVA

Functioning in interpersonal subdomain across different age of starting intervention.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.032	2	.016	.290	.749
Within Groups	3.069	56	.055		
Total	3.100	58			

Table 27 indicated that, the mean functioning in interpersonal subdomain not significantly different (P=0.749) across different age group of starting intervention. This may be due to the effect of confounding which can be controlled by multiple linear regressions in the last section of this chapter. Since all groups are equal, no need of conducting post hoc test.

Means Plots

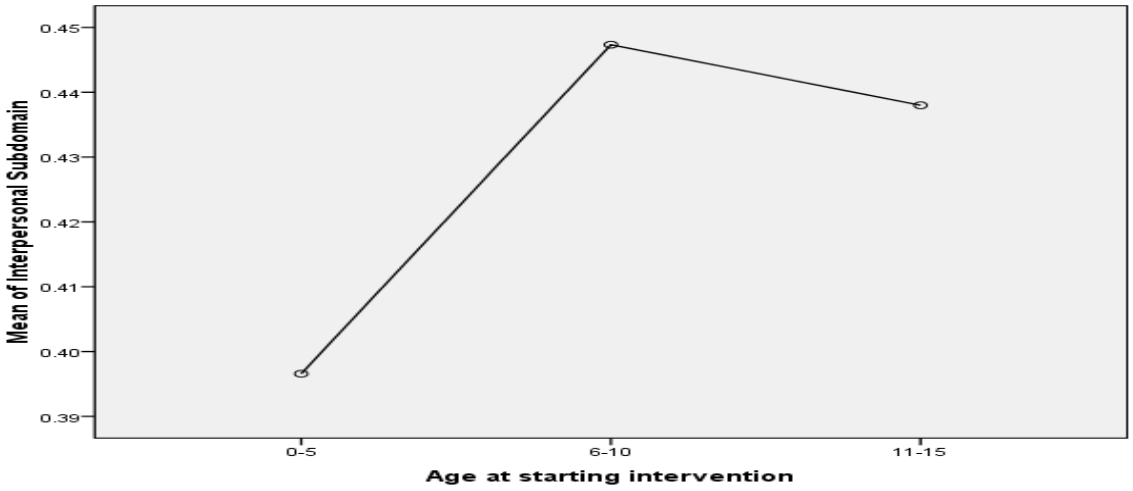

Figure 9 functioning of interpersonal subdomain across different age group of starting intervention

Figure 9 indicated that, those children who join intervention between the age of 6-10 are more advantageous.

4.8.3 Relationship between early intervention Personal and interpersonal functioning

Table 28
Descriptive statistic of age and functioning

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
0-5	19	.5672	.27816	.06381	.4331	.7013	.18	1.12
6-10	34	.6333	.37830	.06488	.5013	.7653	.13	1.28
11-15	6	.6028	.48062	.19621	.0985	1.1072	.21	1.22
Total	59	.6089	.35535	.04626	.5163	.7015	.13	1.28

The result shows that the children are performing more if they join intervention between 6-10 age groups (table 28)

Table 29

ANOVA of age and functioning of children

Functioning of the children					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.054	2	.027	.206	.814
Within Groups	7.270	56	.130		
Total	7.324	58			

Table 29 indicated that, the mean functioning is not significantly different (P=0.814) across different age group of starting intervention. So this result fails to reject HO. This may be due to the effect of confounding which can be controlled by multiple linear regressions in the last section of this chapter. Since all groups are equal, no need of conducting post hoc test.

Means Plots

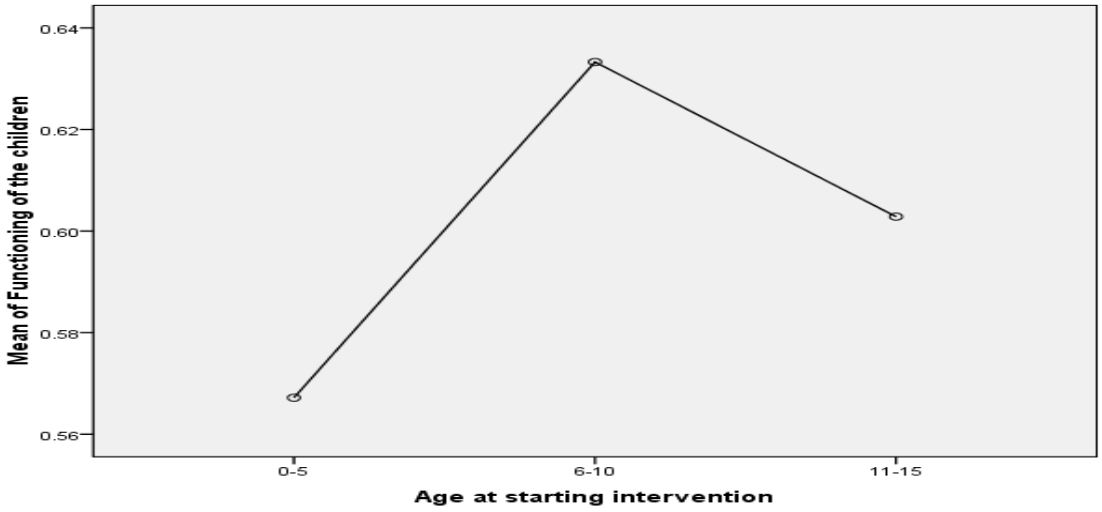

Figure 10 functioning across different age group of starting intervention.

Figure 10 indicated that, those children who are joining the intervention after 10 years are not advantageous. Joining between6 to 10 years old is increase the functioning.

4.8.4 Controlling the effect of confounding by using multiple linear regression

The main problem in research is the effect of confounding. The effect of confounding is known by making most important variable insignificant and less important variable significant. And sometimes the effect of confounding will change the direction of relationship meaning it convert positive relationship to negative and vice versa. So to control the effect of confounding the current researchers have used multiple linear regressions as best method of controlling the confounding. From the ANOVA result it was observed that early intervention was found to be insignificant and the researchers have suspected that there may be confounding effect between current age, early intervention and age at starting intervention.

By checking the assumption of multiple linear regression total years stayed in intervention was excluded because it has multicollinearity problem having variance inflation factor (VIF) = 3.165> 2. So both current age and early intervention were analyzed by multiple linear regression and the result was presented as table 31.

Table 30

Relationship between current age of child and Age at starting Intervention with functioning of the children

Variables	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
Age of child	0.07	0.01	8.30	0.00	0.06	0.09	0.72	1.40
Age at starting Intervention	-0.06	0.02	-3.85	0.00	-0.09	-0.03	0.72	1.40

Table 30 indicated that, both age of child and age at starting intervention free from mulicollinarety problem since their VIF< 2 and tolerance > 0.5. The result of multiple linear regression indicated that, current age of child and age at starting intervention have significant effect

on functioning of the children. This result is obtained be controlling the effect of confounding as a result the real finding is obtained. From the regression output it was found that current age of child is the potential confounding for age at starting intervention and its effect was controlled by using multiple linear regressions. Using both ANOVA and multiple linear regressions is useful for determining whether the confounding exist between current age and age at starting intervention. The statistical model for current age of child and Age at starting intervention with functioning of the children is:

Functioning of the children = 0.07* current age of child - 0.06*Age at starting intervention

As the result indicated, there is significant positive (B=0.07, P < 0.001) relationship between functioning of the children and current age of child. This result implies that, for one year increment of age of child, the functioning of the child will increase by 7%. Moreover there is also significant negative (B= -0.06, P < 0.001) relationship between functioning of the children and age at starting intervention.. This result implies that, for one year early intervention (for one year decrement of age at starting intervention) the functioning of the child will increase by 6%.Being engaged in the intervention significantly improves functioning of the children (Table 31).

