EFFECT OF SPORT SOCIALIZATION INTERVENTION PROGRAMME ON SOCIAL SKILL LEARNING AMONG CHILDREN WITH INTELLECTUAL DISABILITY IN KAKAMEGA COUNTY, KENYA.

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A Thesis Submitted In Partial Fulfilment of the Requirement for the Degree of Doctor of Philosophy in Sport Science (Adapted Physical Activity) of Masinde Muliro University of Science and Technology.

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DECLARATION

This thesis is my original work prepared with no other than the indicated sources and has not been presented elsewhere for a degree or any other award.

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology a thesis entitled: "**Effects of Sport Socialization Intervention Programme on Social Skill learning among Children with Intellectual Disabilities in Kakamega County, Kenya."**

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DEDICATION

This work is dedicated to my dear daughter Camille and all the children living with Intellectual disabilities and their parents/caregivers in Kakamega County who contributed immensely to the success of this project throughout the study period.

ACKNOWLEDGEMENT

I thank God for his providence in the completion of this work.. I owe special acknowledgement to my supervisors Professor Peter Bukhala and Dr. Gordon Nguka for their great support, patience, priceless commitment and scholarly advice which culminated into the processing and production of this scholarly work. Their constructive evaluation and suggestions were of paramount significance. I also thank the course lecturers, especially Professor Edwin Wamukoya, whose combined effort equipped me with the knowledge, values, skills and techniques which proved valuable in the process of preparation and completion of this research work.

I would like to acknowledge the contributions of the Head Teachers, Special Education Teachers and Pupils of Roster man, Kakamega and Mayiakalo Primary Schools as well as Sport Science Staff and Students/field assistants who volunteered to take part in this research study. They became a source of inspiration, encouragement and support during data collection in their individual capacities. Special tribute to my beloved daughter Camille Akinyi for having been supportive to my academic endeavours and psycho-social support, which made this study a success.

ABSTRACT

Research consistently documents sports participation as promising for the promotion of social skill learning in children with intellectual disability. However, there exists limited evidence- based intervention research to confirm this research proposition. This study investigated the profile of social behaviour functioning levels in eight (8) children with intellectual disability aged 8-14 years who were exposed to an adapted protocol of a sport socialization intervention programme. The specific objectives of this study were to: (a) Establish the demographic characteristics of study participants (b) Determine the effect of a sport socialization intervention programme on social skill development, (c) Compare ratings of social behaviour levels across gender and (d) Compare adaptive behaviour levels of children with ID before and after the sport socialization intervention programme. The intervention involved instructing, prompting and cueing each child with ID into action. This study used a Single Subject design (SSD) quasi-experimental research. Data was collected at three weeks interval during pre-test and post-test after fourteen weeks of treatment. Data collection instruments were: a 3-5-minute video capture, Peer Social Task Rating Scale (PSTRS) and Adaptive Behavior Scale (ABS) checklist. Data was analysed descriptively, visual analysis, time series analysis and Null hypotheses tested by Statistical Process Control (SPC). Results were considered significant at >6 consecutive point runs above Upper Control Limit (UCL) of Statistical Process Control (SPC)/-+3SD. The overall findings of this study showed all children had an identifiable mild to moderate intellectual disability, similarly parents/guardians who accompanied children were females. All the children had lower social skill functioning at pre-test compared to post-test and skills learnt were generalizable. Gender did not affect social behaviour learning. All Children improved in pro-social aspects of adaptive behaviour functioning with YAMY 3, at 21.4%, YAKS 4 at 28.6%, YAKS 5 at 10%, YAKS 6 at 42.8%, YARO 7 at 21.4%, YARO 8 at 35.7% and YARO 9 at 14.3%. Null hypothesis that expected no significant difference on child's learning of social skill and adaptive behaviour after intervention was rejected. Although Yaks 5 registered non-significant performance after fourteen weeks intervention, there was improvement from pretest raw scores of negative social strategies towards positive social behaviour functioning at posttest. The study concluded that majority of caregivers were grandparents, the intervention programme had significant effect on social behaviour. Intervention also improved social behaviour irrespective of gender. Pro-social skills of adaptive behaviour learning of children with ID were enhanced. The study recommends that parents should allow their child with ID to play with typically developing peers in their neighbourhoods to develop social behaviour(s). Promotion of parents/caregivers involvement in their children's learning, both boys and girls should be given opportunities to learn skills. Promote school health promotion programmes to enhance adaptive behaviour functioning in the county. This study recommends for further research on: impact of parental socio-economic factor on social behaviour levels of their children, replication of study on other disability classifications (Children with Autism and Cerebral Palsy who may experiencing similar social skill deficits. Study should be replicated in other counties to benefit other children with ID not covered by the study.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABS	Adaptive Behaviour Scale
ADD	Attention Deficit Disorder
ADHD	Attention deficit Hyperactivity Disorder
ADL	Activities of Daily Living
AI	Activity Index
APA	Adapted Physical Activities
ASD	Autism Spectrum Disorder
BLM	Base Line Mean
DS	Down Syndrome
DQUAS	Director of Quality Assurance and Standards
FXS	Fragile X Syndrome
ID	Intellectual Disability
LCL	Lower Control Limit
MICS	Multiple Indicator Cluster Survey
MVPA	Moderate to Vigorous Physical Activity
NACOSTI	National Council for Science and Technology Institute
PDD	Pervasive developmental disorder
PSTRS	Peer Social Task Rating Scale
SCT	Social Cognitive Theory
SOK	Special Olympics Kenya
SSD	Single Subject Design
SSSAK	Special Schools Sport Association of Kenya
TD	Typically Developing
UCL	Upper Control Limit

UNCRPWD	United Nations Council of Rights of Persons with Disabilities
UNICEF	United Nations International Children Education Fund
UNOSDP	United Nations Office for Sport and Development

OPERATIONAL DEFINITION OF TERM

Adapted Physical Activity	:	Refers to the theory and principles of modifying, adjusting activities to enable children with intellectual disability to engage in physical activity.
Socialization	:	Networks that provide the best possible opportunities for children living with disabilities acquire skills and sport identities to successfully participate in sport and active recreation for enjoyment, leisure and competition.
"Sport"	:	It is a physical activity involving physical exertion and skill in which a child with intellectual disability is paired with a peer in play together for recreation while modelling social behaviours.
Intellectual Disability	:	A condition indicating an intelligent quotient lowers than average on a standard scale characterized by deficits in adaptive behaviour functioning levels.
Down syndrome	:	A genetic disorder caused by the presence of all or part of a third copy of chromosome 21 characterized by delayed developmental milestones, cognitive deficit in 99% of the cases and malfunctioning in one or more of the adaptive behaviour skills.
Pro-social skills		Behaving in ways that show concern for others and society.
Social skills	:	Are situation specific social behaviours that enable one to interact and communicate with one another.
Adaptive behaviour	:	Refers to skills individuals with ID need in order to operate as independently as possible within the environment e.g. keeping clean, dressing, using the toilet, communicating with people, obeying simple instructions, and moving from place to place.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Socialization refers to provision of support services, programs, contacts and social networks that provides the best possible opportunities for children living with Intellectual disabilities to successfully participate in sport and active recreation for fun, enjoyment and competition (Nigel & Williams 2014; Guivarch et al., 2017). Organized adapted physical activities and Sport programmes provide opportunities that make them to participate in suitable physical activities that promote physical, cognitive, developmental milestones, health and fitness (Iverson,2010; Nash, 2010; UNESCO 2015).

Disability sport socialization is concerned with how individuals with Intellectual disabilities acquire their sporting identities (Williams, 2014). Cues to socialization may include among others: Verbalization, response to name calling, passing ball to team mate, ball contact, joining other children in play, holding hands, interaction with peers, and duration of contact in play (Brooks 2013).

Socialization of children into sports is implied and activated within the International Frameworks: United Nations Convention of the Rights of Persons with disabilities (UNCRPD) signed in 2003, 2006 and ratified in 2008, which Kenya has domesticated through Persons with Disability (PWD) act of 2006 and Inclusive Education Act of

2009. Particular articles in these policies identify the rights of persons with disabilities in access, freedom, education, health, recreation, liberty, employment and rehabilitation.

The rights of persons with disabilities (PWDs) to participate in cultural life, recreation, leisure and sport are expressed in article 30 of the UNCRPD.

They are hence forth enabled to participate on equal basis with others and to the fullest extent possible. In mainstream as well as take part, develop, and organize disability-specific sporting and recreational activities and their important role in overcoming individual, social and societal limitations towards an all-inclusive and equal society at all strata. This international human rights treaty outlines the important role played by sports and recreational programmes for persons with disability in various levels of societal integration. These policies have created structural opportunities for socialization into sports for children with disabilities in general. This policy document also requires that children with disabilities are included in Physical Education within the school system to the fullest extent possible and that they enjoy equal access to play. However, children with ID are often absent from school system and if in school are segregated in special units in one corner of the school (UNESCO, 2013; Elder, 2015). This segregation poses a great challenge in socialization and integration of these children into community life., hence necessitating interventions through evidence based research works.

In the development of physical ability occurs from childhood to maturity, for children with Disability (ID), the development of motor ability is either delayed or abnormal (Rehabilitation International 1991). A report by UNICEF (2013) showed a discrepancy

as great as 4 years between motor skills level and chronological age for children with disabilities, including those with intellectual disabilities. They lag behind in motor and social skill developments, delayed language acquisition, have low vitalities, uncoordinated movements and lowered fitness level, this puts them at risk of living sedentary lifestyles (Sherrill & Huztler 2010).

Limited adaptive behaviour in children living with intellectual disability affect their daily lives as they respond to the environmental demands and demonstrate their capacity to adapt to challenges both physical and psychosocial (Brooks2013). Research studies document that intellectual disability has substantial impact on adaptive behaviour functioning of children with Intellectual disability (Behera 2011; Schwartz 2015; Santos, 2014; Santo & Morato, 2012). It has been established that low expectations from society and lack of stimulation in children with ID are barriers to adaptive behaviour skill acquisition (Santos et al., 2010; Thomson et al., 2015)

Research indicates that children with disabilities have low fitness and physical activity levels (Canada Fitness Survey, 2013: Lieberman & McHugh, 2011, Watkinson & Bentz, 2012). Furthermore, Children with Intellectual disabilities experience poor attitudes and negative interactions from their classmates and peers due to delayed social skills development (Blinder & McAllister, 2008; Kerr & Helmstadter, 2010; Taub & Greer, 2010). These then increase the feeling of loneliness and isolation, which limits their involvement in many childhood experiences, especially active recreation and physical activity (Longmuir & Bar-Or, 2014). According to Bedell et al., (2013), children with ID between ages 5 and 7 participate less in community activities than their peers who develop typically, hence lack social skills of maintaining relationships. Socialization

into sports and recreation programs may help children living with ID form good relationships and become accepted in the social scene (Siperstein, Glick & Parker, 2009).

A Study by Gosh and Datta (2012) indicated that participation in sporting activities created a positive change on the functionality of children with Intellectual disabilities. Regular exercise also improved flexibility, posture, range of motion, emotional control, social awareness, and peer relations (Poser & Ronthal 2011; Vogt.2015; Valcova 2015). It is postulated that as children with intellectual disability (ID) spend more time in positive social exchanges with peers, they may develop a greater sense of social competence and better tolerance for others (Brooks et al., 2015). Negative attitude and low performance expectations from community at large also contributes to their low self- esteem. A number of researchers have used intellectual disability as an exclusion criterion in conducting research on populations living with disabilities in Kenya without justifiable cause (Sabiri, Bukhala & Nguka 2018). This misconception on their inability to function in a research setting further confounds the already precarious situation. Several studies have been conducted regarding social skill learning by children with intellectual disabilities with gaps that require further research. Traqoulia, (2018) in Switzerland established that social interactions have no great relationship with social skills, since child with ID were less popular but still tolerated as play mates. On the other hand Garrotte (2017) in a study involving secondary schools established a compelling relationship between social interaction and social skill learning, these contradictory findings create research gap for more investigations.

These children may not always be accepted in group plays because of their limited social skills and it becomes even more challenging for them to be integrated in inclusive settings at school. The recent implementation of the Kenyan basic education act (2013) and Special Needs Education policy framework (MOE, 2018) and disability advocacy has led to increase in enrolment of children with ID in primary school. However, lack of social skills and inadequate teacher competencies affect their integration in school's physical education programmes. These findings are inconclusive thus the current study. Studies in Kenya by Bukhala (2012), Favazza et al., (2016) & Wairimu et al., (2016), on motor abilities, athletic performance and psycho-social parameters, relied on feedback from coaches and caregivers. None involved getting direct feedback from children with ID themselves. There is need for further intervention research that uses images; voices and feedback from children with ID themselves.

Research studies on socialization of children living with ID support the influence of peer support in the development of social skills (Townsend & Hassall 2014; Lipoids 2012; Klavina & Block 2011; Brooks 2013; Everheart et al., 2012; Lopez 2016; Klavina & Radionova 2016). However, these studies neither used a sport intervention nor captured images, voices and direct responses from the children with ID themselves creating a research gap. Socialization of children living with ID in competitive sports in Kenya has created programs in the school system, under the umbrella body of Special Schools Sports Association of Kenya (SSSA-K) Directorate of Quality Assurance and Standards (DQAS 2016); these sports competitions are held once a year in April over a period of three days. However, very few children participate since they rotate in regions; posing

travelling and accommodation challenges thereby restricting numbers (Kakamega County Education office, 2015).

Special Olympics Kenya (SOK) has been running sports training programmes at community level for individuals living with intellectual disabilities, their parents and the surrounding communities to learn skills in different sports. Family support network whose mandate is to cheer their children is being supported by the Special Olympic Movement (Special Olympics Kenya, 2011). Despite these few initiatives, attempts at socialization of children living with Intellectual Disabilities through adapted sport programme has not been studied in Kenya, making this research long overdue. Factors in the socialization processes in Adapted Physical Activity (APA) and sport is therefore an important prerequisite in designing effective intervention programmes, hence this study. There is therefore a need to establish whether Children with intellectual disabilities (ID) improve on their social skill development during the period of the Study.

1.2 Statement of the Problem

Childhood is a critical stage when gross and fine motor skills are learned. These are prerequisite skills in learning sport skills, social behaviour and functional independence in society. Children without intellectual disabilities learn these social skills instinctively in natural play situations with their peers; and through active transport, hence more socialized in community activities as they grow up (United Nations Office for Sport Development and Peace - UNOSDP, 2012).Unlike their peers these children have social skill deficits. The lack of social skills leads to rejection by peers in play.

Secondly, intellectual disability is a barrier to the learning of social skills due to delayed developmental milestones and late socialization, leading to diminished opportunities to engage with peers (Lopez, 2016).Cultural practices that still treat these children as not able to learn and lack of necessary support services limit children with intellectual disability in the acquisition of social skills.

Several researchers have investigated social skill learning by children with intellectual disability globally (Brooks et al., 2015; Klavina & Radionova, 2016; Reid, Bouffard & McDonald,2015). However all these studies were carried out in Europe with advanced technologies and support services for children with ID in social skill training. Lack of evidence based research on effectiveness of sport socialization intervention programme on training of social behaviour among children with intellectual disability creates a research gap.

Thirdly, children with ID need to acquire social skills to enable them function in school, at home and community and gain acceptance from their peers. However, to date there is paucity of information on socialization of these children into adapted physical activity and sports involvement in Kakamega County, Kenya. Hence this study expanded the training of social skills using an innovative intervention a mong children with intellectual disability using evidence based intervention in Kakamega County, Kenya.

1.3 Purpose of the Study

The purpose of this study was to investigate the effect of sport socialization intervention programme on children with intellectual disabilities subjected to fourteen week training in Kakamega County, Kenya.

1.4 General objective

The main objective of this Study was to assess the effect of sport socialization Intervention programme on social skill development among children with intellectual disabilities (ID) in Kakamega County, Kenya.

1.5 Specific objectives

The following were the specific objectives that guided this study.

1. To establish the demographic characteristics of children with ID and their parents/guardians before intervention in Kakamega County, Kenya.
2. To determine the effect of a sport socialization intervention programme on social behaviour functioning levels of children living with ID in Kakamega County, Kenya.
3. To compare ratings of social behaviour functioning levels across gender before and after the sport socialization intervention programme in Kakamega County, Kenya.
4. To compare pro-social skills of adaptive behaviour functioning levels of children before and after the sport socialization intervention programme in Kakamega County. Kenya.

1.6 Research Question

The following research question guided the study in assessing objective one.

1. What are the demographic characteristics of children with intellectual disability and their parents /guardians in Kakamega County, Kenya?

1.7 Hypotheses

The following null hypotheses were tested in this study.

$H0_1$: Sport socialization intervention programme has no significant effect on social behaviour functioning levels of children with ID between pre-test and post-test.

$H0_2$: There is no significant difference in social behaviour functioning levels by gender of children living with ID between pre-test and post-test in Kakamega County, Kenya.

$H0_3$: There is no significant difference in pro-social skills of adaptive behaviour functioning levels of children with ID before and after a sport socialization intervention programme.

1.8 Significance of the study

This research study was an original contribution to knowledge of innovation in adapted physical activities on a specific disability regarding social skill deficits prevention and management. This study was significant as there is little documented literature on the relationship between sport participation and social skill development of children with intellectual disabilities (ID) in Kenya. The research locale was a pivotal point for disability advocacy, awareness and information dissemination. Through this research, information, advocacy and awareness campaigns about children with intellectual disability to parents, teachers and community members would be enhanced.

The study findings may enhance knowledge of parents, teachers, community members, faculty staff and students on role of sports and adapted physical activities towards

intervention in children with intellectual disabilities social skill learning and adaptive behaviour functioning interventions. This research may have particular implications for policy formulation by both national and county government on the important role sport involvement and adapted physical activity participation can play in areas of socialization and behaviour change at all levels regarding children with intellectual disability.

Study would give further insights on prospective programme design for children with ID as well as workable intervention programmes towards the attainment of inclusive policy framework (MoE 2018) and achievement of SDG no.4, theme 1 (assessment and early intervention) and theme 12 (research, data management and innovation). However in inclusive education system, children with intellectual disability with limited social skills are likely not to be intergraded successfully.

Additionally, research study may improve understanding and acceptance of ID by their typically developing peers as a result of participating and interacting with them. By documenting the findings on impact of such interventions and other areas of social development, the study findings could push for early innovative interventions for children living with ID country wide and globally. The study would add to the existing baseline data for future research works locally and worldwide. This study is significant in enriching curriculum content in disability-related and sport innovations. The research provides information to programme developers, policy makers and teachers in designing programmes that enhance the capacity of children living with ID in order to improve their social skills functioning levels.

1.9 Justification of the Study

Research findings in this study may influence policy implementation and practice in special needs education in laying more emphasis in physical activities in order to improve practice in adapted physical activity in Kakamega County, Kenya. The justification of this study lays in its mandate in the implementation of international policy frameworks and national policy obligations in meeting vision 2030, Social Development Goals no. 4 on inclusion of persons with disabilities (UN, 2015). Socialization of children into sports is being referred to within the International Frameworks: United Nations Convention of the Rights of Persons living with disabilities (UNCRPD) signed in 2003, 2006 and ratified in 2008, which Kenya has domesticated through Persons with Disability (PWD) act of 2006 and Inclusive education act of 2009. Particular articles in these policies identify the rights of persons with disabilities in access, freedom, education, health, recreation, liberty, employment and rehabilitation.

The rights of persons with disabilities (PWDs) to participate in cultural life, recreation, leisure and sport are expressed in article 30 of the UNCRPD. They are hence forth enabled to participate on equal basis with others and to the fullest extent possible. In mainstream as well as take part, develop, and organize disability-specific sporting and recreational activities; and their important role in overcoming individual, social and societal limitations towards an all-inclusive and equal society at all strata. This international human rights treaty outlines the important role played by sports and recreational programmes for persons with disability in various levels of societal integration. These policies have created structural opportunities for socialization into

sports for children with disabilities in general. This policy document also requires that children with disabilities be included in Physical Education within the school system to the fullest extent possible and enjoy equal access to play. However, children with intellectual disability are often absent from school system and if in school are segregated in special units in one corner of the school (UNESCO, 2013; Elder, 2015).

This study is in line with the above mentioned legal and policy provisions and makes it justifiable in these contexts. An inclusive approach through sports socialization intervention programme could be an effective way to make inclusion a reality in Kenya and globally. Overly, the investigation about the feasibility of sport socialization models to meet the needs of Kenyan children; would improve and enhance improvements in the social skill function, independent function, and also help broaden and facilitate clinical actions of adapted physical activity specialists.

This study has implications for practice among physical education teachers as the model used in the intervention can be integrated within the school physical education programmes. This has the capacity to improve physical activity participation opportunities for children with intellectual disability.

This study has implications for disability advocacy and awareness that children with ID can learn, hence changing the trajectory of these children. This will create more opportunities for physical activity participation and support. When parents, children without disability and community is sensitized and see that sport is a medium that enhances social skill functioning, it has the capacity to change attitudes and perceptions

about these children, hence resulting in more opportunities that empower them to take part in family and community decision making, hence viewed positively.

This research has implications for the attainment of Sustainable development goals; SDG 1: End poverty in all its forms. Since poverty and disability are closely linked and both have direct impact on health and wellbeing as well as development outcomes, this was addressed through parent education and empowerment in this research project. SDG 3: Ensure healthy lives and well-being for all at all ages, by addressing the social and environmental determinants of sports socialization for learners with disabilities and SGD 4: Ensure inclusive quality Education and promote lifelong learning opportunities for all, (Sustainable Development Goals, UN, 2015). This study was instrumental in fostering healthy child development, lifelong health, cohesion and increased productivity through functional independence in school and daily life for this group of children.

The study also has policy implications for Kenya Institute of Curriculum Development (KICD) towards improving curriculum content on adapted physical education curriculum; through the implementation of core competencies such as community service learning, parental empowerment and engagement for children with ID. This would help to strengthen adaptive behavior functioning levels and community integration so that they can be involved in decision making at family and community levels.

This study was instrumental in the implentation of two broad objectives of the competency based curriculum in Kenya for grade 4,5 and 6.which emphasizes that

learners should be guided to use tactical and social skills in outdoor experience and objective 7 on exhibition on inter and intra-personal responsible behaviours that respect self and others.(KICD,2019).

The implication on teacher training and teaching methodology is immense as a peer tutoring model or partnership model used in this study. If adopted as an instructional strategy, it can have far reaching consequences for social behaviour enhancement of children with ID at all levels. The model has the capacity to enhance sport intervention as a therapeutic modality in managing stereotypic behaviours in these children. The documented data filled the research gap on the role of sport socialization on social skill development in Kakamega County, Kenya.

1.10 Delimitations of the Study

Study was delimited to Children with Mild and Moderate Intellectual disabilities attending primary schools aged 8-14 years accompanied by their parents/guardians. The study was also confined to special public day primary schools for with special units in Kakamega County, and the intervention programme lasted for a duration of four weeks only. This is because persons living with disability are not the same and learning for each one of them cannot be based on norms and hence, each individual should learn at his or her own pace and performance is comparable within an individual and not against each other (Vogt.et.al, 2015).

1.11 Limitations of the Study

This study adopted a single subject design. This design is applicable for research on individual children with disabilities only hence results cannot be generalized to all

participants with intellectual disability in Kakamega and indeed Kenya. However, this design has been validated by other researchers in other countries as evidenced based intervention research on children with disabilities (Marina, et.al.2009; Reid, Bouffard and McDonald 2015; Delsiege, 2015) and its relevance in disability confirmed worldwide. Another limitation was lack of control of extraneous factors like the children's cognitive status, school environments and home environments.

This study did not test parent's socio-economic status yet it may have an impact on social skill learning. These limitations were mitigated by methodological programme modification and purposive sampling of equal gender as well as application of theoretical, conceptual framework and programme implementation with fidelity to minimize the possible biases. The presence of parents and inclusion of a few siblings as TD mitigated against the new setting transition away from home.

1.12 Assumptions of the study

This study was based on the assumption that sport socialization intervention programme participation would lead to improved social behaviour functioning levels of children with ID. It was also assumed that all participants were in good health, optimum dietary intake and participated continuously in the study programme for the fourteen weeks study period.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the literature related to the study on sport socialization intervention programme on social skill learning among children with intellectual disabilities in Kakamega County, Kenya. The literature review was guided by the study objectives and organized into three major areas. The first section dealt with sport socialization and social skill learning levels by children with intellectual disabilities. Secondly, it provided review of related literature on the social skill learning levels between boys and girls. The third section dealt with, adaptive behaviour functioning levels of children with intellectual disability with peer support, fourth section dealt with summary of reviewed literature, and lastly the theoretical and conceptual frameworks that guided this research study is also presented in this chapter.

2.2 Demographic characteristics of children with ID and their parents/guardians

American association of intellectual and developmental disabilities (AAIDD, 2010) and World Facts and Statistics on Disability and Disability Issues (WFSDDI, 2011) defines intellectual disability as a condition characterized by significant limitations in both intellectual functioning and in adaptive behaviour as expressed in conceptual , social and practical adaptive skills. These persons have a function of 2 or more standard deviations below the mean on standardized Intelligence tests. Gavin (2014); Zeddin (2012) have grouped these individuals into four group categories: Mild with IQ of 52-69, Moderate with IQ range of 40-51, Severe with IQ range of 20-39 and Profound with

IQ range of less than 19. The emerging trend by ICD-11 (American Psychiatric Association 2012-2013) states that levels of severity of intellectual disability is based on adaptive functioning which is used to determine the level of support needed rather than I.Q scores, some of which have been proven to be less valid in the lower range of I.Q scores. This classification then places children with developmental disorders such as autism spectrum disorders and cerebral palsy within the intellectual disability classification. Children with intellectual disabilities have been reported to have stereotypic behavioral characteristics: temper tantrums, withdrawal syndromes, inability to pick social cues, restricted movement, limited speech and cognition (Legs don 2014; Grohol 2013; Valcova 2013; Brooks 2013).

National Down Syndrome Society (2020) affirms that ID is affected by limitations in the areas of communication, taking care of oneself, and deficits in social skills. Research further document that Such limitations then, causes the child to experience delayed developmental milestones in such functions like walking, dressing, keeping clean, decision making and engaging in self-help skills compared to their typically developing peers (Sauders et al.,2015; Gluck,2014; Canberrra et al.,2018). Intellectual disability is reported to occur in approximately 2-3% of the general population, with the prevalence of mild ID being seven to ten times more than severe ID (Gopala, Sharma & Unikrisnan, 2014)

Parental factors such as caregiving activities, social support have been reported to generate both positive and negative perceptions among mothers of children with ID (Vilaseca et al., 2014; Roggman et.al.,2014). Similarly ID is associated with poverty and exposure to a wide range of environmental and psychosocial stressors. Family influence

on children's developmental milestones continues to receive massive research attention (Barreto et al., 2017; Cabrera et al., 2018; Chiang et al., 2015). Despite these efforts, understanding how these efforts are exerted to shape developmental outcomes is a complex process, yet to be realized in families of children with ID. Preventive intervention measures of social adversities through sport socialization intervention could mitigate against social skill dysfunction and be useful for prevention and social skill therapy of children with Intellectual disability.

With regards to children's development outcomes, parental education levels, family support and peer assistance haven been consistently associated with better developmental outcomes in children with intellectual disability (Cohen et al., 2013, 2016). The social cognitive theory of learning (Bandura, 1989) offers a theoretical model for understanding the effect of sport socialization intervention on social skill learning of children with ID. Moreover few studies have examined the relationship between sport and management of social skill dysfunctions of children with intellectual disability in Kakamega county, research in this area may be important as the research outcomes could be used to design social skill management strategies for families of children with intellectual disability in Kakamega County, Kenya.

2.3 Effect of sport Socialization intervention programme on social behaviour functioning levels of children with ID.

Sport socialization addresses how individuals with intellectual disabilities acquire their sporting identities and social skill behaviors while engaging with peers (Nigel & Williams, 2014). Social skills are diverse, consisting of various social tasks; these tasks

include joining other children in play, response to name calling, passing ball to team mate in play, interaction with peers, playing with other children, ball contact, interaction with peers and establishing friendships (Brooks et al, 2015). Socialization opportunities for children with intellectual disabilities is embedded within the international frameworks (UNCRPD, 2006, ratified in 2008) and domesticated in Persons with disability act, 2013 and Special needs Policy frame work to align them to the revised constitution (2010). Particular articles in the Kenya constitution (24, 54), identifies rights of persons living with disability in access, freedom, education, health, recreation, liberty, employment and rehabilitation. The role of these articles is to provide opportunities that may help overcome social and societal limitations towards an all-inclusive and equal society at all strata (SDG goal no.4). Despite these proclamations to which Kenya is signatory, the country is yet to fulfil this mandate, as many children with disability lack access to essential services like education and active recreation (Kenya Institute of special Needs Education-KISE, 2018).

Research has documented that intellectual disability is a barrier to the learning of social skills due to diminished opportunities to play with peers in play situations (Lopez, 2016). American association of intellectual and developmental disabilities(AAIDD, 2010) and World Facts and Statistics on Disability and Disability Issues (WFSDDI, 2011) defines intellectual disability as a condition characterized by significant limitations in both intellectual functioning and in adaptive behaviour as expressed in conceptual, social, and practical adaptive skills. These persons have a function of 2 or more standard deviations below the mean on standardized Intelligence tests. Gavin (2014); Zeddin (2012) have grouped these individuals into four group categories: Mild

with IQ of 52-69, Moderate with IQ range of 40-51, Severe with IQ range of 20-39 and Profound with IQ range of less than 19.These children have stereotypic behavioural characteristics: temper tantrums, withdrawal syndromes, inability to pick social cues, restricted movement, limited speech and cognition (Legs don 2014; Grohol 2013; Valcova 2013; Brooks 2013). These behaviors engaged in at certain times interfere with participation in physical activities and social behaviour responses

Most assessments of learners with Intellectual disability (ID) have demonstrated that they have deficiencies in their physical, intellectual, personality and social development, thus becoming dependent on other people in their daily lives (Tonge 2013; UNICEF 2013; Vogt and Struder 2015; Valcova 2015). Their development of social and motor ability is reported to be either delayed or abnormal resulting in a discrepancy as great as 4 years between skill levels and chronological age for these children in comparison to their typically developing peers (Rehabilitation International 1991; UNICEF 2013).

Research Studies contend that children with intellectual disability have low fitness and physical activity levels (Canada Fitness Survey, 2011; Watkinson and Benz, 2012). They are reported to lag behind in motor development, have delayed language acquisition and restricted movements often accompanied by distractible compulsive behaviours and sensory processing problems (Townsend & Hassall, 2014). These stereotypic behavioural characteristics make it difficult for them to interact with peers at school, at home and within the community, impacting negatively on their social skill acquisition (Katiwa, Mwangi and Njororai (2012). On the other hand, research studies report that individuals within Mild to Moderate IQs can benefit from learning social

skills through inclusive sport participation (Bukhala 2012; Wairimu, Macharia, and Muiru, (2016).

Research studies on determinants to socialization of children with intellectual disabilities includes: opportunities to make choices, variety and stimulation of environmental facilities, social support, family involvement, assistive technology and positive staff attitudes (Verdonschot, et al., (2015). On the other hand, Lippold and Burns (2013) also noted that the most frequently identified barriers to socialization by children with Intellectual disability were; not feeling accepted by peers and restricted networks associated with their disability. Conversely, lack of public awareness towards Children with Intellectual disability is also widely considered to hamper socialization of these children (Maaljars Boonen and Neon 2014). Researcher by Abel & Balaruga (2014) also reported that under- nutrition led to long term consequences in the development of fine and gross motor skills of these children.

According to Korir, Mukuria and Andea (2012), poor infrastructure and cultural beliefs were deterrents to their social skill development since culturally they were viewed as liabilities than assets. Early involvement in sport and physical activities provide optimal opportunities for socialization and reduces societal barriers in Africa; where many children with living with intellectual disabilities are to a large extent socially segregated and experiences low performance expectations, as well as negative societal attitudes (Favazza, et al., 2016).

Researchers recommend that for Children with Intellectual disability, avenues for optimal participation and reduction of societal barriers should be provided by involving

them in play with their typically developing peers(TD) through physical activity programmes, thus encouraging unified sports (Klavina and Radionova, 2016). Guided Sport socialization programmes in Adapted Physical Activities and Sport may help children with Intellectual disability develop a sense of efficacy and acquire social skills they may be deficient in if they were involved early enough through social exchanges with peers (Block 2011; Valcova 2012). Additionally, researchers in Canada and United States of America established that sport socialization in adapted physical activity and sports has beneficial effects such as improving emotional control, social awareness, functional wellbeing and peer relations in these children (Valcova 2014; Gosh and Datta 2012). However, these research findings have not been proven to be effective in different cultural contexts where documented data to support these research findings are limited, especially in developing countries.

Research consistently demonstrate that opportunities for learning of social skills are inherent in sport participation by children with ID, and that playing with peers without ID can be an excellent way to enable children with ID acquire social skill (Price,2018; Santos & Morato, 2012). Various researchers have noted that one way to enhance social skill level of children with intellectual disability is through participation in sports and recreational activities; unfortunately, most of the children with intellectual disability have been denied opportunities to socialize with peers in Sports programmes (Block et al., 2011). Research Studies on determinants to socialization of children with Intellectual disability (Bedell et al 2013; Bar-O and Shields 2011) also document that children with Down syndrome do not meet the recommended amount of daily physical activities; this

is compounded by late socialization and inability to pick social cues from peers that create barriers to physical activity for these children.

Brooks (2013) also investigated the effect of physical activities on social skill development of 7-12 year old children with ID in comparison to their typically developing peers (TD) using survey research methodology. Results demonstrated that the more time spent in unstructured activities the higher the social competence. On the other hand Everhart et al., (2012) reviewed several studies on the influence of daily structured physical activities on academic progress of Elementary school Children with Intellectual disability. Results demonstrated that school structured physical activities plays a major role in providing opportunities for children with ID to engage with peers. This is in support of impact of structured physical activities on social skill development. These two findings are supportive of impact of sport on social behaviour learning for children with ID, despite their divergent view on programme type. However, this particular study did not compare structured versus unstructured physical activity programme but investigated on sport socialization in social behaviour functioning levels of the children; irrespective of programme type and inconclusive results; hence in order to establish more conclusive findings, further research work is necessary.

Brooks et al., (2015) investigated on interacting with typical class mates in extra curricula activities in a sample of 40 children aged between 8-11 mild ID wit IQ OF 70.The study adopted survey design which collected information from parents and caregivers in Brisbane, Australia. Results showed marked improvement in conversation starters in peers with ID. The interpretation of this research finding was that, there was

a positive effect of interaction on social skill enhancement of children mild intellectual disabilities..

A study by Lopez (2016) investigated on the use of Physical Education buddies and communication impact on conversation starting conversation with peers without intellectual disability. Results reported significant improvement in conversation starters with peers without Intellectual disability. This study focused only on conversation starters yet their range of social skills is diverse beyond starting and maintaining conversations. There is a gap for further research on variety of social skill cues learning through the use of buddy system.

Bukhala (2012) investigated peer tutoring programme on social, psycho-motor and physical fitness of 106 youth with and without intellectual disabilities in Nairobi City County. The study involved cueing, prompting, reinforcement, observation and individualized education programme. T-test and analysis of variance was used to analyse the data. Results showed marked improvements in psycho-social parameters and also in motor activities. This study relied on feedback from parents and volunteer coaches and did not take into account voice and direct feedback from the participants with ID themselves. One of the recommendations of this study was that a related study be conducted that captures image, motion and voice of a child with intellectual disability. This recommendation has not been investigated in Kenya. This was the gap identified that created the necessity for this study.

Klavina & Radionova (2016) investigated on effect of peer tutoring in a Global Partnership Education (GPE) program involving 259 youth with and without ID. Survey

research design was used to collect information from teachers and respondents. Interactions between target students and trained peer tutors increased when peer-mediated conditions were implemented. However, during teacher-directed conditions interactions with peers were minimal. These results did not present stability and hence findings inconclusive, further the study did not use a sport intervention programme creating a gap for further research to establish a trend of social skill learning through peer- assisted programme.

Townsend & Hassan (2014) also investigated on social interaction of younger children versus older children with peers with ID. Results indicated that younger children easily interact with peers with ID while older children find it difficult to socialize with peers with ID. These findings too did not reflect a clear trend in comparison to other research findings (Brooks 2013), hence inconclusive findings creating a research gap necessitating this research study.

Another research investigation by Traqoulia (2018) involving survey of 38 junior schools with 392 typically developing peers and students with ID in Switzerland, using survey reports found out that students with ID were not popular but were socially accepted by peers, and that social skills and social interactions have no connections, this results disagrees with Garrote's (2014) finding which stated that social skill are connected to social interactions and ability to make friends. These inconclusive findings creates a yawning research gap for an empirical study to establish if social skill learning is a product of socialization in a peer supported programme.

Nepi et al., (2015) also investigated on social posit of Special Needs students in general classes of primary and high school in Italy. The study examined effects of inclusion in different aspects of social participation based on positive interactions and friendliness. Study sample was 486 students aged 7-14 years. This was baseline survey research. Results from this investigation demonstrated that that physically challenged and children with ID are less accepted and that danger of rejection is higher in high school than in primary. This study was a baseline survey and used children with different disabilities, the weakness of this study was that it only investigated on two social tasks of acceptance and friendliness; yet range of social skill are diverse. There is a gap for an intervention on ID children on several social tasks for a more conclusive finding and to establish the trend and level of social skill learning in a peer supported programme.

Another study by Schwab et al,. (2015) investigated on strengthening social skills of special educational needs (SEN) in Graz, Austria. Study involved 35 students with special educational needs (SEN) and 108 typically developing peers in general education classes. Results from survey research illustrated those children with special educational needs (SEN) has less participation and felt less integrated in their peer groups. Results revealed further poor social inclusion is a consequence of student social behaviour. Study recommended that scholars and teachers should improve social skill of students with SEN. This study was on general SEN and only established the opinion of children and did not focus on specific disabilities in general education class, a gap exist for a similar study using a sport based intervention to establish fact in research on children with ID.

On the other hand, research investigation by Plavnick, Kaid and McFarland (2016) on the application of Video-based Group Instruction (VGI) in general high school. The study targeted generalization of targeted skills in general school environment and preservation of acquired social skills by children with ID. Results confirmed that VGI can be successful intervention model and that this intervention can be applied in public school environment. This study was in Spain and used classroom instruction, not sport interaction model. This study creates a gap for similar study to be conducted in a developing county using a sport socialization model.

2.4 Ratings of social behaviour functioning levels across gender by children with ID.

Researchers document that in most aspects of life, children with intellectual disabilities lack equal opportunities and access to essential services (UNICEF, 2017). This includes basic needs such as education and health and these limit their social integration, thus leads to them lacking social skills. Female children are more prone to physical and sexual violence, harassment, discrimination, and exploitation as compared to male children. This limits their opportunities for social interaction and development of appropriate social behaviours (Gilbert & Bennet, 2012).

Revised UNESCO Charter of Physical Education, Physical Activity and Sport which was adopted in November 2015; article 11.3 state that:

"Sport for development and Peace initiatives should be inclusive and culture, gender, age and disability sensitive; and include strong monitoring and evaluation mechanisms".