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

Introduction

This chapter presents the discussion on the finding of the study. This section presents the finding of the study in comparison with other studies conducted in Ethiopia as well as outside Ethiopia. It includes discussion on types of intervention, personal and interpersonal functioning of children of children with ASD, relationship between stage and personal and interpersonal functioning of children with ASD, relationship between chronological age and personal and interpersonal functioning of children with ASD, and relationship between early intervention and personal and interpersonal functioning of children with ASD.

5.1 Types of Early Intervention

Methods of Early intervention are primordial for children on the spectrum of autism, as mentioned by many different studies. Several different methods of early intervention have been implemented and evaluated over the years. The effectiveness of each of these methods and the decision as to which is the most helpful for children on the spectrum of autism have not yet been identified. In the following pages, a discussion regarding each method of early intervention presented earlier is discussed.

5.1.1 The Denver model

The study found out that teachers and nurses mostly give the therapy for autistic children in Joy center. Unlike the finding, Literature says that this type of behavioral therapy occurs during play and helps children between the ages of 1 and 4 years old (Autism Speaks, 2019). A psychologist,

behavioral specialist, or occupational therapist uses joint activities and play to help a child with autism build positive relationships with a sense of fun. Findings from the research says that this program is delivered within a classroom setting that is on a 12-month calendar and meets 4 to 5 hours a day, 5 days a week. The focus is on positive affect, and interpersonal interactions within a structured environment and almost all activities and therapies are conducted within a play situation. The variation among different countries and the current study might be because of the differences in skilled labor.

5.1.2 Family centered approach

The study further found out that Family therapy is helpful and is aimed not only to help children with autism but also to help people within the family make sense of difficult situations, and help them work together to develop new ways of thinking about and managing these difficulties. It is important to find out if family therapy can be helpful for people with ASD and their relatives given that the core symptoms of ASD, and additional difficulties people can experience, often impact on the family unit. In joy center, it is believed that working on family helps families to make informed decisions; family choice regarding their involvement in and provision of services; and parent/professional collaborations and partnerships as the context for family program relations.

Similar to the finding, family involvement can be helpful with the help of therapists and psychologists in every intervention model, A family member with an autism spectrum disorder presents pervasive and bidirectional influences on the entire family system, suggesting a need for family-focused autism spectrum disorder treatment. People with ASD tend to rely on family members, including parents and siblings, well into adulthood (Heward, 2003).

Family-centered practice has as its primary goal, empowering families with the knowledge and skills to make the best choices for their child and for the family (Heward, 2003). In family-centered

practice, professionals collaborate with families in decision-making about specific goals and objectives, as well as educational/treatment approaches. Families are considered from a lifespan perspective and may include parents, guardians, siblings, spouses and caregivers.

5.1.3 Applied Behavioral Analysis Method

Findings from this study show that, different intervention types are used. Applied Behavioral Analysis is one. There are also interventions that joy center do not use. From ABA, a system called PRT is mainly used in the center. PRT makes particularly effective in developing communication, play, and social behaviors. This strategy, as mentioned by MR Yonas, Enhances the pivotal learning variables of motivation, responding to multiple cues, self-management, and self-initiation, which serves to influence target behaviors within a natural setting.

Along with this, finding from the research shows that significant attention is given to the social and physical environment, including the antecedent conditions and consequences that elicit and maintain behavior(Kita & Hosokawa, 2011). The literature says that there are different types of ABA programs that are given. One of these types of intervention is floor time, which involves parents joining children in the play area and building relationships. Another ABA intervention type is Pivotal response treatment that aims to support motivation and the ability to respond to motivational cues in children with ASD. Functional Communication Training (FCT) is a also found under ABA therapy that focuses on replacing difficult behavior with more appropriate communication that achieves the same thing. In addition, Antecedent-Based Intervention (ABI) is just one of evidence-based practices used in Applied Behavior Analysis (ABA) therapy for children with autism. Antecedent – what happens immediately before a behavior occurs (Kita & Hosokawa, 2011).

The variation between the current research and different literatures might be because of lack of professionals and the nature difficult nature of some intervention types like floor time. It might also be because of lack of professionals to deliver such kind interventions.

5.1.4 Occupational therapy

In joy center occupational therapy is provided to the children in the form of play activities which are used to improve the fine motor co-ordination, which helps the children to use pencil for writing, catch the ball, cut papers, buttoning, picture books to naming animals, engage in play activities, and it also help to enhance and maintain play, self-help and school readiness skills.

In line with this finding, literatures show that skills include dressing without assistance, grooming and hygiene, and fine motor skills. People with ASD then practice these skills outside of the therapy sessions, which are usually Between 30 and 60 minutes long (autism speaks, 2019).

5.1.5 Speech therapy

It was reported in the finding that joy center uses speech therapy as one of the intervention techniques. In addition, joy center gave emphasis on speech therapy. Abugida phonetics, created by Zemi Yenus, involves the treatment of speech and communication disorders, which means it is a very wide-ranging field. Abugida phonetics can help children with stutters or lisps to pronounce the Amharic words correctly, but they can also help children with developmental disorders to understood and use spoken language in a social context.

All of the above intervention types are being given in joy center, in six of classes/rooms, attending 1 and 2 room, speech room, occupation room, pre academic room, and academic room and 3 shared classes, toilet training room, sensory integration room, and tv/music rooms.

Similar to the finding, literature shows that helps to address the challenges in communication that people with autism might experience. Assistance might include matching emotions with facial expressions, learning how to interpret body language, and responding to questions. A speech therapist might also try to teach the nuances of vocal tone and help the individual strengthen their speech and clarity (Heward, 2003).

5.1.6 Medication

Finding from the research shows that there are no medications that directly treat the social and language impairments seen in individuals with ASD. The medications used most frequently for children with ASD to treat mood and repetitive behaviors, and stimulants and other medications used to treat attention deficits and hyperactivity

In line with the findings, the evidence base is good for using atypical antipsychotics (e.g., risperidone and aripiprazole) to treat challenging and repetitive behaviors, but there are also significant side effects associated with the use of these drugs. There are some well-designed studies supporting the use of ssris and stimulants with patients with ASD, but the evidence base is not as strong as for the antipsychotic medications (Renee, 2018).

5.2 Personal and interpersonal functioning of children

The study found out that children with autism function better on personal domains than interpersonal. From the personal domain, they are better at general trends like washing hands, proper eating, going to toilet, wearing clothes and shoes. On the other hand, they do no perform well on things like choosing appropriate clothes.

The finding also revealed that in the interpersonal domain, children are better at smiling, identifying familiar people, eye contact and affection. On the other hand, they do not perform well on identification of best friends, personal space and shared interest.

5.3 Stage of intervention

The study found out that majority of the children were in academic stage 12(20.3%), occupation 11(18.6%) and speech 11(18.6%). Children in academic (1.17) and pre academic (0.74) were best functioning as compared to the others. This significant change may be due to the fact that, all best performing children are transferred to academic and pre academic. The other possible explanation for this significant difference can be since older children are in academic stage and these older groups are those who stayed more in joy center that are working for improving the good performance of children. Having majority of children in academic and pre academic stage and if the children in these stages are functioning better it implies that the foundation is effectively achieving its objective. The third stage in which the children are functioning were occupation (0.7). In speech (0.38), attending 2 (0.27) and attending 1 (0.19) the functioning of the children were relatively low and below the mean value (0.61).

The functioning level of children was significantly different in each stage except between: {[Attending 1 and attending 2 (P= 0.081> 0.05)] and [pre academic and occupation (P= 0.426> 0.05)}.

5.4 Chronological age and functioning

The findings indicated that as age of child increase their functioning also increases in both personal and interpersonal subdomains. The result indicated that the mean functioning in personal subdomain in more than 20 current age group is higher (1.11) as compared to others. It is observed that as the age of child increase their functioning also increase. In addition, the mean functioning in

interpersonal subdomain in more than 20 current age group is higher (0.7767) as compared to others. it is seen that as the age of child increase their functioning also increases.

Similar to the finding, Empirical evidence suggests that early treatment optimizes long-term prognosis, and treatment yields diminishing returns as children get older (Meyer-Bahlburg, Dolezal, Baker, 2008). Several studies have estimated that the gains in functioning associated with early treatment will result in considerable cost savings to both families of children with ASD and the systems in which they are served. Other research also suggest improvements over time in decreasing the age at which children with ASD, especially higher functioning children, receive a diagnosis (Auyeung , Taylor, Hackett, Baron-Cohen S, 2010).

5.5 Early intervention and functioning

The current finding shows that, there is significant negative ($B = -0.06$, $P < 0.001$) relationship between functioning of the children and age of starting interventions. This result implies that, for one year early intervention (for one year decrement of age at starting intervention) the functioning of the child will increase by 6% . This means the who join the intervention early by one year his/her functioning will increase by 6% as compared to the one who join the intervention late by one year.

Similar to this finding, A research shows that early intervention for young children diagnosed with ASD has been shown to reduce core ASD symptoms and has demonstrated significant long-term improvements in language acquisition, social skills, cognitive abilities, and adaptive behaviors (Estes et al., 2015; IACC, 2011).

CHAPTER 6

SUMMARY, CONCLUSION, LIMITATION AND RECOMMENDATION

6.1 Summary

- The study entitled as "personal and interpersonal functioning of children with autism in Joy center" was conducted with the general objective of assessing the personal and interpersonal functioning of children with autism in Joy center.
- In order to check similarity or difference between the finding and different theories, the researcher has used theory of executive dysfunction and theory of mind. Both theories were selected based on the study objective.
- The study has employed a mixed method approach. The researcher has employed primary data collection method, and both in depth interview guide and questionnaire were the primary data collection tools. The researcher has employed two ken informant interviews and Vineland Adaptive Behavior Scale – III questionnaire was distributed to asses about 59 autistic children in Joy center. In order to collect data with selected instruments, the researcher used non-probability sampling.
- The study found out that there are various types of interventions used in Joy center. The Main types of interventions applied in the center are applied behavior analysis, Occupational therapy and speech therapy and Denver model. It was further found out that Association between chronological age and functioning of children is directly related with age. Besides, it was noted that the children in the academic stage have the highest functioning as compared to the rest of the stage. Again, the study revealed a negative association between early intervention and functioning of children.

- Based on the study finding, it is recommended that it would be better for Autistic children to join Autism centers as early as possible. Thus, if the number of Autistic children joining different centers increased, it would be better if the number of centers is also increased. It would also be better of other researchers conducted the same study using other methods like experiment and also include the parent's perspective.

6.2 conclusion

Each person with ASD is unique, and intervention plans must be individualized based on the needs of the individual and family. Early intervention can make a significant difference in improving cognitive and social development for children with ASD, and intensive, highly structured educational programs are the gold standard for early autism treatment. The primary focus should be on the child's acquisition of communication, social, play, and academic skills. Major kinds of intervention that are given in joy center are, applied behavior analysis, occupational therapy, speech therapy and Denver model. Medication cannot cure ASD, but it can help provide control over symptoms such as aggression, mood problems, rigid behavior, and attention deficits. Medical care may also be needed to manage associated problems with seizures, gastrointestinal problems, dietary imbalances, or disrupted sleep patterns

The association between stage of intervention and functioning of children in personal subdomain is significantly ($F=197.6$, $P<0.001$) different across the stage except between Occupation and Preacademic, speech and attending 2. Functioning of children in personal subdomain is significantly ($F=69.6$, $P<0.001$) different between all stages ($p<0.05$) except between Occupation and Pre-academic ($p=0.338$), speech and pre academic ($p=0.069$), attending 1 and attending 2($p=0.519$). , the functioning level of children was significantly different in each stage except between: {[Attending 1 and attending 2 ($P= 0.081> 0.05$)] and [pre academic and occupation attending 2($P=$

0.426> 0.05)}. It was observed that the children in the academic stage have the highest functioning as compared to the rest of the stage.

Association between chronological age and functioning of children is observed as the age of child increase their functioning also increases.

There is negative association between early intervention and functioning of children. The result indicated that early joining would significantly improve the functioning children by 6% for every one year early intervention.

6.3 Limitations

Some of the factors that might have affected the quality of the data collected are acknowledged in this section.

A major limitation in this study was during data collection, the researcher was not able to collect information about the children's level of functioning from their parents due to the organization's confidentiality rule. Hence, this might led to data bias and recall bias. Nevertheless, the researcher used an IDK (I don't know) response category so that the caregivers do not give the wrong information about the activities they do not recognize.

Another limitation was the failure to conduct FGD with parents. Although, the researcher initially aimed to conduct FGD with both mothers and fathers, it was not possible to conduct the FGD due to several factors. This might have affected the quality of the data since the researcher was not able to acquire the perspective of parents in FGD, which can limit analysis about functioning differences.

In addition, this study failed to manipulating one or more variables, controlling and measuring any change in other variables. The study has also time restriction.

6.4 Recommendation

- It is found in the study that early intervention is good for children with autism and it would be better if parents send their children to autism centers at an early age.
- Since there are few autism centers, the burden of Joy center is high. As a result, children in the center are not having proper therapies as they should. Besides, many children with autism are waiting longer years to be part in this center. thus, it would be better if the government and any other concerned bodies open other autism centers.
- The autistic children are assisted by general nurses, and the intervention would be more effective if they are treated by professional psychologist.
- Due to the organization's confidentiality rule, children's level of functioning was not assessed from their parent's perspective. Thus, it would be better if other researches incorporate such information from other centers and produce a result.
- The research would also be better if other researchers study the topic using other methods such as experiment. This would help to produce a finding based on the use of manipulation and controlled testing to understand causal processes.
- The study would also be useful guide for policy makers and baseline secondary data for more researchers if other researchers studied the problem using longer years of time i.e., starting from children's enrolment to the center.

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አዲስ አበባ ዩኒቨርስቲ
የሥነ ትምህርት እና የሥነ ባሕርይ ጥናት ኮሌጅ
የሳይኮሎጂ ትምህርት ቤት
ለኒያ ፋውንዴሽን የሚገኙ ባለሙያዎች
የሚውል ቃለ መጠይቅ

በአጥኚ ኣካል የሚሞላ

የስምምነት ቅጽ

ሰላምታ! እኔ ስሜ _____ ነው፡፡ እኔ የካውንስሊንግ ሳይኮሎጂ የማስተርስ ዲግሪ ተማሪ ስሆን፣ በአሁኑ ወቅት በኒያ ፋውንዴሽን ውስጥ የሚገኙ የኦቲዝም ተጠቂ ሕፃናት ላይ በሚስተዋለው የግለሰባዊ እና ማሕበራዊ መስተጋብር ችግር አስመልክቶ በለጋ እድሜያቸው የሚደረግ ርብርብ የሚያስገኘውን ውጤት በተመለከተ መረጃዎችን ለመሰብሰብ ነው፡

እርስዎ ጊዜ እና ፈቃደኝነት ካለዎት አንዳንድ ጥያቄዎችን ላቀርብልዎት እወዳለሁ፡፡ ስለ እርስዎ ማንነት የሚገልጽ ምንም ዓይነት ጠቋሚ ነገር ማለትም እንደ ስም እና አድራሻዎትን የማይጠቀስ ይሆናል፡፡ እርስዎ በዚህ ምርምር ስኬት ላይ የሚኖርዎት ሚና ጠቀሜታው የጐላ ሲሆን፣ እርስዎ ለምርምሩ የሚያበረክቱትንም አስተዋፅኦ አደንቃለሁ፡፡መረጃውን ሞልቶ ለማጠናቀቅ 30 ደቂቃ የሚወስድ ሲሆን በዚህ ጊዜ ውስጥ እኛ የእርስዎን መልሶች እንጽፋለን፡፡