This policy statement strongly supports inclusive sport for development in practice, policy and research with equal opportunities for both boys and girls. Researchers consistently document that, irrespective of age and gender, Sport can have a social impact on people with disabilities (Kaufman et.al., 2015). However, double discrimination based on gender and disability is often experienced by women with disabilities. Studies show that women make up only a third of athletes with ,with 93% of these not participating in sport of physical exercise. This is due to their reduced social status courtesy of their living with one form of disability or the other (GEI, 2013;Valcova et al.,2015). The combined interaction of traditional practices, gender norms, cultural norms and poverty in developing countries, commonly results in women's and girl's isolation from sports and public life(WHO,2008).This is supported by reports that parents tending to restrict girl's mobility than boys; to protect their safety and reputation. This in effect narrows their appearances in public life including opportunities for socialization and sports engagement (KISE,MODULLE 11,2013).

Prejudice, discrimination and oppression of women in sport has been documented. In a majority of cultures in Africa, women with disabilities experience discrimination at a very young age. These little girls are not introduced to sports at family and community level, and may be taught that they are not fit for child bearing and marriage (Mwaura,2007).

A related study by Thangu et al., (2015) which investigated on classification of athletes' with physical disabilities in Kenya, reported that only 35% of female athletes with cerebral Palsy indicated to have been participating only with similar athletes with disabilities. This could have meant limited opportunities for them in mixed setting.

Parents also appear to protect their girls for fear of molestation and intimidation. Although this study was on learners with physical disabilities, it has implications for all children with disabilities globally. This underscores the need to open up space for socialization by gender, hence necessity for this research.

Therefore, women with disabilities describe themselves as triply disabled (negatively affected by activity limitation, poverty and gender); they are more limited than Men in terms of resources, participation and socialization in sport (Sherrill, 2004). Most countries still enter fewer women in the Paralympics (IPC, 2011). Even the Special Olympics have not been able to achieve equalization of participation by gender to date (Special Olympics International - SOI, 2018). There is no documentation in the socialization of girls living with ID in Kenya. Data on girls with disability in sport are on adult elite athletes, creating a research gap on Girls with intellectual disability's socialization in sport. There is no data available on girls with Intellectual disability attending primary school and their socialization in sport hence their socialization and activity levels remain unknown to date. Few studies focus on comparing social skill learning between boys and girls, hence scarcity of literature necessitating this research study.

2.5 Pro-social skills of Adaptive Behaviour functioning levels by children with ID

Levels of adaptive functioning relative to IQ in areas of socialization, communication and daily living skills is significantly higher in children with Pervasive Developmental Disorders (PDD) compared to those with Attention Deficit Disorders (ADD) and Attention Hyperactivity Disorders (AHD)(Stein et al 2013). There is over whelming

evidence that Children with ID are deficient in daily living skills (dressing, bathing, keeping clean, communication and moving from place to place (Price, 2018).

A study by Schwartz (2015) also stated that domains of socialization and communication have relative weaknesses in daily living skills. The child who scored less in cognitive areas during pre-therapy assessment also scored less in dressing skills in the post-therapy assessment in this study. Research studies documented that the stereotypic behavioural characteristics of ID affect pro-social skills of adaptive Behaviour functioning levels, cognitive skills, body image, size, colour concept and are correlated with self-help skills (dressing). These inhibit their involvement in physical activities and sport (Behera, 2011). There is therefore a need to determine if sport socialization is malleable in improving pro-social aspects of adaptive behaviour skill levels in Kakamega County, Kenya.

Santos (2014), investigated on comparison of adaptive behaviour of children and adolescence with and without ID. The study sample comprised of 586 children and adolescents with ID with age ranges of 6-16,with 296 (50.2%) being females, while 294 (49.2%) were males. Random sampling was used to get the sample from selected special schools and regular schools in Portugal. Instruments of data collection were Portuguese version of adaptive behaviour scale and interview format from those who knew the subjects. Results from data analysis illustrated statistical differences between both groups and adaptive domain in all variables. Study concluded that curricula in special schools differ a lot in content and that this caused non –skill acquisition by the children and adolescence with ID. This study was in Portugal and used survey reports from those who knew the participants. The study was impact on curricula and did not use a sport

intervention. Finally the Portuguese version of ABS is not a validated tool; hence results may need further validation for authentication. The study did not get direct feedback from the study participants. This creates a gap for the current study.

2.6 Single Subject Design

This is a quantitative approach that examines functional relationships between baseline and experimental conditions. The design also encompasses repeated measures of behaviour by observation across several sessions. The ABA design is a design where the experimental intervention is divided into three phase (Delsiege, 2015). The first phase consists of establishing baseline behaviour before intervention. Phase two consists of treatment on an individual and replication of treatment either within an individual or across several individuals consisting of different data sets. Phase three consist of reversal of withdrawal of treatment to establish the new behaviour level. Then the behaviour is analysed between the three phases to establish trend and level of behaviour functioning. Several researchers have adopted it in disability research with positive outcomes on social behaviour modelling.

Drossinou-Korea Maria & Nikabs (2017) also investigated on strengthening social skills in students with an intellectual disability in secondary schools in Greece. Study sample comprised of 3 students with ASD and 4 with mild intellectual disability, task analysis of instruction and behaviour modelling. Results demonstrated that educational interventions are focused on enforcement of social skills as apriority for inclusion of students with intellectual inside the school community. The study recommended that social abilities of the children were insufficient, hence need for an intervention. This

study used a general education instruction in social skill training and did not yield positive outcomes.

O'Handley et al., (2016) also investigated on the application of programme superheroes social skills to establish the accuracy of tasks such as expression of desires, communication and waiting turn to speak among children with ID in general school environment in Spain. The study design was an intervention using video modelling and structured teaching on 3 children with intellectual disability. Results indicated that all participants acquired use of all the skill under investigation and generalized the learnt skills. This study though relevant used teaching intervention; a gap exists for sport–related intervention programme to corroborate these findings.

Güy (2016) also conducted a study on the consequences of intervention of video modelling and social stories for people with ID to teach social skills in Greece. The sample population comprised of 3people with ID aged 20-25 years. Results showed 100% accuracy as they perceived these skills overtime and they generalized them in other cases of social interactions. This study was on older children using social stories and video modelling assessed perception and not person to person physical involvement, creating a gap for the current Study. Although these study used SSD using social stories and instruction the current study incorporated parts of each aspect to create an innovative quasi- experimental design to train social behaviour functioning with sport-based activity intervention.

This design is effective when the researcher attempts to change the behaviour of an individual and wishes to document the behaviour observed. It is commonly used in the

field of special education and counselling. Single Subject Design (SSD) strength is based on the fact that the person is his/her own control group. Similarly this design has been tried and tested in research settings due to its advantages such as; offering immediacy of data, continuous data collection and visual monitoring, precludes instructional decision making. This research methodology has been used previously by other researchers in other countries as evidence based intervention on social skill learning among children with ID (Marina, et.al., 2009: Reid, Bouffard and McDonald 2015, Delsiege, 2015).

The Single Subject research design (SSD) also allowed the researcher to determine changes in social behaviour functioning levels of children with ID arising from a three month sport socialization intervention programme. The study results were applied directly in the field as opposed to laboratory experiments, hence the relevance of this study design (Thomas & Nelson, 2013).

This Single Subject research design was also relevant to this study due to: immediacy of data instead of waiting till post intervention, provided continuous data collection and visual monitoring, as well as allowing for immediate instructional decision making/program modification so that subjects did not linger on in an intervention which was not working for the individual participant. The pre-test and post-test data of the case group was done in three stages: pre-test (baseline) for two (2) weeks. In this pre-treatment phase children were given balls to play freely without guided instruction as they were observed and their behaviour recorded. This was done to determine the social behaviour functioning levels before intervention. The second phase was the treatment phase which lasted for ten (10) weeks. The activities included kicking, jumping the

blocks, throwing and rolling ball, trapping and goal keeping, mini-games on learnt skills and dribbling as well as combined fun games. During this phase children with intellectual disability were randomly pared with typically developing peers to provided support and enhance peer to peer interactions in play. The programme was continued for two (2) weeks of reversal treatment (termination of treatment) at post-test, refer to appendix C showing intervention programme. Observation, video capture and time series assessments were conducted at three weeks interval, with final assessment at the end of fourteenth (14) weeks. The researcher determined the social behaviour functioning levels of the subjects prior to sport socialization intervention. Researchers have used single subject design in studying intervention on social skill training with positive outcomes; hence it is a viable design for children with ID

2.7 Research gaps

The gaps in knowledge identified after extensive review of literature is presented in table 2.1

Table 2.1: Research gaps in reviewed literature

Variable	Author and Year	Findings	Research gap
Demographic characteristics	Barreto *et al*(2017) in India	Family influence children's developmental milestones	Yet to be realized in families
Effect of sport socialization intervene on social behaviour of ID	Traquolia, (2018 in Portugal	Social skill not related to social interaction	Findings contradictory and inconclusive and was in EU
	Garrotte(2017)in Switzerland	Social skill related to social interaction	
	Bukhala(2012) in Kenya	Peer supported sport programme enhances social skills of ID	Did not use images, voices and direct feedback of participants
Rating of social behaviour by gender	Kaufman,*et al*(2015)in Australia	93% of women do not participate in sport	Study did not factor in social behaviour and male gender
Effect of socialization on pro-social skills of adaptive behaviour of ID	Santos *et al*(2014) in Portugal	Curricula differences caused non skill acquisition adaptive function	Was in EU and used general education ,not sport intervention

These research gaps and lack of research documentation in Kakamega, therefore necessitated the current study to shed light on the effectiveness of sport socialization intervention on social behaviour functioning of children with ID in Kenya.

2.8 Summary of reviewed literature

A study by Block et al., (2011), Brooks (2013); Everhart et al., (2012); Lopez (2016), Bedell et al., *(*2013) were in U.S.A., Santos & Morato (2014); Santos, (2012) was in Portugal and on the general education curriculum and used Portuguese version of ABS which has not been validated, while Garrotte et al., (2017) was on general education involving SEN were in Portugal and combined children and adolescence, Guy (2016) used video modelling and social stories. Drossinou-korea Maria & Nikabs (2017) were in secondary schools in Greece. Nepi et al., (2015) in Italy combined both primary and secondary and was on SEN and not specifically ID. Similarly study by Schwab (2015) was on SEN and carried out in Austria and investigated on perception of ID on social participation and acceptance by peers without disabilities.

Studies by Favazza et al., (2016)); Wairimu (2016) were carried out in Kenya. However, their investigations were on motor ability and psycho-social benefits of sport participation on adolescence with and without intellectual disabilities. These studies relied on feedback from coaches and care givers; none involved getting direct feedback from participants themselves. Klavina and Strazdina (2012); Klavina and Radionova (2016) carried out their study in USSR. Most of these studies were on adolescence and investigated on general education programmes in the learning of social skills, a gap exists for a related study on effect of sport socialization programme on social skill development among children with intellectual disabilities in Kenya.

Most of the studies cited above were carried out in developed countries with advanced programmes, culturally appropriate policy, technological and environmental

interventions on disability-related programs. Conversely, Study by Bukhala (2012) was on youth with and without disabilities in a special Olympic programme in Nairobi County, the study also focused more on psycho-social and physical fitness parameters. There is a gap for a related study targeting children living with intellectual disabilities in a rural setting of Kenya in the area of social skill development to fill the research gap.

Furthermore, none of the studies captured voices of the athletes and partners to document their personal views. There is paucity of literature regarding socialization of children with intellectual disability into adapted physical activity and sports. This study therefore, sought to fill this gap and provided evidence based practice of sport socialization intervention programme on social skill functioning levels among children with intellectual disabilities (ID) in Kakamega county Kenya.

In conclusion, there is paucity of literature regarding socialization of Children with intellectual disability into adapted physical activity and sport in this region. This research study therefore was designed to fill this yawning study gap and provide evidence based critical analysis on social skill development among children with intellectual disability in Kakamega County, Kenya.

2.9 Theoretical Framework

Theoretical frameworks are referred to as systems used to facilitate understanding of concepts under investigations (Knouff, 2011). This research study was guided by two theories namely: the Social Cognitive theory modified by Glanz and Rimmer (2005) from the work of Bandura (1989) and Mobile Management of Ecological theory by

Matsudo (2004). Behavioural theories are intervention based models that provide guidance to practice education and research.

2.9.1 Social Cognitive theory (SCT)

This theory was first developed by Bandura (1989) but later improved on by Glanz and Rimmer (2005). This theory is based on learning by observing a model and is a social learning theory which states that behaviour is learnt by observing others, imitation and positive reinforcements. When a child observes others behaviour, they can form rules of behaviour and enhance their knowledge and skills through encoding information based on other children's behaviours. Through observation learning, there is a tendency to learn new behaviours and also modify acquired behaviours when they experience reinforcement, motivation, punishment or extinction of behaviour. The proponents outline factors reinforcing the acquisition of new behaviours as: characteristics of the observer, model presentation, similarity of the model to observer by age, sex and attitude and model competencies. Finally this theory focuses on the acquisition and performance of social behaviours which is usually accomplished using a three- medium elemental approach to the socialization process: socializing agents (significant others), social agencies (home, school, sport) and opportunities. All of these interact to a learned role through which one may become a spectator, participant or just a sport consumer (Campbell & Willis, 1992).

Aspects of this theory was relevant to this study due to its strength of learned behaviour through imitation and environmental influence which the researcher manipulated to suit the condition of the child with intellectual disability in this study; hence facilitated

changes in the desired parameters. Peers can facilitate learning by providing corrective feedback during play and act as role models, hence enable a child with ID to know the socially acceptable behaviour and acquire the ability to manage stereotypic behavioural deficits they could be having (Brooks, 2013).

Sport socialization intervention programme focused more on equal status mode, thus reinforcing social behaviour displays when interacting with peers. Observation learning was adopted in this study due to its strength on programme enhancement through reinforcement of observed behaviour. Peer support, young athlete's guidance enhance self- esteem, social skill learning and ease in establishing relationships with peers amongst children living with intellectual disability. The constructs of social learning resonate with other related research finding (Bukhala, 2017), in which the role of volunteer coaches and trained peer tutors was key in changing attitudes towards athletes with intellectual disabilities (ID) and improved their skill acquisition and social interaction with peers without disability during special Olympic programme at Camp Shriver in Nairobi County, Kenya .

2.9.2: Mobile Management of Ecological Model of Sport Participation, Matsudo (2004).

This theoretical model refers to interrelationships among intra- personal factors, personal connections, institutional factors and community influence. This model assumes that individual efforts at behavioural change are likely to become more successful in a supportive environment when applied through a sport socialization Intervention programme. Mobile management of the ecological model (Matsudo 2004),

identifies arrange of intra personal, social and environmental factors that affect physical activity levels, hence agrees with social learning theoretical approach. These frameworks provided the research team with an excellent opportunity to target social behaviour deficits of children with ID for intervention during this study. These models were relevant to this study, because they focused on the social conditions and ecological factors that influence the Child's socialization process. SCT and Ecological models were used as theoretical frameworks to explore the effect of a sport socialization intervention programme on Children with intellectual disabilities (ID) in Kakamega County, Kenya.

2.10 Conceptual Framework

This study was guided by a conceptual framework developed from the social cognitive theory of learning by Bandura (1989) modified by Glanz and Rimmer (2005); and mobile management Ecological model of Sport participation by Matsudo (2004). The researcher adapted and modified the constructs of these theories for use to guide this research study. This concept was relevant to this study due to its emphasis on peer learning facilitation through corrective feedback and role modelling.

Sport socialization intervention programme was focused more on participation, thereby ensuring equal treatment of all participants irrespective of skill level and deficits in social behaviour functioning levels throughout the study. The flexibility of this conceptual framework also provided the researcher with opportunities for programme modification based on individual capacity of study participants, and peer assisted learning at various points of data collection during the entire study period. The researcher also identified the covariates which were likely to affect the study outcome

as: environmental interface, social skill learning delay by child with ID and new setting transition, since child was operating away from his/her familiar environment. Figure 2.1 represents the conceptual framework which guided the study.

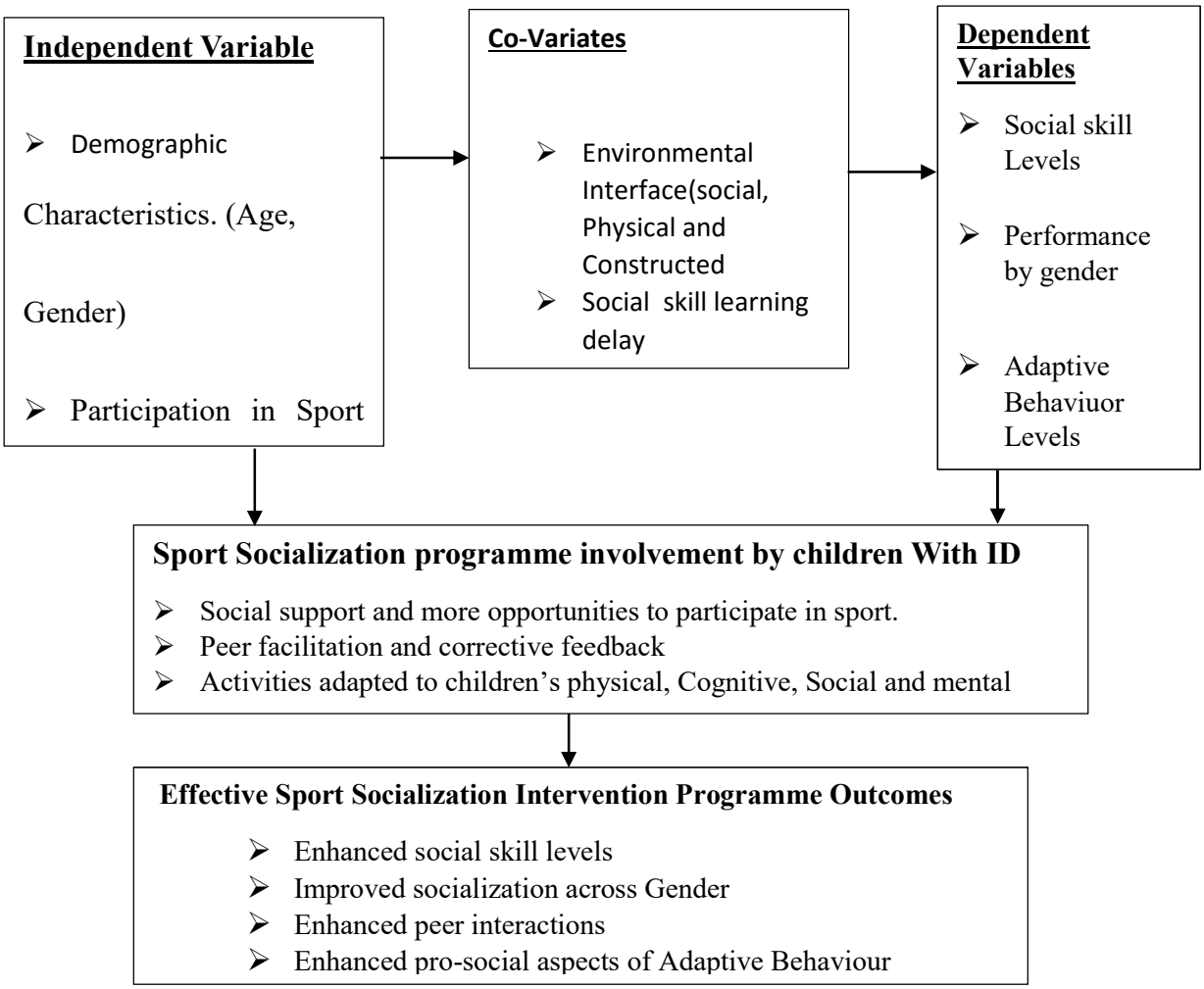

Figure 2.1: Conceptual framework Adapted by the researcher with modification from the work of Matsudo (2004), Bandura (1989).

These were mitigated by a well-designed sport socialization intervention programme involvement by the child and the implementation to minimize the possible effects of the covariates on child, learning. The researcher also relied on this framework to determine the effectiveness of the sport socialization programme. It was hypothesized in this study that a sport socialization intervention programme integrated intrapersonal, social and

constructed environment which led to social skill acquisition and social competence of children with ID in this Study. The outcomes e.g. Improved peer interaction, improved social skills, improved functional independence, enhanced gender socialization and enhanced adaptive behaviour functioning levels was a reflection of programme effectiveness, whereas absence of the same outcomes was equated to no effect on participant's social skill learning. These concepts were relevant to this study due to their effect on learning through socialization and provision of increased opportunities for social physical activity participation, in a specifically designed sports intervention programme, within a peer- supportive environment which was the focus of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses research methodology. This includes research design, measurement variables, location of the study, target population, sample size and sampling procedure, research instruments, pre-testing the research instruments, validity and reliability of the research instruments, data collection techniques, logistical and ethical considerations.

3.2 Research design

This study used simple ABA single subject quasi- experimental research design replicated in 8 subjects. Single Subject Design (SSD) records data on a particular individual by observing and recording measures of one or more variables at different points in time (Delsiege, 2015). Subject serves as his own control rather than use another individual as a control. This design is a user friendly empirical procedure that aids in the evaluation of the effectiveness of the services provided to clients and also beneficial in guiding practice. This design also helps in focusing research on practical significance that can be observed directly with implementation of programme. The selection of design was based on the nature of participants. Children with intellectual disability are not the same and learning for each one of them cannot be based on norms, hence not comparable (Klavina & Block, 2011). Secondly, learning for children with disability is guided by the concept of Individualized Education Programme (IEP), and progresses at each learners level, any research that compares children with disability's performance against each other is not practical to disability specific learning and

individualized instructional strategy. Each learner with ID progresses at his/her own level. Choice of this design fits in well with the theoretical model of social learning (Bandura) through behaviour modelling and made it a viable design for the problem under investigation. Quasi-experimental design resembles experimental research but is not pure clinical trial. Although the independent variable is manipulated, participants are not randomly assigned to conditions or orders of conditions (Campbell & Stanley, 2015). The most compelling advantage of this design is that they are easily more frequently implemented than the randomized trials (Bernard & Bernard, 2012), hence its relevance for use in this study.

3.3 Measurement variables

Independent variables were the demographic characteristics (age, gender) of children with Intellectual disabilities as well as participation in Sport socialization Intervention programme. The dependent variables measured in this study were: the social skill functioning levels tasks (joining other children in play, responding to others in play, responding to name calling by peers, passing ball to team mate, playing games with other children and having conversations with other children); socialization by gender and pro- social aspects of Adaptive behaviour functioning levels in Children with Intellectual Disability (ID) across data sets between baseline, treatment and post treatment phases. The total peer task rating scale and the individual social tasks score were compared within each individual to determine level and trend of social skill learning by child with ID in this programmed intervention.

3.4 Location of the study

This Study was carried out in Kakamega County. Kakamega County is one of the 47 devolved units in Kenya under the new constitution (2010).The county lies at an altitude of between 1,240 meters and 2000 meters above sea level within the equatorial rain forest. Its borderline counties are: Vihiga County to the South, Siaya to the West, Bungoma to the north and Nandi on the eastern part. It comprises of 12 sub-counties (Kakamega County Development Plan-KCDP 2017). Kakamega has high distribution of special schools (M0E, 2017); this is presented in table 3.1

Table 3. 1: Distribution of Special Schools per County as adopted by the researcher from MoE (2017)

	Count	**% of Total**
Nairobi	2	3.5%
Kakamega	5	8.8%
Bungoma	3	5.3%
Mombasa	5	8.8%
Kwale	2	3.5%
Siaya	3	5.3%
Kisumu	2	3.5%
Kisii	4	7.0%
Nakuru	3	5.3%
UasinGishu	2	3.5%
Nandi	1	1.8%
Nyeri	3	5.3%
Muranga	5	8.8%
Meru	4	7.0%
Garissa	4	7.0%
Lamu	2	3.5%
Turkana	1	1.8%
Wajir	2	3.5%
Kitui	4	7.0%
Total	57	100.0%

Regarding disability type, the prevalence rate of disabilities among children aged 0-21 was also reported to be 13.5% which is comparable to the global estimate of 15% as of

(WHO, 2017). Therefore the county has higher rate of children with ID falling within the participants age ranges. Disability prevalent rate in Kenya is presented in table 3.2

Table 3. 2: Incidence of Disability by County as adopted by the researcher from (MoE, 2017) SNE report.

County	Total No. of Children	CWDs	Disability Rate
Nairobi	3260	531	16.3%
Kakamega	2176	320	14.7%
Bungoma	2046	399	19.5%
Mombasa	1404	142	10.1%
Kwale	783	54	6.9%
Siaya	1153	335	29.1%
Kisumu	993	212	21.3%
Kisii	1599	151	9.4%
Nakuru	1753	121	6.9%
Uasin Gishu	1190	107	9.0%
Nandi	961	112	11.7%
West Pokot	705	44	6.2%
Nyeri	802	81	10.1%
Muranga	1114	173	15.5%
Meru	1448	148	10.2%
Garissa	821	85	10.4%
Lamu	209	26	12.4%
Turkana	1123	137	12.2%
Samburu	287	26	9.1%
Wajir	635	72	11.3%
Kitui	1147	178	15.5%
Total	**25,609**	**3,454**	**13.5%**

The distribution of special schools and disability prevalence rate, high number of persons with disability experiencing activity limitation (KNSPWD, 2008) made Kakamega County an ideal location for this study.

Study site was at Masinde Muliro University of Science and Technology, where. Participants converged for the programme implementation; this was done to ensure reliability of the measurement procedures, expose them to the same environment with standardized training and instruction while performing activities in the social skill rating checklist, and hence need for the centralization. This was also done to ensure ease of logistics in coordinating the research assistants, facilitation and programme implementation. The choice was also necessitated by its central location with regard to participant's locations and accessibility by study participants. Refer to appendix B showing a map of Kakamega County.

This project involved children from three primary schools coded appropriately for purposes of data collection as follows: Roster man (YARO), Mayiakalo (YAMY) and Kakamega (YAKS) with Special Units catering for children with intellectual disabilities. The study was restricted to children who had been assessed and confirmed as having mild to Moderate intellectual disabilities aged between 8-14 years old, accompanied by their parents/guardians/caregivers. The study was confined to public day Primary Schools with Special Units for children with intellectual disabilities (ID) in Kakamega County, and the intervention program lasted for duration of Fourteen weeks only. Each school is located at opposite borders of rural setting in Kakamega, County of western Kenya. They were impacted by many of the barriers to socialization and education highlighted in this study. Map of Kakamega county (Appendix ii).

3.5 Target population

The study targeted 8 children with Intellectual Disability (ID)Purposively sampled based on Assessment records from EARCS, School records and 24 typically developing peers. The target population. was guided by the study design of single subject which ranges between a minimum three (3) to a maximum eight (8) ,these were children registered in public day primary schools with special units catering for children with various disabilities, within Kakamega County, Kenya. The TD was to pair with ID as part of the intervention and to help in the display of social skills and manipulation of the intervention programme between phases for each individual child with ID.

3.5.1. Inclusion criteria

The study included only children with ID, males and females aged 8-14 years purposively sampled from school records, attending day primary schools with Special units in Kakamega County. These children were important in this study because they are the most vulnerable most affected by social skill deficits yet still most under studied in the field of research. Children in this group were identified as having mild to moderate intellectual disabilities. The information about the children was obtained from the Education Assessment Resource Centre Coordinators (EARC's) records in Kakamega County. Researcher contacted teachers in-charge of special units to help in identifying the Children for programme inclusion. The children's ages were checked from the school records or as reported by parents or their caretakers and their disability confirmed by the research assistant through use of Multiple Indicator Cluster Survey-MICS (UNICEF, 2008) and Activity Index-AI (Simeonsson, 1995). Comparable behaviour

modelling children of typically developing peers (TD) included children without any identifiable disability within the same age ranges. Only children with ID with the ability to move independently and follow simple instructions were recruited for inclusion in the research study.

All the participants had a medical diagnosis of mild and moderate intellectual disability, and had cognitive abilities to follow verbal commands and cues; did not use any mobility devices and did not use drugs within six months prior to the study. During the study, the participants were not in any other interventions to improve social skill and adaptive behaviour functioning, and had previously, not participated in Inclusive Sport at School or Community level. They had no associated pathologies or movement disorders.

3.5.2 Exclusion criteria

Children with intellectual disability attending special public primary schools within Kakamega County, who had severe health conditions and used assistive devices for mobility that would hinder their participation in the sport socialization intervention programme were excluded from the study.. Children aged 7 years and below, and others who were likely to attain 15years of age, before the end of the Intervention Programme were also excluded from the study. Children from boarding primary schools were also excluded from the study due to difficulty in getting consent from their Parents/Guardians and also difficulty in getting personnel to a company them to and from the study site for the entire period of the study.

3.6 Sample size and sampling procedure

The study sample size was identified from the EARC's office records in Kakamega County. These records indicated the names, location and the schools where these children were placed after assessment. The researcher then got in touch with head teachers of the schools for permission to include their schools in the study. Special education teachers in charge of special units helped in the identification of the study sample. The researcher organized with the teachers to meet the parents in each school with their children. During the meeting the researcher administered The Activity Index tool (AI) and the Multiple Indicator Cluster Survey (MICS) to determine presence of mild to moderate intellectual disability. Based on this, the maximum sample size of Eight (8) was selected for inclusion in this study. The sample size was guided by the study design (SSD) which places the minimum number at three (3) and maximum eight (8) in single subject design, (Delsiege, 2015). The researcher used the maximum threshold to cater for natural attrition if any during the duration of the study.

Study sample was gotten through purposive sampling method. This technique aims at achieving a sample whose units share the same(or very similar) characteristics or traits/known sample with definite characteristics targeted for research study;a homogenous sample (Mugenda & Mugenda 2003; Thomson et al.,2015). This was informed by the researcher's judgment and knowledge of the population, as well as issues involved in the problem under investigation. Teachers in the Special units in each school targeted by the study were involved in the identification of the required sample. A population of children with Intellectual Disability formed the study sample (N=8) comprising of Four (4) boys and four (4) Girls aged 8-14years (Eight to Fourteen years

of age), from public day primary schools with special units for intellectual disability within Kakamega County. They all met the criteria set for inclusion in this study (Gavin, 2014; Schwartz, 2015; Zedin, 2012). This group was characterized by estimated IQ score of between 40 and 70 as well as deficits in adaptive behaviour functioning as indicated by Educational Assessment Resource (EARC) Records and competed by their respective schools and confirmed through use of MICS (UNICEF, 2008) and AI (Simeonsson et.al., 1995) by the researcher.

These two instruments and records from EARC in Kakamega office confirmed and validated the presence of mild to moderate intellectual disability in each recruited child. MICS (Multiple Indicator Cluster Survey) is a 10-item questionnaire used to identify Children with Congenital and developmental disability related to Vision, hearing, motor, language, and health and activity limitation. It has been used in numerous cultural context including Kenya (Favazza, Siperstein, & Wairimu 2016) in an interview format with apparent or caretaker.

Likewise AI (Activity Index) is young children with disability functional assessment tool that has been used in many countries as a tool to provide information about child's ability across nine major areas: A-Audition, B-Behavior and social skills, I-Intellectual Functioning, L-Limbs, I-Intentional Communication, and T-Tonicity, I-Integrity of Physical Health, E-Eyes, and S-Structural Status. A rating for each child in each area is provided using a scale ranging from 0 (No impairment -6 (profound ID). AI has demonstrated Adequate Test –retest reliability of 70 (Buysse, Smith, Bailey & Simeonsson 1993). These two instruments were modified by the researcher when she visited the children in school in presence of their parents; to further confirm the presence

and level of ID for each recruited child for inclusion in the programme .This was done to make the study culture appropriate and also, to guide the research team on the type of adaptation each participant required during the intervention phase of the programme implementation.

A comparative group of typically developing peers (N=24) included children without any identifiable disability, from regular class attendance records. These children were randomly selected and only those whose parents gave consent were included and used as part of the sport socialization intervention programme to act as peer tutors. Socialization of children into sports is being referred to within the International Frameworks: United Nations Convention of the Rights of Persons with Disabilities (UNCRPD) signed in 2003, 2006 and ratified in 2008, which Kenya has domesticated through Persons with Disability (PWD) act of 2006 and Inclusive education act of 2009. Particular articles in these policies identify the rights of persons with disabilities in access, freedom, education, health, recreation, liberty, employment and rehabilitation.

The rights of persons with disabilities (PWDs) to participate in cultural life, recreation, leisure and sport are expressed in article 30 of the UNCRPD. They are enabled to participate on equal basis with others and to the fullest extent possible. in mainstream as well as take part, develop, and organized disability-specific sporting and recreational activities; and their important role in overcoming individual, social and societal limitations towards an all-inclusive and equal society at all strata. This international human rights treaty outlines the important role played by sports and recreational programmes for persons with disability in various levels of societal integration. These policies have created structural opportunities for socialization into sports for children

with disabilities in general. This policy document also requires that children with disabilities be included in physical education within the school system to the fullest extent possible and enjoy equal access to play. However, children with ID are often absent from school system and if in school are segregated in special units in one corner of the school (UNESCO, 2013; Elder, 2015).

Children without disability were included into the programme as peer tutors. The sample of 24 participants included twelve (12) boys and twelve (12) girls and served as peer tutors, this was to ensure a pairing ratio 1:1, 1; 2 and 1:3 respectively during intervention phase of the programme. They were inducted in the specific activities and fun games of the intervention programme including cueing, supporting, prompting, individualized education programme, reinforcing and providing feedback to their peers as part of the study intervention, under supervision of one research assistant who was an MSc. Student in Health promotion and Sport science at Masinde Muliro University of Science and Technology, Kakamega, Kenya.

3.7 Research Instruments

In order to achieve the objectives of this study, a 5 minute video capture adapted from the work of Faith, Hodgins & Reigh (2012) was used to capture images and voices, Peer Social Task Rating Scale (PSTRS) by Gresham , Eliot (1990) rated use of skilful and unskilful strategies in behaviour responses in social skills by recording skilful and unskilled behaviour determinants of social responses, and Achenbach's Adaptive Behavior Scale (ABS) Check lists by Sparrow, Balla, Gichetti (2005; Cook and Oliver (2011) adapted by the researcher and used to measure changes in performance of pro-social skills of adaptive behaviour of the subjects participating in sport socialization

intervention programme and scores taken before, during and after the treatment. The adaptive behaviour checklist was used to observe, record and to get parental reports of absence or presence of each child's engagement in self-help skills and activities of daily living both at the study site and also at home. The average of all the scores for each child in the eleven adaptive task were taken as the child's adaptive functioning.

3.7.1: Video capture and multi-modal video analysis

Video capture and multi-modal dyadic video analysis **(**Faith. et al 2012) was adapted by the researcher and used to record and decode participants' social behaviour, their voices and body languages(appendix iv). This comprised of data sets containing 28 sessions of 3-5 minute participant-participants during key moments of interactions in play. In each session, the researcher examined an adapted semi-structured soccer training and fun games protocol (Appendix iii) which was designed to elicit abroad range of social behaviours and methods to decode the interactions. Study recorded 28 sessions through multi-modal data sets which contained high interactions based on behavioural cues under investigation. These cues were recorded by research assistants during the sport socialization intervention programme in play fields. An associated scoring sheet was used by research assistant to note whether a child engages in a social behaviour following verbal prompts including eye contact, smiling, holding hands, kicking ball back, picking social cues, asking for help and smiling during key moments of child to child interactions. Immediately following completion for each sub- stage, child's effort to engage was rated using a 3 point Likert scale as follows as: 0=easily engaged,1=little effort required to engage,3=significant effort required to engage, eventually collapsing 1 and 2 into one category. Scores closer to 0 was equivalent to

high social skill rating, while score closer to 2 is poor social skill (refer to appendix D) showing video coding checklist rating. This was then cross-referenced with scores on PSTRS to get the raw scores for each participant in social skill functioning.

3.7.2: Peer Social Task Rating Scale (PSTRS).

This tool was adapted from Social Skill Rating Scale (Gresham & Elliot 1990) and used with modifications by the research team to measure social skill functioning levels of children with ID during the study for purposes of triangulation. It measured how often a child attempted various social tasks and child's success at each task using a 5 point Likert scale ranging from 1=rarely, 5=very often, research assistants rated the child with ID in seven social tasks (joining other children in play, responding to other children in play, responding to name calling, passing ball to team mate, playing games with other children and having conversations with other children). Total scores were created by summing the frequencies of skilful strategy use with reverse coded unskilful strategy use (-5 to -1). Higher frequency/positive scores = skilful strategy, low frequency/negative score = unskilful strategy. The interpretation of these scores is that skillful strategies represents by positive PSTRS facilitate social behaviour engagement, whereas unskillful strategies representing negative PSTRS does not facilitate social behaviour response following peer prompting.

3.7.3: Adaptive Behaviour Scale (ABS)

Adaptive Behaviour Scale (ABS) checklist by Achenbach (2000) was used to measure adaptive strengths and weaknesses as an additional score for social competence on pro-social aspects of adaptive behaviour functioning levels as opposed to negative social

behaviours. This scale included items assessing a child's ability to interact with others (cooperation, consideration, and interaction with others, knowing names of playmates etc.). The behaviour is scored as 0=absent and 1=present. Summary of frequency of scores closer to 0=low ABS .1=high ABS.

These Checklists are validated tools in measuring important aspects of social behaviour and adaptive functioning levels among children with Intellectual Disabilities (ID). They have been used in research investigations on social skill ratings among youths and children with intellectual disabilities in the United States of America and Canada by Brooks (2013), Gosh and Datta (2012), with Cronbach's alpha of .87. Protocols for assessing social behaviour levels are in appendix (E) and adaptive behaviour checklists are in appendix (F) whose interpretations and assessments were used in the discussion of the results.

3.8 Pre-testing the Research Instruments and Training of research assistants

Eight (8) research assistants were recruited and trained by the researcher; they were blinded to the intervention and were selected from among caregivers, physiotherapists, teachers/volunteer coaches and students of sport science proficient in handling children with ID, and who speak the local language of the areas captured by the study, for a period of three days. The selection ensured that the tools can be easily understood and interpreted in alanguage easily understood by the study participants, hence no need to translate items in the tools. Three research assistant observed one child, scores were compared until three scores for child tally for all the three, and then it was confirmed as the valid score for the child. The research assistants gained more experience during pre-testing among three (3) children with mild and moderate intellectual disability in Mululu

Special Unit for Intellectual Disability Vihiga County, which was not used for the study. During the pre-test, the test –retest method was used and results analysed statistically to determine the reliability of instruments. Peer Social Task Rating Scale (PSTRS) checklist for children with Intellectual Disability (ID) and Adaptive Behavior Scale (ABS) were used to track social behaviour functioning levels of these children, and exercise repeated with the same group after two weeks. To assess data collected during pre-testing, results were statistically analysed and the Cornbrash's alpha formula used to calculate the reliability. A reliability index of 0.70 and above was set as acceptable for this study. A test-retest analysis using two-tailed intra-class test correlations(ICCs) was also employed during pre-testing at Mululu Primary Special Unit in Vihiga County, Kenya; results indicated that the tests were reliable on population of children with Mild and Moderate intellectual disability in social skill functioning, social competence and adaptive behaviour functioning in the Kenyan context. This was done to ensure that the test items were culturally appropriate.

3.9 Validity and reliability of the Research Instruments

Validity is the accuracy, soundness or correctness with which a test instrument measures what it is intended to measure (Thomson, et al, 2015; Bolanriwa, 2015). In this study, validation of instrument was established so that the measurement tools are consistent with study variables. PSTRS, Video capture and ABS tools which were used to assess social skills and adaptive behaviour functioning have been found to valid and their reliability established (Brooks 2013; Cook and Oliver 2011; Faith et al 2012).