<u>የፈቃደኝነት ማረጋገጫ</u>

ስለ ጥናቱ በተመለከተ የቀረቡትን መረጃዎች ተሳታፊው በሚያቀርበው ቀን በተሰጠው የመረጃ መስጫ ቅጽ ውስጥ በሰፈረው መልኩ አንብቤ በአግባቡ የተረዳሁ መሆኔን አረጋግጣለሁ፡፡ እኔ ጥያቄዎችን ለማቅረብ እድል ያገኘሁ መሆኔን እና ተመራማሪው የእኔን ፍላጐት በሚያሟላ መልኩ ስለ ጥናቱ አስመልክቶ ላቀረብኩለት ማንኛቸውም ጥያቄዎች ምላሽ የሰጠኝ መሆኑን አረጋግጣለሁ፡፡ የእኔ ተሳትፎ በበጐ ፈቃደኝነት የተመረኮዘ መሆኑን እና በማንኛውም ወቅት ምንም ዓይነት ምክንያት ሳላቀርብ እና ምንም ዓይነት መዘዝ ሳይከተልብኝ ከዚህ ፕሮጀክት ለመውጣት የምችል መሆኔን ተገንዝቤያለሁ፡፡ እኔ የሰጠሁትን መረጃ ከጥናቱ በማንኛውም ጊዜ መልሼ መውሰድ እንደምችል ተረድቻለሁ፡፡
በምርምሩ ውስጥ ተመዝግቦ የሚያዙ ማንኛቸውም መረጃዎች በምስጢር የሚጠበቁ እና እኔን በተመለከተ የሚቀርብ ማንኛውም መረጃዎች በምንም መልኩ ቢሆን ለሕዝብ ይፋ እንደማይደረጉ ተገንዝቤያለሁ፡፡

ይህንን መረጃ ለምርምር፣ ለሕትመት፣ ለሌሎች ለማጋራት እና በመረጃነት ሰንዶ ለመያዝ ጥቅም እንዲውል በተሳታፊ መረጃ ቅጽ ውስጥ በተገለፀው መሠረት ተስማምቻሁ፡፡ የድምፅ/ ቪዲዮ/ ቃለመጠይቅ መግለጫዎች የዚህ ፕሮጀክት አንድ አካል ተደርገው ተመዝግበው/ ተቀርፀው እንዲያዙ ስምምነቴን ገልጫለሁ፡፡

ከዚህ በላይ በተጠቀሰው ጥናት ውስጥ ለመሳተፍ ተስማምቻለሁ/አልተስማማሁም፡፡

ቀን _____ ፊርማ _____

ምላሽ ሰጪዎችዎን ማንነት እባክዎ ይግለፁ

1. *ፆታ*
    1. ወንድ
    2. ሴት
2. *ሙያ*
    1. ሳይኮሎጂስት
    2. ክሊኒካል ነርስ
    3. የልዩ ፍላጐት ባለሙያ
    4. *መምህር*
    5. ሌላ (ይግለፁ)_____
3. የጆይ ማዕከል የኦቲዝም ተጠቂ ሕፃናትን እንዴት እየረዳቸው ነው ያለው? በጆይ ማዕከል እየተሰጡ ያሉት አገልግሎቶች ምንድን ናቸው?
4. ምን ያህል ባለሙያ ባለሙያ አለዎ? የትምህርት ደረጃቸው እና የወሰዱቸዉ ስልጠና ኣይነቶች ምንድን ናቸው?
5. የርብርብ ጥረት ዓይነቶች ምንድን ናቸው?
6. ሕፃናቱን ለመንከባከብ በማዕከሉ የቀረበውን ማስፈፀሚያ ዓይነቶች ምንድን ናቸው?
7. ማዕከሉ ለእያንዳንዱ ሕፃን የሚውል ተስማሚ ዘዴን የሚመርጠው እንዴት ነው?
8. ሕፃኑ በየትኛው እድሜ ላይ ነው አፋጣኝ ድጋፍ ርብርብ ሊደረግለት የሚገባው?

    _____

9. የግምገማ መሳሪያዎች እና ርብርብ ማስተካከያ *መመሪያ/ማኑዋሎች* አሉ?
10. ምላሽዎ አዎ ከሆነ, ምን ዓይነት?
11. በቂ የሆነ አወቃቀር ለእያንዳንዱ ዓይነት ምርመራ ተሚልቶ ይገኛል?
    1. አዎ
    2. የለም
12. ምላሽዎ አዎ ከሆነ ማዕከሉ ኦቲዝምን ለይቶ ለማወቅ እና ለመመርመራ ምን ዓይነት መገልገያዎችን ነው የሚጠቀመው?
13. በማዕከሉ አየተተገበሩ ያሉት ኣፈጻጸም ቅጽ ሂደቶች ምንድን ናቸው?
14. ወላጆች ወይም ቤተሰቦች በሁሉም የርብርብ ፕሮሰሶች ውስጥ የነቃ ተሳትፎ ያደርጋሉን?

1. አዎ
2. አያደርጉም

15. ማዕከሉ ለሕፃናቱ በቤታቸው ውስጥ ሊተገበርላቸው የሚገቡ ርብርብሮችን በተመለከተ አግባብነት ያላቸው ስልጠናዎችራ ለወላጆች ይሰጣል?
16. ምላሽዎ አዎ ከሆነ, ከሆነ ምን ዓይነት ስልጠናዎችን ነው ማዕከሉ የሚሰጠው?
17. የትኞቹ ባለሙያዎች ናቸው በአፈፃፀም ሂደቱ ላይ የሚሳተፉት?
    1. ሳይኮሎጂስት
    2. ክሊኒካል ነርስ
    3. የልዩ ፍላጐት ባለሙያ
    4. ሌላ ፣ ይግለጹ _____
18. ለመምህራኑ የሚሰጥ ማንኛውም ዓይነት ሙያዊ የሥነ እድገት (ዴቨሎፕመንታል) ተግባራት ስልጠና አለ?
19. ማዕከሉ እየሰጣቸው ለሚገኙት አገልግሎቶች የተሻለ ጥራት ደረጃን ማረጋገጥ በምን መልኩ ነው?

አዲስ አበባ ዩኒቨርስቲ
የሥነ ትምህርት እና የሥነ ባሕርይ ጥናት ኮሌጅ
የሳይኮሎጂ ትምህርት ቤት

በተንከባካቢ ኣካል የሚሞላ

የስምምነት ቅጽ

ሰላም! ስሜ _____ ነው። እኔ የካውንስሊንግ ሳይኮሎጂ ትምህርት ክፍል ተመራቂ ተማሪ ስሆን፣ በአሁኑ ጊዜ በኒያ ፋውንዴሽን ውስጥ ኦቲዝም ባለባቸው ህፃናት ላይ በለጋ እድሜያቸው ጊዜ በግለሰባዊ እና እርስ በእርስ በሚደረግ መስተጋብር ላይ ያለውን ተጽእኖ በሚመለከት የመመረቂያ ጽሁፌን እየሰራሁ ነው።

እርስዎ ለዚህ ጥናት ተሳታፊ እንዲሆኑ የተመረጡ መሆኑን እየገለጽኩ ትክክል ዎይም ተገቢ ነው ብለው የሚያስቡትን መልስ በመስጠት እንዲተባበሩኝ እጠይቃለሁ፡ በመጠይቁ ላይ ስም መጻፍ የማያስፈልግና የሚሰጡት መረጃ ለጥናቱ አላማ ብቻ የሚውል መሆኑን ልገልጽለዎት እወዳለሁ። መረጃውን ሞልቶ ለማጠናቀቅ 30 ደቂቃ የሚወስድ ሲሆን በዚህ ጊዜ ውስጥ እኛ የእርስዎን መልሶች እንጽፋለን።

ማረጋገጫ

ስለ ጥናቱ የተሰጠውን መረጃ በተጠቀሰው ቀን በቀረበው የተካፋይ መረጃ ቅጽ እንደቀረበው አንብቤ እና የተረዳሁ መሆኔን አረጋግጣለሁ።

ጥያቄዎች ለመጠየቅ እድል እንደነበረኝ እና ጥናት አድራጊው ለኔ እርካታ እና ፍላጐት የሆነውን ጥናት በሚመለከት ያቀረብኳቸውን ጥያቄዎች የመለሰችልኝ መሆኑን አረጋግጣለሁ።

በጥናቱ ውስጥ የተሳተፍኩት በራሴ ፈቃድ መሆኑን እና በማንኛውም የጥናቱ ሂደት ጊዜ ውስጥ ለመውጣት ነፃ መሆኔን፣ ምንም ምክንያት መስጠት ሳያስፈልገኝ እና ምንም አይነት ቀጣይ ሂደት ሳያመጣብኝ መውጣት እንደምችል ተረድቻለሁ። የሰጠሁትን መረጃ በማንኛውም ጊዜ ማውጣት እንደምችል ተረድቻለሁ።

ማንኛውም መረጃ በሚስጥር የሚያዝ መሆኑን እና እኔን የሚጠቁም ማንኛውም አይነት መረጃ ለህዝብ ግልጽ እንደማይሆን ተረድቻለሁ።

መረጃውን በጥናቶች፣ ህትመቶች፣ እና በተካፋይ መረጃ ቅጽ ውስጥ በተገለፀው መሰረት እንዲያዝ ተስማምቻለሁ።

የኦዲዮ/ቪዲዮ/ ቃለመጠይቆች እንደ ጥናቱ አካል ሆነው እንደሚደረጉ ተስማምቻለሁ።

ከላይ በተገለፀው ጥናት ውስጥ ለመሳተፍ ተስማምቻለሁ።

የተካፋይ ስም /እንደ አማራጭ/ ---------- ቀን----------ፊርማ ----------

ቫይንላንድ-3

የልምምድ ባህሪያት ደረጃ -3 እትም

ቫይንላንድ የልምምድ ባህሪይ ደረጃዎች፣3ኛ እትም /ቫይንላንድ ቲኤም -3/

አጠቃላይ የቃለመጠይቅ ቅጽ ሪፖርት

ሳራ ኤስ.ስፖሮ፣ ዶሚኒክ ቪ. ሲቼቲ ፣ እና ሴሊን ኤ.ሳውልኒየር

የተፈታኝ መረጃ

መታወቂያ፡

ጾታ፡

እድሜ፡

በጆይ ማዕከል ህክምና የጀመረበት ቀን፡

የፈተና መረጃ፡

የፈተና ቀን፡

የቃለ መጠይቅ መላሽ ስም፡

ዝምድና፡

የፈታኝ ስም፡

ስለ ቫይንላንድ -3 ነጥቦች

የቫይንላንድ መለኪያ በየቀኑ ለመኖር የሚያስፈልጉ ግለሰባዊ እና ማህበራዊ ክህሎቶችን ይመረምራል። በተጨማሪ እንደ ኦቲዝም፣ አስፐርገር ሲንድረም እና የእድገት መዘግየት ያሉ የእውቀት ችሎታ ማጣት ወይም ሌሎች ተመሳሳይ ሁኔታዎች ያሉባቸውን ልጆች ለመለየት ያገለግላል። ቫይንላንድ በምርመራ ውስጥ እርዳታ ማድረግ ብቻ ሳይሆን፣ ትምህርታዊ እና ህክምና እቅዶችን ለማበልፀግ የሚሆን ጠቃሚ የሆነ መረጃ ያቀርባል።

ቫይንላንድ የንግድ ምልክት የለጋ ህፃንነት ጊዜ የሚደረግ የባህሪይ ልምምድ ሽፋን በመጨመር ከመካከለኛ እስከ ጥልቅ የሆነ የእውቀት እና የአካል እድገት ዝግመቶች ያለውን ክፍፍል አሻሽሏል። በተጨማሪ፣ የተሻለ እና ሙሉ የሆነ የጐልማሳ የባህሪይ ልምምድ ሽፋን እድሜያቸው በገፋ ጐልማሳዎች ላይ የሚታየውን ቸል የማለት ነገር አሻሽሏል።

ደረጃዎች

በፍፁም- በዚህ አገባብ በፍፁም ማለት ምንም አይነት ድርጊት አልተደረገም ማለት ነው። /በሳምንት 0 ቀናት።

አልፎ አልፎ - በዚህ አገባብ ውስጥ አልፎ አልፎ ማለት አንድ ድርጊት በሳምንት ውስጥ ከ1-3 ቀናት ተደርጓል ማለት ነው።

ብዙ ጊዜ - በዚህ አገባብ ውስጥ ሁል ጊዜ ማለት አንድ ድርጊት በሳምንት ውስጥ ከአራት ጊዜ በላይ ተደርጓል ማለት ነው።

አላዉቅም - በዚህ አገባብ ውስጥ አላዉቅም ማለት ድርጊቱ ሲደረግ አልተመለከትኩም ወይም መልስ ለመስጠት አልችልም ማለት ነው

ግላዊ ንዑስ ጕራ
ግላዊ ንዑስ ጕራ ይዘት

- ሀ= መብላት እና መጠጣት
- ለ= መልበስ እና ማውለቅ
- ሐ= መፀዳጃ ቤት መጠቀም
- መ= ፊትን እና ገላን መታጠብ
- ሠ= ንጽህና
- ረ= ጤና

ግላዊ ንዕስ ጕራ ይዘቶች	የይዘት ቦታ	በፍፁም 0	አልፎ አልፎ 1	ብዙጊዜ 2	አላዉቅም 3
1. ምግብ ወደ አፉ/ዋ ሲቀርብለት/ላት አፉ/ፏን ይከፍታል/ ትከፍታለች					
2. ከጠርሙስ ወይም ከማያፈስ የመጠጫ ኩባያ ይጠጣል/ ትጠጣለች።					
3. በጣቶቹ ላይ የቀሩትን የምግብ ቅንጣቶች ይታጠባል/ትጠባለች ወይም ያኝካል/ ታኝካለች።					
4. ደረቅ ምግቦች ይበላል/ ትበላለች።					
5. ልብስ በማውለቅ እና በመልበስ ሂደት ውስጥ ትብብር ያደርጋል/ ታደርጋለች።					
6. እዎቻን እና ፊቱን/ ትዋን በመታጠብ ሂደት ውስጥ ይተባበራል/ ትተባበራለ።					
7. ራሱን/ዋን በማንኪያ ይመግባል/ትመግባለች፣ ሊፈስ ይችላል።					
8. ጫማዎቹን/ቿን እና ካልሲዎቹን/ቿን ያልቃል/ታወልቃለች።					
9. በመደበኛ ኩባያ ወይም ብርጭቆ ይጠጣል/ትጠጣለች፣ሊፈስ ይችላል።					
10. ራሱን/ዋን በሹካ ይመግባል/ትመግባለች፣ ሊፈስ ይችላል።					
11. በሰው ፊት የሚወለቁ ልብሶችን ያወልቃል/ታወልቃለች።					