In this study face and construct validity of test items were assessed by experts from the department of health promotion and Sport Science at Masinde Muliro University of Science and Technology and comments from the experts were incorporated in the final tools to enhance their validity for use in this study. Further, to ensure construct validity the PSTRS was drawn from previous literature that identified measurements with a strong relationship to social skill functioning levels. It emphasizes impairment, type of ID, speech, reciprocity and responding to peers prompts. This tool had been tested and found valid and reliable in a sample of Children with intellectual and developmental disabilities and typically developing peers (TD) in the United States of America (Brooks, 2013).

To further confirm the efficacy of data collection in this study, the checklists were given to the supervisors and two lecturers in the Department of Health Promotion and Sport Science at Masinde Muliro University of science and Technology, to critique and make suggestions to ensure clarity and adequacy of the research tools. Based on the feedback, the researcher revised the checklists in the tools and in this way content validity was achieved. Video capture and coding supplemented and confirmed the findings and helped strengthen the visual analysis of the data gathered during the Study. In order to ensure the suitability of the test items on the intended sample, the tools were pretested. This process helped the researcher to establish content validity. Test-retest reliability results during pre-testing in Vihiga County, were highly reliable with PSTRS and ABS at r=0.85 to 0.97.This is well above Cronbach's alpha acceptable reliability index of r=.70 (Donoghue, 2012). Consequently, the social skill rating items had been adapted

from acceptable instruments internationally, whose validity and reliability have been established globally, hence their relevance in this study.

Internal consistency technique was also used to test the reliability of data collection instruments. In this case Cronbach's alpha, which is a general form of Kruger-Richardson (K-R) 20 formulas were, used (Tavakol & Derrick, 2011). Cronbach's alpha value of 0.70 was set as an acceptable reliability index to ensure good internal consistency for this study. This process enabled the researcher to ensure that the instruments used in this study were valid and reliable on a population of children with ID in Kakamega county,Kenya.

3.10 Data Collection Procedures

Letters were sent to teachers in charge of special units in the three schools. Children were recruited from public primary schools with Special units catering for Children with intellectual disabilities. The purpose of these letters was to explain to the parents/guardians, that the aim of the project was to determine the effect of a sport socialization intervention programme on rating of social behaviour functioning levels of children with intellectual disability in Kakamega County. School head teachers and teachers in charge of Special Units in the selected schools were asked to distribute these letters to families of these children with moderate to mild intellectual disability between ages 8 to 14 years.

To recruit children without intellectual disability and any other identifiable disability (N=24), solicitation letters were sent purposively to families of children in the same age brackets to serve as partners. Friends of children with intellectual disability enrolled in

the same public special primary schools in the same areas were also included in the selection process. This was to ensure that the project kicked off from the point of acceptance and mutual understanding. Interested parents were encouraged to contact the researcher for further information. The entire study sample was (N=8), comprising of four (4) boys and four (4) girls for purposes of this Study, the other 24 children were part of the intervention programme, therefore data was analysed for the seven (7), out of eight (8) participants (eight) study participants who were the children living with intellectual disability (ID) and completed the 14 (fourteen) weeks programme. The research team met the participants and their parents/guardians/caregivers on agreeable day and time (Saturday at 9.00 a.m. at Kakamega primary School Special Unit for MH) where the intervention programmes details was explained to them. The project site was based at Masinde Muliro University of Science and Technology main campus sports ground; where space was borrowed when it was not in use by the Institution. Baseline data on present level of social behaviour functioning levels of children with intellectual disability was collected in the first two weeks of the study where the participants were given balls and other equipment to play freely with non-intervention.

An organized adapted physical activity socialization programme (appendix iii) was conducted once every Saturday for a duration fourteen (14) weeks (week1,2,3, 4, 5 6, 7&8) lasting two hours (30 minute intermittent practical lessons, with breaks, alternate participation and 90 minutes learning on hygiene, ADL and informal education component on functional independence. This was done so as not to interfere with school routine. The activities included jumping boxes, jumping blocks, kicking ball, mini soccer games, assessment in week 5, throw-in, rolling ball, trapping, goal keeping and

assessment. Thereafter, the intervention programme was intensified from the 9th week up to 12th week to run for 5 days per weeks during the August 2018 school holidays for duration of four (4) weeks. Thereafter, the intervention reverted to once per week without intervention when schools opened for the remaining Two (2) weeks 13th and 14th to check on the maintenance of benefits already accrued if any within the three months study period. Then programme lasted for Fourteen (14) weeks (refer to appendix iii). This was done purposively to monitor the study out come with intentional manipulation of the independent Variable during the data collection and intervention phases. Participants were also taught hygiene, activities of daily living, as well as functional independence as part of the programme implementation to supplement social behaviour functioning levels.

During the implementation of intervention programme, children with intellectual disability trained alongside their typically developing peers (TD). They were paired randomly during specific data sets as follows: week 4 and 5 (1:1 ratio), weeks 6 and 7 (1:2 ratio), weeks 8 and 9 (1:3 ratio) and weeks 10, 11 and 12 whole group participation (no pairing). In the last two weeks (week 13 & 14) of the intervention the treatment was terminated and all the children were allowed to play freely. This was done so as to give social support under the guidance of a trained volunteer research assistant, supervised by the researcher (each session 2hrs X 28 sessions). An Informal parent educational programme was included to teach parents on how to support their child with ID, Nutrition, soap making to supplement family income, general fitness to enable them be healthy and be contracted by the researcher team to support their children practice the learnt skills at home.

A training activity log was given to parents/caregivers/guardians after the training sessions to help children living with intellectual disability practice on the learnt skills and support the child at home before the next session. Test administration using 3-5 minute video capture, PSTRS and ABS tools were used to document social skill functioning levels, gender socialization and pro-social aspects of adaptive behaviour functioning levels by the research assistants in children with ID before, during after the treatment period. This enabled the researcher to determine the differences in the social behaviour functioning, socialization levels between boys and girls and pro-social aspects of adaptive behaviour levels of children with Intellectual Disabilities (ID) before, during and after the intervention programme. Parents were also contracted to report how the children helped with house chores and activities of daily living as part of adaptive behaviour training. The project was continuously adjusted to meet the evolving needs of the study participants throughout the study duration. Adaptations were also made to accommodate each child's needs during the sport intervention programme.

3.11 Data Analysis and Presentation

All the participants whose parents/guardians consented to their participation attended all the sessions. Only those who attended all sessions for fourteen weeks Study period were used for data analysis .Their pre-test and post-test results on social skills and adaptive behaviour levels were used for data analysis. Data collected was cleaned, coded and subjected to Statistical Analysis Software (SAS version 9.0 in a computer).

This study did not use Inferential statistics due to limited data points, limited generalizability since data was gathered on single subject and in disability studies

concept of individualization is key in implementing interventions (Bouffard 2013). This is because each disability may present different clinical manifestations requiring specific and special adaptations in the programme to meet each individual need and finally serial dependency of data points (Dewing, 1986), since they were mutually exclusive.

Descriptive statistics was used to analyse data on objective one which assessed the demographic characteristics of study participants and their parents/guardians. Objective two on determination of the effect of sport socialization intervention programme on social behaviour functioning levels of children with intellectual disability was analysed by visual analysis. Objective three on comparing ratings of social behaviour functioning levels by gender of children with intellectual disability before and after the intervention programme was analysed using Time series analysis. Objective four on comparing pro-social aspects of Adaptive behaviour functioning levels of children with intellectual disability before and after the intervention was analysed by visual analysis within and between datasets for each of the seven (7) subjects.

The stated Null hypotheses of no significant difference on social skill learning, and pro-social aspects of adaptive behaviour functioning levels of children with intellectual disability before and after the intervention were tested by Statistical Process Control (SPC-Dewing, 1986). SPC helps to ease out variables inherent in any process so that both researchers and practitioners understand whether interventions have had the desired effect. Control Charts for individual measures were used to set the control limits for each individual participant in. the Study; where sample size=1, used moving range of two successive observations to measure variability.

Moving range is defined as:

MR=(X_1=X_1).

The mean of the baseline was used, which is the absolute value of the first difference (difference between two consecutive data points) of data analogues to the control chart, where both data of individual score and moving range of baseline was plotted as follows:

UCL= $\overline{X}$ +3 $\frac{\overline{MR}}{1.128}$

Center line = $\overline{x}$

LCL = $\overline{X}$ -3$\frac{\overline{MR}}{1.128}$

$\overline{x}$ Is the average of individual score and MR the average of the moving range of the baseline of two observations (note that 1.128 is the value of d_2 for n-2). Control charts for individuals scores are used; in case none of the plotted points fall outside the Upper Control Limits(UCL)or Lower Control Limits(LCL), the process is in control and not special effect elicited a change hence no significant effect, hence rejection of Null Hypotheses. The level of significant difference was acceptable by determination of special effect across the data sets of Upper Control Limits (UCL) and Lower Control Limits (LCL) + -3SD of moving range of baseline as follows: points above or below the Upper Control Limits (UCL), Six consecutive point runs; five (5) or more points cutting across the centre line demonstrates changes in trend, whereas points between baseline and final treatment demonstrates levels in social skill functioning. Results were

presented in Tables, percentages, Frequency distribution charts, X-control charts and histograms.

3.12 Logistical and Ethical Considerations

The researcher sought and obtained Ethical approval to conduct the study from Masinde Muliro University Ethics and Review Committee (appendix vii), after approval of proposal and clearance from directorate of open and E-learning-ODEL (Appendix vii), which was used to facilitate the application and granting of research authorization from the National Council for science and Technology Institute (NACOSTI) (appendix, ix) to carry out the research study.

Using this research authorization, the researcher carried out the research investigation. With regard to Children's recruitment, parents/caregivers of those identified were requested for consent to allow their children to participate through a letter (Appendix i) before commencement of data collection. A consent form (appendix i) was filled by the parents/guardians of children to participate in the research study. To ensure confidentiality, participants were given code names to avoid use of real names. A separate permission was requested and obtained (appendix x) for use of video/ camera in taking still and motion pictures. Participants' faces were covered or blurred to conceal their real identities where photographs were used. Parents, caregivers and children were also presented with a detailed explanation of the study as they arrived for data collection. Assent of the children was sought orally, after briefing them on modalities of study, and all agreed to participate in the study.

Participants were assured of confidentiality in handling their data and personal information. Subject's anonymity and all information obtained during the study was handled with confidence and used for academic purposes only. Each parent/caregivers who participated in the study would be presented with a detailed report on their children's performance in various tasks and cues in the intervention programme after completion of the research study. Similarly, any indication of injury by participants or situation that would arise during the programme implementation phase that posed danger to the study participants, led to withdrawal from the study. Participation in this study was voluntary and participants were allowed to withdraw from the programme at any time if they so wished without penalty. Participants were not given any incentives to participate in the study. Out of eight children initially sampled, one child withdraw after two weeks of intervention, data was analysed for the seven who completed the whole duration of the study. In order to ensure that the principle of beneficence (non-maleficence) was adhered to, a comparative risk assessment was conducted by experts so as to protect participants from psychological, social and physical harm. The materials used in the study were stored securely after the research and treated with confidence.

The principle of distributive justice was also addressed in this study by ensuring that the selection criterion of the study was guided by the overall aim of the study rather than the ease of obtaining consent from participant's parents/gurdians. The programme was adjusted to be culturally appropriate and the researcher ensured that language or words that seemed sensitive to participant's status and behaviour were avoided.

The safety of participants was ensured through various mechanisms that the researcher put in place during training, testing and data collection procedure. First, all research

assistants were taken through the nature and characteristics of children with intellectual disability. This was to enhance their understanding of intellectual disability and its effect on social behaviour functioning and to be observant of safety issues of the children during participation.

Secondly, two of the research assistants were purposively chosen based on their first aid training and certification by St, Johns ambulance and Kenya Red Cross Society, as they were sport science Master students, who have also covered units in occupational health and safety in sports in their undergraduate courses. In addition a fully equipped first aid kit was always available on site for the whole duration. Masinde Muliro University health unit and the university security were also informed of the on-going research and requested to be on standby in case of any health and security emergency.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF THE RESULTS

4.1 Introduction

This chapter presents the analysis, findings and interpretation of the collected data based on demographic information and research objectives of the study. In this study, the social skill functioning levels, social skill learning by gender and pro-social skills of adaptive behaviour functioning levels of the children with mild and moderate intellectual disabilities in Kakamega County. During the fourteen a Fourteen-week study duration, the social behaviour functioning level were measured using, video capture and video analysis **(**Faith, Hodgins & Reigh, 2012), Peer Social Task Rating Scale (PSTRS) (Gresham & Elliot 1990) and Adaptive Behaviour Scale checklist by Achenbach (1990) adapted by the researcher and used to record and decode children's social behaviour, their voices and body languages. The results are displayed in form of percentages, charts and tables. Descriptive statistics were used to analyse the variables used in the study.

4.2 Demographic characteristics of children with intellectual disability

A total of seven (7) out of eight (8) participants with ID initially sampled for the study attended all the sessions and data was analysed for the seven participants who participated continuously for the whole duration of the study. One participant dropped out in the second week of the study due to relocation, hence his score was not considered in the analysis of the results. The research study established the demographic information of children with ID and their parents which included age, gender, ID level, and relationship to child. Categorization of participants by age and ID level was

important in order to establish if age or ID level affected social behaviour responses of child with ID before intervention, and performance of social behaviour functioning by gender and pro-social skill of adaptive behaviour(s) functioning before and after the intervention. The study participants were aged between eight (8) to fourteen (14) years old. Results are presented in table 4.1

Table 4. 1: Descriptive information of each child's demographic characteristics

S/no	Participants codes	Age	Gender	ID Category
1.	YAMY 3	9 Years old	Female	Mild ID
2.	YAKS 4	10 Years old	Female	Moderate ID
3.	YAKS 5	11 Years old	Male	Moderate ID
4.	YAKS 6	14 Years old	Female	Mild ID
5.	YARO 7	14 Years old	Male	Mild ID
6.	YARO 8	12 Years old	Female	Moderate ID
7.	YARO 9	9 Years old	Male	Moderate ID

KEY:

YAMY=Young athletes from Mayiakalo primary school special unit

YAKS=Young athletes from Kakamega primary school special unit

YARO=Young athletes from Roster man primary school special unit

Description of participants with ID.

YAMY 3 is a girl aged nine (9yrs) with mild intellectual disability, speech and physical ability not affected.

YAKS 4#: is a girl aged Ten (10) years old. She has Moderate ID, specifically Down syndrome. She has speech deficits and stereotypic characteristic temper tantrums and withdrawal syndromes.

YAKS 5#: is a boy aged eleven (11) years old, has mild ID and Physical impairment of mild hemiplegic cerebral palsy causing mild paralysis on the right side of the body. Has gait problems but can ambulate on his own.

YAKS 6#: is a girl aged Fourteen (14). Diagnosed with moderate ID, specifically Down-syndrome and is enrolled in a special unit for children with mental retardation. She has no other pathological effect.

YARO 7#: is a boy aged fourteen (14) years old. Diagnosed with mild ID. No associated pathologies and able to follow simple instructions.

YARO 8#: is a girl aged twelve (12) years old. Diagnosed with moderate intellectual disability. Stereotypic behavioural characteristics included withdrawal and temper tantrums.

YARO 9#: is a boy aged nine (9) years old and has a diagnosis of moderate ID, specifically Down syndrome. The child has withdrawal syndromes, delayed speech and low vision.

The study sought to establish the demographic information of parent/guardian of participants with ID This information was collected with regard to age, relationship to the participant with ID and their hygiene status. Distribution of participants by gender is presented in figure 4.1.

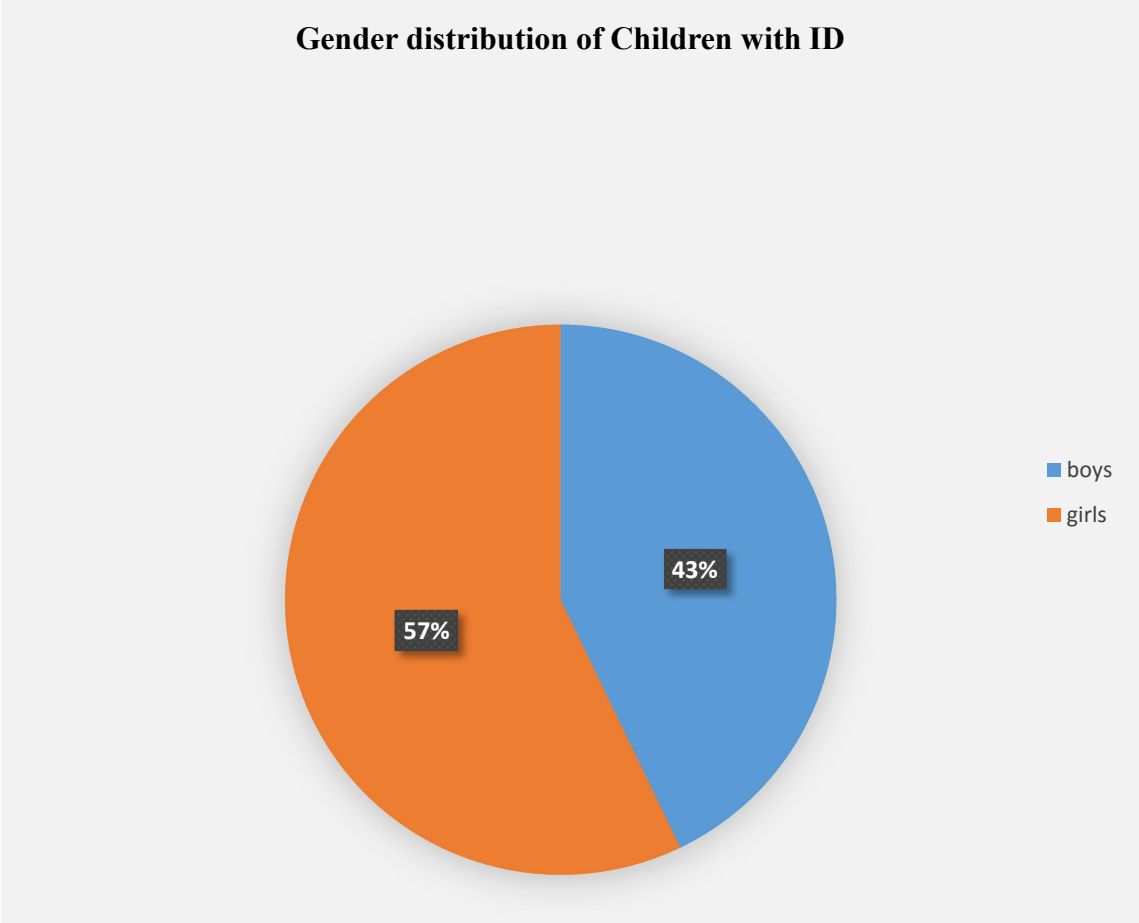

Figure 4.1: Percentage distribution of participants by gender

4.2.1 Demographic characteristics of parents and guardians of children with ID.

The information was obtained during the first meeting with researchers as they accompanied their children to the study site. Results are presented in table 4.2

Table 4. 2: Parents /Guardians Demographic characteristics

Child	Parent/Guardian's Age	Gender of parent	Relationship to child
YAMY3	49 yrs.	Female	Grandmother
YAKS4	70 yrs.	Female	Grandmother
YAKS 5	30yrs	Female	Biological mother
YAKS6	78 yrs.	Female	Foster mother
YARO7	59 yrs.	Female	Grandmother
Y ARO8	50 yrs.	Female	Grandmother
YARO 9	64 yrs.	Female	Grandmother

Results in table 4.2 demonstrated that five (5) of the Parents/Guardians were grandmothers, one (1) was a biological and one was a foster parent who adopted the Child

4.3 Fidelity of Implementation of the intervention programme

Attendance records (appendix D) indicated that seven children attended 90% of the programmed intervention activities. In addition the research assistant attended all the 28 sessions. Each of intervention sessions lasted for ninety (90) minutes intermittent participation for each session. Collectively these three measures of child attendance, number of activities completed and duration of programme was an indication that the sport socialization intervention programme was implemented with high fidelity. Cumulatively programmed activities and sessions were covered.

4.4 Effect of sport socialization intervention programme on social behaviour functioning levels of children with intellectual disability

The research study assessed objective two in terms of how children responded cumulatively in total peer rated social behaviour functioning and also their performance on the individual social tasks.

4.4.1 Results on total peer task rating level of children with intellectual disability

The study established that there was marked improvement after intervention compared to before intervention**.** Results of the overall performance of participants with ID is presented in table 4.3

Table 4.3: Total Peer Social Task Rating Score for each participant in the programme.

CHILD	PRETEST	POSTTEST	REVERSAL	% IMPROV.
YAMY3	-16	18	14	56.7 %
YAKS 4	-21	15	15	60%
YAKS 5	-18	20	20	63.3%
YAKS 6	-16	15	15	51.6%
YAKS 7	-17	14	14	56.7%
YARO 8	-14	16	16	48.3%
YARO 9	-18	12	11	50%

Similar results were evident across various social tasks. A result of visual analysis is presented in figure 4.2.a-g

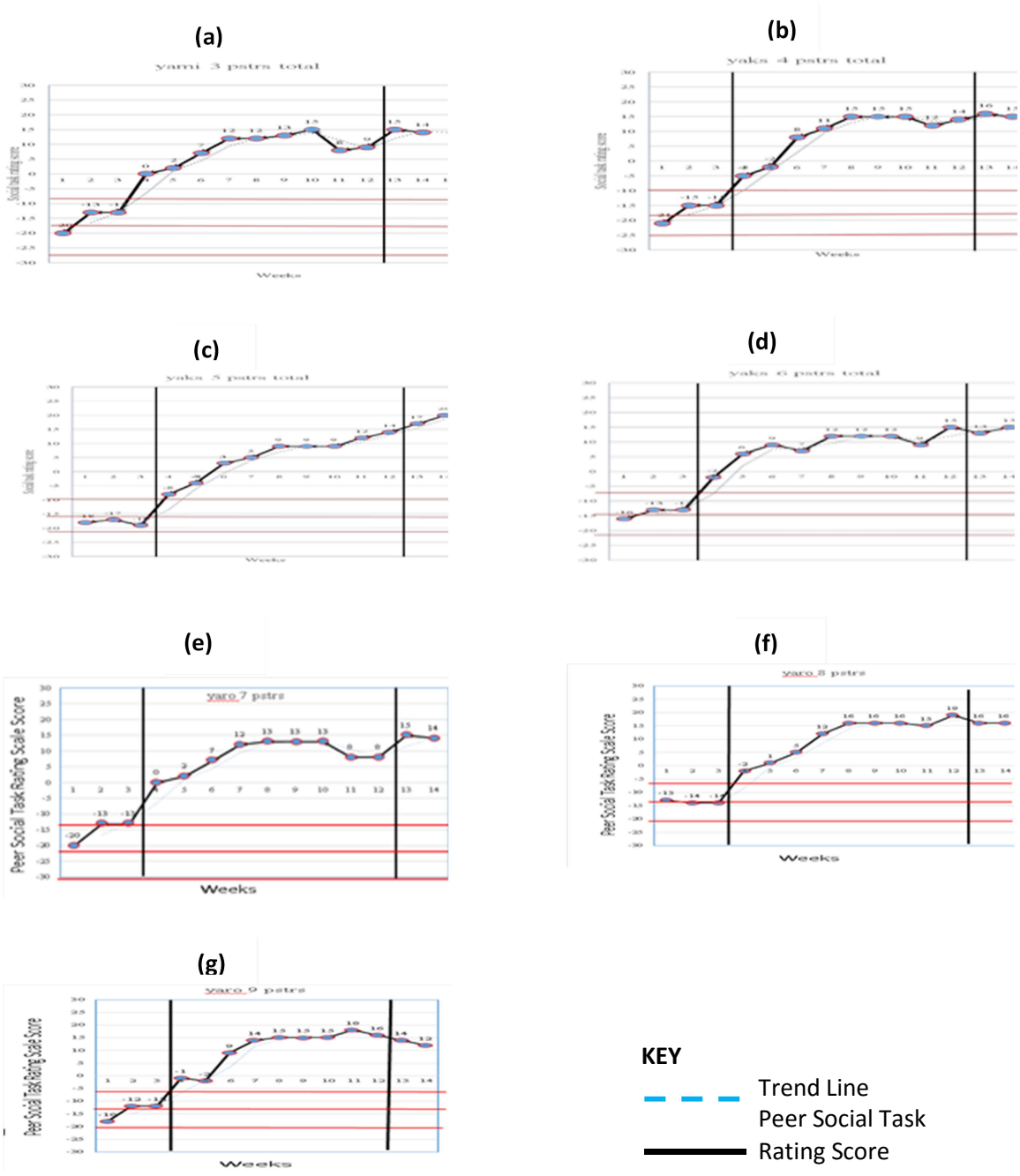

Figure 4.2: a-g: X-Control charts showing performance in total peer social rating scores by children with ID

The magnitude of improvement between pretest and posttest were: YARO 3 (56.7%), YAKS 4(60%), YAKS 5(63.5%), YAKS 6 (51.6%), YARO7 (56.7%, YARO8 (48.3% and YARO 9 (50%) respectively.

Similarly statistical analysis established that the intervention programme had significant effect on each of the seven children with the following standard deviations of moving range of: YAMY 3 (3.17), YAKS 4 (2.53), YAKS 5 (2.28), YAKS 6 (2.59), YARO 7 (3.17), ARO 8 (2.34) and YARO 9 (2.34) respectively. Results are also presented for each child performance on overall social skill and individual tasks in social skill peer rating.

YAMY 3 recorded an improved score at post-test compared to pre-test scores, the overall improvement index stood at 56.7% on overall social skill functioning. Data record on improvement in overall social rating was highest during 1:2 and 1:3 pairing ratio as opposed to 1:1 in week four (4) and whole group in weeks eleven (11) & twelve (12). Post-intervention performance in weeks thirteen (13) and fourteen (14) of the intervention demonstrated sustained performance at post-test levels. YAKS 4 results noted 60% improvement at post-test of raw score compared to before intervention on total social skill peer- rated performance. Performance on total Peer Social Task rating demonstrated improved post-test score (14) compared to pre-test (-17). There was 63.3% magnitude of improvement. Structured play and 5x5 sessions a week had the highest improvement on learning of social skills during child to child interaction in play. However 1x1 sessions per week had minimal improvement. Results of the statistical analysis in SPC also demonstrated that the sport socialization intervention programme

had significant effect after fourteen weeks of treatment. Results are presented in Table 4.4

Table 4. 4: Statistical analysis of child on overall social skill performance

Baseline Mean	SD of MR	UCL	LCL
-17	2.28	-10.16	-23.84

YAKS 5 was also investigated on overall social task rating scale scores. Researcher sought to understand the overall social skill functioning level of the child from the sum of all the social tasks she/he was exposed to during the intervention. Performance on total Peer Social Task rating demonstrated improved post-test score (14) compared to pre-test (-17). There was 63.3% magnitude of improvement. Structured play and 5x5 sessions a week had the highest improvement on learning of social skills during child to child interaction in play. However 1x1 sessions per week had minimal improvement.

Results of the statistical analysis in SPC also demonstrated that the sport socialization intervention programme had significant effect after fourteen weeks of treatment. Results are presented in Table 4.5

Table 4.5: Statistical analysis of child on overall social skill performance

Baseline Mean	SD of MR	UCL	LCL
-17	2.28	-10.16	-23.84

YAKS 6 was also observed and the study sought to determine how this child performed in social skill learning in total PSTRS; before and after the sport socialization intervention programme in Kakamega County. The child scored higher in overall social

skill functioning at post-test compared to pre-test. Magnitude of improvement was at 51.6%. This research finding ,established that the child had social skill deficits at pre-test (-16**) ,** which prevented interactions with peers compared to improved social skill learnt at post-test(16), which facilitated appropriate social skill responses during play. The child displayed improved skilful strategy during post-test compare to pre-test. The responses also varied with manipulation of IV of 1:1, on PSTRS performance, 1: 2, 1:3 and whole group participation. Post intervention scores observed that the benefits accrued during peer to peer sport socialization dropped when intervention was terminated, but not to baseline level, hence they are sustainable and replicable in play environment. Statistical analysis results demonstrated that the programme had significant effect on child's response on the social tasks under investigations; with SD of MR score of 0.51, UCL of 0.03.

YARO7 was also evaluated on total peer social rating score on social skill functioning in order to determine the level of social skill function before and after the sport socialization intervention programmer in Kakamega County. Analysis results in table 4.13 showed that, the child improved in total social skill functioning levels with post-test score of 14 as opposed to -20 at pre-test. There was a 56.7% magnitude of improvement after intervention. Results are presented in Table 4.6

Table 4.6: Descriptive statistics in total peer rated social skill functioning by Child with ID.

Pre-test	post-test	Termination	% improvement
-20	14	14	56.7%

Analysis results of SPC demonstrated that, the Sport Socialization Intervention Programme (SSIP) had special effect on Child's sustained engagement with peers in the use of skilful strategies, with all data points plotted during and post intervention falling above the UCL by more than Six (6) consecutive point runs; with SD of MR score of 0.57, UCL of -0.21 and LCL of -3.21.

YARO 8 was the next concern. The performance on total peer rated social skill functioning was a concern to the researcher as it sought to determine the overall social behaviour functioning of the child before and after intervention. This was to establish whether the intervention programme had any effect on the total peer rated social skill learning. The study established that child's score on total peer rated social skill functioning had higher post-test raw score of 16 as opposed to lower pre-test of -13. The results in table 4.1 showed that the child had 48.3% magnitude of improvement after participating in the sport socialization intervention programme. The analysis also illustrated consistent improvement between data sets on overall social skill functioning This research finding further established that, when pairing was stopped child performance declined, but was retained above pre-test levels. Large group participation could have overwhelmed the child, but programme effect was sustained beyond the intervention phase in Weeks (13 & 14).

Statistical analysis in SPC established that, the intervention was effective in child learning the social task after intervention, with; SD of MR scores of 0.64, UCL of -0.79 and LCL of -4.21 respectively. All post-test scores were above UCL hence programme effectiveness on child with ID learning social skills.

The study also investigated YARO 9. The researcher sought to evaluate the performance on total peer rated social skill learning. This was to help in determining whether the participant with ID benefited from the sport socialization experimental intervention programme in Kakamega, County. Results are presented in table 4.7.

Table 4.7: Descriptive analysis in total peer rated social skill functioning by Child with ID.

Pre-test	post-test	Termination/Reversal	%Improvement
-18	15	12	50.6

Results in Table 4.7 established YARO 9 benefited from the intervention by learning social skills through observed social behaviour display from negative strategy of -18 before intervention to use of positive strategies of 15 which facilitated social responses after the experimental intervention. Post intervention performance dropped when treatment was terminated in the last two weeks to a low of 12; but above the pre-test levels .The magnitude of improvement after participating in the programme was 50.6%.

Statistical analysis of the overall social skill functioning was done determine if intervention programme had significant effect on child with intellectual disability's learning of total social skills. Results are presenter in Table 4.8.

Table 4.8: Statistical analysis of child on overall social skill performance by child with ID.

Baseline Mean	SD of MR score	UCL	LCL
-13.3	2.34	-6.48	-20.52

From the analysis report; all the scores during and after intervention were above the threshold of special effect at Six (6) consecutive point runs above UCL.

4.4.2: Performance on individual social tasks by child with intellectual disability.

This study also investigated the effect of sport socialization intervention programme on social behaviour functioning levels across the six social tasks. The specific tasks were: joining groups of other children in play, responding to other children, response to name calling, passing ball to team mate, playing games with others and having conversation with other children. Results are presented per each individual social task in figure 4.9.

Table 4. 9: Individual social task scores by children with ID between pre-test and post-test

	PRETEST							TREATMENT							POST-TREATMENT						
	A							B							A						
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
JGP Task 1	-2	-3	-2	0	-1	1	0	6	6	7	8	6	6	7	4	5	8	6	4	3	4
ROC Task 2	-2	-5	-3	-3	-3	-2	-3	4	3	2	2	2	3	3	4	3	1	2	2	3	3
NC Task 3	-7	-5	-6	-6	-7	-6	-6	-4	-1	-3	-2	1	3	2	1	1	2	0	2	3	2
PBT Task 4	-4	-3	-3	-3	-3	-3	-3	3	2	3	2	3	2	2	3	1	3	2	2	2	1
PGO Task 5	-1	-2	-2	-2	-4	-1	-3	3	2	2	3	2	3	2	3	1	3	2	2	2	1
HCO Task 6	-1	-3	-2	-3	-4	-3	-2	4	2	2	2	2	3	2	3	1	2	2	2	2	1
TOTAL PSTRS	-17	-20	-18	-17	-22	-14	-17	16	14	13	15	16	20	18	18	12	19	14	14	15	12

Key: JGP: *Joining Groups of children in play*. **ROC**: *Responding to Other Children* **NC**: *Name Calling* **PBT**: *Passing Ball to Team mate* **PGO**: *Playing game* **HCC:** *Having Conversation*

The first item among the six social tasks on this objective two sought to establish how each child responded to joining other children without ID in play. YAMY 3 whose baseline scores demonstrated presence of negative social strategies of -1 improved once the sport socialization intervention programme was under way. Results are presented in figure 4.3

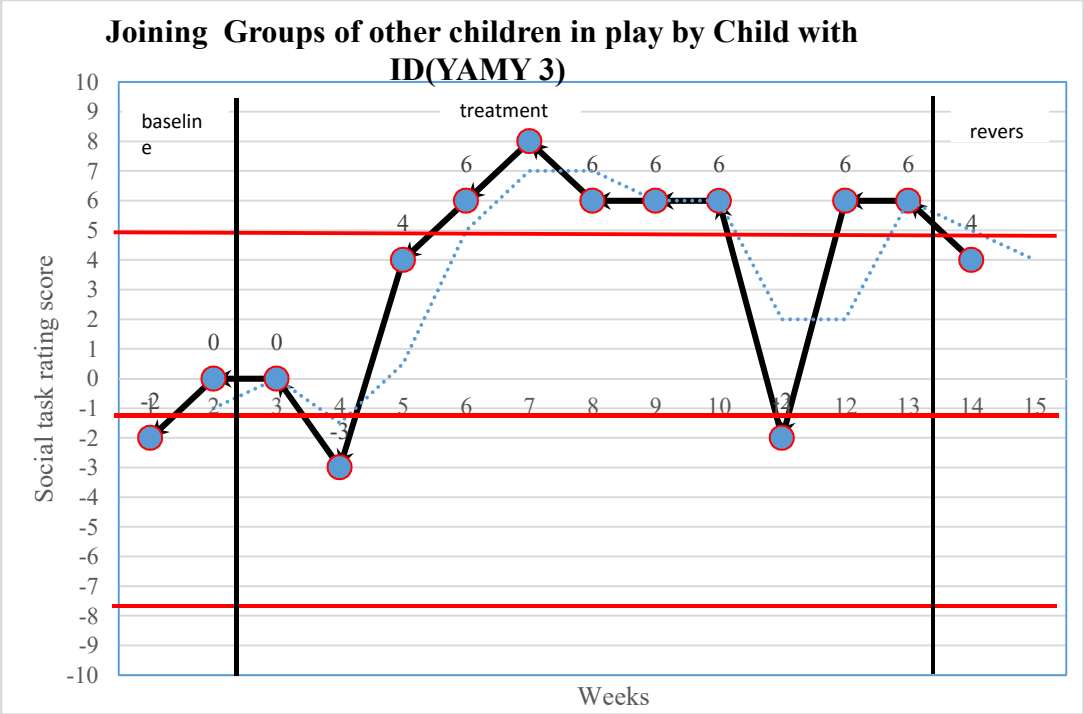

Figure 4.3: Performance on Joining Group of other children in Play (JGP) by Child with ID

The baseline score of this child demonstrated presence of negative social strategies of -1. However, 1:3 pairing data sets in weeks eight (8) and eleven(11) recorded highest program effect, whereas post intervention performance recorded sustained improvement but with slight decline to treatment phase. Data analysis between data sets, demonstrated varied behaviour responses with manipulation of independent variables at different data points. This study scores were: 1:1 pairing did not yield improved engagement, however when pairing with typically developing peers was increased to 1:2 and 1: 3 in weeks 8-10 ratio; highest improvement was observed. The results demonstrated that the child

benefited more in social skill learning from multiple partners without intellectual disability.

The data set on whole group participation at week eleven (11) during intervention, further demonstrated that child scored highest, an indication that child enjoyed operating with many children. This was a demonstration that the intervention effect was more pronounced in uncontrolled and unstructured play for YAMY 3, due to freedom provided on choice of a peer to engage with. Visual analysis of data pointed to the fact that the programme was effective in helping child to unlearn unskilful strategies she had and acquired more skilful strategies from peers support in the sport programme.

Post intervention score by this child demonstrated sustained impact with slight drop. This was an indication that programme had impact on child on this social task functioning; and that once asocial behaviour is learnt it can be sustained even after intervention is stopped.

When data was subjected to X-Control chart to test for the effect, child score in post-test had more than six (6) consecutive data points runs above the Upper Control Limit (UCL), with Baseline mean of -3, Standard deviation of moving range score at 1.14, upper control limit= 0.42 and lower control limit= -6.42. Statistically, programme was effective in both level and trend.

YAKS 4 similarly, posted improved performance in social behaviour functioning at post-test as opposed to lack of social behaviour strategies which was observed and recorded at pre-test before intervention. Child recorded a lower pre-test score of -3 compared to an improved post-test score of 5 on social task of joining groups of other

children in play. Data sets of 1:3 IV manipulations had the highest improvement with magnitude of improvement of 40%. Results are presented in figure 4.4.

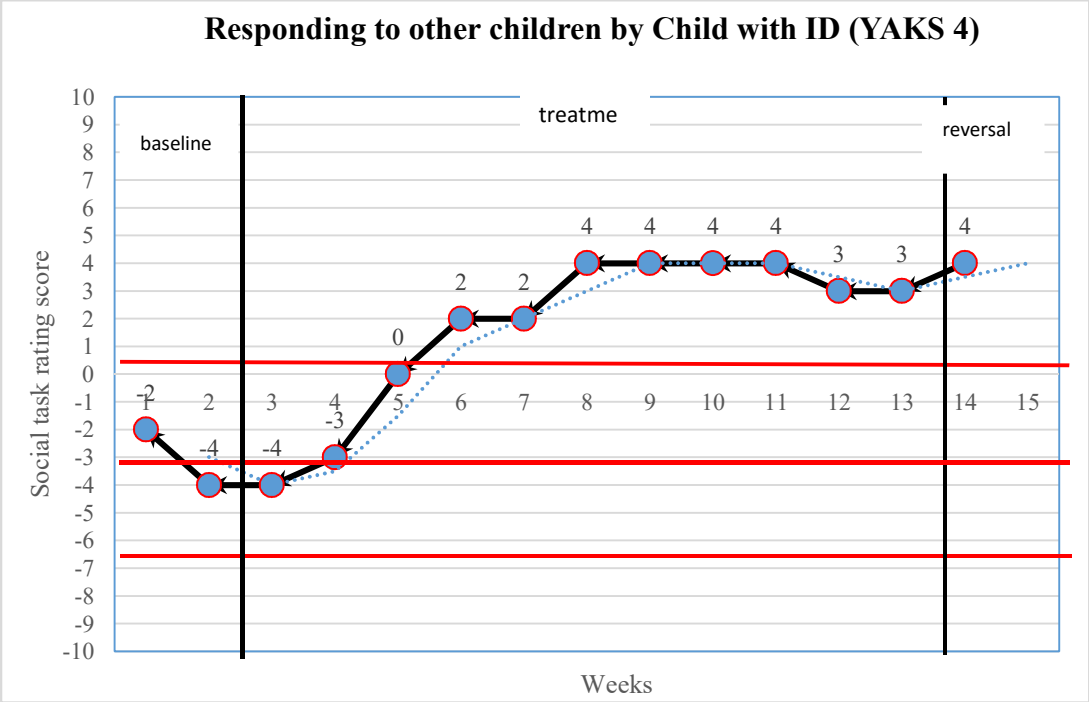

Figure 4. 4: Performance on Responding to other Children in Play (ROC) by Child with ID.