12. መቀየር ስትፈልግ/ሲፈልግ ለሆነ ሰው ያሳውቃል/ታሳውቃለች					
13. የሚለጠጥ የወገብ ዙሪያ ያላቸውን ልብሶት ይጎትታል/ትጐትታለች፡፡					
14. ከመደበኛ ኩባያ ወይም ብርጭቆ ምንም ሳያፈስ/ሳታፈስ ይጠጣል/ ትጠጣለች፡፡					
15. በመፀዳጃ ቤት ወይም የህፃናት ፓፖ ላይ የሸናል/ትሸናለች፣					
16. እጆቻን ይታጠባል/ትታጠባለች እና ያደርቃል/ታደርቃለች፡					
17. ምንም ሳያፈስ/ሳታፈስ ራሱን/ስዋን በማንኪያ ይመግባል/ ትመግባለች፡፡					
18. የሚጠለቅ ሹራቦችን ያወልቃል/ታወልቃለች					
19. ጫማ ይጫማል/ትጫማለች፣ ምን አልባት በተሳሳተ እግር ላይ እና ማሳሪያ አያስርም/አታስርም፣					
20. በሰው ፊት የሚወለቁ ልብሶችን ይለብሳል/ትለብሳለች					
21. መፀዳጃ ቤት ወይም በህፃናት ፖፖ ይጸዳዳል/ ትፀዳዳለች					
22. በቀኑ ጊዜ ውስጥ የመፀዳጃ ቤት ልምምድ አለው/አላት					
23. የሚጠለቁ ሹራቦችን ይለብሳል/ትለብሳለች					
24. አፍንጫውን/ዋን ሶፍትና ብኪን፣ወዘተ በመጠቀም ያጸዳል/ ታፀዳለች፡፡					
25. ፊቱ/ትዋን ይታጠባል/ትታጠባለች እና ያደርቃል/ታደርቃለች					
26. በሚመገብበት/ ምትመገብበት ጊዜ እንደአስፈላጊነቱ እጁን/ዋን እና ፊቱን/ ትዋን ያጸዳል/ ታፀዳለች ወይም ይታጠባል/ ትታጠባለች					
27. ልብሶቹ/ቿን በትክክል ሁኔታ ይለብሳል/ለብሳለች ወይም በትክክል ያወልቃል/ታወልቃለች					
28. በምሽት ጊዜ ውስጥ የመፀዳጃ ቤት ልምምድ አለው/አላት፣					
29. በሚያስነጥስበት/ በምታስነጥስበት ወይም በሚስልበት/ በምትስልበት ጊዜ አፍና አፍንጫ ይሸፍናል/ ትሸፍናለች፡					
30. መፀዳጃ ቤት መጠቀም ሲያስፈልገው/ጋት ያለምንም እርዳታ ይጠቀማል/ ትጠቀማለች፡፡					
31. የሹራብ ኮፍያ ያስራል/ ታስራለች፣					
32. ጥርሱን/ሷን ይቦርሻል/ትቦርሻለች					
33. ትልልቅ ቁልፎችን በትክክለኛው የቁልፍ ቀዳዳዎች አስገብቶ/ታ ይቆልፋል/ ትቆልፋለች					
34. የቆሸሹ/የረጠቡ/ጠረን ያላቸው ልብሶችን ይቀይራል/ትቀይራለች፣					
35. ዚፖቹ/ቿን አገናኝቶ/ታ ይዘረጋል/ትዘጋለች					

36. እራሱን/ዋን ችሎ/ላ ሰውነቱን/ቷን ታጠባል/ ትታጠባለች፣ እና ያደርቃል/ ታደርቃለች፡					
37. ጫማ በትክክለኛው እግር ላይ ይጫማል/ትጫማለች እና ማሰሪያዎችን ያስራል/ ታስራለች፣					
38. በጠረጴዛ ቢላዋ ምግብ ያነሳል/ ታነሳለች፣					
39. ትናንሽ የልብስ ቁልፎችን በትክክለኛው የቁልፍ ቅዳዳ ውስጥ ይቆልፋል/ ትቆልፋለች፣					
40. ጤናማ የሆኑ እና ጤናማ ያልሆኑ ምግቦች ላይ ግንዛቤ ያሳያል/ ታሳያለች፣					
41. ከቤት ርቆ/ቃ በሚህድበት/ በምትሄድበት ጊዜ የመፀዳጃ ቤት ፈልጎ/ጋ ይጠቀማል/ ትጠቀማለች፣					
42. የቧንቧ መክፈቻ ይከፍታል/ ትከፍታለች እና የውሃውን መፍቀት እና ቅዝቃዜ ያስተካክላል/ ታስተካክላለች፡					
43. ለዝናባማ/ብርዳማ የአየር ፀባይ የሚስማማ አለባበስ ይመርጣል/ትመርጣለች፣					
44. ለመቁረጥ ቀላል የሁኑ ምግቦችን በቢላዋ ቆርጦ/ጣ ይወስዳል/ ትወስዳለች					
45. የሰውነት እንቅስቃሴ ለሰዎች ጥሩ እንደሆነ ግንዛቤ ያሳያል/ታሳያለች፣					
46. ፀጉሩን/ሯን ይታጠባል/ትታጠባለች እና ያደርቃል/ታደርቃለች፣					
47. ለጤና እና/ወይም ለመዝናኛ የሚሆን የአካል እንቅስቃሴ ማድረግ ይመርጣል/ ትመርጣለች፣					
48. ከቤት ከመውጣቱ/ዋ በፊት ካስፈለገው/ጋት መፀዳጃ ቤት ይጠቀማል/ ትጠቀማለች					
49. ጤናማ የሆኑ የአመጋገብ ምርጫዎች ቀደርጋል/ታደርጋለች ፣					
50. ለመቁረጥ አስቸጋሪ የሆኑ ምግቦችን በስለታማ ቢላ ቆርጦ/ጣ ይወስዳል/ ትወስዳለች፣					
51. ከቤት ከመውጣቱ/ትዋ በፊት ለአየር ፀባይ የሚስማማ ልብስ ለመለወጥ ያቅዳል/ታቅዳለች					

የእርስ በእርስ ግንኙነቶች ንዑስ ጕራ

የእርስ በእርስ ግንኙነቶች ንዑስ ጕራ ይዘት ቦታዎች

ሀ=ማህበራዊ ባህሪይ መጀመር

ለ=ስሜታዊ እድገት ማሳየት

የእርስ ሐ=ጓደኝነት በእርስ ግንኙነቶች ንዑስ ጕራ ይዘቶች መ=እንክብካቤን ማሳየት ሠ=የእርስ በእርስ አግባብነት ረ=የቃላት ልውውጥ ክህሎቶች	የይዘት ቦታ	በፍፁም 0	አልፎ አልፎ 1	ብዙ ጊዜ 2	አላዉቅም 3
1. የቤተሰብ/ተንከባካቢ ፊት ትመለከታለች					
2. ፈገግታ ወይም የሚያውቀውን/የምታውቀውን ድምጽ ሲሰማ/ ስትሰማ በፈገግታ ይመልሳል/ ትመልሳለች					
3. የቤተሰብ አባላትን ወይም ሌሎች ቀረቤታ ያላቸውን ለይቶ/ታ ያውቃል/ ታወቃለች					
4. የሆነ የሚያውቀው/የምታውቀው ሰው ሲቀርብ ፈገግታ ያሳያል/ ታሳያለች ወይም ድምጽ ያወጣል/ታወጣለች፣					
5. ቢያንስ 3 የተለያዩ ስምሜቶች ያሳያል/ታሳያለች፣					
6. ከሌሎች ጋር ለመግባባት ይሞክራል/ትሞክራላች፣					
7. የለመደውን/ችውን ሰው እጁን/ዋን ሲይዘው/ዛት መልሶ/ሳ ይይዛል/ ትይዛለች					
8. ለለመደው/ችው ሰው ስሜት ያሳያል/ታሳያለች ፣					
9. በእሱ/ሷ እድሜ ላሉ ህፃናት ፍላጐት ያሳያል/ታሳያለች					
10. ቤተሰብ /ሌላ ቀረቤታ ያለው ሰው በቅርቡ መኖርን ያረጋግጣል/ ታረጋግጣለች፣					
11. በመስታወት ወይም ፎቶ ውስጥ ራሱን/ስዋን ለይቶ/ታ ያውቃል/ ታውቃለች፣					
12. ለውዳሴ ወይም ምስጋና መልስ ፈገግታ ይሰጣል/ትሰጣለች					
13. የቤተሰብ/ ተንከባካቢ የፊት ገጽታ መገለጫዎች ያስመስላል/					