Results in table 4.3 illustrated that, with reversal treatment performance dropped slightly, but still retained above baseline levels.

Results of statistical analysis demonstrated significant effect of the programme; with Five (5) consecutive point runs above UCL. Child had an SD of MR score of 1.65 with UCL at 4.95 and LCL at -4.95, respectively

Participant 3 (YAKS 5) similarly recorded improved performance at post-test as opposed to display of negative social strategies before the intervention. Results are presented in figure 4.5

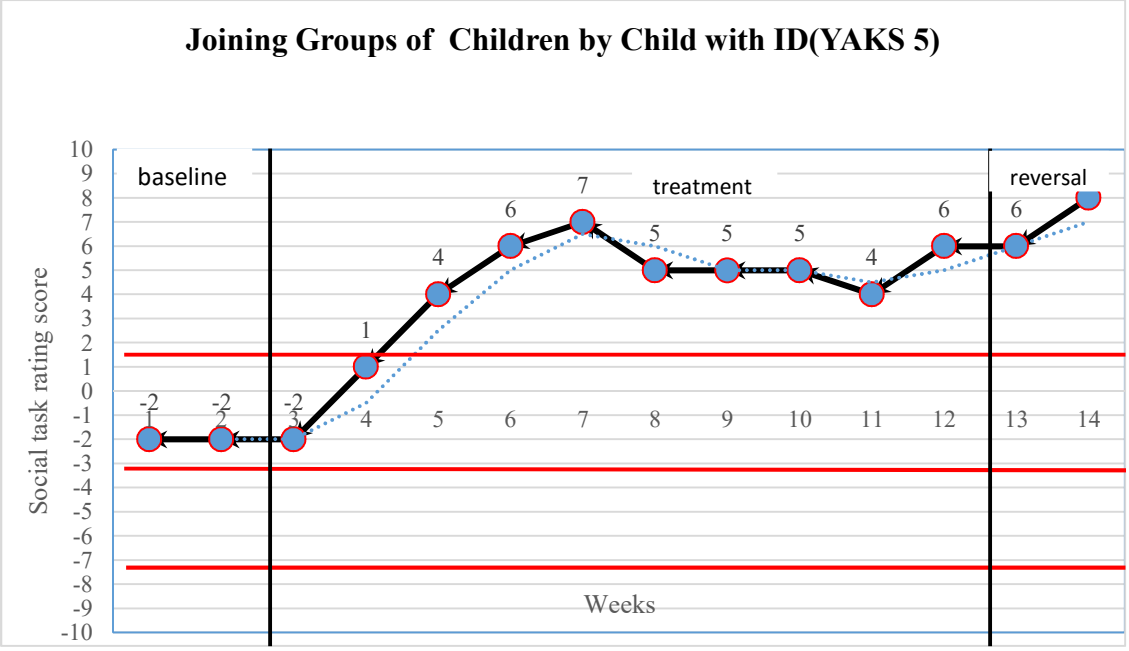

Figure 4.5: X-Control chart plots on Performance on Joining Group of other Children in play by Child with ID.

Analysis established a pre-test mean score of -1.5, compared to an improved score of eight (8) after interventions. IV manipulation of 1:3 pairing data set in week seven (7) had the highest effect on this child's social task rating. This contrasted with whole group participation in week eleven (11); which demonstrated slight drop but not below initial treatment phase in the first three weeks. Child performance was highest at post-intervention, a demonstration that child took the whole duration of programme to observe peers without intellectual disability, gain confidence and get approval from

peers to be able to join them in play. Results of statistical analysis, demonstrated that the intervention programme had an effect on the child learning of this social task.

Results of statistical analysis are presented in table 4.10

Table 4.10: Statistical analysis on performance on joining groups of other children by Child with ID.

Baseline Mean	SD of MR	UCL	LCL
-2	1.27	1.68	-4.68

This research study observed consistent trend of improvement. Throughout the intervention, even when intervention stopped child continues playing with others actively there was a magnitude improvement of 50% at post-test from pre-test.

YAKS 6 also improved on social behaviour functioning at post-test as opposed to lower social skill functioning during pre-test. Analysis results from the peer social task rating checklist and video recordings established an increase in social interactions and eagerness to join other children during play. The child had an improvement index of 40% from baseline. Results are presented in figure 4.6

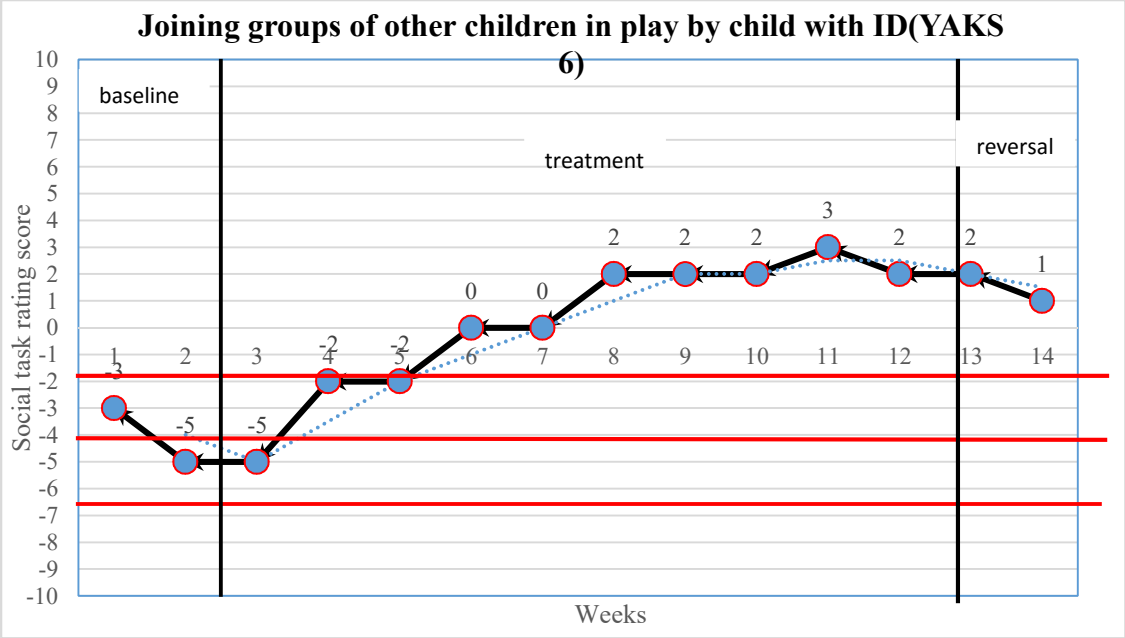

Figure 4. 6: X-Control chart plots on Performance on Joining Group of other Children in play by Child with ID

Data was subjected to statistical analysis in SPC to determine for significant effect of programme. Result demonstrated that, the Sport Socialization Intervention Programme (SSIP) had special effect on child's sustained engagement with peers in the use of skilful strategies, with all data points plotted during and post intervention falling above the UCL by more than Six (6) consecutive point runs; With SD of MR score of 0.57, UCL of -0.21 and LCL of -3.21.

Participant 5(YARO 7) also demonstrated improved post-test performance in the ability to join other children in play as opposed to pre-test when the child was unable to join others in play. Results of YARO 7 before and after intervention is presented in figure 4.7

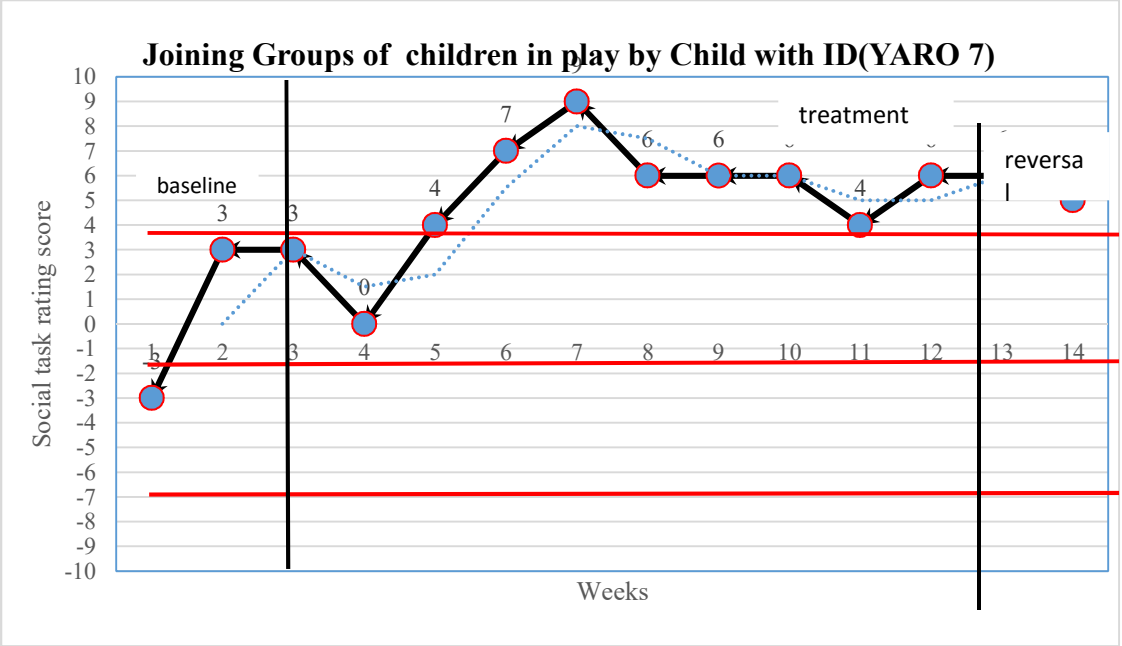

Figure 4. 7: X-Control chart plots on Performance on Joining Group of other Children in play by Child with ID.

The child performance of joining groups of other children in play stood at 25% magnitude of improvement from pre-test. Similarly social skill functioning was also assessed during manipulation of IV in different data sets. Analysis during 1:2, 1:3 pairing, recorded sustained and constant application of use of skilful strategy based on peer to peer interaction; however, during whole group pairing in week eleven (11), there was slight reduction in child's ability to engage use of more skilful strategies when playing with others. Large group could have been overwhelming and confusing to the child, leading to withdrawal for this child as he observed others. Children with Down syndrome at times revert to their own world even when prompted. Their attention easily shifts due to effect of the disability. However, 1:1 peer support worked best for this

child. Post–intervention scores of child demonstrated sustained performance of intervention phase; hence benefits accrued are sustainable and applicable beyond intervention phase. Visual analysis between baseline and post intervention was evident that child level of social functioning improved during treatment. Data was subjected to statistical analysis in SPC to determine for significant effect of programme. Result demonstrated that, the Sport Socialization Intervention Programme had special effect on Child's sustained engagement with peers in the use of skilful strategies, with all data points plotted during and post intervention falling above the UCL by more than Six (6) consecutive point runs; With SD of MR score of 0.57, UCL of -0.21 and LCL of -3.21.

Participant 6 (YARO 8) registered improved performance during post-test in peer to peer rating compared to negative social behaviour functioning observed by the research assistants during baseline phase of the programme. Results are presented in figure 4.8

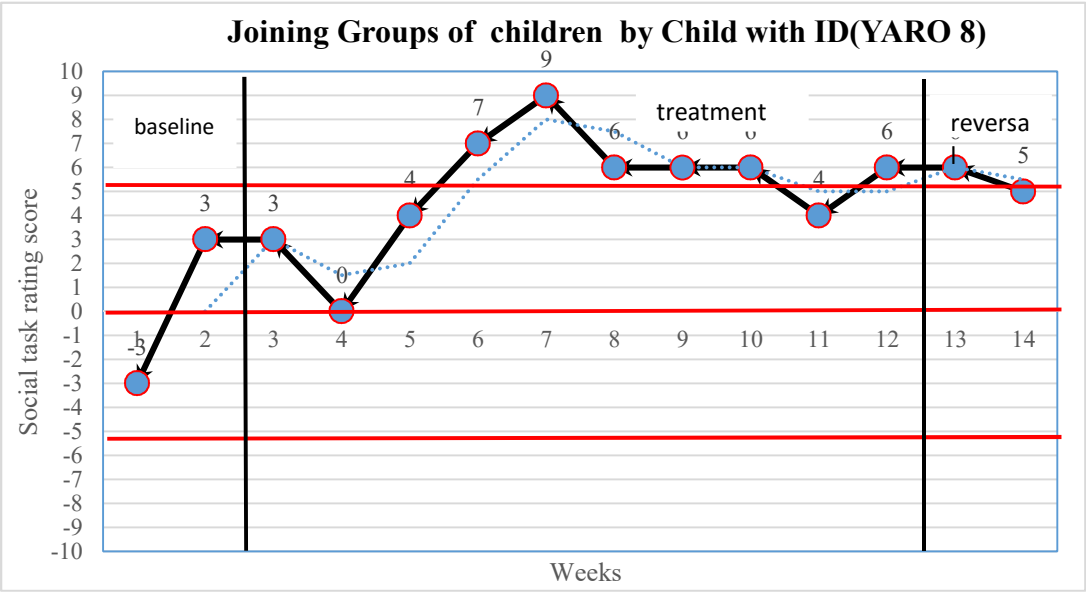

Figure 4. 8: X-Control chart plots on Performance on Joining Group of other Children in play by Child with ID

The behaviour(s) was observed, video tape, recorded and analysed for the next child in the study (YARO 9). Results established that before intervention the participant 7 (YARO 9) exhibited unskilful strategies which prevented him from interacting with peers in joining other children in play.. Results are presented in figure 4.9

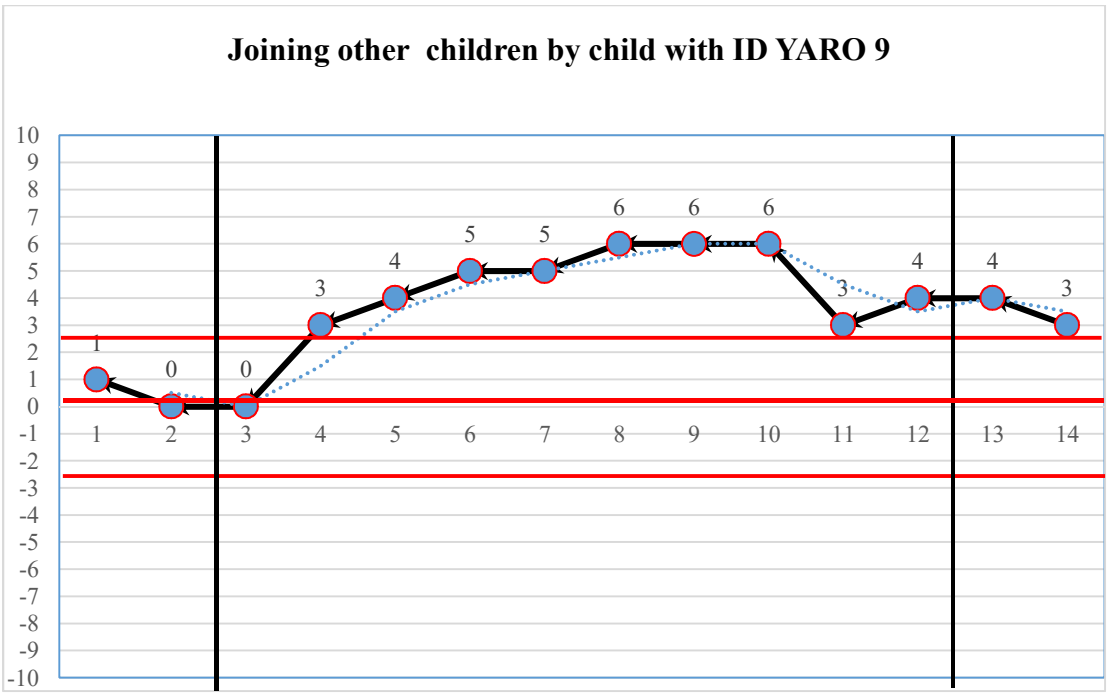

Figure 4. 9: X-Control chart plots on Performance on Joining Group of other Children in play by Child with ID

KEY:

Trend Line

Peer Social Task Rating Score

From the results, the post-test results demonstrated improvement in positive responses after sport socialization intervention programme compared to before. Child had learnt skilful social strategies that enhanced his interaction with peers across the social tasks. The magnitude of improvement between pre-test and post-test test was 25% in Joining groups of other children in play

YARO 9 recorded a performance index of 0.5 baseline mean before intervention, compared to an improved post-test performance index of 3. Child demonstrated consistent improvement between data sets on social task functioning. When pairing was

stopped, and whole group participation facilitated, the child's performance recorded a decline but above pre-test level. This demonstrated that although large group was overwhelming, the program impact was sustainable by the child. Similarly, post-termination scores recorded a decline, further confirming that the improved performance was the result of intentional intervention of sport socialization programme. The fact that the drop was sustained at treatment level and not reverts to baseline was further proof that once a social skill is learnt it cannot be unlearned immediately, and that social tasks are sustainable beyond programme phase and can be replicated in a supportive environment.

Results from statistical analysis of data collected, demonstrated significant impact of programme on child's learning on this social skill cue; with an SD of MR score of 0.76, UCL at 2.78 and LCL at -1.78.There were eleven consecutive point runs of plotted data falling above the UCL, hence programme impact. The Null hypothesis of no significant impact of social skill learning before and after the intervention programme was found to be false based on the study findings, hence Null hypothesis was rejected. However 1:3 pairing data sets in weeks eight (8) and eleven(11) recorded highest program effect, whereas post intervention performance recorded sustained improvement but with slight decline to treatment phase.

On the other hand on the social task of responding to other children there was a negative score of -3 at baseline (pre-test), child appeared awkward and ignored playmates. Child displayed unskilful strategies that were indicative of lack of response to peers in play; this was demonstrated in the first two (2) weeks of intervention. After ten (10) weeks of being subjected to the intervention, post-test scores in week twelve (12), demonstrated

an improvement of 3 in raw scores where child responded to other children in a warm and friendly way, used a more skilful strategy that enabled her to respond appropriately to other children. This was an indication of acquisition of asocial skill response.

Data analysis between data sets, demonstrated varied behaviour responses with manipulation of independent variables at different data points. This study scores were: 1:1 pairing did not yield improved engagement, however when pairing with typically developing peers was increased to 1:2 and 1: 3 ratio; highest improvement was observed. The results demonstrated that the child benefited more in social skill learning from multiple partners without ID.

The data set on whole group participation at week eleven (11) during intervention, further demonstrated that this child scored highest, an indication that child enjoyed operating with many children. This was a demonstration that the intervention effect was more pronounced in uncontrolled and unstructured play for YAMY 3, due to freedom provided on choice of a peer to engage with. Visual analysis of data pointed to the fact that the programme was effective in helping child to unlearn unskilful strategies she had; and acquired more skilful strategies from peers support in the sport programme.

Post intervention score by this child demonstrated sustained impact with slight drop. This was an indication that programme had impact on child on this social task functioning; and that once a social behaviour is learnt it can be sustained even after intervention is stopped. Results are presented in figure 4.10

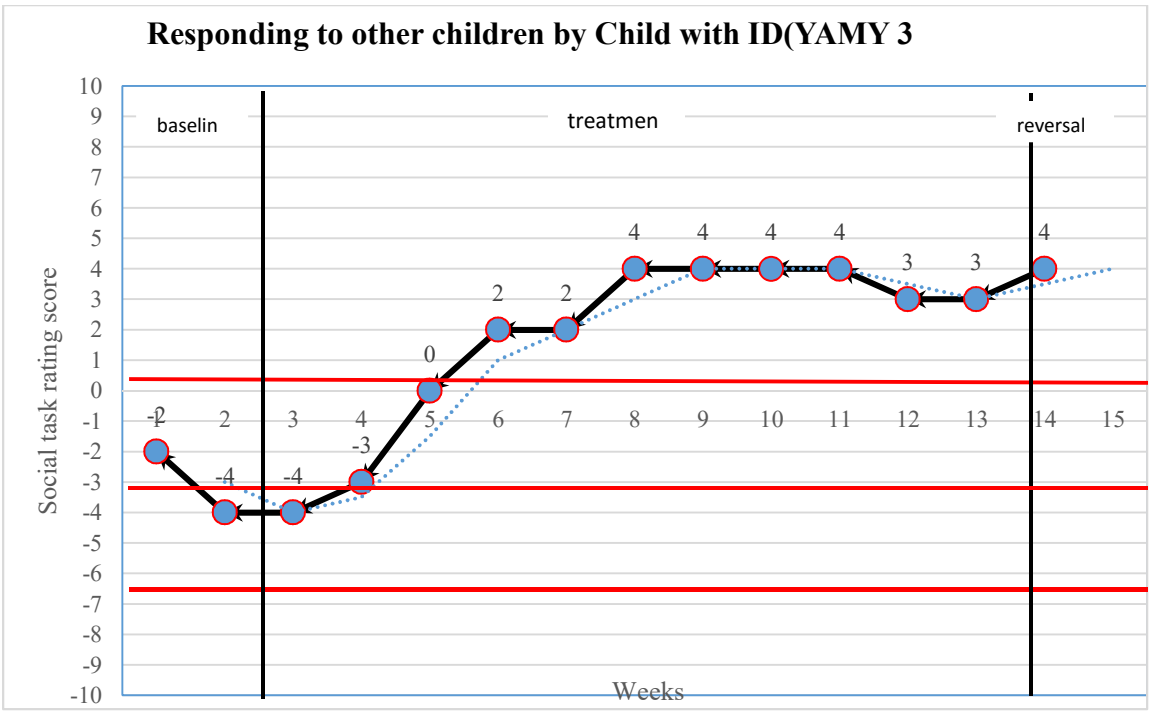

Figure 4. 10: Performance on Responding to other Children in Play (ROC) by Child with ID.

When data was subjected to X-Control chart to test for the effect, Child score in post-test had more than Six (6) consecutive data points runs above the Upper Control Limit (UCL), with Baseline mean of -3, Standard deviation of moving range score at 1.14, Upper control limit= 0.42 and Lower control limit= -6.42 Statistically, programme was effective in both level and trend.

YAKS 4 similarly, the second item in social skill learning sought to establish the child's performance on Responding to other children in play (ROC).Study observed and recorded Childs behaviour as she/he responded when playing with other children. Cues

in this parameter were based on whether child ignored, withdrew and appeared awkward, or responded in a warm and friendly way when approached by playmates. Child exhibited negative social strategy of -5.5 at baseline; in which Child appeared awkward and uncomfortable and withdrew from joining other as indicated on the PSTRS checklist compared to an improved post-test score of 4 after the programme when child responded in a warm and friendly way; that enabled her join other Children in play. Data sets at 1:1, 1: 2, 1:3 and whole group participation had the highest improvement. Post intervention score of raw data showed slight drop but sustained use of the skilful strategy above baseline level. Results are presented in figure 4.11

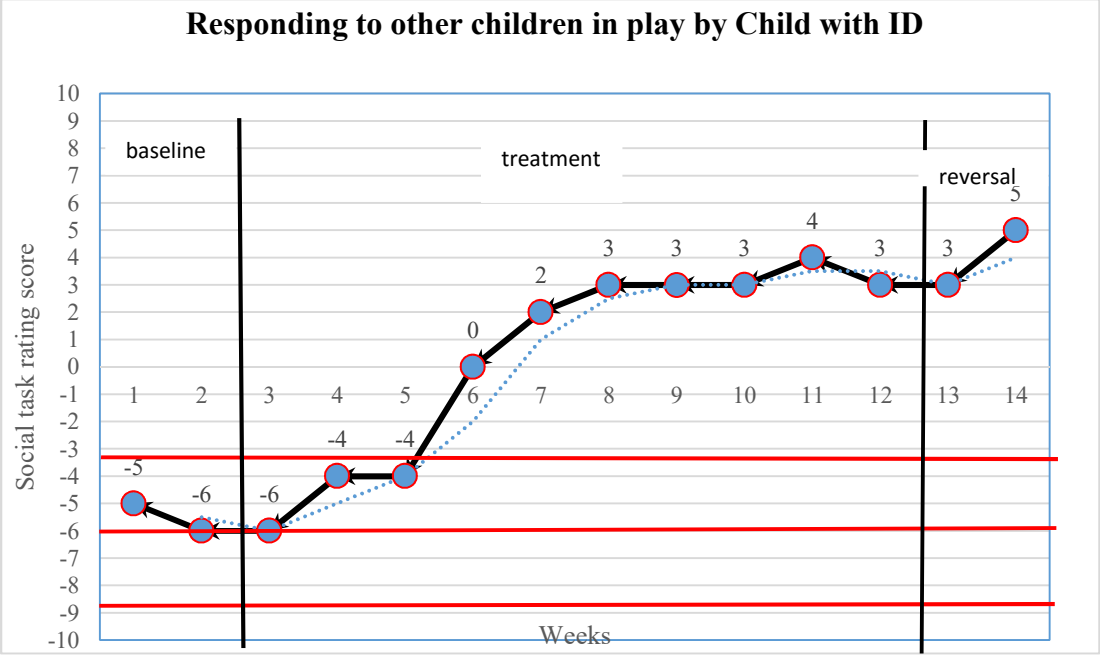

Figure 4.11: X-Control chart plot on Responding to other Children in Play .by Child with ID.

Statistical analysis results demonstrated programme effect since all plotted data points were above the upper control limit, with Baseline mean = -5.5; Standard deviation of moving range score= 0.89, Upper control limit= -2.83, Lower control limit= -8.2. This was an indication that the child's improvement on this social skill cue was the result of special effect of intentional intervention through sport socialization programme, since a similar trend was absent at baseline before intervention.

YAKS 5 had pre-test performance of -4 an indication of negative social strategy use that made child to ignore and withdraw when he joins groups of other children, as opposed to an improved post-test score of 2. This research study established a pre-test performance of -4 an indication of negative social strategy use that made child to ignore and withdraw when he was beckoned to join groups of other children, as opposed to an improved post-test score of 2 for this child.. Results are presented in figure 4.12

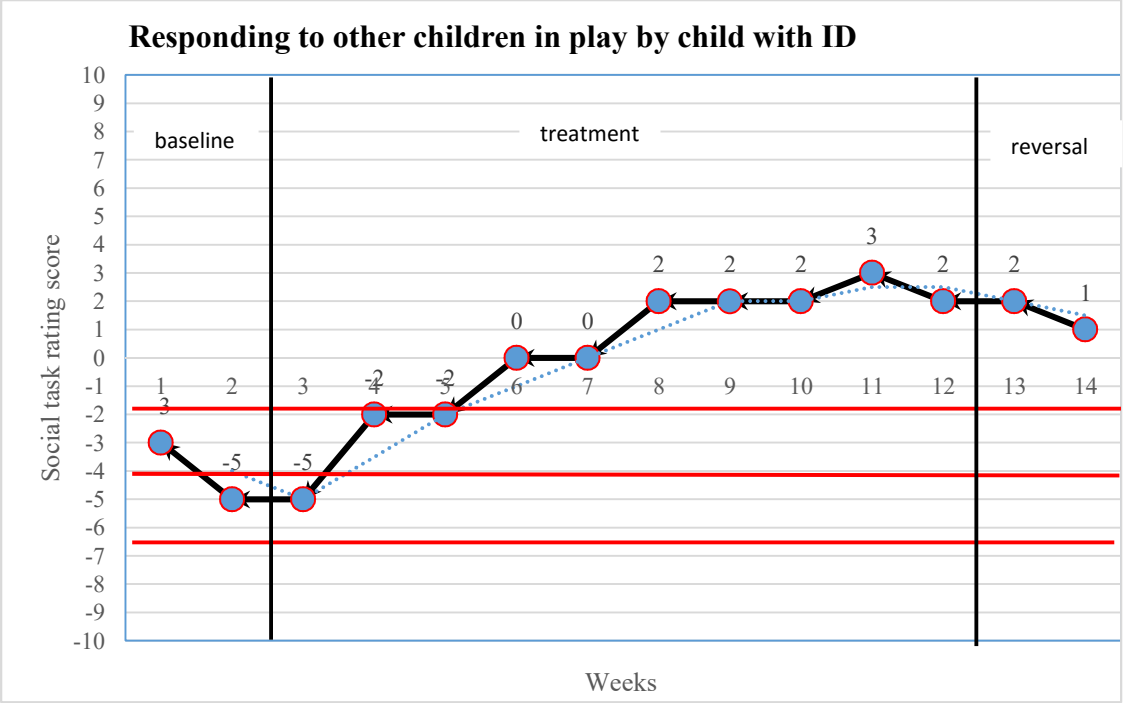

Figure 4. 12: X-Control chart plot on Responding to other Children by Child with ID

Analysis of data sets with independent variable manipulation at weeks 4, 6, 8 and 11, demonstrated some improvement. However, whole group participation accounted for the highest score in joining other children. Data sets gathered two (2) weeks after termination of, demonstrated slight but sustained drop by the child, but not below special effect threshold. This implied that benefits accrued during intervention are applicable and sustainable beyond intervention phase. There was an improvement index of 20%. However, low range of magnitude of improvement could have been affected by child characteristics.

This child had mixed disability: had hemiplegia with speech and awkward gait which affected his movement and communication with peers. This point to the fact that personal factors and disability clinical manifestations may require multi-disciplinary approach in social skill intervention. Results of statistical analysis of program effect on this task is presented in table 4.11

Table 4. 11: Child performance on responding to other children in play

Baseline Mean	SD of MR	UCL	LCL
-3	0.89	-2.83	-8.2

Results in SPC analysis for determination of special effect, reported all plotted data were more than Six (6) consecutive point runs above the Upper Control Limit (UCL), with SD of MR score of 0.89, UCL=-2.83, LCL=-8.2 .Though score were negative, there was evidence of reduction of unskilful strategies, hence effect of intervention.

YAKS 6 displayed improved skilful strategy during post-test compare to pre-test. The responses also varied with manipulation of IV of 1:1, on PSTRS performance, 1: 2, 1:3 and whole group participation 20% in responding to others and passing ball respectively. Post intervention scores observed that the benefits accrued during peer to peer sport socialization dropped when intervention was terminated, but not to baseline level, hence they are sustainable and replicable in play environment. Results are presented in figure 4.13

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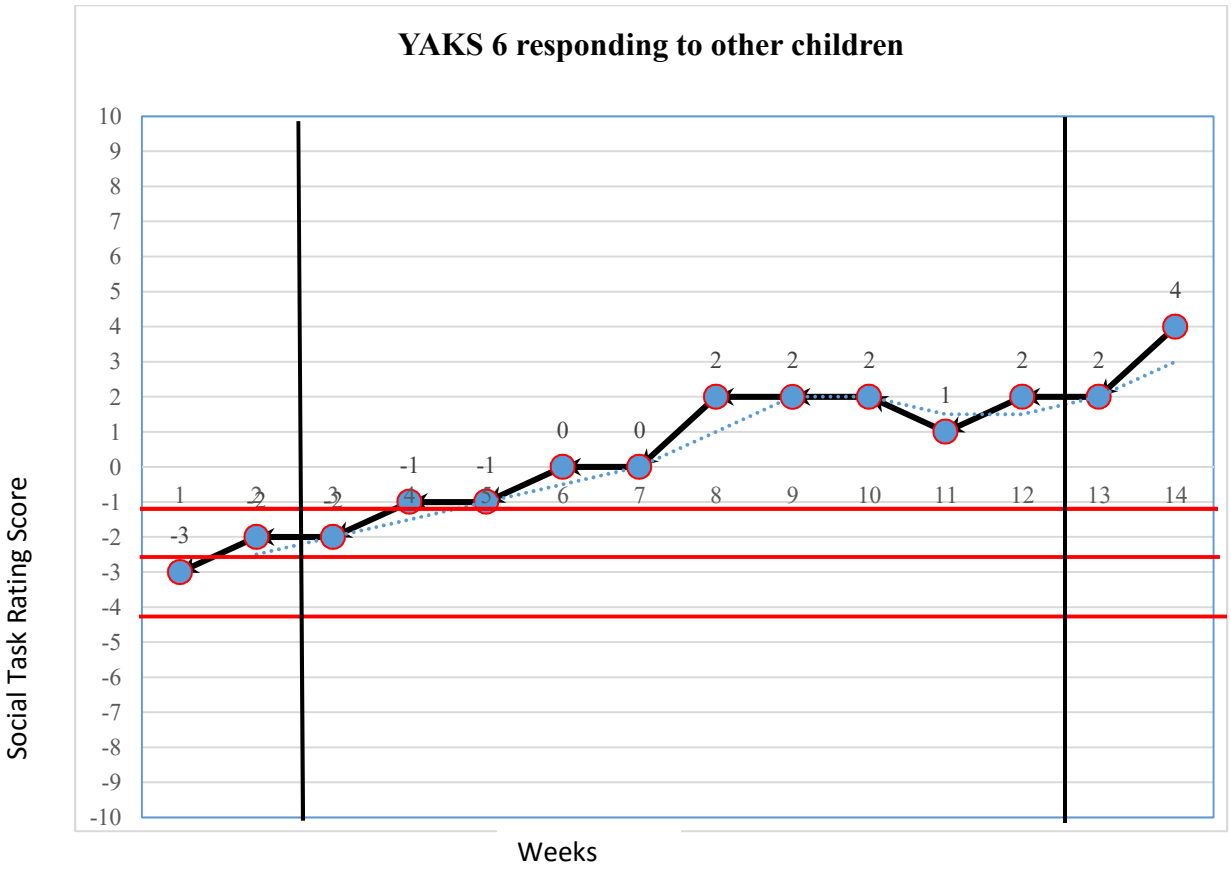


Figure 4.13: X-Control chart plot on Responding to other Children by Child with ID

When data was subjected to statistical analysis**.** Individual score and standard deviation of moving range of baseline mean in X-control charts had more than Six (6) consecutive point runs above the Upper Control Limit (UCL), with MR score of 0.57.

YARO 7 also recorded improved social behaviour response at post-test compared to before. Results are presented in figure 4.14

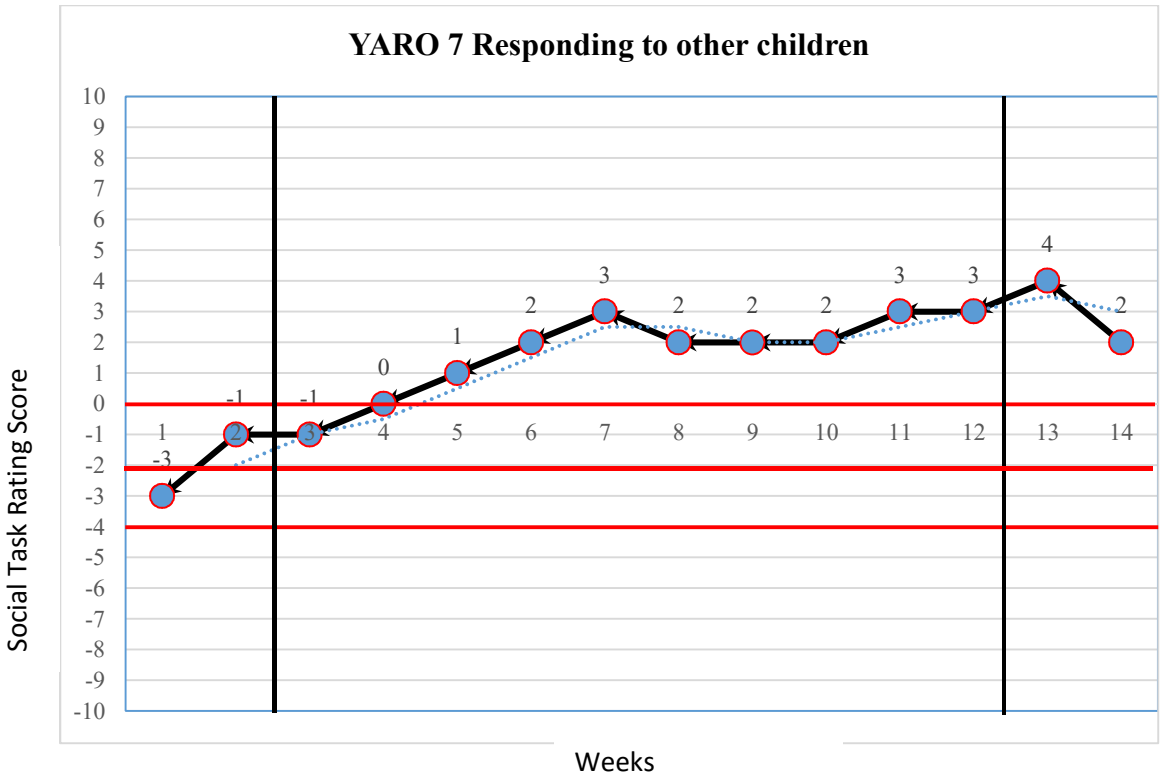


Figure 4.14: X-Control chart plot on Responding to other Children by Child with ID

Post intervention score indicated a slight drop but not to baseline level. This was a demonstration that the accrued benefits from intervention were sustainable beyond intervention period when opportunities to engage with peers was provided. Data sets of IV manipulation raw scores showed consistent trend in child's ability to join other children in play; then levelling off from week 7 to 11 with no further increase. This could be attributed to child's disability characteristics of lowered concentration and restricted networks in pairing. However, visual analysis demonstrated responding in play. Hence programme impact on this social task.

Participant 6 (YARO 8) had higher social behaviour response at post-test compared to non-engagement with peers before intervention. Results are presented in figure 4.15.

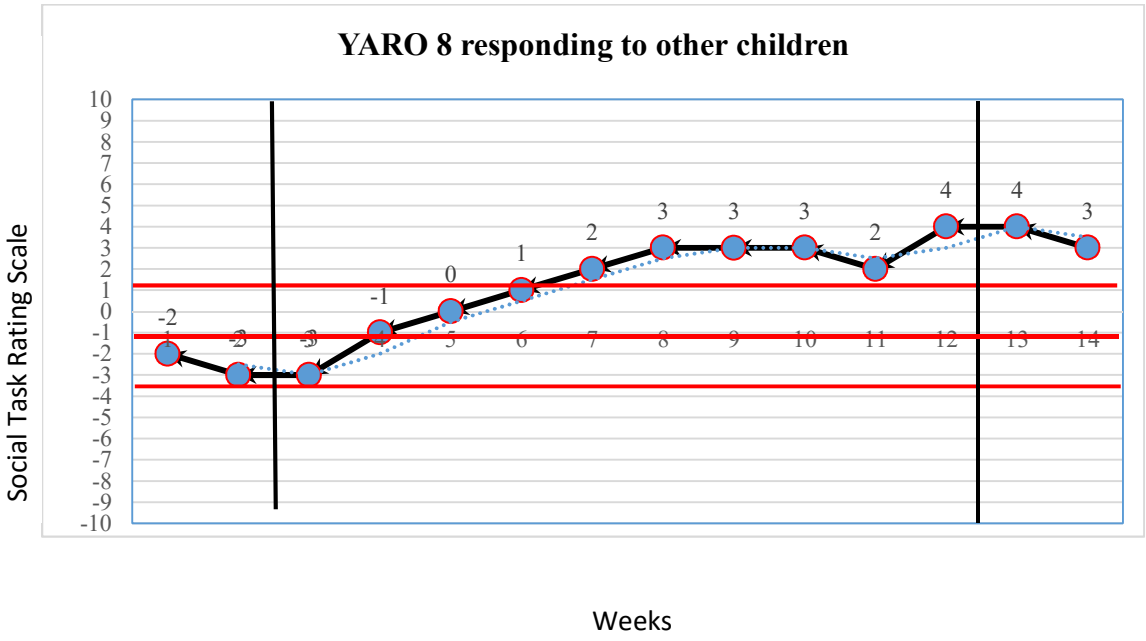


Figure 4. 15: X-Control chart plot on Responding to other Children by Child with ID

Manipulation of IV through pairing also provided peer support in engaging with other Children. However, whole group play in Week Eleven (11) led to a slight drop in child's inability to respond, though not back to baseline level. This could be due to large group environment being too overwhelming and effect of child ID characteristics of Down syndrome. Child functioned best with peer to peer prompts of (1:1, 1:2).

In order to determine programme effect on the Child; data was subjected to statistical analysis using X-control Chart in Statistical process Control (SPC). Results from this analysis demonstrated sustained social task learning levels and trend during

intervention. All plotted data points from Week Five (5) of intervention were more than Seven (7) consecutive point run above the Upper control limit, with standard deviation of MR score = 0.7 and UCL of-0.4,LCL of -4.6 and improvement index of 25%, hence programme impact on child response to other children in play.

YARO 9, similarly, demonstrated improved social behaviour functioning levels after participation in the sport intervention programme. This was the youngest participant. Pre-test score at -2.5 of baseline mean was a demonstration that the Child had lower ability to respond to others when approached by a peer without ID. Post-test score of 3 was a demonstration of child's ability to use skilful strategy to respond in a warm and friendly way. Child had moderate disability and had Down syndrome, which required more time to get used to peers. Data set during manipulation of IV of 1:1 pairing had led to marginal gain from -2.5. However, when more support peer was provided in Week Seven (7) of 1:3 pairing, Child was more responsive to peers.

During unstructured play in whole group play, Child recorded further improvement. This is a demonstration that child operates better in unstructured environment with less restriction. Post intervention score on PSTRS was an indication of sustained trend of responding to other children. Benefits accrued from intervention albeit slowly are sustainable beyond intervention. Results are presented in figure 4.16

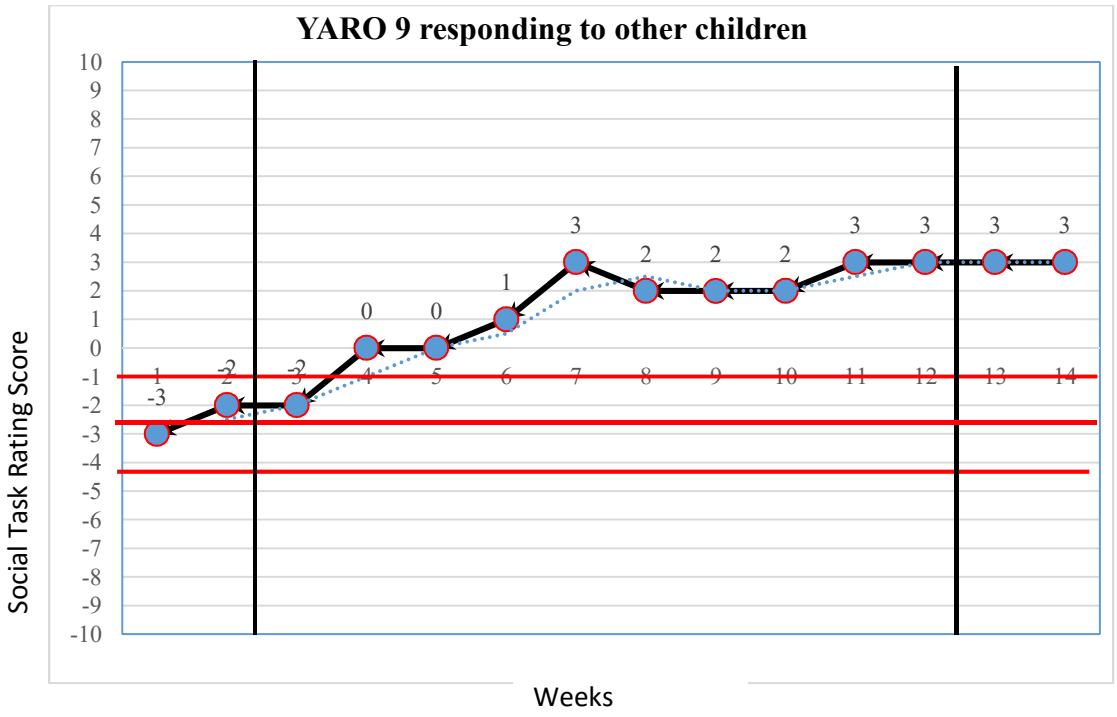


Figure 4.16: X-Control chart plot on Responding to other Children by Child with ID

Visual analysis was combined with statistical process control to determine effect of intervention on child's ability to respond to other children in play. Analysis demonstrated positive effect of programme on child's learning skilful strategies as child's data points plotted were all above the UCL during and even post intervention. The intervention had special effect on participant's social behaviour functioning, with SD of MR score of 0.51 and UCL of 0.79.Child, s improvement index was 30%.

To establish child's performance on Name Calling (NC), the child was observed how he/she responded, whenever a TD child called him/her by name. The study used PSTRS to analysed child's response whenever TD peers called child with ID by name. Child's

response was captured in video picture and peer rated to determines his/her performance on this social task. YAMY 3 was not able to respond at all to name calling before intervention with pre-test baseline mean score of -7.5. Child even drifted further to a high of -8 at inception of intervention. Child began responding positively slowly though scores were still in the negative, with a reduction towards more skilful strategy use from raw score of -7.5 to -4. 1:3 pairing improved child's ability to respond when a peer called him by name. Magnitude of improvement stood at 30% at post-test. Results are presented in figure 4.17.

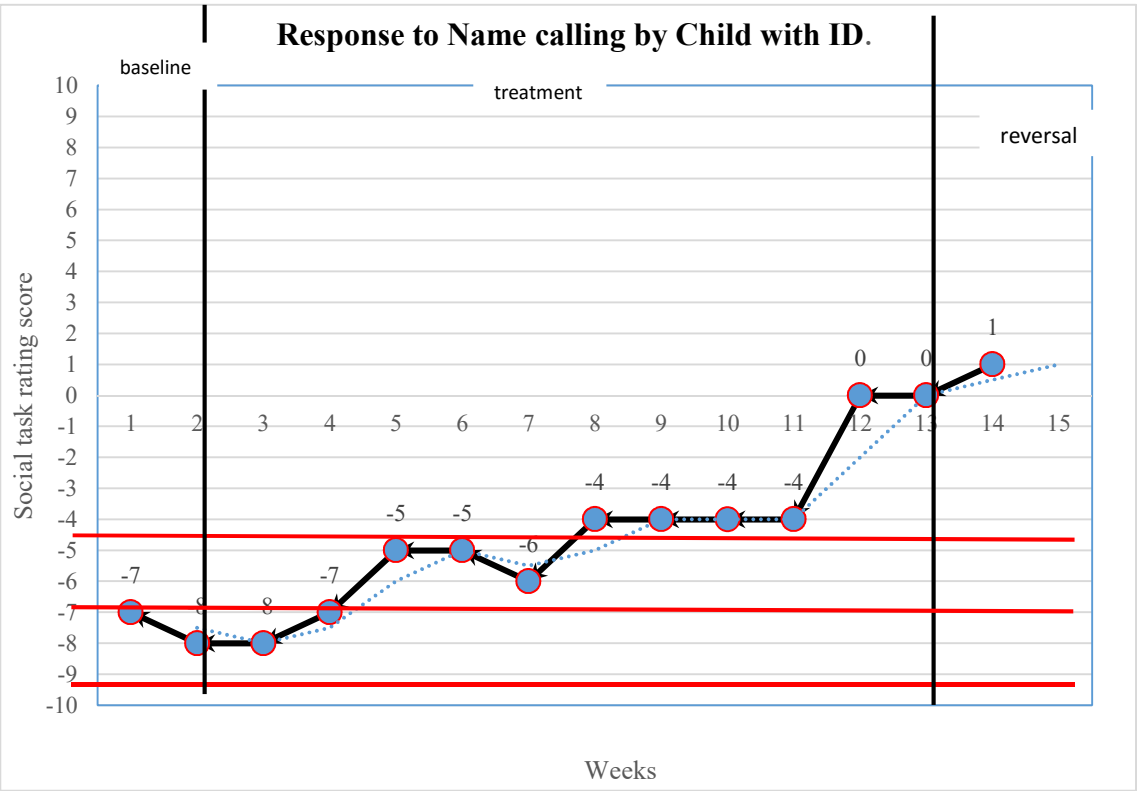


Figure 4.17: X-Control chart plot on response to Name Calling (NC) by Child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

Statistical data analysis in SPC results demonstrated more than Five (5) plotted data point above UCL, with SD of MR score of 0.76, hence programme impact on Child performance on Name Calling. Null hypothesis was not true, hence rejected.

YAKS 4 recorded a pre-test score of -5.5 before intervention, compared to an improved post-test score of 2 after programme. 1:1, 1:2 and 1:3 pairing during manipulation of IV had the highest impact on child learning of skilful strategy that facilitated child response in the affirmative and movement towards caller. When programmed was modified to have less structured play involving whole group, child response dropped slightly, this may have been due fear of large numbers which overwhelmed the child. Figure 4.18 provides visual presentation of child performance on this social task.

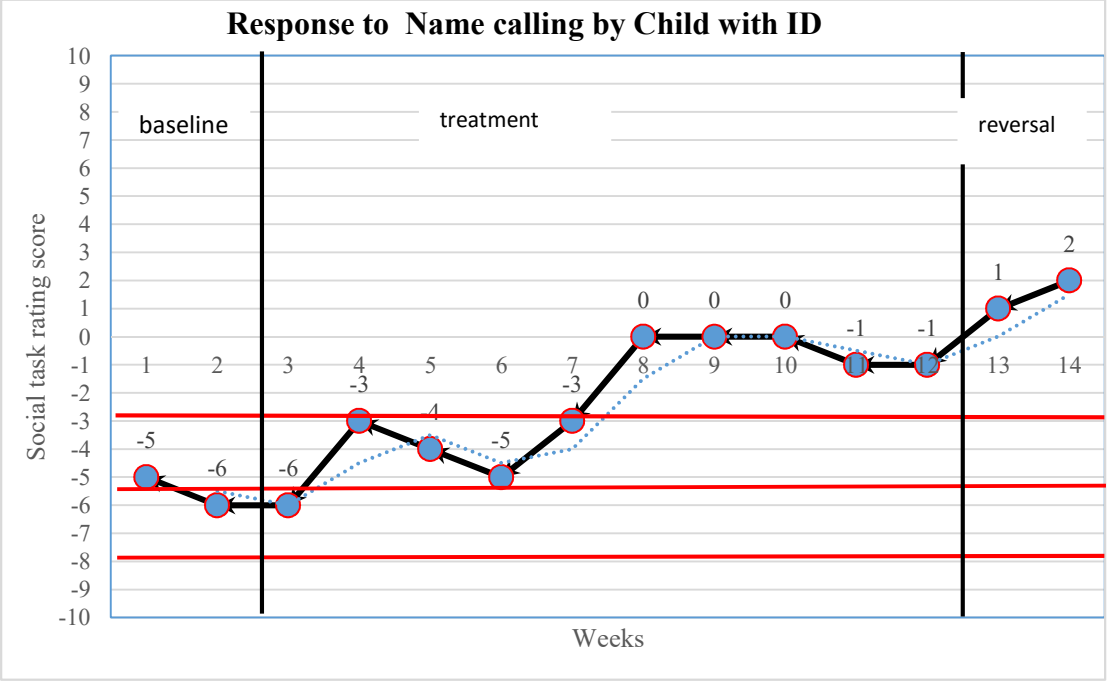


Figure 4.18: X-Control chart plot on response to Name Calling by Child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

Results in figure 4.12 reported effect of intervention after Week Seven (6) with all plotted data points above UCL, SD of MR score of 0.82 and UCL=3.04. Data analysis using X-control Charts showed impact of intervention after Week Seven (6) with all plotted data points above UCL, SD of MR score of 0.82 and UCL=3.04. Performance index of child stood at 35% magnitude of improvement on this social task.

YAKS 5 scored high on use of unskilful strategies up to end of programme by not responding in the affirmative when called by a peer without disability, with a pre-test score of -6 compared to -3 after the programme. Results are presented in figure 4.19.

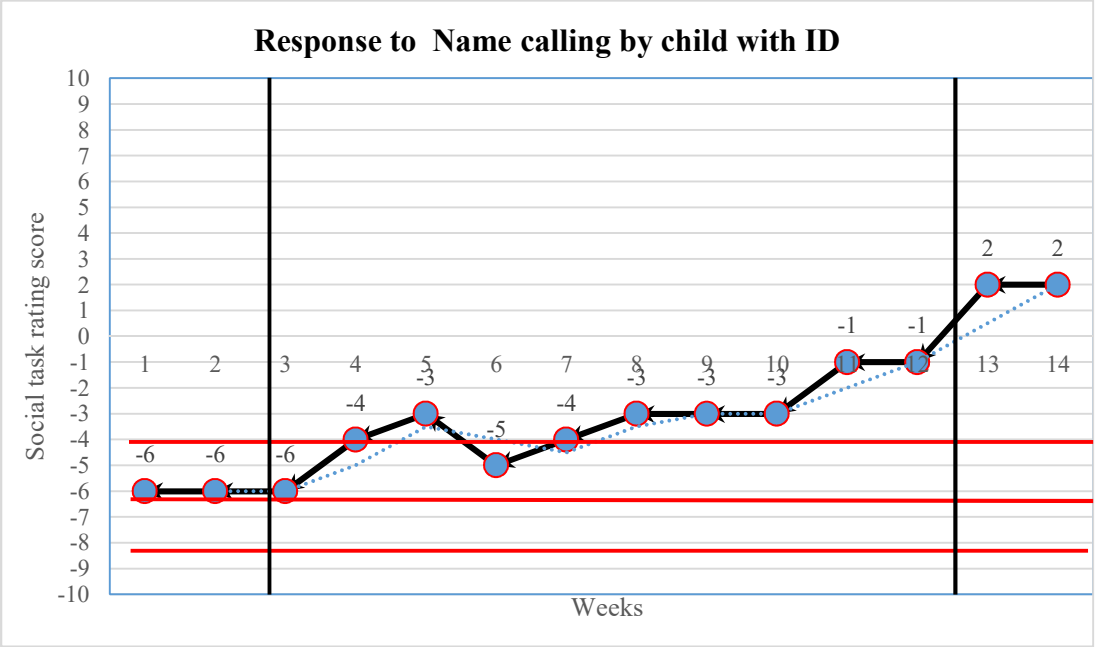


Figure 4. 19: X-Control chart plot on response to Name Calling by Child with ID.

Although the score were in the negative there was reduction in use of unskilful strategy .that interfered with performance in this variable. The Child had mixed ID with

hemiplegic Cerebral Palsy. Child characteristics of difficulty in communication and difficulty in cognition could have caused this type of responsiveness. Results of X-control Chart in Statistical Process Control, demonstrated that, Child had standard deviation of MR score of -0.63, with UCL of -4 and LCL of-7.89. The program had significant impact with more than Six (6) consecutive data points above UCL with Magnitude of improvement of 40%. Null hypothesis of no significant impact was rejected.

YAKS 6 scored high on inability to respond to peers when called with pre-test of -6 to an improved score of 1 after the programme. Post intervention raw score was highest. Results are presented in figure 4.20

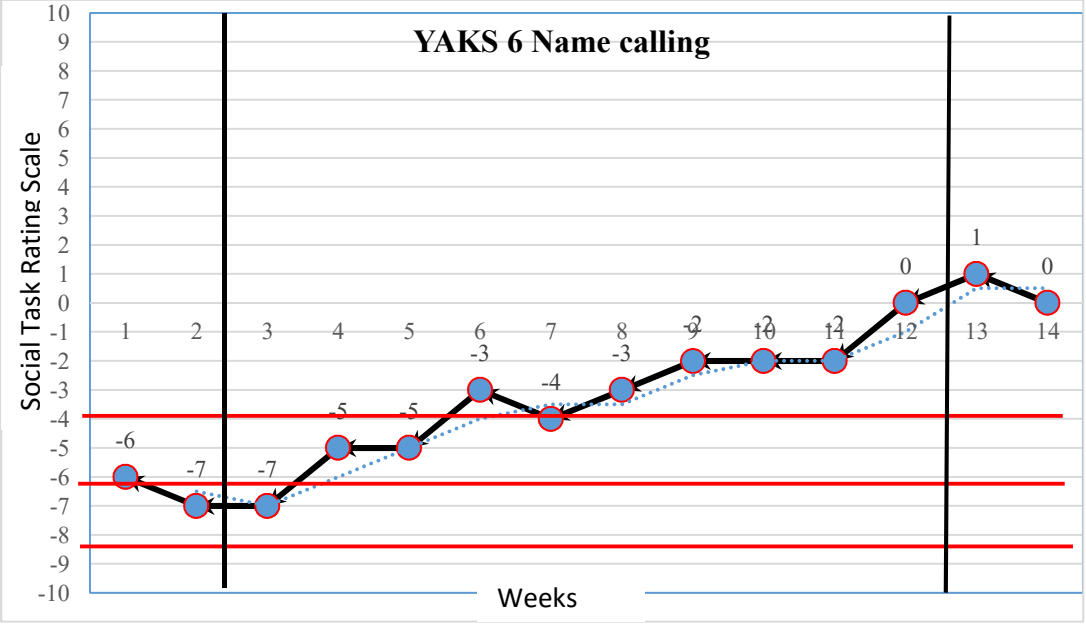


Figure 4. 20: X-Control chart plot on response to Name Calling by Child with ID.

Statistical analysis demonstrated significant impact of the intervention with Eight (8) data points plotted falling above UCL which was -8.68 and SD of MR score at 0.76, and improvement index of 30%.

YARO 7 demonstrated non-response when called by a peer with disability with pre-test raw score of -6.5 compared to improved score of 9.after the programme. Results are presented in figure 4.21

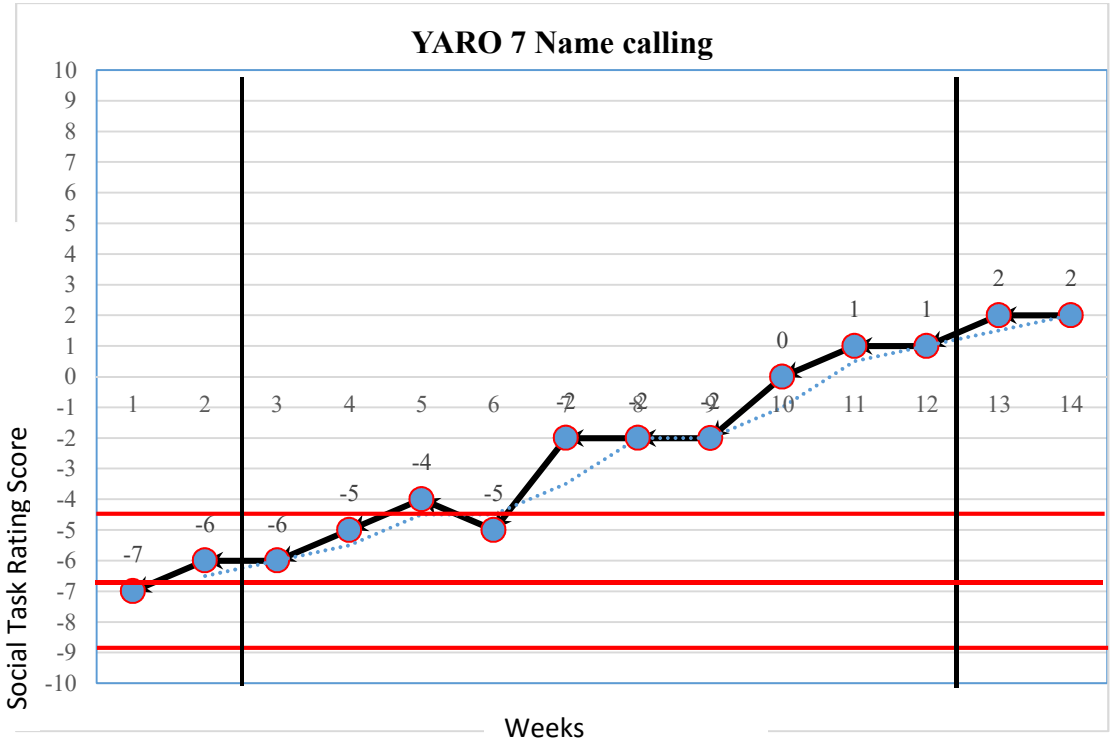


Figure 4. 21: X-Control chart plot on response to Name Calling by Child with ID.

Programme helped child to reduce use of unskilful strategy of not responding to adopting skilful strategy of responding in the affirmative and moving towards the caller

after twelve (12) weeks of engaging with peers. Data sets at manipulation IV of whole group had the highest impact on child's response. Peer support helped child in learning how to respond appropriately when called. Statistical analysis of X-Control charts, demonstrated programme impact on the child's performance on this social task; with more than eight (8) plotted data points falling above the UCL. This was an indication that the change was due to special effect of the intentional intervention and not chance. There was an improvement index of 45% with SD of MR score of 0.7, UCL -4.4 and LCL of 0.86.

YARO 8 had a pre-test mean at baseline of -5, compared to an improved raw score of 7 after the programme... Results on participant performance is presented in figure 4.22

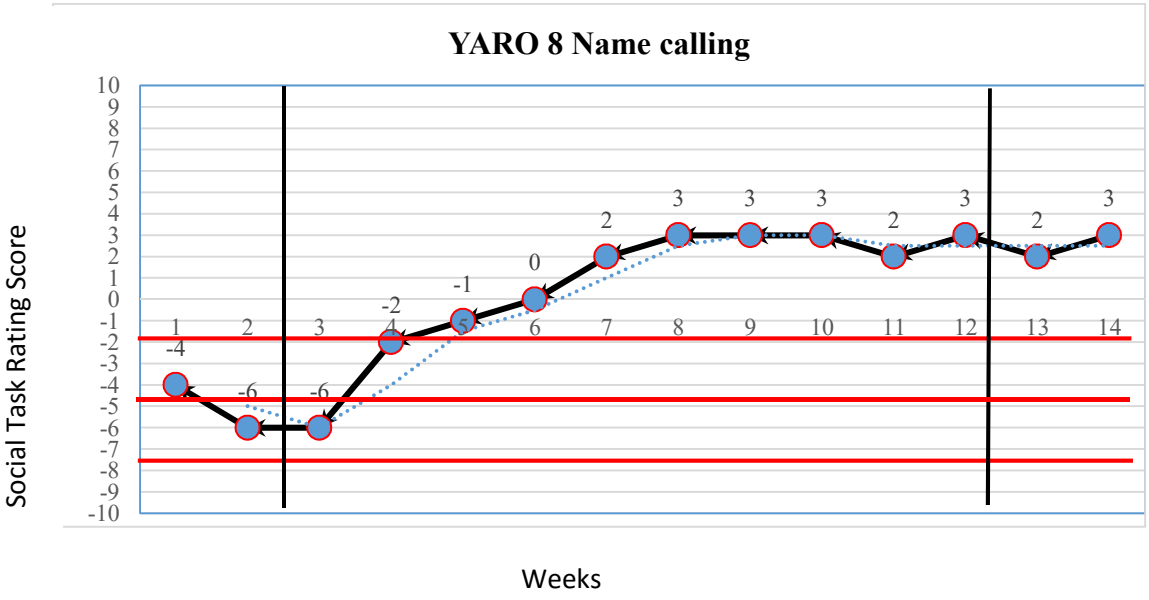


Figure 4. 22: X-Control chart plot on response to Name Calling by Child with ID.

During manipulation if IV of 1:1, 1:2, there was improvement on child's response in the affirmative and moved towards a peer without disability when called. However, data set during 1:3 pairing had the highest impact on child ability to respond in this social task. The more the social support, the higher the response. Post- intervention scores in Week (14) demonstrated a slight drop but sustained performance above the special effect threshold. Social behaviour response on responding to name calling, was difficult due to cognitive abilities.

Statistical analysis using SPC, demonstrated that program had impact on child's response to name calling between weeks 4-14 showing all plotted data points were above UPC; with SD of MR score -95,UCL=-2.15 and LCL=-7.85 respectively. Similarly, Child recorded a performance index of 35% magnitude of improvement on this social task. Programme had noticeable impact on child learning. Null hypothesis was not true, hence rejected.

Participant 7(YARO 9), demonstrated an improvement both in trend and level between baseline and post-test. Results are presented in figure 4.23

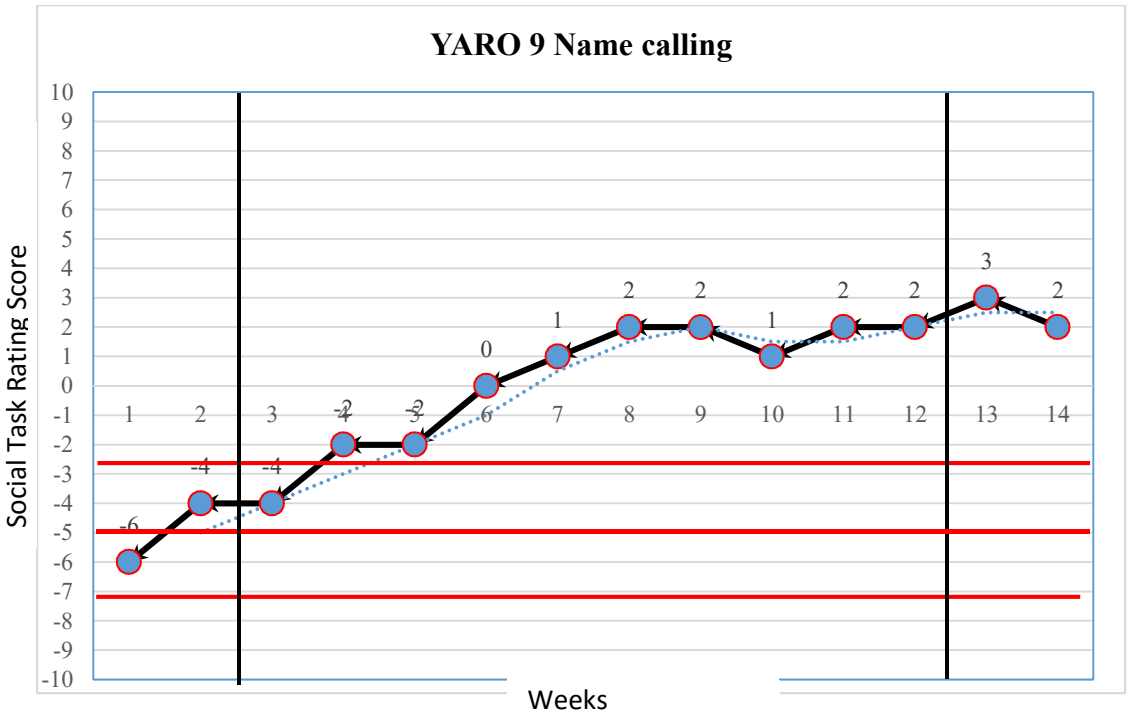


Figure 4. 23: X-Control chart plot on response to Name Calling by Child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

Manipulation of IV during 1:1 pairing did not yield special effect, whereas 1:2, 1; 3 and whole group participation led to child's adoption of skilful strategy that enabled child to respond in the affirmative and move towards the caller. Post- termination raw scores demonstrated sustained response with slight drop within the special effect threshold. Benefits accrued were sustainable and replicable. Statistical analysis of SPC using X-Control charts, demonstrated an improved performance at post-test with SD of MR score of 0.86 and UCL of -2.72 and LCL of-7.25.

The other area of concern in social skill learning of children with ID was children's response whenever team mate without ID signalled for ball to be passed to him /her. This was to help the researcher establish child's level of picking asocial cue from peers.

YAMY 3 baseline trend indicated that the Child engaged in use of unskilful strategies of ignoring and not passing ball to team mate, whenever teammate signals for ball to be passed to him/her by child with ID before intervention. Manipulation of Independent variable of 1:1, 1:2, 1:3 pairing and whole group participation between week Seven (7) to Ten (10) did not improve child's social skill functioning on this task, performance was levelled at 1. This could be attributed to child disability characteristics. An indication that every time child gets anew partner, the environment becomes overwhelming to the child, hence need for stability. Heightened interest in responding to team mate is unlikely so that the manipulation neither decreased nor increased child's use of skilful strategy. Child took time to get used and become confident relating to new partners. Once stability was established there was marked improvement in Child's use of skilful strategy to enable kicking ball back to team mate in week twelve (12) as child was more confident in engaging with peers. Post termination raw score demonstrated maintenances with no reduction or increment. This demonstrated that the impact of intervention was sustainable beyond intervention phase. Results are presented in figure 4.24

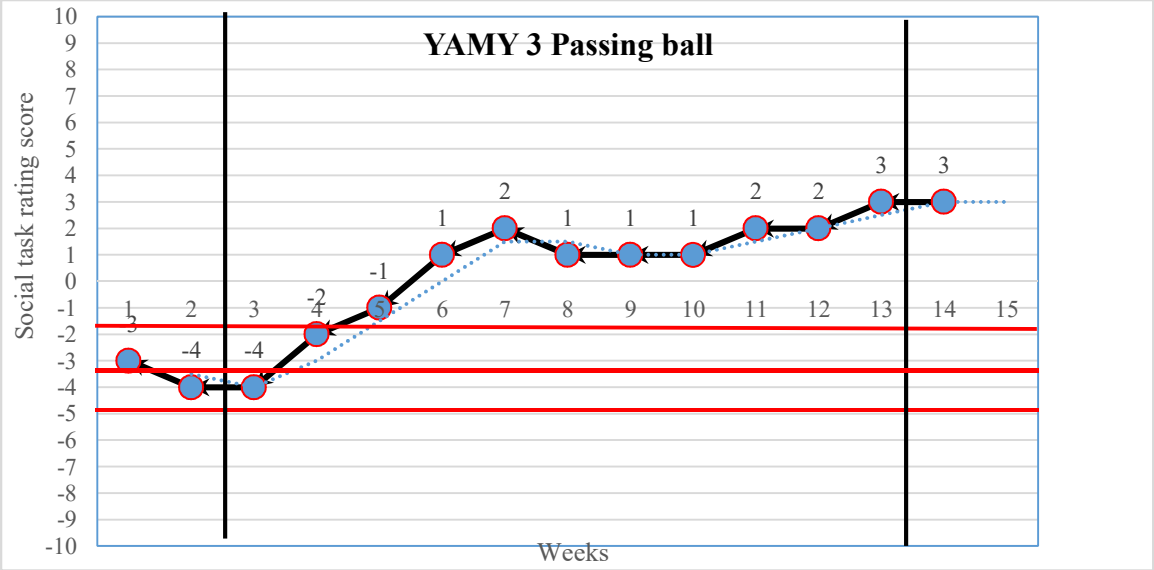


Figure 4.24: X-Control chart plot on passing ball to teammate (PBT by Child with ID.

Statistical analysis through the X-Control charts of SPC, demonstrated significant impact with all data points plotted after week Four (4) of intervention having more than six consecutive point runs above the UCL. This demonstrated consistent trend in the impact of intervention on child use of skilful strategy to respond to peers on this social task. There was an SD of MR score of 0.51, with UPC of -1.97 and LCL of -5.03. Child's performance index stood at 30% magnitude of improvement.

YAKS 4 recorded a pre-test raw sore of -2.5 before intervention. Child ignored teammate and did not pass ball back, when teammate without ID signalled for ball. Visual analysis demonstrated improved picking of the correct cue on this social task

during implementation of the intervention programme with post-test score of 1.Results are presented in figure 4.25

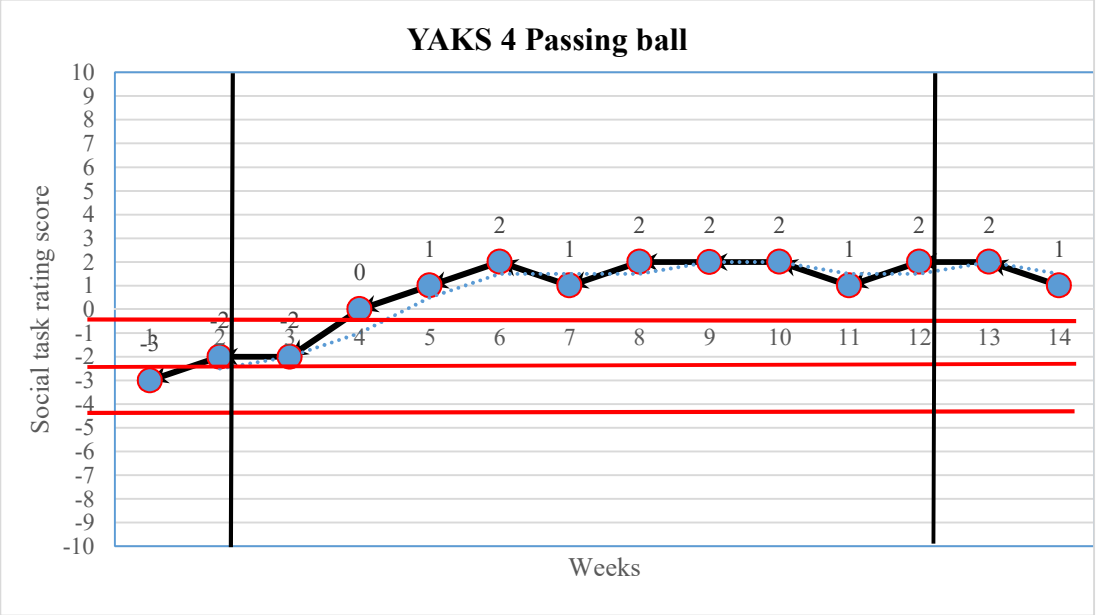


Figure 4.25: X-Control chart plot on passing ball to teammate (PBT by Child with ID.

First control stage of 1:1 pairing with new partner saw child response dropping, hence effect of new environment, child needed time to adjust to new environment by observing before being able to imitate the response appropriately. This was demonstrated during subsequent IV manipulation of 1:2, 1:3 pairing, registering improved performance. Enhanced peer social support improved child, s use of skilful strategy as he/she observed peers and gained approval. During the final IV manipulation of whole group participation, the data set in Week Eleven(11) shows child's engagement dropped; large group learning environment could have overwhelmed and confused the Child ,however

child continued to respond in the affirmative albeit slowly. This child required structured support to engage at his best. When intervention was stopped, child's use of skilful strategy that facilitated engagement in the social task continued with slight drop. This demonstrated that the gains were sustainable and that social skill learning could be maintained beyond the intervention phase and that social behaviour acquired cannot be unlearned immediately; and are applicable if environment remain supportive to the child with ID. Performance index of child stood at 20% improvement after intervention.

YAKS 5 performance demonstrated improvement at post-test as opposed to lack of social behaviour before the intervention. Visual Analysis demonstrated use of unskilful strategy that prevented child's execution of this social task with pre-test score of -2.5 before intervention. There was gradual reduction on use of this unskilful strategy once intervention was implemented up to end of programme with improved post-test score of 3 after the programme. This was a demonstration that, the child was able to acquire social task of responding in a warm manner and passing ball to target.1:1 manipulation of independent variable affected the execution. This could have been during to structured participation with new partner assigned to child. Child may have been overwhelmed with new environmental modification .Child needed to get used and get affirmation from new partner. However, when manipulation increased to1:2 and 1:3 pairing, Child appeared more stable and gained ground to previous level of engagement. At week eleven (11) when further manipulation with whole group participation was done, the performance further improved with increased use of skillful strategy, enhancing child's response in the affirmative. Results are presented in figure 4.26

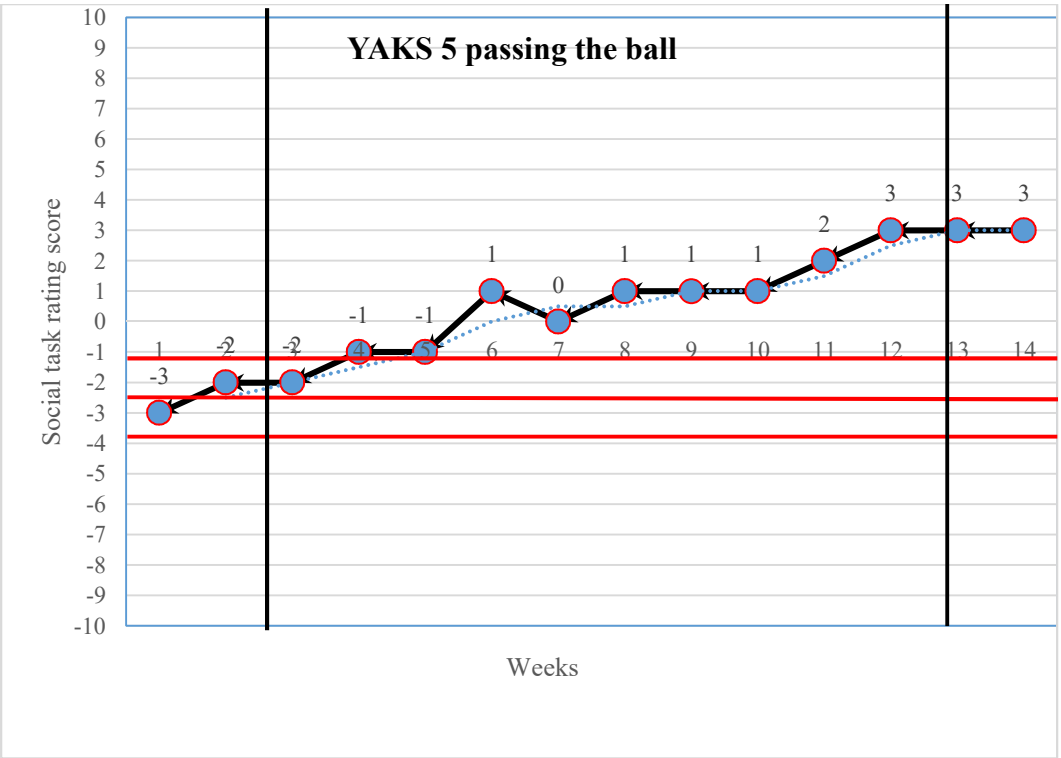


Figure 4.26: X-Control chart plot on passing ball to teammate (PBT) by Child with ID

One of the youngest in the programme. Unstructured play environment worked best for this social task as opposed to semi-structured play environment for Yaks 5. Post-intervention score was marked by sustained performance, an indicator that, some social tasks analysis.