ታስመስላለች፣					
14. በሌሎች ላይ የምታያቸውን ስሜቶች ያውቃል/ታውቃለች					
15. የሌሎችን ድርጊቶች በሚደረጉበት ጊዜ ያስመስላል/ ታስመስላለች፣					
16. ለሌሎች ደስታ፣ ሀዘን ወይም ምክንያታዊነት ያሳያል/ታሳያለች፣					
17. ከእድሜ አቻዎቿና ሌሎች ግለሰቦች ጋር ጓደኝነት ለመፍጠር ይሞክራል/ ትሞክራላች፣					
18. የቤተሰብ አባላት ከሱ/ሷ ጋር እንዴት እንደሚዛመድ ይናገራል/ ትናገራለች፣					
19. ስሜቶቻን ለመግለጽ ለመጥቀስ ቃላቶችን ይጠቀማል/ ትጠቀማለች፣					
20. በባህላዊ ሁኔታ ውስጥ ተገቢ የሆነ የአይን ትይዩ ይጠብቃል/ ትጠብቃለች፣					
21. ጮልማሶች አነስተኛ ወሬ በሚያደርጉበት ጊዜ በትህትና ይመልሳል/ ትመልሳለች ፣					
22. ከበርካታ ሰአታት በኋላ የሌሎች ድርጊቶችን ያስመስላል/ ታስመስላለች፣					
23. የቃላት ልውውጥን ለማስተካከል ንግግሩን/ሯን ይለውጣል/ ትለውጣለች					
24. ሌሎችን ለማስደሰት ለመሞከር የሚያስፈልጉ ነገሮችን ያደርጋል/ ታደርጋለች					
25. ጥሩ የሆነ አንድ ጓደኛ ወይም ጥቂት መልካም ጓደኞች አሉት/ዋት ፣					
26. ተቀባይነት ያለው ግላዊ ቦታ ይጠብቃል/ ትጠብቃለች፣					
27. ጓደኞቹ/ቿን በደህና ሁኔታ ያስተናግዳል/ታስተናግዳለች፣					
28. ከሌሎች ጋር በጋራ ፍላጐቶች ዙሪያ ያወራል/ታወራለች፣					
29. በጊዜ ሂደት ውስጥ ጓደኝነትን ይጠብቃል/ትጠብቃለች፣					
30. ሌሎች የተለየ መውደድ/ አለመውደድ እንዳላቸው ያውቃል/ ታውቃለች፣ የሚያውቃቸውን/ የምታውቃቸውን ሰዎች ሲያገኝ/ ስታገኝ ትንሽ ወሬ ይጀምራል/ ትጀምራለች፣					
31. የሚያውቃቸውን/ የምታውቃቸውን ሰዎች ሲያገኝ/ስታገኝ ትንሽ					

ወሬ ይጀምራል/ትጀምራለች፣					
32. ጥሩ ብቃት ያላቸውን ጓደኞች ይመርጣል/ትመርጣለች፣					
33. በንግግር ልውውጥ ውስጥ ከአንድ ርዕስ ወደ ሌላ ርዕስ በቀላሉ ቀይሮ/ ቀይራ ያወራል/ ታወራለች፣					
34. ከሌሎች ጋር ያለምንም ማቋረጥ ወይም ብልግና ያወራል/ ታወራለች					
35. ምን እያሰበ/ች እና እየተሰማው/ት እንደሆነ ለሌሎች ይናገራል/ ትናገራለች፣					
36. አስፈላጊ ሲሆን በንግግር ልውውጥ ውስጥ አንድ ርዕስ ይዞ/ዛ ይቆያል/ትቆያለች ፣					
37. ጥሩ ነገሮች ሲከሰቱ ሌሎችን እንኳን ደስ አላችሁ ይላል/ ትላለች					
38. በቤተሰብ አባላት የልደት ቀናት፣ ወዘተ ጊዜ ካርዶች/ስጦታዎች ይሰጣል/ ትሰጣለች፣					
39. በጓደኞቹ/ቿ የተነገረውን/ራትን ተመራጭነት የሌላቸውን ተግባራት ያደርጋል/ ታደርጋለች፣					
40. ሌሎች ፍላጐት ባላቸው ነገሮች ላይ ንግግር ልውውጥ ማድረግ ይጀምራል/ ትጀምራላች፣					
41. ተመራጭነት በሌላቸው ርዕሶቹ ዙሪያ በሚደረግ የንግግር ልውውጥ ይካፈላል/ ትካፈላለች፣					
42. በንግግር ልውውጥ ውስጥ ለሚያጋጥሟት ፍንጮች ወይም ቀጥተኛ ያልሆኑ ምልክቶች መልስ ይሰጣል/ ትሰጣለች፣					
43. ሌሎች በሚፈልጉበት ጊዜ ተጨማሪ ማብራሪያ ያቀርባል/ ታቀርባለች					

አስተያየቶች፡

Addis Ababa University

College of education and behavioral studies

School of psychology

Vineland Adaptive Behavior Scales

Filled by caregivers

Agreement form

Introduction

Greetings! My name is_____. I am a graduate student of counselling psychology, currently doing my thesis on the impact of early intervention on personal and interpersonal functioning of children with autism at Nia Foundation.

I have a number of questions that I would like you to answer but please be assured that your responses will be kept in complete confidence. This will take approximately 30 minutes during which time we will be noting down your answers.

Confirmation

I confirm that I have read and understood the information about the project as provided in the Participant Information Sheet dated.

I confirm that that I have had the opportunity to ask questions and the researcher has answered any questions about the study to my satisfaction.

I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to give a reason and without any consequences. I understand that I can withdraw my data from the study at any time.

I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.

I consent to use of the data in research, publications, sharing and archiving as explained in the Participant Information Sheet.

I consent to being audio/ video/ interviews being recorded as part of the project

I agree / do not agree to take part in the above study.

Name of Participant _____ Date _____ Signature _____

Vineland-3
Adaptive Behavior Scales—Third Edition

Vineland Adaptive Behavior Scales, Third Edition (Vineland™-3)

Comprehensive Interview Form Report

Sara S. Sparrow, Domenic V. Cicchetti, and Celine A. Saulnier

Examinee Information

ID:

Name:

Gender:

Birth Date:

Age:

Overall IQ Score:

Test Information

Test Date:

Interview Respondent Name:

Relationship:

Examiner Name

Vineland-3 (Vineland Adaptive Behavior Scales, Third Edition)

[1.0 / RE1 / QG1]

ABOUT THE VINELAND-3 SCORES

The Vineland™: assesses personal and social skills needed for everyday living. It is also used to identify individuals who have an intellectual disability or other disorders such as Autism, Asperger Syndrome and developmental delays. Not only does Vineland aid in diagnosis, but also it provides valuable information for developing educational and treatment plans.

Vineland™: increased coverage of early childhood adaptive behavior improves classification of moderate to profound intellectual and developmental disabilities. Furthermore, a more complete coverage of adult adaptive behavior improves detection of decline in older adults.

Ratings

Never – in this context never is to mean that an action is not done (0 days a week).