Participant 3 (YAKS 6) recorded an improvement score of 1 after treatment compared to a pre-test score of -2.5. Results are presented in figure 4.27

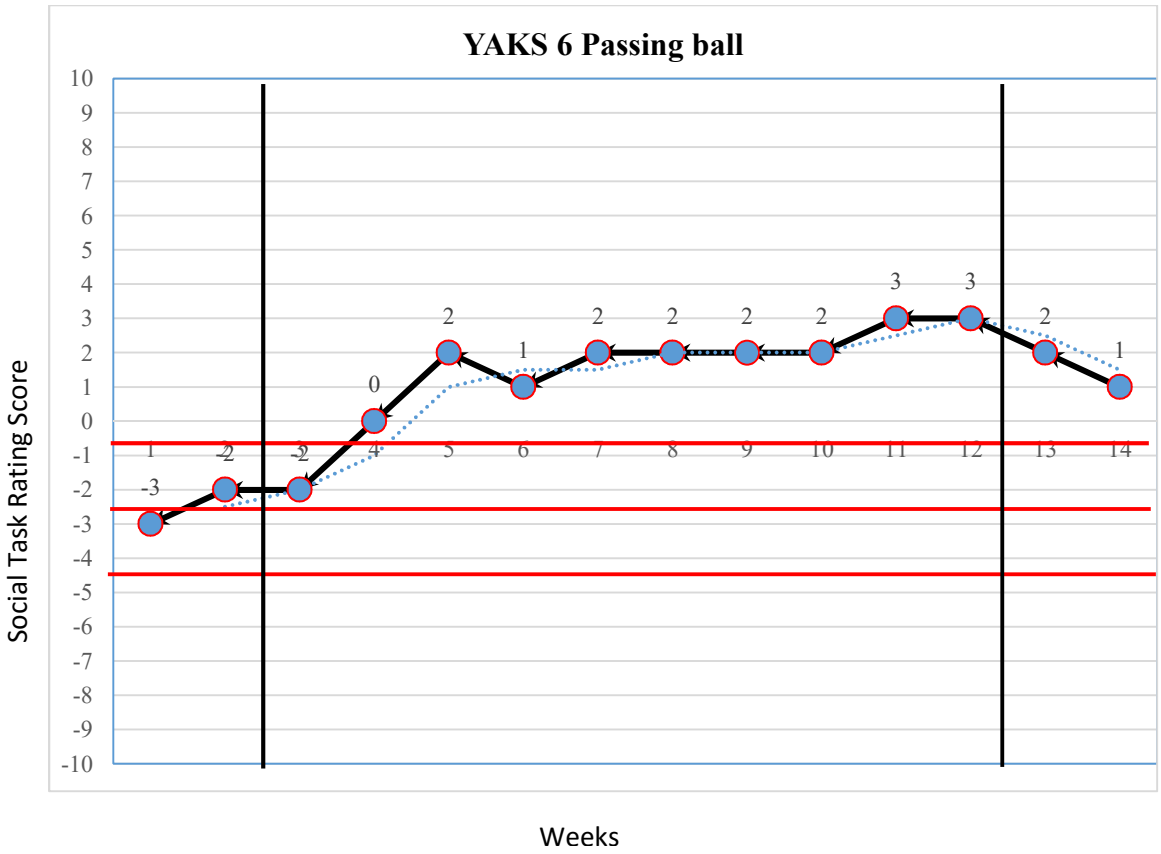


Figure 4.27: X-Control chart plot on passing ball to teammate (PBT by Child with ID.

As child spent more time engaging with peers; (5x5), coupled with inclusion of energy drink to sustain energy levels from week Five (5) onwards during the intervention phase. Structured manipulation of IV on 1:1, 1:2 pairing did not show improvement beyond normal progression in semi structured.

YARO 7 recorded lack of strategy to respond to peer without ID when signalled to pass ball, recording a pre-test score of -3, compared to an improved post-test score of 2 after the programme. Results are presented in figure 4.28.

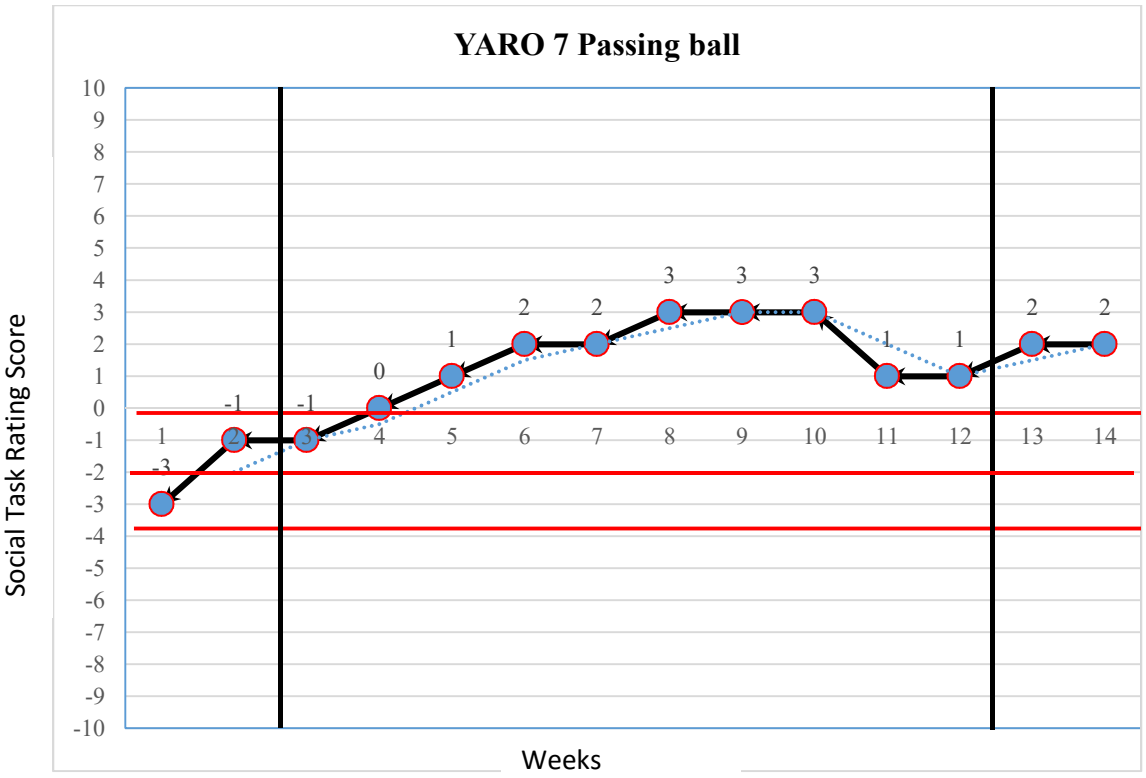


Figure 4. 28: X-Control chart plot on passing ball to teammate (PBT by Child with ID.

Child recorded a performance index of 25% magnitude of improvement. There was consistent trend and level of learning in this social task by child in the programme.

YARO 8 recorded a pre-test score of -3 before intervention, compared to an improved post-test score of 3 after intervention. Results are presented in figure 4.29.

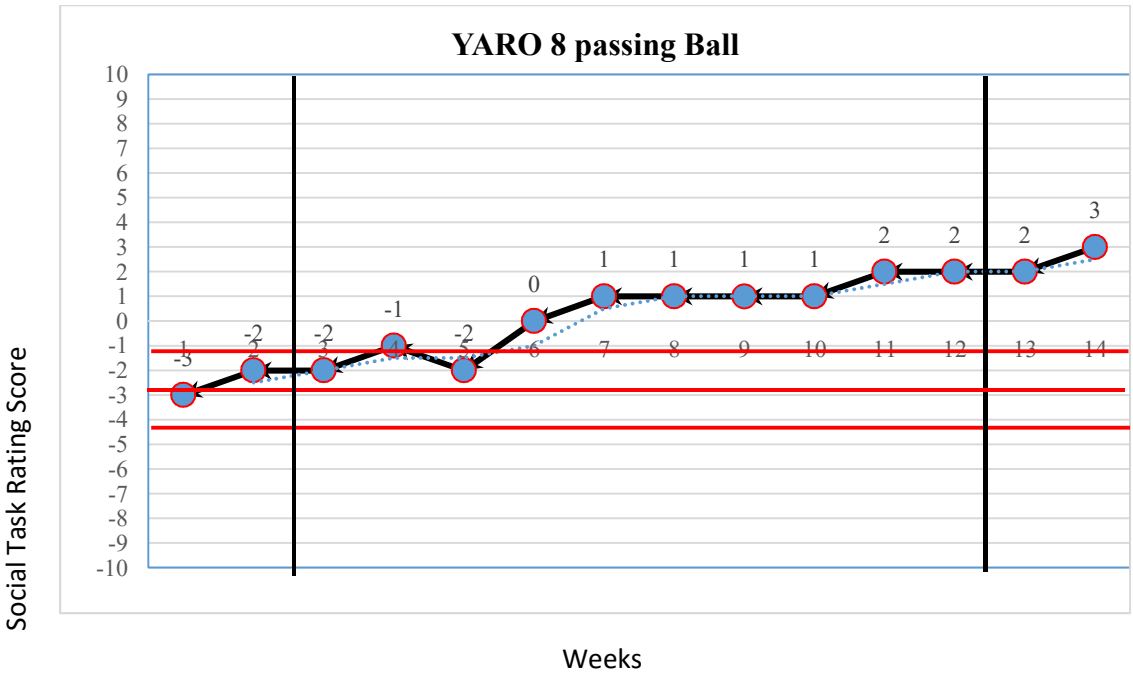


Figure 4. 29: X-Control chart plot on passing ball to teammate (PBT by Child with ID

Data sets at different points during the intervention phase of the programme, demonstrated gradual improvement of the child to smile and pass ball to the correct target whenever teammate signalled for ball to be passed to him or her; however, manipulation of IV in pairing of 1:1,1;2,1:3 did not result in marked improvement in executing this social task. Child was not accepting to given playmates in a controlled environment. This could be due to playmates nonverbal responses, whenever pairing with child with ID is done. Child ID characteristics of non-responding to peers in structured play. During whole group participation, there was improved response, an indication that child responds well to social tasks in unstructured environment. Child also took a very long time to establish friendship with TD, post intervention score was

highest. This Child had Down syndrome and needed a lot of time and support to learn before being able to respond appropriately to peers. The child also found it easier and freer to play in unstructured environment and takes time to trust that he will be accepted by partners. Visual analyses of data sets depicted level of improvement in the affirmative. There was also a performance index of 30% magnitude of improvement between pre-test and post-test.

Analysis demonstrated improvement in social behaviour for the participant wit SD of MR score of 0.51, UCL of -0.97 and LCL of -4.03. Null hypothesis was not supported by the findings, hence was rejected.

Participant 7 (YARO 9), recorded a pre-test score of -2.5, demonstrating use of unskilful strategy of ignoring and not passing ball when signalled by a peer without ID. This continued into the first two weeks of intervention. This could have been due to child ID characteristics, of drooling and Down syndrome which affected his information processing; coupled with low self-esteem. Child was able to learn skillful strategy of smiling and trying to kick ball to correct target by week 6 of intervention. Child registered post-test score of 1.During manipulation of IV 1:1 pairing had no impact on week four (4), however 1:2, 1:3 pairing provided impetus for the child to respond in the affirmative and pass ball to team mate. This was also the youngest child in the programme aged Nine (9) years old. Once the child began to use skillful strategy to smile and hit ball to target with more peer support, there was steady improvement throughout especially week eleven (11) with Whole group play, when the Child recorded greatest improvement. Analysis recorded a performance index of 20% between baseline and end of the intervention.

Child characteristics and unstructured play environment facilitated high performance on this social task. Child response to peers in this social task was more successful based on video recording on child to child interaction. Post intervention score demonstrated sustained performance with no further improvement. Results are presented in figure 4.30.

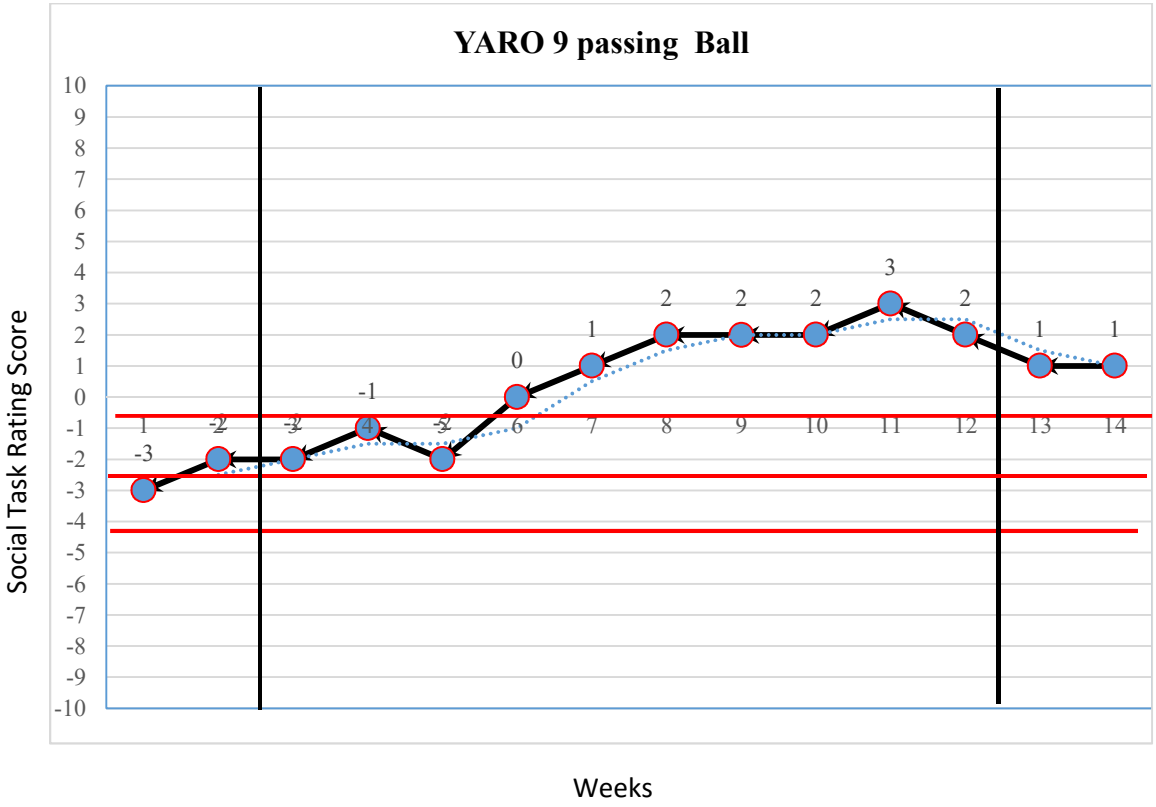


Figure 4. 30: X-Control chart plot on passing ball to teammate (PBT by Child with ID

Children performance on playing games with others (PGO) was assessed by taking video pictures on child to child interaction when playing games with others, Video coding helped in rating the degree of effort child exerted to execute the desired behaviour ranging, from 2 (no effort) to 0 (significant effort) required to produces

desired social behaviour. Peer Social Task Rating Scale (PSTRS) was also used to record both the negative social behaviour and positive social behaviour when child with ID play Games with other children. Child's responses was rated whether he/she act like sore loser which reflects unskilful strategy that prevents execution of the social task(-5 to -1) or whether child plays fair, follow rules and loses or wins graciously, evidence of child having learnt use of skilful strategy that facilitates social task execution(5-1). Scores were recorded as negative when unskilful strategy was displayed and positive for any display of skilful strategy and cross referenced with video coding to get the performance before and after the intervention.

YAMY 3 had a pre-test score of -1 before intervention. When IV manipulation was introduced Weeks (4, 6, 7 & 11) of 1:1, 1;2, 1:3 and whole group pairing, there was marked improvement in child performance towards positive behaviour on this social task by playing fair and following rules. This was a demonstration that, the more the number of peer support availed to the child with ID, the higher the performance of the child in the execution of the social task irrespective of ID effects. Results in Figure 4.28 established that, reversal phase recorded no further increase with slight drop, but within post-test mean of 3. This was evidence that intervention effects were sustainable and applicable beyond the period of intervention; as long as the opportunity to engage with peers was provided in a supportive environment. Secondly, child with ID was capable of learning social tasks by observing and imitating acceptable behaviors responses from other children without ID. The interpretation of this behaviour was that the child had attained anew baseline of social behaviour after fourteen weeks intervention. The implication of this new baseline was that it is now necessary to ether sustain the benefits

by continuing with programme including more advanced social skills, or design a new programme with more challenging activities as part of unified community sport programme. Results of the analysis are presented in figure 4.31

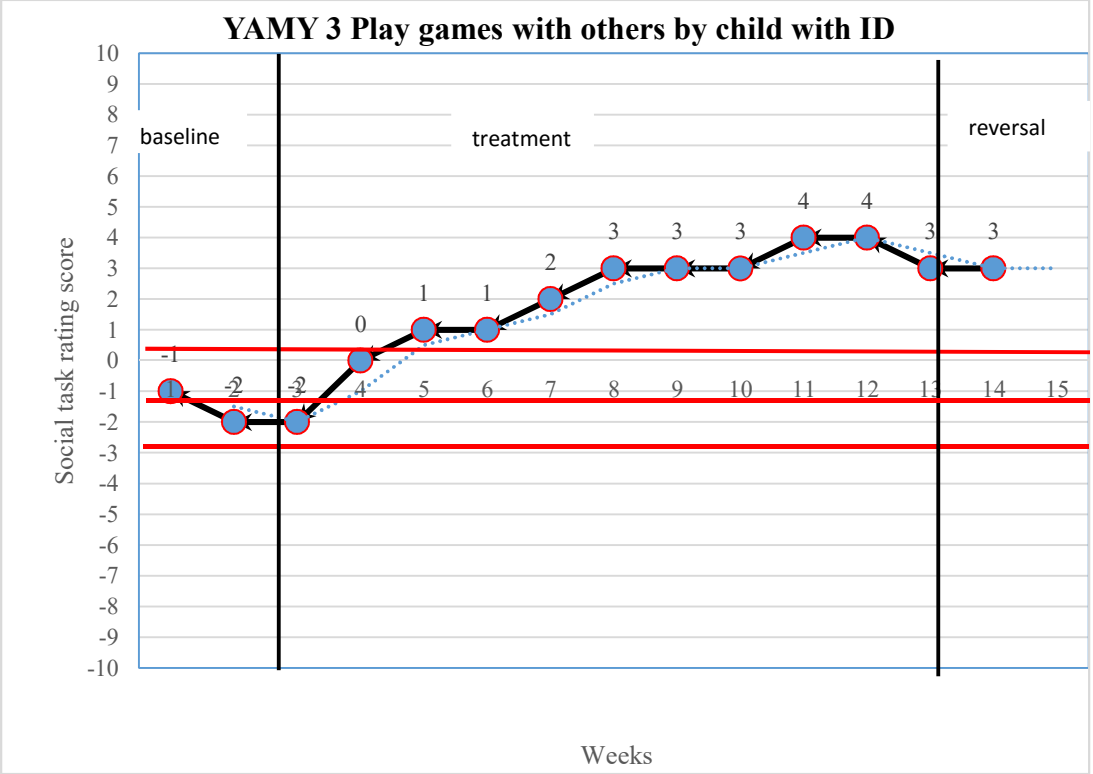


Figure 4.31: X-Control chart plot Performance on Playing Games with Others by Child with ID.

A statistical process control result was indicative of progressive social behaviour enhancement with SD of MR score at 0.51, UCL of 0.53 and LCL of -2.

YAKS 4 had a score of -2 at baseline, an indication that use of unskilful strategy affected child's ability to play fair. Video capture showed child crying and sitting on

ball whenever he was scored a goal. Child required significant effort to respond appropriately before intervention. Visual analysis showed that, after initiation of Intervention, there was sharp increase in child's ability to adopt use of skillful strategy when playing games with other. Results are presented in figure 4.32.

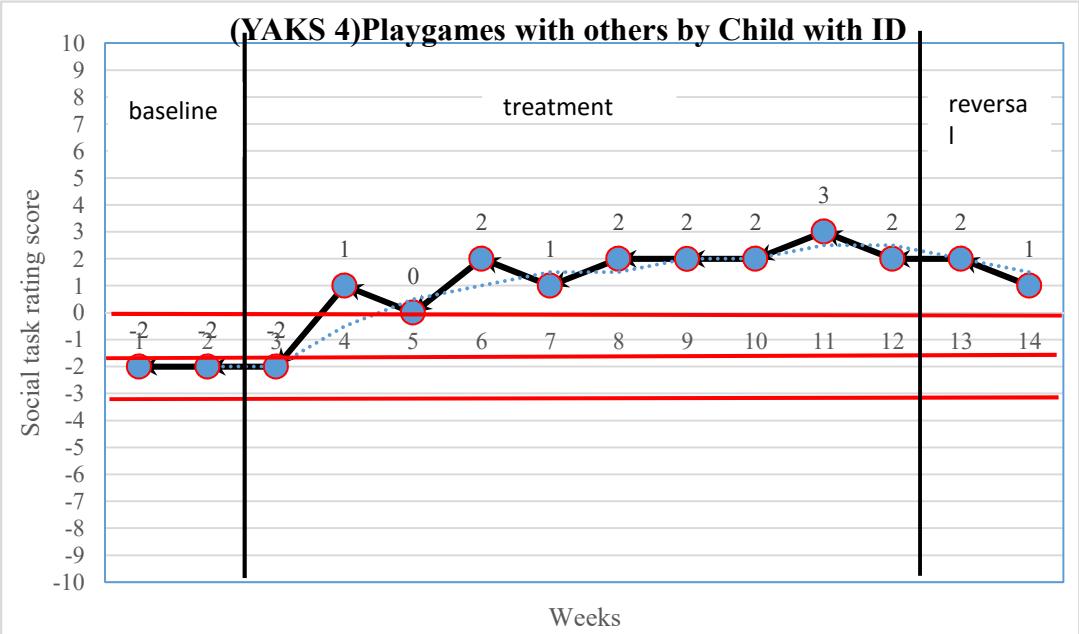


Figure 4.32: X-Control chart plot on Playing Games with Others by Child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

Whole group play in week eleven (11) had the highest improvement on child response performance index of Child stood at marginal 15% magnitude of improvement. Child responded better in unstructured play environment with more freedom to engage with peers of choice compared to when paired on 1:1. During the treatment withdrawal phase, there was no further increase.

Analysis results demonstrated an improvement both in level and trend. There was a significant effect with more than Five (5) consecutive point runs of plotted data lying above UCL with SD of MR score of 0.57, with UCL OF 0.29 and LCL of -3. Margin of improvement was due to ID clinical manifestations which may have affected child's ability to learn social responses.

Child had moderate intellectual disability, specifically Down Syndrome, and low energy which could have caused irregular but sustained response in the increased use of skillful strategy of smiling and continue playing, hence win and lose graciously. With manipulation of IV saw improvement, an indication that multiple peer support was effective to assist child to more successful in holding ball and steadying ball for child to kick. Nutritional intervention enhanced child energy levels and peer support in the programme could be credited for child sustained social behaviour during intervention.

Whole group play in week eleven (11) had the highest impact on child response. Child responded better in unstructured play environment with more freedom to engage with peers of choice compared to when paired on 1:1. During the treatment withdrawal phase, there was no further increase, evidence that improvement was the result of the intervention treatment. However, child did not revert to pre-test level, a demonstration that once asocial behaviour is learnt it takes time for it to be unlearned and that it can last beyond intervention and be applicable in supportive environment.

The fifth social task was to help the researcher in determining the effect of intervention on participant 3 (YAKS 5) response in playing games with other children. Performance during various phases of the intervention, also recorded improved and sustained learning

on this social task. Results demonstrated a post-test improvement of 25 % after intervention.

During manipulation of IV in 1:2 & 1:3 pairing in week seven (7) and week eight (8); this research finding established that sport socialization contributed to the marked improvement in child's ability to play fair and follow rules when engaging with other children. However whole group participation in weeks eleven (11) and twelve (12) did not change child's response. Post intervention score implied sustainability of gains made during intervention. Results are presented in figure 4.33.

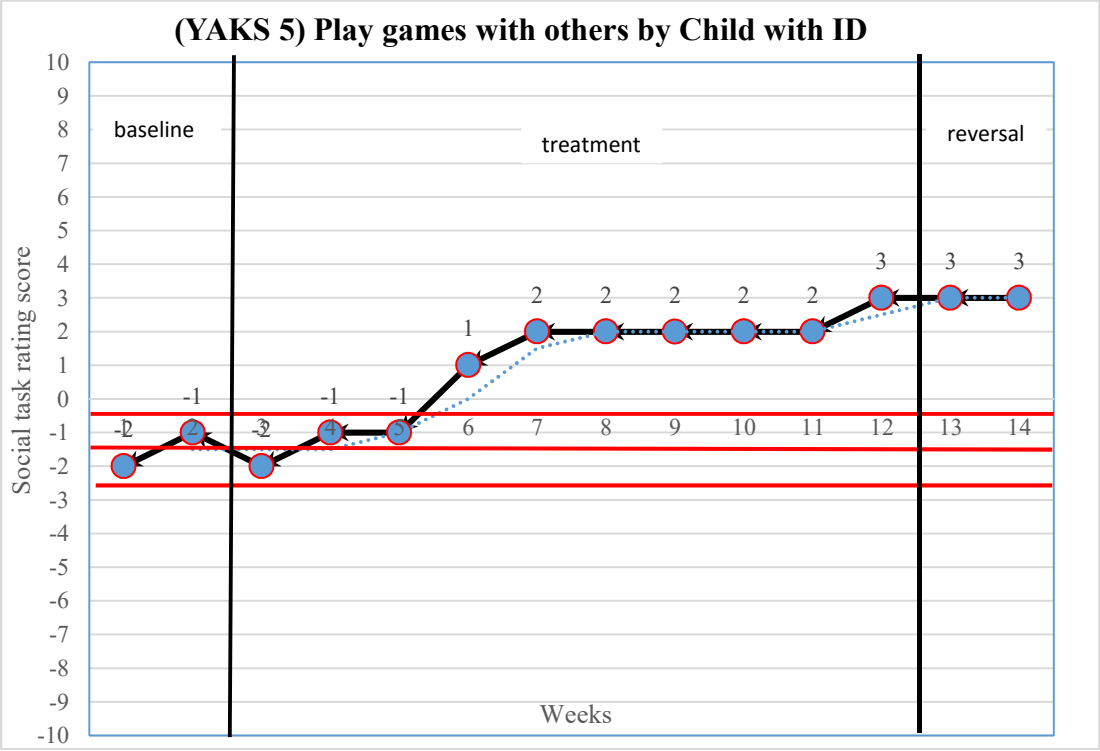


Figure 4.33: X-Control chart plot on performance on Playing with others Games by Child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

at post-test levels. This could be attributed to overlearning and peer support as a necessary modification that helped to spur special effect on child, despite the child's multiple disability condition of cerebral palsy, as well as ID. YAKS 6 participated on the item of having conversation with other Children in order to determine child responsiveness on starting and maintaining conversations with other children without ID. Results are presented in figure 4.34.

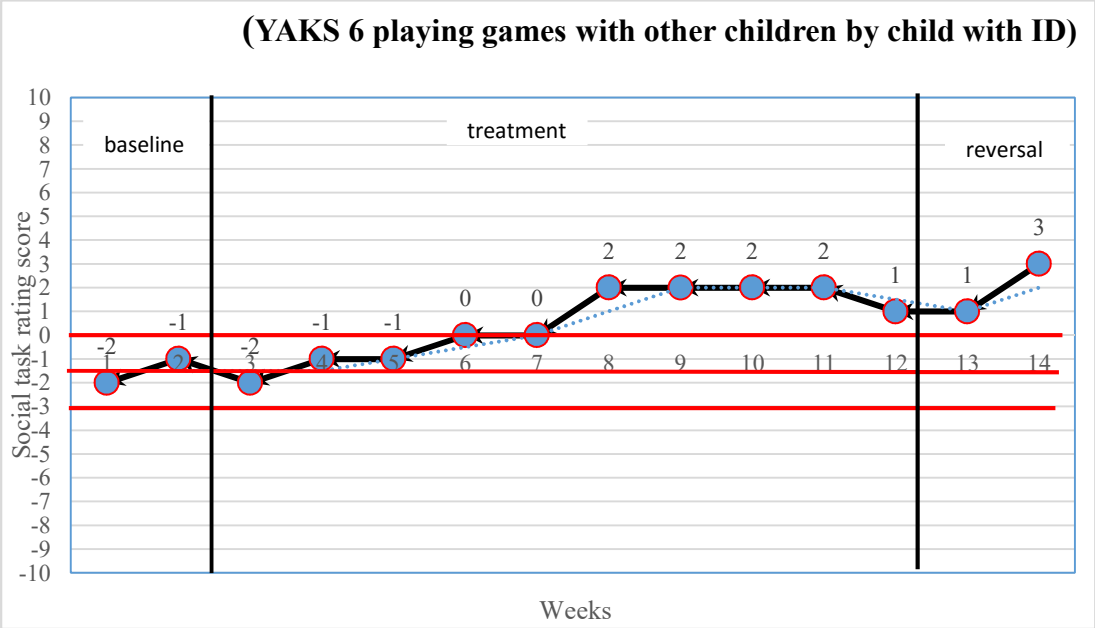


Figure 4. 34: X-Control chart plot on performance on Having Conversation with others by child with ID

The analysis results showed improvement from negative social strategies to positive strategies after sport socialization intervention programme in Kakamega County.

The highest engagement was observed during 1:1 pairing; however 1:2 and 1:3 did no lead to any further improvement. Whole group participation led to child decline in having conversations, this could be attributed to large numbers being overwhelming to the child and limited his ability to have conversations. Results of the statistical analysis demonstrated significant effect of programme on child having conversation with others during and after intervention with SD of MR score of 0.57, UCL of 0.21 and LCL of -3.21, respectively.

YARO 7 recorded a pre-test score of -1.5 before intervention compared to an improved score of 2 after the programme. Programme modification with data sets between IV manipulation on 1:1 recorded change from use of unskilful strategy of acting like sore loser to more use of skilful strategy where child played fair and followed rules, lost/won graciously. During 1:2, 1:3 pairing, Child recorded sustained and constant application of use of skilful strategy based on peer to peer interaction; however, during whole group pairing in week eleven (11), there was slight reduction in child's ability to engage use of more skilful.

Result demonstrated that, the Sport Socialization Intervention Programme had special effect on Child's sustained engagement with peers in the use of skilful strategies, with all data points plotted during and post intervention falling above the UCL by more than Six (6) consecutive point runs. Magnitude of improvement stood at 15% with SD of MR score of 0.57, UCL of -0.21 and LCL of -3.21.Results are presented in figure 4.35.

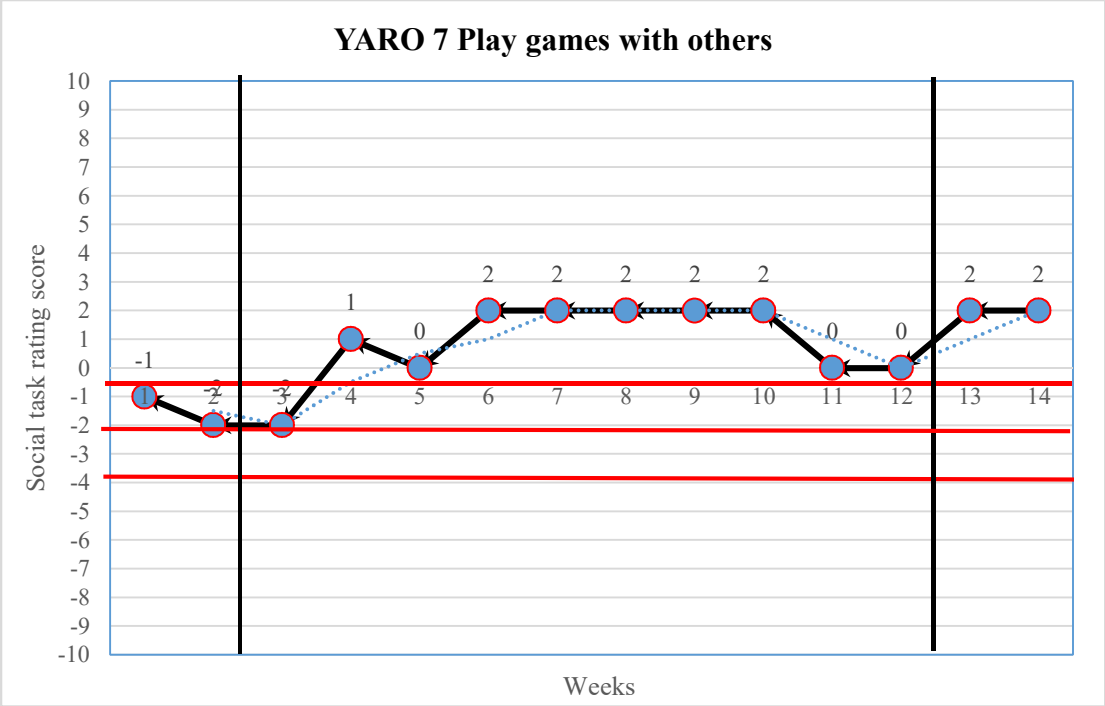


Figure 4. 35: X-Control chart plot on performance on Having Conversation with others by child with ID.

Participant 6 (YARO 8) had a pre-test score of -2 and an improved score of 2 when both the observed video analysis and peer task rating scale were cross referenced to rate child's level of social behaviour functioning on this social task. Results are presented in figure 4.36.

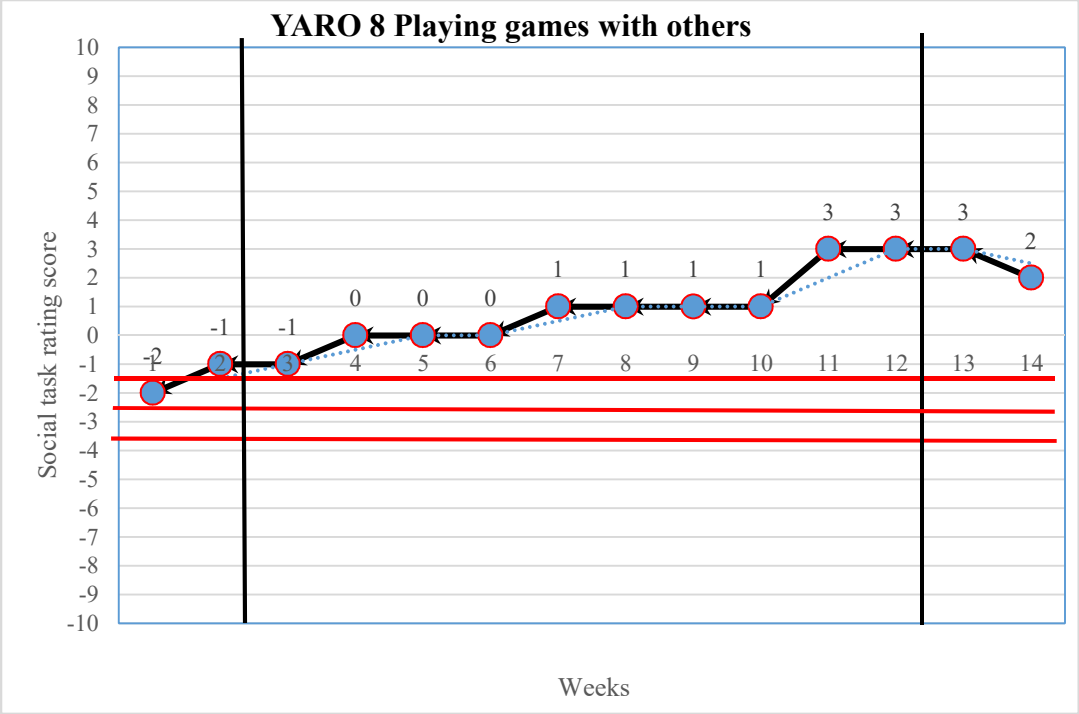


Figure 4. 36: X-Control chart plot on performance on Having Conversation with others by child with ID.

KEY:

Trend Line

Peer Social Task Rating Score

After intervention, and assignment of peers to help with practice; child reduced use of the unskilful strategies and began to adopt positive responses of trying to play fair with other Children. During manipulation of IV of Pairing of 1:1, 1:2 and 1:3 of ID and TD, improved and sustained learning of use of skilful strategy was observed after termination of treatment.

Participant 7(YARO 9), registered a pre-test mean score of -2.5 before programme, compared to an improved post-test score of 1 in playing games with other children. Results are presented in figure 4.37.

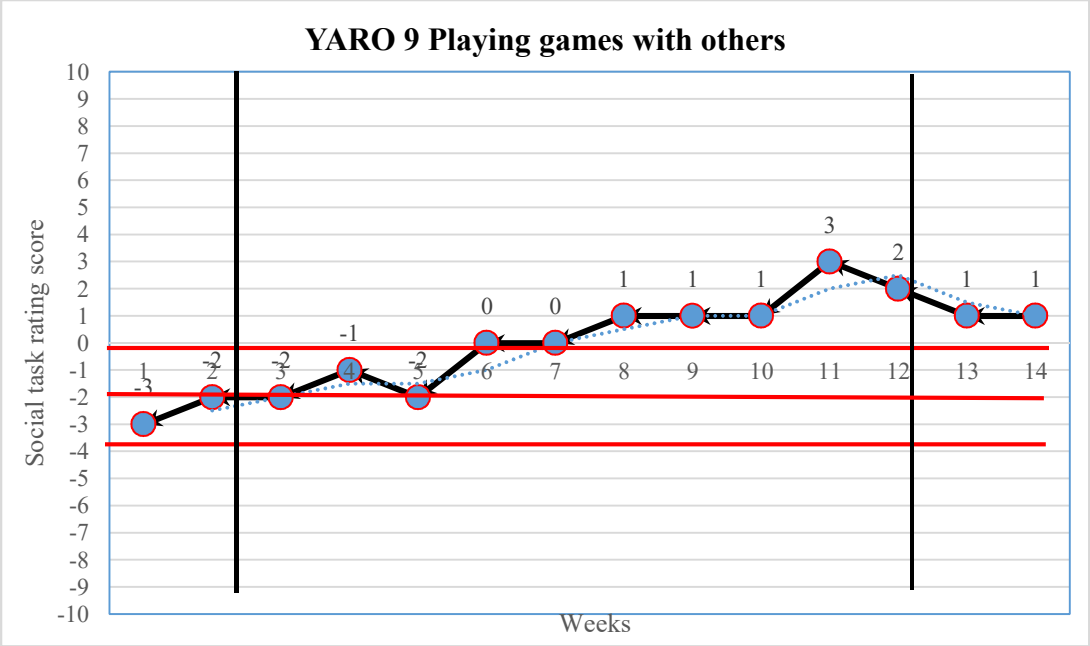


Figure 4.37: X-Control chart plot on performance on Having Conversation with others by child with ID.

Child performance across data sets with manipulation of intervention variables in pairing child with ID to TD; recorded marked improvement in effort and use of skilful strategy of playing fair and observing rules during whole group pairing as opposed 1:2, 1: 2 1:3 pairing. Once a child with ID has learnt a social task, it is sustainable beyond intervention, replicable in continuous interaction with peers without ID.

Visual analysis of child score before and after the programme demonstrated that, child had higher social task functioning after programme as opposed to before, hence the intervention was responsible for this improvement. Statistical analysis of X-Control chart in SPC presented above, established that the program was effective and produced

special effect on child's ability to use skilful strategy when playing with other children. There were more than Six (6) consecutive point runs of plotted data falling above the UCL. With SD of MR score of 0.65, UCL of -0.61 and LCL respectively.

YAMY 3 had a performance score of -1.5 on peer to peer social task rating on having conversation with others in play at pre-test, where child failed to stay on topic and could not understand what the peer without ID was saying. Video analysis portrayed child requiring significant effort to respond to peers before the programme. Child appeared uncomfortable, stared blankly into space or just walked away whenever a peer initiated a conversation. Results are presented in Figure 4.38.

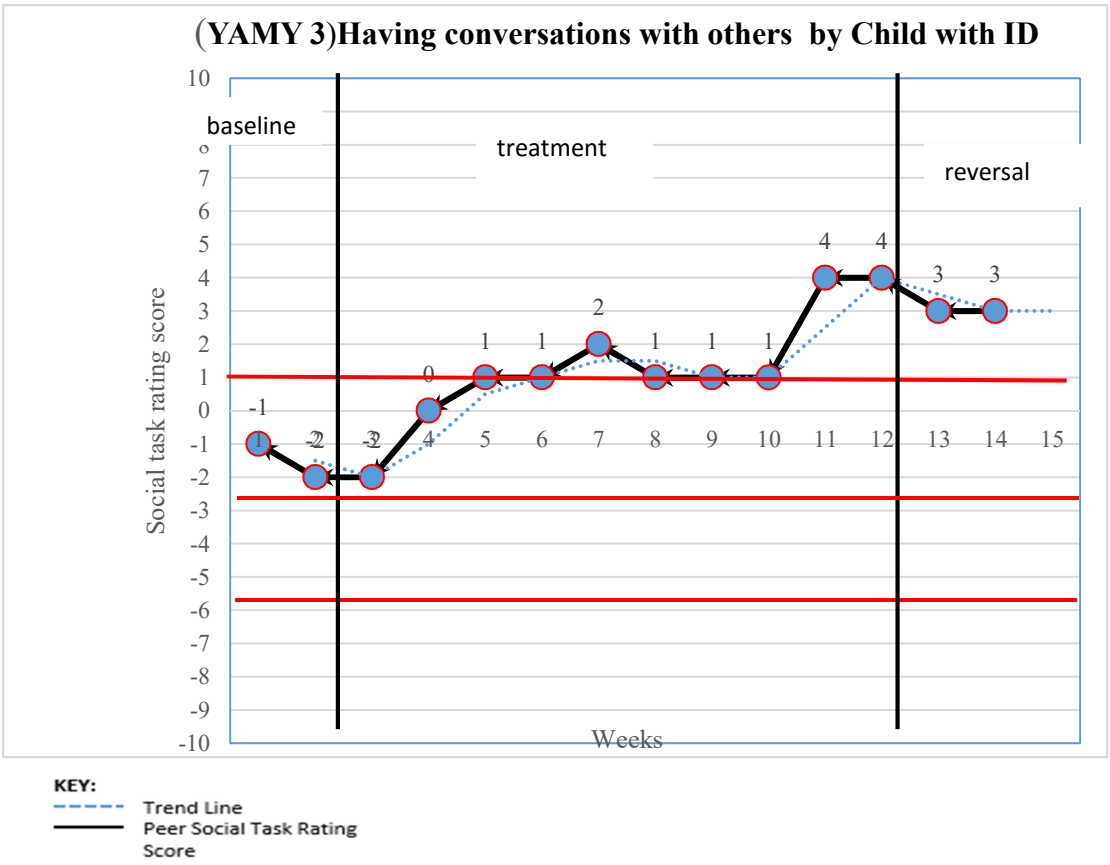


Figure 4.38: X-Control chart plot on Performance on Having Conversation by Child with ID.

After the programme post-test score of 4 on peer social task rating scale was recorded. Performance index was 20% magnitude of improvement. Data sets during manipulation of IV, demonstrated that performance was highest during whole group pairing in week eleven (11) as opposed to during 1:1, 1:2 and 1:3 pairing in weeks four, six and eight (4, 6 & 8). Results from statistical process control demonstrated an improvement in trend and level; with SD of MR score of 0.71, UCL of 0.39 and LCL of -3.39 as presented earlier in figure 4.8.All scores were +3SD above moving range of baseline mean .

YAKS 4 had a lower present level (-3) of social skill functioning as opposed higher scores (2) after intervention on having conversation with other children. Results are illustrated in figure 4.39.

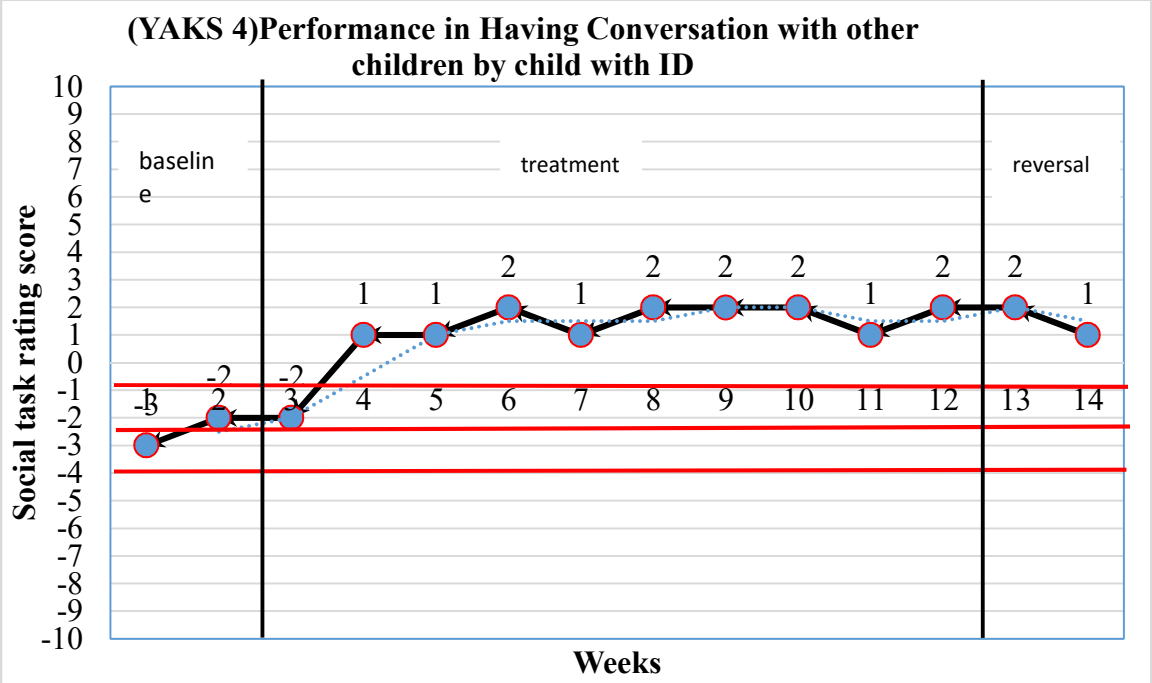


Figure 4. 39: X-Control chart plot on having conversation with other Children by Child with ID

Child had a performance index of 25% magnitude of improvement with SD of MR score 0.57, UCL of -0.97.

YAKS 5, recorded pre-test score of -2, compared to an improved post-test of 2 after programme on peer to peer social task rating indicating 25% improvement in performance from pre-test. Results are illustrated in figure 4.40

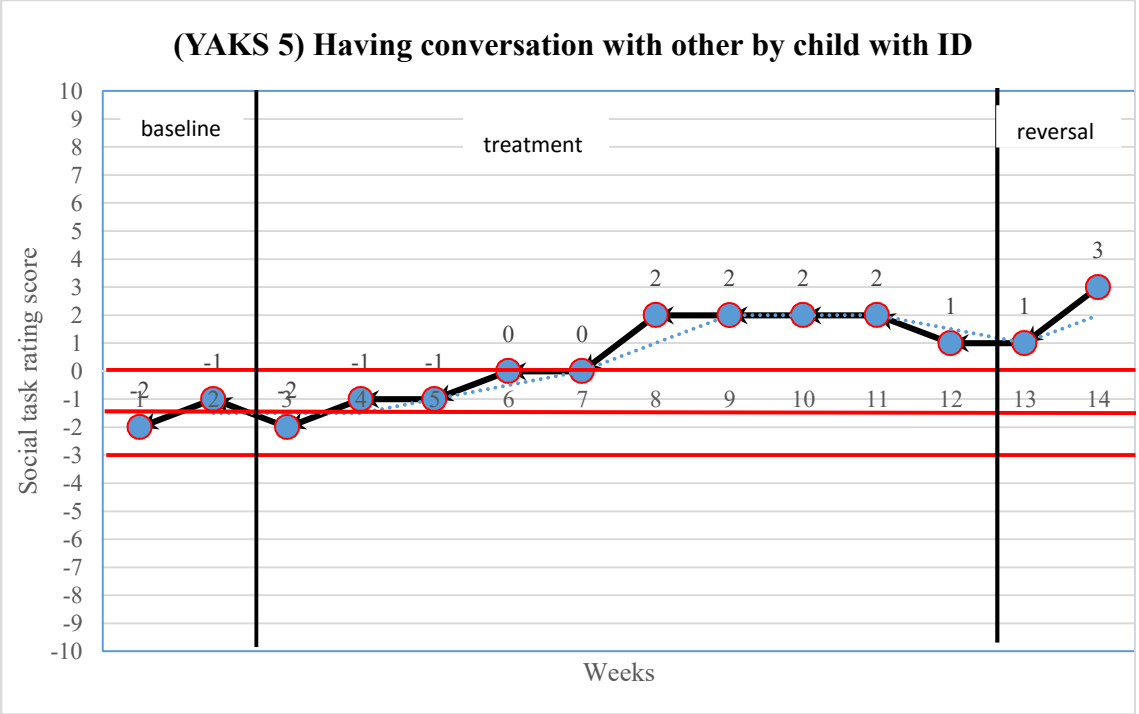


Figure 4. 40: X-Control chart plot on performance on Having Conversation with others by child with ID.

The analysis results showed improvement from negative social strategies to positive strategies after intervention. There were images of children having non-verbal conversations with peers from the video analysis. This could be attributed to over learning and chaining strategies used for this child .This enabled him to acquire social ability to engage in conversation despite constraint posed by his multiple disability characteristics. The highest engagement was observed during 1:1 pairing; however 1:2 and 1:3 did no lead to any further improvement. Whole group participation led to child decline in having conversations, could be attributed to large numbers being overwhelming to the child and limited his ability to have conversations.

Data was subjected to statistical analysis to determine the effect of sport socialization on child performance in this task. Results are presented table 4.12

Table 4. 12: Statistical analysis on performance on having conversation with others by Child with ID

Baseline mean	SD of MR	UCL	LCL
-2	0.57	0.21	-3.21

Results of the statistical analysis in table 4.12, demonstrated significant effect of programme on child having conversation with others during and after intervention; with SD of MR score of 0.57, UCL of 0.21 and LCL of -3.21, respectively.

YAKS 6 performance on pre-intervention score indicated high use of unskilful strategy, which negated engagement in conversation with other children at -2, compared to post-intervention of 3, where child learnt to use skilful strategy of picking social cue and responding to verbal prompts in staying on topic and listening to other children during conversations. Performance index of the Child stood at 25% from pre-test score on having conversations. Results are illustrated in figure 4.41.

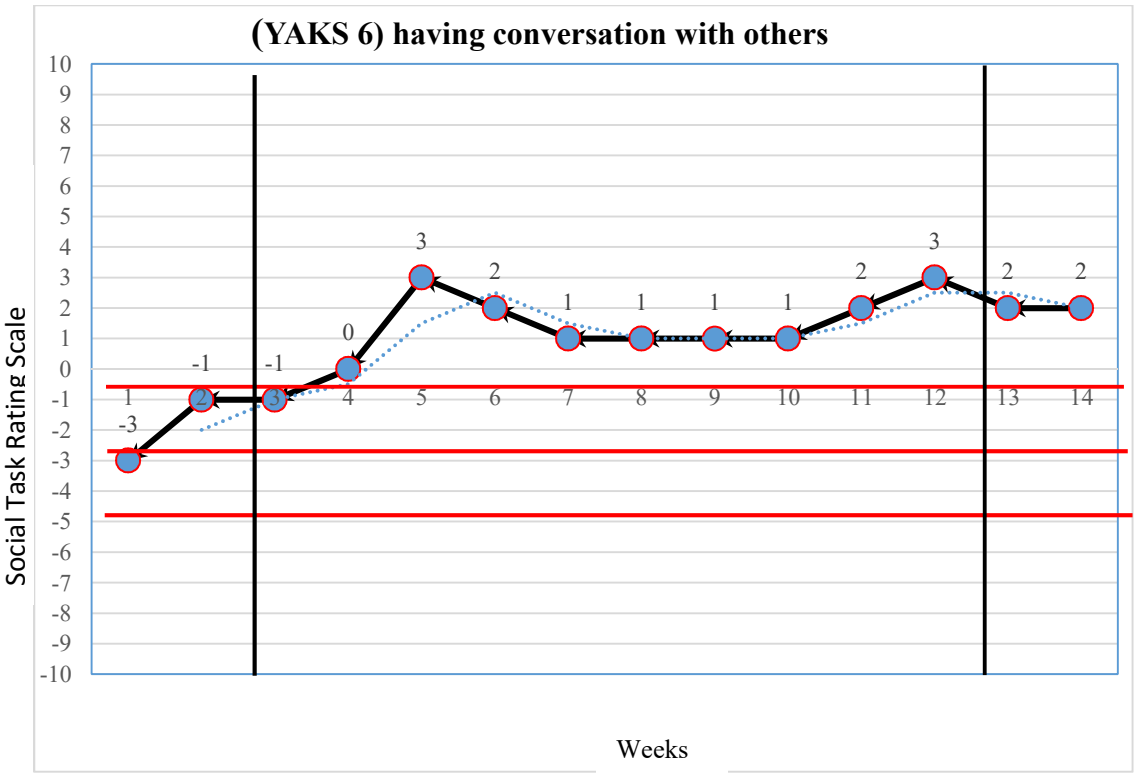


Figure 4. 41: X-Control chart plot on performance on Having Conversation with others by child with ID.

KEY:
Trend Line
Peer Social Task Rating Score

When pairing of 1:1 was introduced, it had the highest impact. Peer to peer engagement inspire trust and confidence to enable conversations. However, when number of partner without disability was increased, child recorded no further improvement but slight drop instead, large numbers was overwhelming and made child uncomfortable ;hence inability to engage new partners in conversations. Child took time to get used and get approval from other peers without disability, hence improvement in week eleven-twelve (11-12) during whole group participation.

The fluctuations in conversation starters between data sets could have been influenced by child's communication difficulties based on disability characteristics of Down syndrome (DS) and non-verbal responsiveness of TD towards child with ID. Child needed time to stabilize relationships and gain the confidence of a peer without ID to respond in conversations.

Statistical analysis confirmed special effect of intervention on child performance on this social cue, where X-Control chart data points had more than Six (6) consecutive point runs above UCL. This demonstrated a clear trend of change after intervention. SD of MR score of 0.64, at UCL of 0.08 and LCL of -3.92. Intervention impact on child learning was +3SD above baseline mean. Null hypothesis was rejected for this child.

YARO 7 had a low score at pre-test due to use of unskilful strategies of -4 which prevented child from engaging in conversation with other children. This was one of the oldest children in the programme at age fourteen (14). However, when intervention was implemented, when pairing of 1:1 was introduced**,** there was consistent increase in engagement trend and level in having conversations with ID. There was a demonstrated consistent trend of improvement during intervention. Performance index stood at 30% magnitude of improvement, Visual analysis of data sets between pre-test and post-test confirm improved level of social skill functioning of child on this task. Child engaged peers in conversations, recording score of 2 at post-test in peer social task rating. Video capture showed child listening to what other children said and nodding in the affirmative, whenever TD peer engaged him in conversation. Pairing of 1:1, 1:2 ratios with child without ID facilitated improved response; however whole group participation reduced child's level of engagement. Results are illustrated in figure 4.42

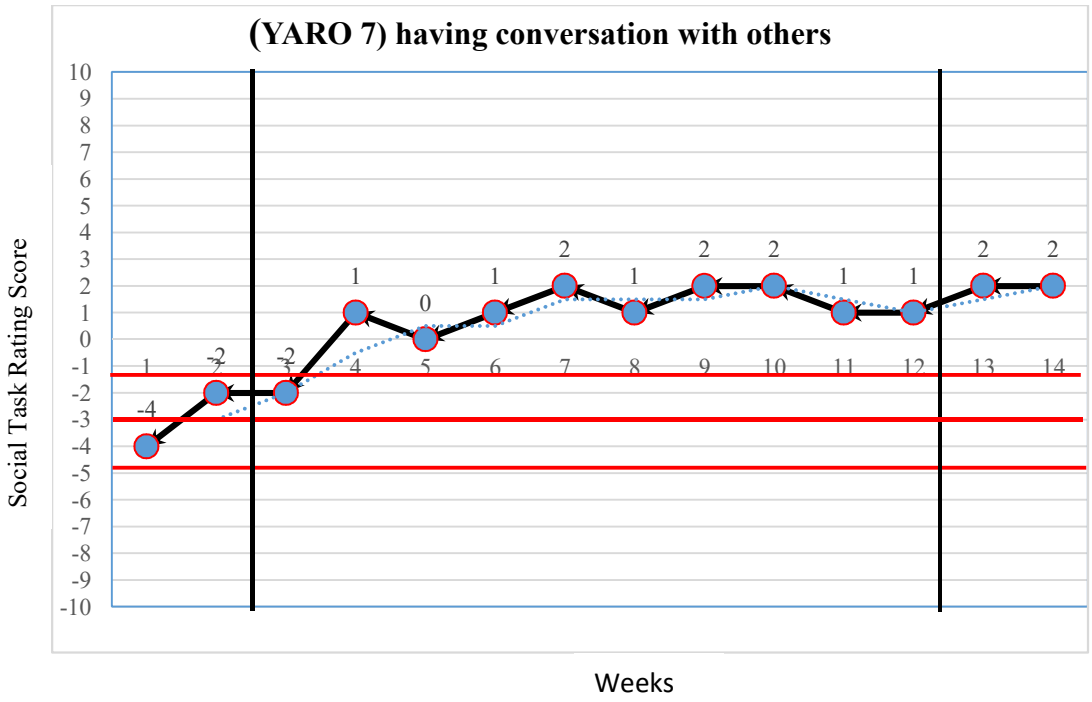


Figure 4. 42: X-Control chart plot on performance on Having Conversation with others by child with ID.

When IV was introduced, highest improvement was noted from Week Eight (8) during 1:2, 1:3 and whole group pairing. The controlled pairing with multiple partners gave child impetus to observe and copy the behaviour through observation, then imitation.TD response could have also prompted child to behave towards affirmation. Post termination score recorded sustained performance with slight drop.

Results of analysis of data points plotted in X-Control chart presented above in figure 4.38 had more than Six (6) consecutive point runs above UCL, With SD of MR score of 0.63 UCL of -1.11. Performance was +3SD above baseline mean, hence effect of intervention on this participant social skill function. The null hypothesis that predicted non -significant impact was proven false and rejected.

YARO 8 recorded a low pre-test mean score of -2.5, compared to positive scores (3) after sport socialization intervention based on peer social task rating. Video capture. Results are presented in figure 4.43

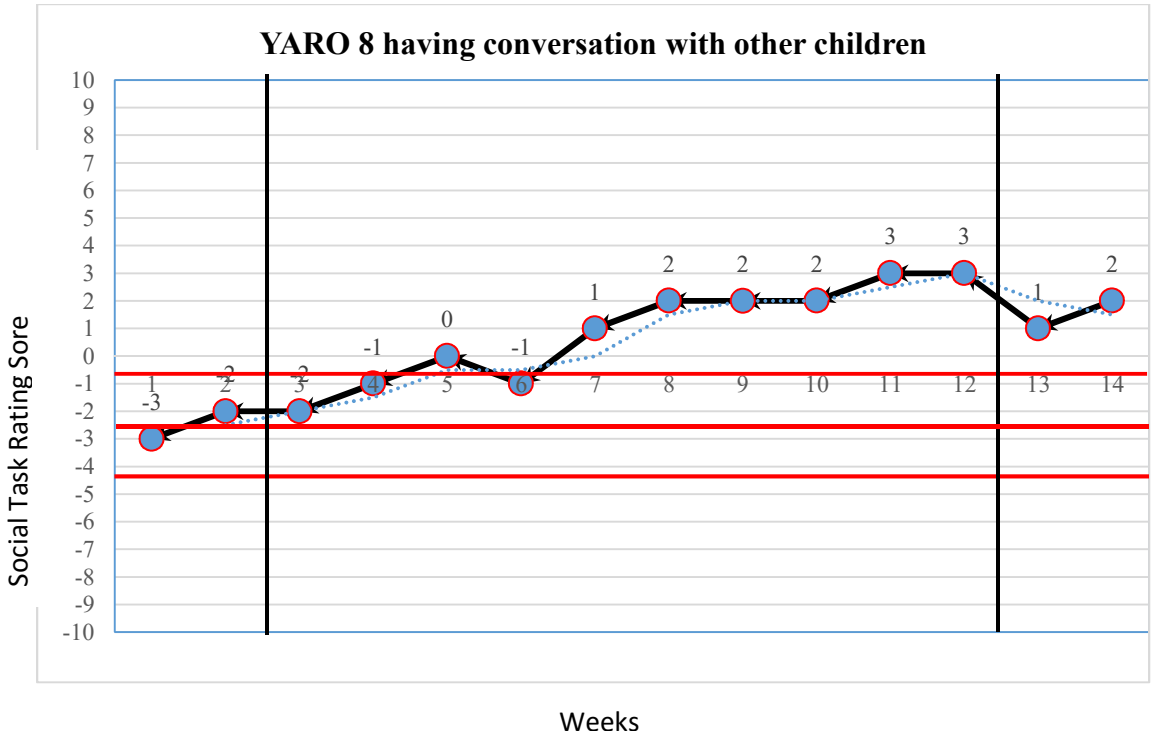


Figure 4. 43: X-Control chart plot on performance on Having Conversation with others by child with ID.

YARO recorded a performance index of 25% magnitude of improvement. Results of analysis further demonstrated that all plotted data points between start of intervention to end of programme were above the UCL, with SD of MR score of 0.64, UCL of-0.79 and LCL of-4.21.

YARO 9 had a present level of social skill functioning -2 compared to improved performance score of -1 in reduction of use of unskilful strategy that affected participants positive social behaviour responses during play. These results are illustrated in figure 4.44.

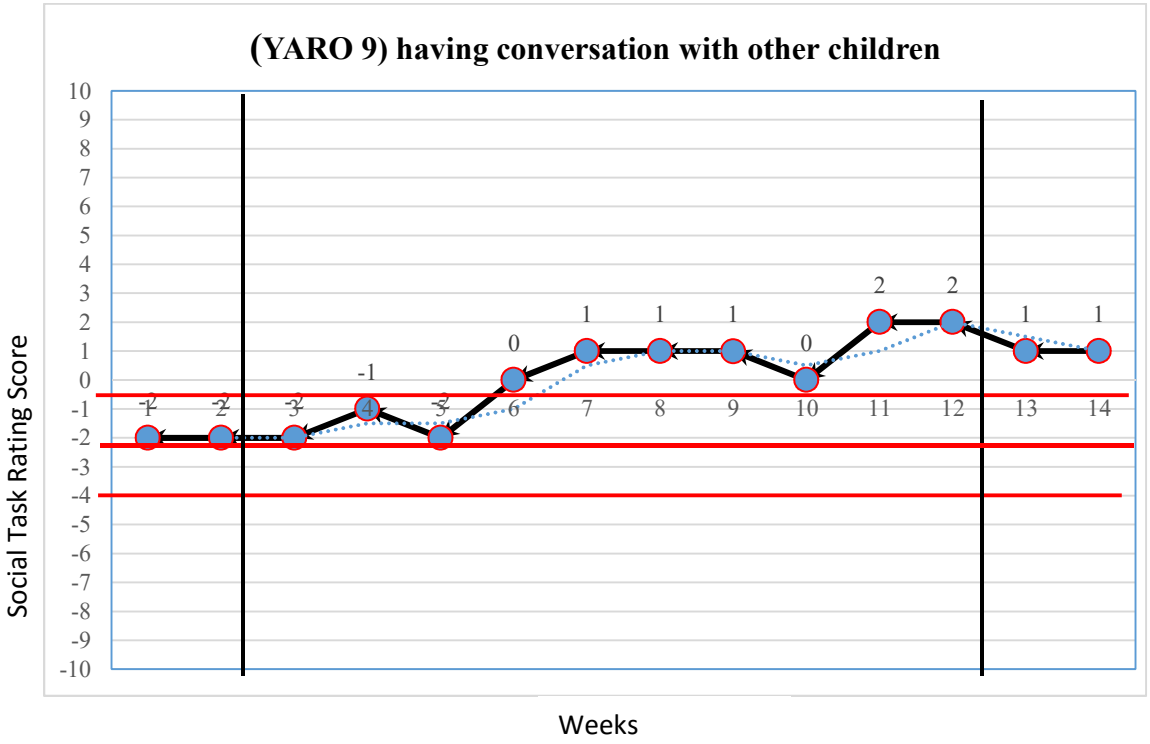


Figure 4. 44: X-Control chart plot on performance on Having Conversation with others by child with ID.

The first three weeks of intervention recorded limited but gradual reduction of use of unskilful strategy in the negative from-2 to -1. These scores were within baseline. This was due to ID characteristic of Down syndrome and language deficits. Drooling by child lowered his self-esteem and delayed engagement, coupled with information processing problems. Manipulation of IV on 1:1 and 1:2 paring yielded no improvement in child

response. Child took a lot of time to adjust to new environment and also required more effort. When increased programme modification was introduced of 1:3 and whole group conditional play was introduced, child started smiling and having non-verbal responses towards peers and intermittent conversations. More peer support motivated child to engage in conversation with other children. This was the youngest child in the programme at nine (9) years of age.

Whole group pairing provided more opportunity for child to interact with more partners and was able to pick appropriate social cues of responding to peers in conversations. When intervention was stopped there was no further improvement, but child sustained intervention phase score. This demonstrated that, social skill learning is sustainable and replicable with peer support and that peer support works even in the most challenging circumstances for child with ID.

Statistical analysis of programme impact on child in having conversation with others was evident after week Six of intervention, the programme had special effect, with more than Six (6) consecutive point runs of X-Control data points plotted falling above UCL. Child had a magnitude of improvement of 15% with SD of MR score of 0.64, UCL of-0.29 and LCL of-3.71. Programme had impact on child expression and images of responding to other children in conversations. Null hypothesis that expected no significant impact of programme on child's learning was rejected.

4.5 Ratings of social behaviour functioning levels across gender before and after sport socialization intervention programmer

The second research objective was to establish if there were differences in rating of social behaviour by gender among children with ID in Kakamega County, Kenya. In this second item gender was important as it explained interest and social skill learning between boys and girls. First, respondents were identified as boys or girls from the school records during the sample selection process. The results of this objective demonstrated improvement at post-test compare to pre-test with boys registering magnitude of improvement range of 50-60% compared to girls score of 56-60%. All the children irrespective of gender recorded above fifty (50%) magnitude of improvement on social behaviours functioning. On the other hand, the sport socialization intervention programme improves adaptive behaviours functioning levels with boys scoring 14.3-28.4 compared to girls 21.4%-42.8%. Distribution by gender was obtained from the demographic characteristics of the subjects presented earlier in Table 1.1 in this study. This study established that four (4) (57%) were girls and the three (3) (43%) were boys with intellectual disabilities (ID). Results were presented in figure 4.1 on demographic characteristics. A statistical analysis result on gender rating was inconclusive due to lack of statistical decision on objective two of this study. This study rated gender performance by magnitude of improvement (if any) on social skill functioning and adaptive behaviour functioning levels. Results are presented in figure 4.45.

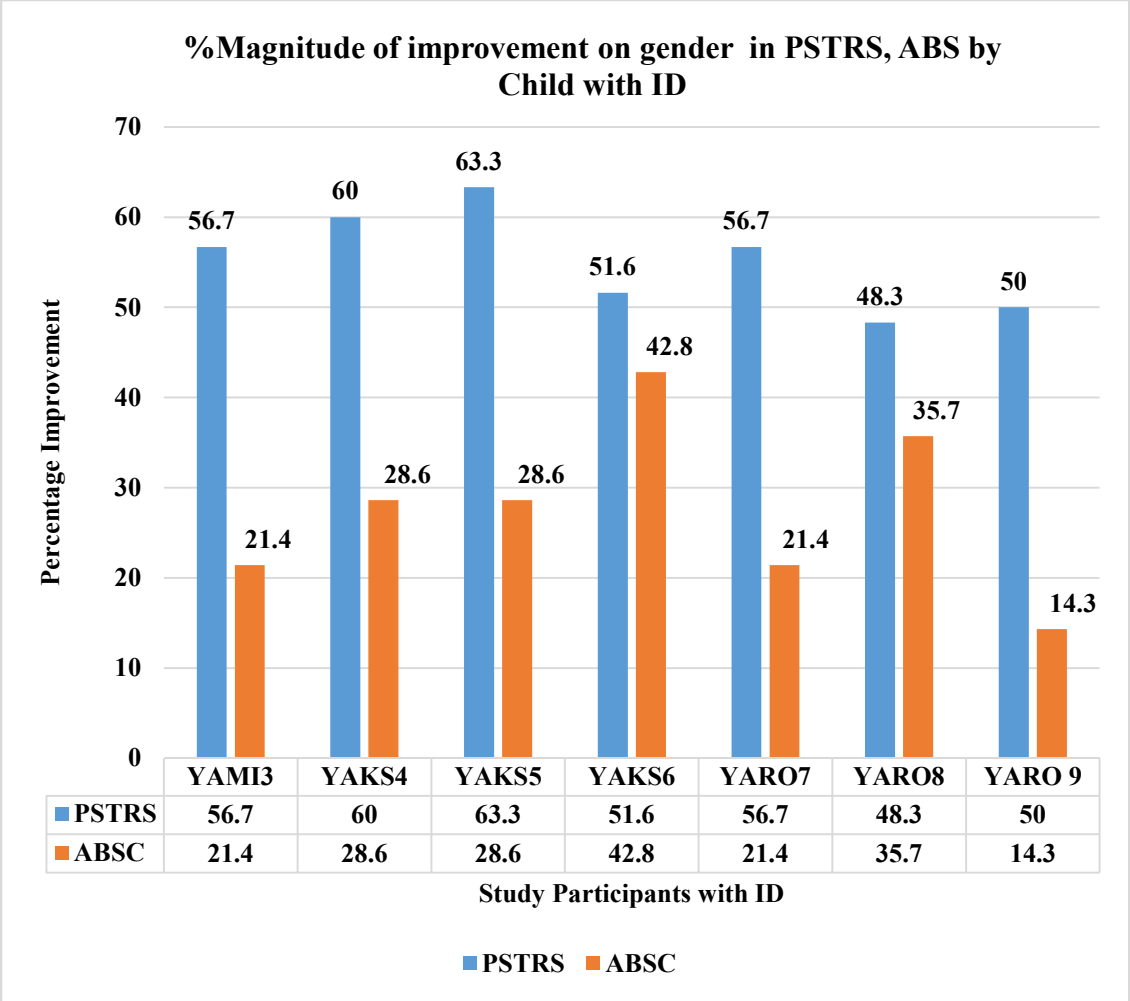


Figure 4.45: Percentage (%) magnitude of improvement on gender rating in PSTRS and ABS.

Note*. **PSTRS** = Peer Social Task Rating Scale. **ABS**= Adaptive Behavior Scale Checklist

The raw scores ranges showed that, before intervention the mean scores ranges in social skill functioning were between -2 to -3, an indication that all children required practical assistance to engage in social tasks and adaptive behaviour functioning skills; compared to an improved score of 4 to 8 after intervention. Results from this study demonstrated percentage improvement range of 50% to 63.3% for boys, compared to girl's

improvement range of 56% to 60%. The interventions had effect on both gender on social skill learning, as improvement ranges noticeable.

Descriptive statistics raw data on adaptive behaviour functioning, demonstrated that girls registered a magnitude of improvement range of 21.4% to 42.8%, compared with Boys 14.3% to 28.4%. Girls appeared to score slightly higher than Boys. Girl's high score in ABS could be due to influence of cultural orientation where girls are more socialized into home making skills and more talkative as opposed to the Boy child.

The generally low raw scores in ABS could be attributed to family factors, limited peer support and cultural orientation. The tasks used to measure adaptive behaviour mostly revolved on family support and child's ability to answer questions to determine whether the adaptive existed or not. The implication of this research finding is that adaptive behaviour evaluation may require further modification in the programme that emphasize more on health promotion components that targets more of activities of daily living as opposed to few opportunities of health promotion activities that the sport programme provided in learning activities of daily living. Overly, being male or female did not affect social skill learning, but disability characteristics could have had a bearing on adaptive behaviour functioning. In this objective gender rating could not be subjected to statistical analysis using time series analysis as this study could not subject the data collected to inferential statistics due to the study design (single subject design) and nature of study participants being intellectual disability and mutual exclusivity of data of the participants. However, percentage ranges of magnitude of improvement suggested programme effect in this study. This study finding has implication for more research that could test gender rating by children with disability using different design with robust

statistical tool such as correlation co-efficient, time series and regression analysis to authenticate the assertion that social skill learning is not determined by gender.

4.6 Pro-social Skills of adaptive behaviour functioning by children with ID before and after the sport socialization intervention programme (objective 4).

The fourth objective in this study dealt with pro-social skills of adaptive behaviour functioning in the areas of**:** knowing names of family members, new friend nominations and having conversation among others. The study sought to compare pro-social aspects of adaptive behaviour functioning levels of children with ID before and after the sport socialization intervention programme in Kakamega County, Kenya. Visual analysis was used to determine difference in pro-social skills of adaptive behaviour functioning. Both the observed and parental rating was used to get an idea of ABS level before intervention. . Results are presented in figure 4.46

Observed and parent rating of child with ID before intervention.

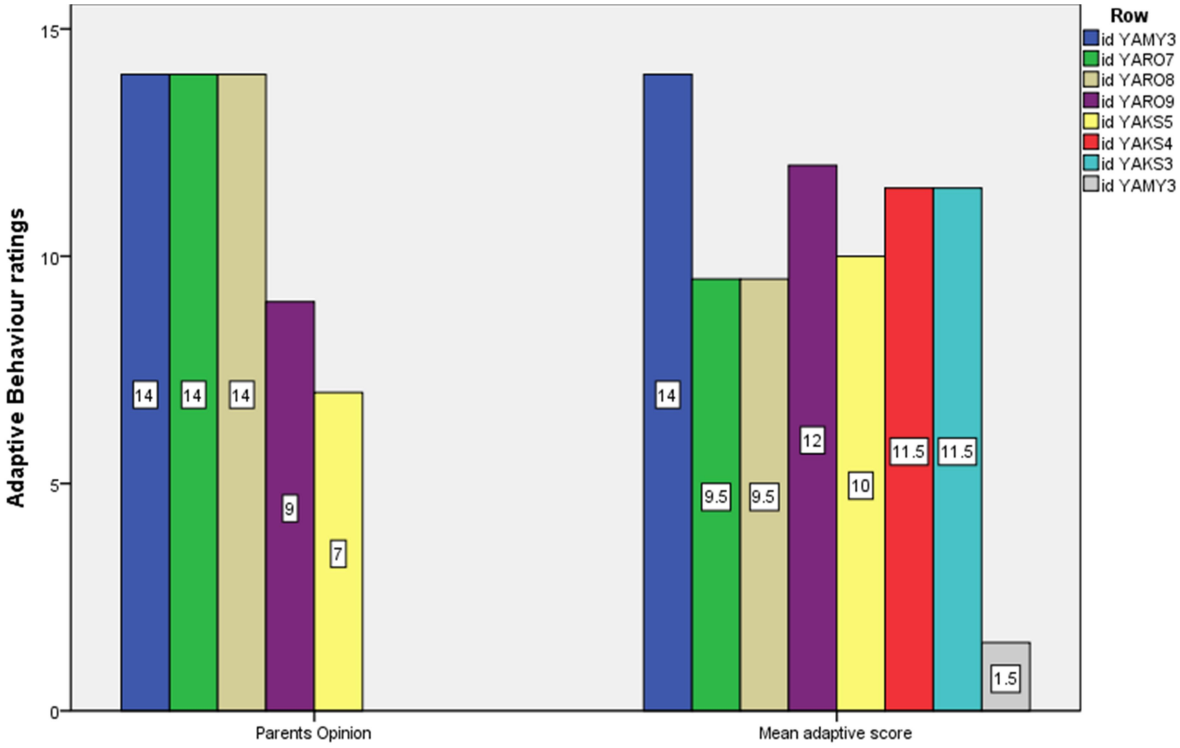


Figure 4. 46: Observed and Parent's/Guardian's/Rating of Child with ID before Intervention

Some parents/guardians overrated their children in order paint a positive image of their child, from the baseline data in Figure 4.46. Their rating was only used once at baseline so as not to affect the outcome of the study.

First the researcher sought to understand how each child performed in pro-social skill of adaptive behaviour functioning, before and after the sport socialization intervention programme. Results are presented in Table 4.13.

Table 4. 13: Descriptive statistical analysis on performance on ABS by child with ID.