Sometimes- in this context sometimes is to mean that and action is done 1-3 days a week

Usually – in this context usually is to mean that an action is done more than 4 days a week

IDK (I don't know) - In this context IDK is to mean that an action isn't recognized by the caregiver

Personal Subdomain

Personal Subdomain Content

A = Eating and Drinking

B = Dressing and Undressing

C = Using the Toilet

D = Washing and Bathing

E = Hygiene

F = Health

Personal Subdomain Items	Content Area	Never 0	sometimes 1	usually 2	IDK
1. Opens her mouth when food is offered					
2. Drinks from a bottle or spill-proof drinking cup					
3. Sucks or chews on finger foods					
4. Eats solid foods					
5. Cooperates in undressing and dressing					
6. Cooperates in washing of her hands and face					
7. Feeds herself with a spoon; may spill					
8. Takes off her shoes and socks					
9. Drinks from a regular cup or glass; may spill					
10. Feeds herself with a fork; may spill					
11. Takes off clothing that opens in the front					
12. Let's someone know when he/she needs changing					
13. Pulls up clothing with elastic waistbands					
14. Drinks from a regular cup or glass without spilling					
15. Urinates in a toilet or potty chair					
16. Washes and dries her hands					
17. Feeds herself with a spoon without spilling					
18. Takes off pullover garments					
19. Puts on shoes; may be on the wrong feet and untied					
20. Puts on clothing that opens in the front					
21. Defecates in a toilet or potty chair					
22. Is toilet-trained during the day					
23. Puts on pullover garments					
24. Wipes/blows her nose using tissue, napkin, etc.					
25. Washes and dries her face					
26. Wipes/cleans face and hands as needed when eating					

27. Puts clothing on right side forward/correct side out					
28. Is toilet-trained during the night					
29. Covers mouth and nose when coughing or sneezing					
30. Uses the toilet when needed without help					
31. Fastens snaps					
32. Brushes her teeth					
33. Buttons large buttons in the correct buttonholes					
34. Changes clothing that has become dirty/wet/smelly					
35. Connects and zips zippers					
36. Bathes or showers and dries herself					
37. Puts shoes on the correct feet and ties or fastens					
38. Spreads food with a table knife					
39. Buttons small buttons in the correct buttonholes					
40. Shows awareness of healthy and unhealthy foods					
41. Finds and uses a restroom when away from home					
42. Turns faucets on and adjusts the water temperature					
43. Selects appropriate clothing for wet/cold weather					
44. Cuts easy-to-cut food with a table knife					
45. Shows awareness that exercise is good for people					
46. Washes and rinses her hair					
47. Chooses to exercise for health and/or enjoyment					
48. Uses the toilet before going out when needed					
49. Makes healthy eating choices					
50. Cuts harder-to-cut food with a sharp knife					
51. Plans for changes in weather before going out					

Interpersonal Relationships Subdomain

Interpersonal Relationships Subdomain Content Areas

A = Beginning Social Behavior

B = Emotional Development

C = Friendships

D = Demonstrating Caring

E = Interpersonal Appropriateness

F = Conversational Skills

Interpersonal Relationships Subdomain Items	Content Area	never 0	sometimes 1	usually 2	IDK
1. Looks at the face of parent/caregiver					
2. Smiles in response to a smile or friendly voice					
3. Recognizes family members or familiar others					
4. Smiles/vocalizes when someone familiar approaches					
5. Shows at least three different emotions					
6. Tries to interact with others					
7. Reaches back when a familiar person holds out arms					
8. Shows affection to familiar people					
9. Shows interest in children her age					
10. Checks to make sure parent/familiar other is nearby					
11. Recognizes herself in a mirror or photo					
12. Smiles in response to praise or compliments					
13. Imitates parent/caregiver's facial expressions					
14. Recognizes emotions in others					
15. Imitates another's actions as they are being done					
16. Shows happiness, sympathy, or concern for others					
17. Tries to make friends with others her age					
18. Says how family members are related to her					

19. Uses words to express her emotions					
20. Maintains culturally appropriate eye contact					
21. When adults make small talk, answers politely					
22. Imitates another's actions several hours later					
23. Modulates her speech to fit the conversation					
24. Does things to try to please others					
25. Has a best friend or a few good friends					
26. Maintains an acceptable personal space					
27. Treats her friends well					
28. Talks with others about shared interests					
29. Maintains friendships over time					
30. Knows that others may have different likes/dislikes					
31. Starts small talk when meeting familiar people					
32. Chooses friends with good qualities					
33. Moves easily between topics in conversation					
34. Talks with others without interrupting or being rude					
35. Tells others what she is thinking and feeling					
36. Stays on topic in conversations when needed					
37. Congratulates others when good things happen					
38. Gives cards/gifts on family members' birthdays, etc.					
39. Will do nonpreferred activities suggested by friends					
40. Starts conversations about things that interest others					
41. Participates in conversations on nonpreferred topics					
42. Responds to hints or indirect cues in conversation					
43. Provides additional explanation when others need it					

COMMENTS

Write Comments Recorded During the Interview

Addis Ababa University

College of education and behavioral studies

School of psychology

Interview guide for Nia foundation staff members

Filled by researcher

Agreement form

Greetings! My name is_____. I am a graduate student of counselling psychology, currently doing my thesis on the impact of early intervention on personal and interpersonal functioning of children with autism at Nia Foundation.

I have a number of questions that I would like to ask you but please be assured that your responses will be kept in complete confidence. I will not include any Identifiers, such as your name and exact address. Only honest answer you would contribute will be used for the improvement of the health planning. Your role in the success of this research is important and I appreciate your contribution to the research. This will take approximately 30 minutes during which time we will be noting down your answers.

Confirmation

I confirm that I have read and understood the information about the project as provided in the Participant Information Sheet dated.

I confirm that that I have had the opportunity to ask questions and the researcher has answered any questions about the study to my satisfaction.

I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to give a reason and without any consequences. I understand that I can withdraw my data from the study at any time.

I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.

I consent to use of the data in research, publications, sharing and archiving as explained in the Participant Information Sheet.

I consent to being audio/ video/ interviews being recorded as part of the project

I agree / do not agree to take part in the above study.

Date _____ Signature _____

Please state your respondents

1. Gender

   A. Male B. Female

2. Profession

   A. Psychologist
   B. clinical nurse
   C. special needs
   D. teacher
   E. Other (specify)_____.

3. How is Nia foundation helping children with autism? What are the services being given at joy center?

4. How many qualified professional do you have? What is their educational background and training background?

5. What are the kinds of interventions given for the children?

6. What kind of resources are available at the center to treat the children?

7. How does the center pick the specific kind of intervention that would work for a child?

8. At what age should a child be screened to start early intervention? _____

9. Is there any available of assessment tool and intervention manuals.

10. If yes, what kind?

11. Does an adequate structure exist for any early detection?

    1) Yes 2) No

12. If yes, what tool does the center use to screen and diagnose for autism?

13. What are the forms of implementation being given at the center?

14. Do parents or families actively involve in all phases of the intervention process?

    A. yes B. No

15. Does the center give parents the proper trainings to implement interventions for their child at home?

16. If yes, what kind of trainings does the center give?

17. Which professionals take part in the implementation process?

    A. psychologists
    B. clinical nurses
    C. special needs
    D. Others specify_____

18. Are there any types of professional development activities that are being provided for the stuff?

19. In what ways do you think the center can Improve for better quality of the service it is giving?

Declaration

This is to clarify that the Thesis is prepared by Roman Abiy Entitled *Personal and Interpersonal Functioning of Children with Autism in Joy Center and* submitted in partial fulfillment of requirements for the degree of the masters of Arts in Psychology; it complies with the regulation of the university and meets the accepted standards with respect to originality and quality.