Child	Pre-test	Post-test	Termination/Reversal	% Improvement
YAMY 3	**7**	**10**	**9**	21.4%
YAKS 4	6	10	10	28.6%
YAKS 5	5	6	9	10%
YAKS 6	5	11	11	42.8%
YAKS 7	5	8	8	21.4%
YAKS 8	5	12	10	35.7%
YAKS 9	7	10	9	14.3%

Visual analysis was also conducted on participants performance in pro-social skills of adaptive behaviour functioning and results are presented in figure 4.47 a-g

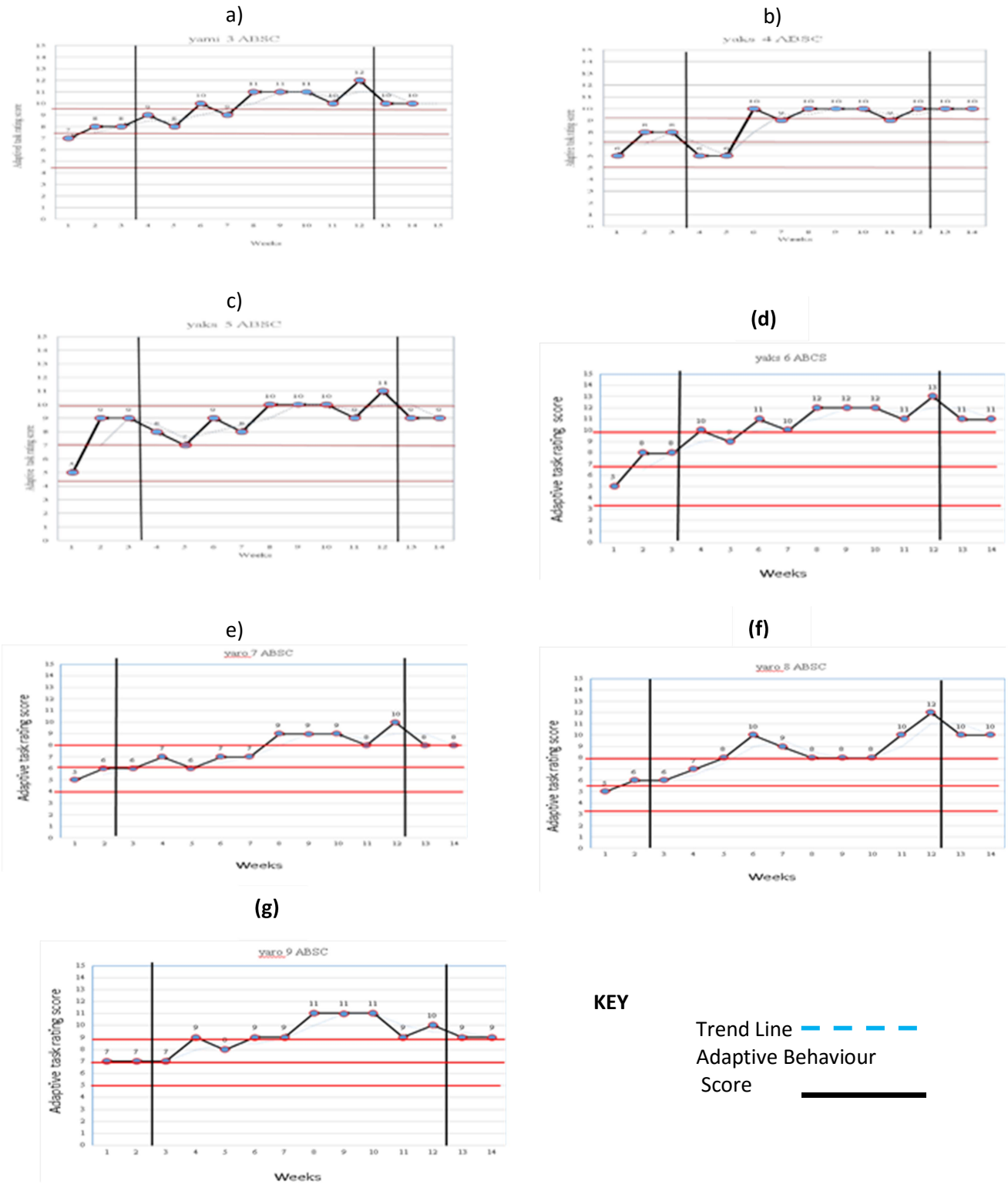
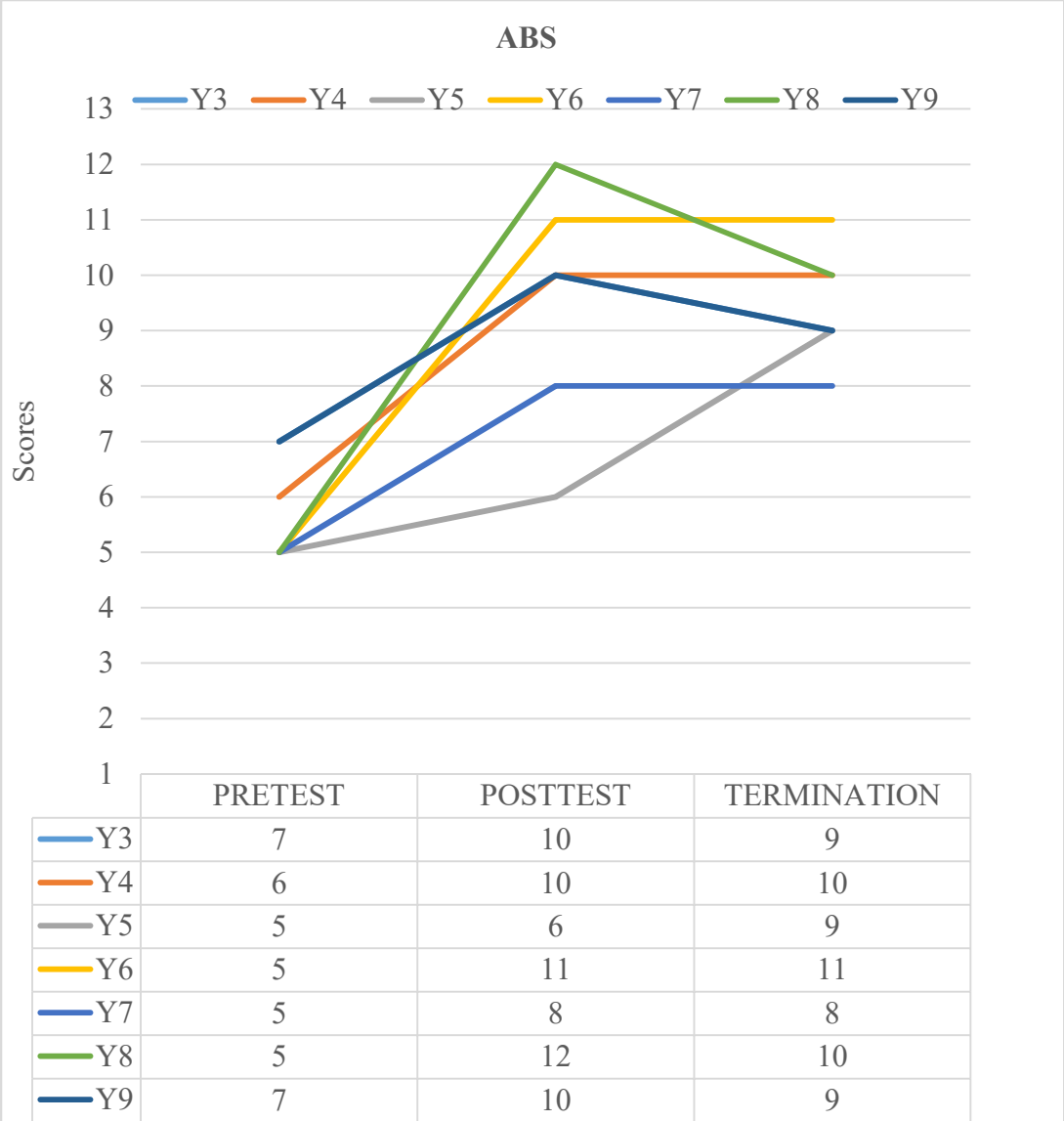


Figure 4. 47: a-g. X-Control charts showing children's abs performance.



	PRETEST	POSTTEST	TERMINATION
Y3	7	10	9
Y4	6	10	10
Y5	5	6	9
Y6	5	11	11
Y7	5	8	8
Y8	5	12	10
Y9	7	10	9

Figure 4. 48: Visual analysis of performance on pro-social skills of adaptive behaviour by child with ID

Visual analysis of data on children performance based on the observation of ABS functioning and video analysis demonstrated marked increase for each child from baseline to post intervention, indicative of programme effectiveness. Further, parents filing of ABS scores at baseline and being contracted to train their children at home helped in the programme implementation. Demand on parents to report ABS progress

after every three weeks may have motivated children to be more helpful and cooperative.

The next concern in this fourth objective was to evaluate each child performance between different data sets. This was to help the researcher determine the functioning levels of each child for programme effectiveness. Child one (YAMY 3) was observed before and after the sport socialization intervention. This study established that this child had a pre-test score of 7, compared to an improved score of 10 in ABS. Results are presents in figure 4.49.

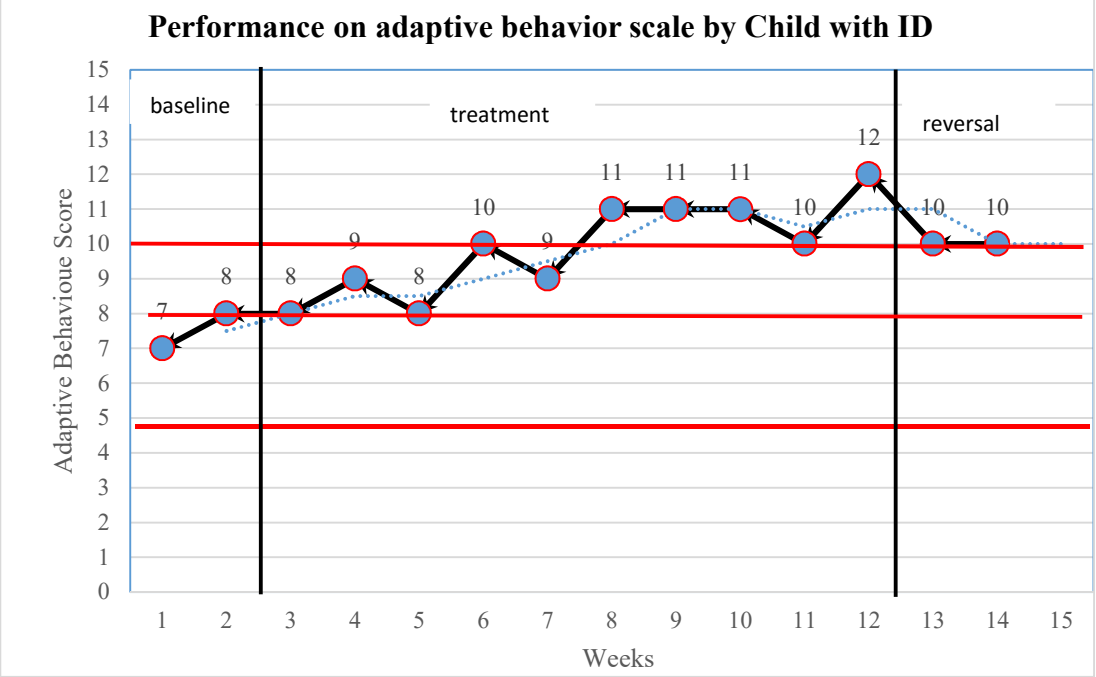


Figure 4.49: X-Control chart plot on observed performance in ABS by child with ID.

KEY

Trend Line

Adaptive Behavior Score

This result reported earlier in figure 4.49 demonstrated sustained improvements throughout the intervention of 21.4%. Data was further subjected to statistical analysis to confirm if programme had significant effect on ABS. Results are presented in Table 4.14

Table 4.14: Statistical analysis on ABS performance by Child with ID

Baseline Mean	SD of MR score	UCL	LCL
7.5	0.82	9.96	4.74

This research study established that, analysis of the statistical process control demonstrated special effect of the intervention, with UCL of 9.92, SD of MR score of 0.82 and LCL of 4.74. The study established that there was marked improvement on pro-social skills of adaptive behaviour functioning levels of children with ID. Statistical significance was established for all the children with ID except YAKS 5 whose result was non-significant.

YAKS 4 performance on pro-social skills of adaptive behaviour functioning. Results for this child was 6 before programme and an improved score of 10 (28.6%) after programme. Results are presented in figure 4.50.

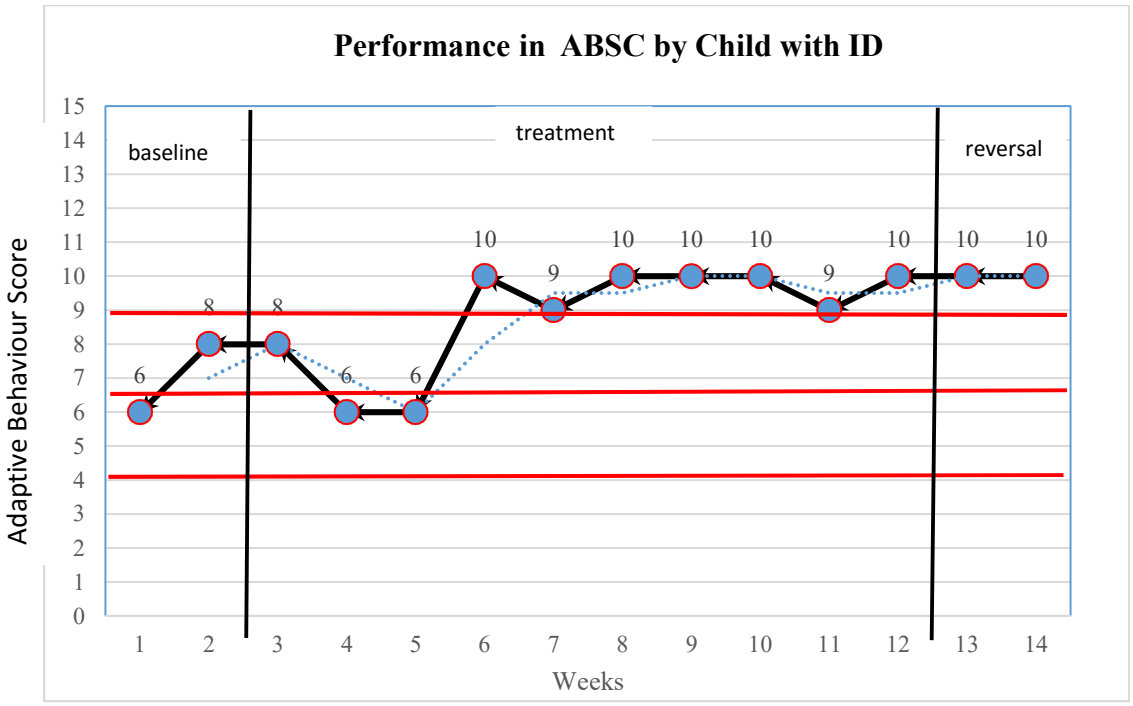


Figure 4.50: X- Control chart plot on performance ABSC by Child with ID.

KEY

Trend Line

Adaptive Behaviour Score

Visual analysis in figure 4.39 illustrated that Manipulation of IV of pairing 1:1 had no effect. This study further established that at 1:2, 1:3 pairing there was marked improvement (10).

Statistical analysis, results of the X-Control charts demonstrated the special effect of the intervention on Child learning of adaptive behaviour. Results are presented in table 4.15

Table 4. 15: Statistical analysis on ABS performance by Child with ID

Baseline mean	SD of MR score	UCL	LCL
7	0.76	9.28	4.72

Participant three (YAMY 5) was also investigated. The research item sought to establish if the child improved in ABS functioning Results are presented Figure 4.51

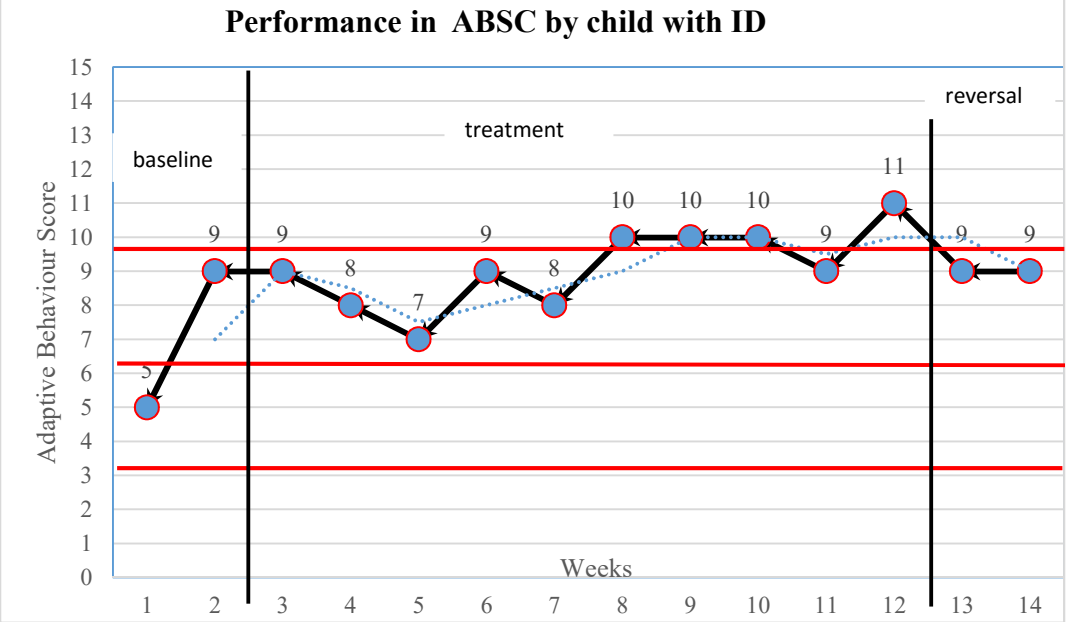
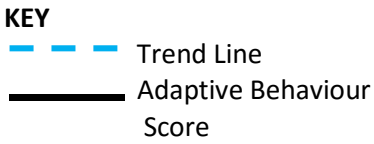


Figure 4. 51: Performance on adaptive behaviour functioning levels by child with ID.



This research established that, child learnt pro-social skills of adaptive behaviour functioning with baseline raw score of 5 before intervention, and an improved score of 6

(10%). Despite magnitude of improvement recorded, child's ABS functioning levels remained low with irregular and inconsistent trend in the learning of pro-social skills of adaptive behaviour. Results in figure 4.40 illustrated reversal performance back to pre-test levels of adaptive behaviour functioning when treatment was terminated. This could be interpreted as inability of child to function without guided instruction and peers assistance in performing adaptive behaviour tasks.

This irregular adaptive behaviour could be attributed to impact of cerebral palsy, language deficits. Adaptive functioning requires more functional and communication skills which may have affected child's performance. The marginal improvement in adaptive functioning was an indication that the programme may help child in ABS.

Results of Statistical analysis are presented in table 4.16

Table 4.16: Statistical analysis on ABS performance by Child with ID

Baseline Mean	SD of MR score	UCL	LCL
7	0.04	10	3.99

Results of analysis in figures 4.46 and table 4.13 presented earlier, established non-significant effects on Child's learning of ABS, with SD of MR score of 0.04.

YAKS 6 in this study was also the researchers concern. The participant was observed and assessed in ABS functioning before and after sport socialization intervention programme. This was to help the researcher determine the effect on sport socialization on ABS functioning. Data analysis confirmed that, the Child (YAKS 6) recorded a pre-

test mean score of 6.5 before programme, and improved post-test score of 13 (42.8%) after the intervention. Post-termination score stood at reduced score level of 11, which was still above special effect threshold. This was a demonstration that adaptive behaviour is once acquired is sustainable beyond intervention phase.

Results of visual analysis are presented in figure 4.52.

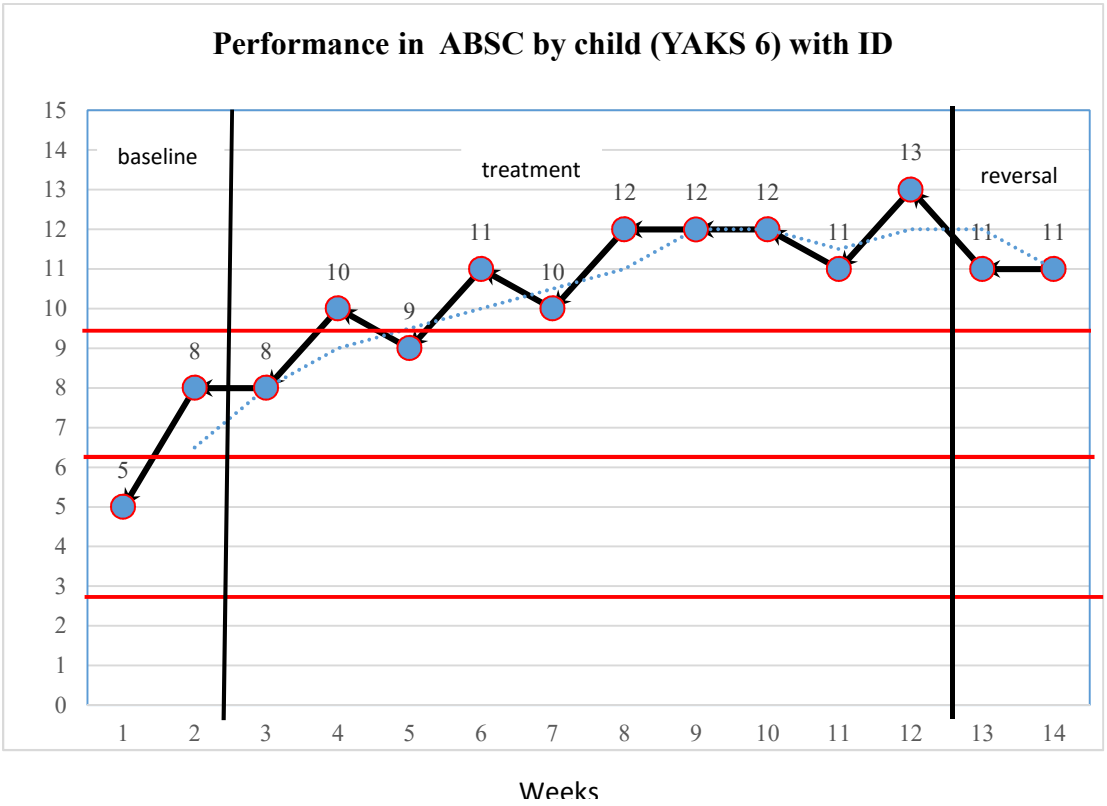


Figure 4. 52: X-Control chart plot on observed performance ABS by child with ID

KEY

Trend Line

Adaptive Behaviour Score

Results presented in figure 4.37 established that, the programme had special effect with UCL at 9.41, with SD of MR score of 1.07. Results of statistical analysis demonstrated improvement in level and trends as well as variability in performance between data sets.

YARO 7 was the next research concern in this fourth objective. Results established that the child recorded a pre-test mean score of 5.5 before intervention and a post-test performance score of 10(21.4%) magnitude of improvement, after the intervention programme. Results are presented in Figure 4.53

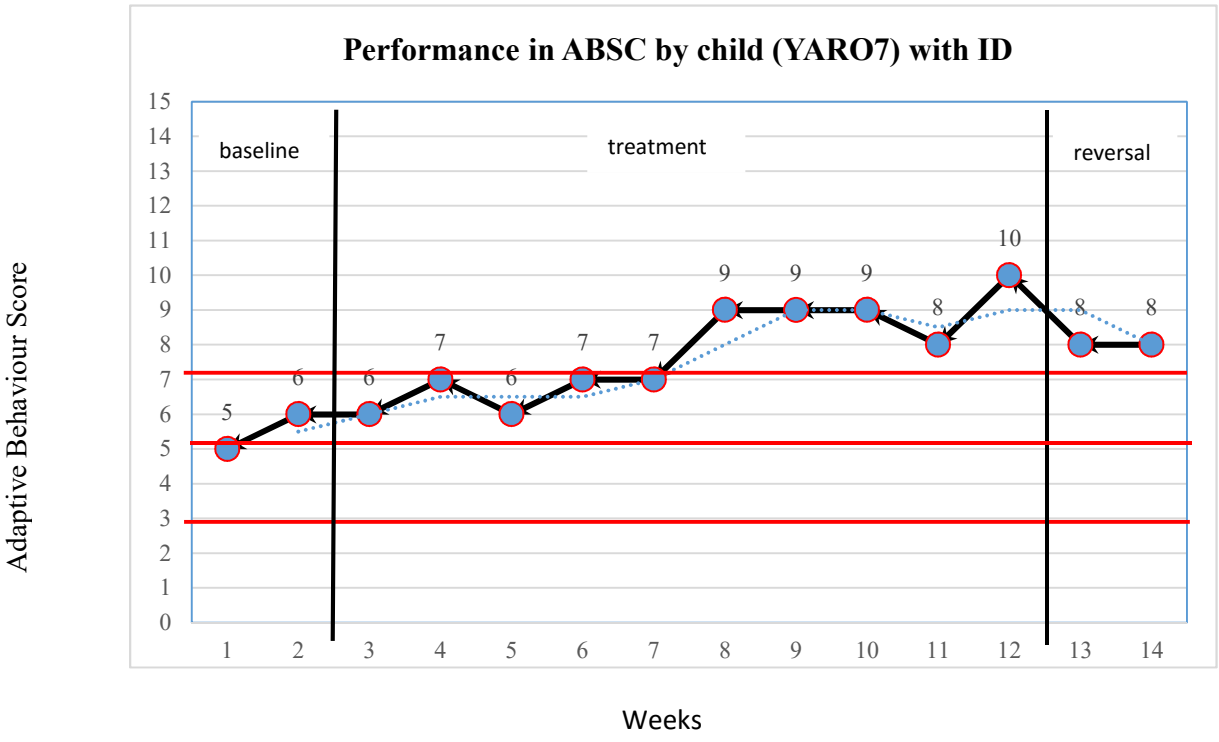


Figure 4. 53: X-Control chart plot on performance of ABS functioning by child with ID

Results in figure 4.53, illustrated that whole group play affected the child negatively, and child score was fluctuating up and down; however, post-intervention phase demonstrated sustainability of post-test score levels.

Data analysis results in SPC demonstrated that, the intervention had special effect on Childs ABS learning with five (5) consecutive point runs of plotted data falling above UCL at 7.6. There was variability of performance at standard deviation of MR score of 0.70 hence effect of the intervention programme. These results are presented in table 4.17.

Table 4. 17: Statistical analysis on ABS performance by Child with ID.

Baseline mean	SD of MR score	UCL	LCL
5.5	0.70	7.6	3.4

The researcher also sought to evaluate the performance of this child (YARO 8) on pro-social skills of adaptive behaviour functioning. Results are presented in figure 4.54.

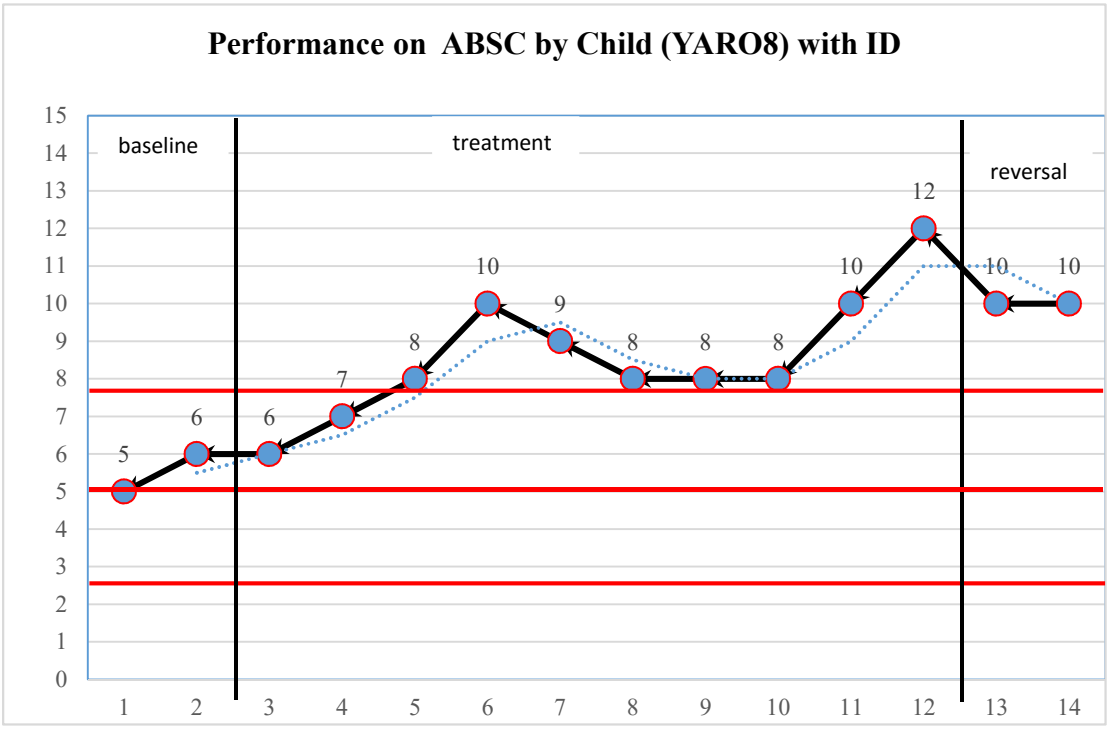


Figure 4. 54: Observed performance on adaptive behaviour levels by child with ID

Results presented in table 4.17

Data analysis results illustrated a raw score of 5.5 before intervention and an improved raw score of 12(35.7%) after the programme. Visual analysis in figure 4.39 demonstrate improvement but irregular trend between data sets

This could be attributed to individual response to cues and family support in practicing adaptive tasks at home, however child sustained performance. Whole group participation in weeks eleven (11) and twelve (12) had the highest impact on learning and child concept in the ability to engage in adaptive behaviour. Sustained performance of treatment phase proved that benefits accrued from programme are sustainable and replicable in play situations. Results of statistical analysis on this child's performance is presented in table 4.18.

Table 4. 18: Statistical analysis on ABS performance by Child with ID

Baseline Mean	SD of MR score	UCL	LCL
5.5	0.82	7.96	3.04

This research study confirmed that the intervention program had special effect on child's leaning of pro-social skills of adaptive behaviour functioning levels. The data points plotted Six (6) consecutive point runs above the UCL of 7.96, from LCL of 3.04, with a standard deviation of MR score of 0.82. The process was out of control hence special effect of the intervention.

YARO 9 was also another research concern in this study. The results of, raw data in table 4.21, recorded pre-test score of 7 at baseline, compared to an improved post-test mean score of 11(14.3%) after programme. Results are presented in figure 4.55.

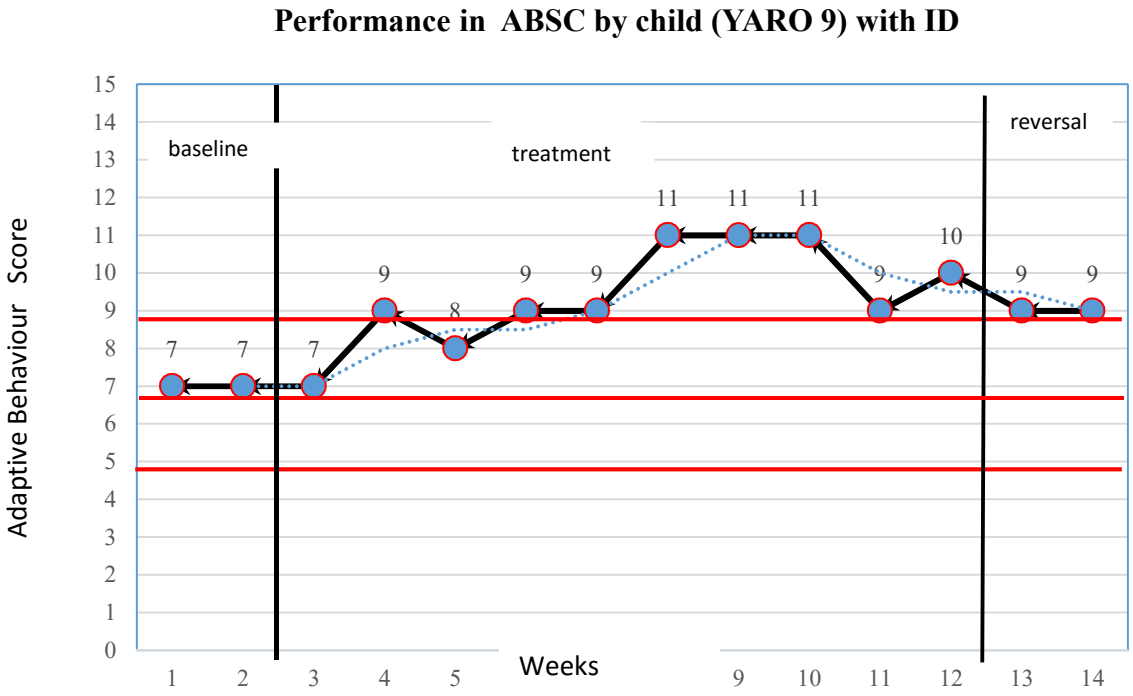


Figure 4. 55: X-Control chart plot on Observed performance on ABSC levels by child with ID.

KEY

Trend Line

Adaptive Behaviour Score

4.6.1 Hypotheses

$H0_1$: Sport socialization intervention programme has no significant effect on social behaviour functioning levels of children with ID between pre-test and post-test in Kakamega County, Kenya. Results from the summary of data analysis presented in table 4.19 illustrated that, all the seven (7) children recorded significant improvement at -

+3SD in SPC. All were above the Upper Control Limit (UCL): YAMY 3 standard deviation of MR score at 3.17, 2.53 for YAKS 4, 2.28 for YAKS 5, 2.59 for YAKS 6, 3.17 for YARO 7, 2.34 for YARO 8 and 2.34 for YARO 9. From this analysis report; all the scores during and after intervention were above the threshold of special effect at six (6) consecutive point runs above UCL. The summary of statistical analysis of programme effect on children performance based on peer social task rating scale in objective one of this study is presents in table 4.19

Table 4. 19: Summary of statistical analysis on total pee rated social skill functioning by each child with ID.

CHILD	PRE-TEST	POST-TEST	SD of MR Score	% IMPROV.	SIGNIFICANCE
YAMY 3	-16	18	3.17	56.7 %	*
YAKS 4	-21	15	2.53	60%	*
YAKS 5	-18	20	2.28	63.3%	*
YAKS 6	-16	15	2.59	51.6%	*
YARO 7	-20	14	3.17	56.7%	*
YARO 8	-13	16	2.34	48.3%	*
YARO 9	-18	12	2.34	50%	*

***=Significant NS=Non-Significance**

The null hypothesis of no significance effect on social skill social behaviour functioning levels of children with ID was proven false and therefore rejected in this study. The

study concluded that sport socialization intervention programme was effective in enhancing social behaviour functioning levels of the seven children with ID in this study.

The second null hypothesis stated that:

$H_0$2 : there is no significant difference in social behaviour functioning levels by gender of children with ID between pre-test and post-test in Kakamega County, Kenya. This hypothesis was designed to be tested by time series analysis. The researcher encountered limitation in this hypothesis as it could not be subjected to time series analysis .This was because of limited data points, and mutual exclusivity of the data of the participants. This was occasioned by the study design. Despite this setback, the researcher used descriptive statistics magnitude of improvement to interpret programme contribution to social behaviour functioning levels by gender.

The null hypothesis that expected no significant difference in social skill levels between boys and girls was neither rejected nor retained, due to of lack of statistical analysis results. Hence, the results are inconclusive on statistical significance of the hypothesis under review. Based on this, the researcher suggested replication of a study on gender rating in social skill learning using a different research design and include large number that use statistical analysis for more conclusive results.

$H_0$3: There is no significant difference in Pro-social skills of adaptive behaviour functioning levels of children with ID before and after the sport socialization intervention programme in Kakamega County Kenya

To confirm whether the hypothesis was true or false, Statistical Process Control (SPC) was computed at -+3SD of Moving range and six consecutive score above the UPC. Results earlier presented tables 4.21 to 4.25 and figures 4.38 pointed to programme effect on child ABSC scores at post-test compared to pre-test.

Control Charts for individual measures were used to set the control limits for each individual participant in the Study; where sample size = 1, used moving range of two successive observations to measure variability.

Moving range is defined as:

$MR=(X_{1=}X_1)$.

The mean of the baseline was used, which is the absolute value of the first difference (difference between two consecutive data points) of data analogues to the control chart, where both data of individual score and moving range of baseline was plotted as follows:

UCL= $\overline{X}$ +3 $\frac{\overline{M}R}{1.128}$

Centre line = $\overline{x}$

LCL = $\overline{X}$ -3$\frac{\overline{M}R}{1.128}$

$\overline{x}$ is the average of individual score and MR is the average of the moving range of the baseline of two observations. (Note that 1.128 is the value of d_2 for n-2). Control charts for individuals scores are used in case none of the plotted points fall outside the Upper Control Limits (UCL) or Lower Control Limits (LCL). The process is in control and not special effect elicited a change hence no significant effect, hence rejection of Null

Hypotheses. The level of significant difference was acceptable by determination of special effect across the data sets of Upper Control Limits (UCL) and Lower Control Limits (LCL) + -3SD of moving range of baseline as follows: points above or below the upper control limits (UCL), Six consecutive point runs; five (5) or more points cutting across the Centre line demonstrates changes in trend, whereas points between baseline and final treatment demonstrates levels. The results of the null hypothesis testing are presented in table 4.20.

Table 4.20: Performance on Adaptive Behaviour Scales (ABS) Checklist by Child with ID.

Child	Pre-test	Post-test	SD of MR score	%Improvement	Significance
Y 3	7	10	0.82	21.4%	*
Y 4	6	10	0.76	28.6%	*
Y 5	5	6	0.04	10%	NS
Y 6	5	11	1.07	42.8%	*
Y7	5	8	0.70	21.4%	*
Y 8	5	10	0.82	35.7%	*
Y9	7	9	0.63	14.3%	*

NS=not significant ***=Significant**

The statistical analysis in Table 4.20, demonstrated that SD of MR scores fell within the threshold of special effect as follows YAKS 3 (0.82), YAKS 4 (0.76), YAKS 6 (1.07),

YARO 7 (0.70), YARO 8 (0.82) and YARO 9 (0.63) with the exception of YAKS 5 (0.04).

This analysis further confirmed that six of the children posted significant results after the intervention. Although YAKS 5 registered non-significant performance, there was improvement on pro-social aspects of adaptive behaviour functioning from 5 at pre-test to 6 at post-test. Parent also reported to notice child helping with house chores occasionally.

The Null hypothesis that expected no significant difference in pro-social skills of adaptive behaviour before and after programme was proven false and rejected for six children (YAKS 3, YAKS 4, YAKS 6, YARO 7, YARO 8 and YARO 9) but accepted for YAKS 5 though improvements were noted. The non-significant results could be attributed to child disability characteristics if mixed with hemiplegic cerebral palsy which affected his responses and ability to carry out ABSC tasks. It is suggested in this study that a multi-disciplinary approach may be the way to go to assist such persons in future.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This Chapter presents discussion of the research findings in this study as they relate to the literature on demographic details of children with ID and their parents /caregivers, social skill functioning levels, levels of social skill rating by gender and pro-social skill of adaptive behaviour functioning by children with ID. Analysis of results for pre and post-test on the study variable by the study participants formed the basis of this discussion. The chapter also provides comparison between this study finding and those of studies reviewed in chapter two of this manuscript.

5.2 Demographic detail Children with ID and their parents/Caregivers.

The first objective of this study sought to establish the demographic characteristics of children with ID and their parents. Data analysis illustrated that 43% were Boys while Girls constituted 57% as presented in figure 4.1 of this study. This illustrated near equity in gender representation in this Study. These findings disagrees with research findings by (Brooks (2013; Thangu et al., (2015); Wairimu et al., 2016) which established that more boys than girls participate in Sports. However this study was on comparing rating in social behaviour by gender and not merely the number of boys or girls present during participation.

Regarding Participants ID level, data analysis demonstrated that child's response at baseline was affected by ID level for each of the seven children as they lacked social skills before intervention. This finding agrees with those (Brooks 2013; Edward 2017; Garguilo & Kilgo 2014; Gosh & Datta 2012; Maina 2016; Townsend & Hassall 2014), reviewed in chapter Two of this study which reported that they lag behind in delayed language development, restricted movements and sensory processing problems. The study documented parents' demographic profiles. Results of parents /caregivers relationship to child illustrated that 72% of parents/guardians were grand mothers who were taking care of child with ID, only 14% were biological and Foster parent respectively. These results demonstrated that, majority of Children with ID were abandoned by their biological parent and left under the care of grandparents. This was attributed to stigma and culture. This study finding agrees with findings reported by Britto, Yoshikawa and Boller 2011; Elder 2015; World Bank, 2011), when they stated that Children with ID are affected by stigma, culture, neglect and also face violence among other factors. The findings of research study by Korir, Mukuria and Andrea reviewed in the literature in this study further corroborate this findings when they stated that poor infrastructure and cultural beliefs are deterrents to social skill learning among children with Intellectual disabilities in Kenya, since the society views them as liabilities than assets compared to their able bodied counterparts..

Data analysis on demographic status of parents/caregivers of children with ID illustrated that. The low purchasing power had impact on child's health, self-esteem and social skill development. These findings are in agreement with those of (Trollope, 2015; World Health Organization, 2017; World Bank 2011) in critical disability studies, which

documented that children with disabilities live in poverty and are often exposed to wide range of risks, inadequate nutrition, poor sanitation and exposure to illnesses. Research findings by (UNICEF, 2013) on status of the world's children with disabilities, further corroborate this research finding when the report documented that other mitigating factors affecting children with intellectual disabilities are neglect and inadequate stimulation. The finding is further supported by (O'Neil 2011), who carried out a study on disability studies global perspective which reported that:

> "Perhaps a billion people worldwide currently have very precarious access to income, security, education or health services"

Data analysis on parents/caregivers with respect to gender, illustrated that 100% of them were females. This finding are supported by those of Wairimu et al. (2016), which investigated on the physical and social benefits of parental involvement in organized physical activity programmes of their children with intellectual disability in Nairobi, County Kenya. Results of demographic characteristics of participants documented that most parents (71%) in the control and (100%) in experimental group were females. This was an illustration that caregivers who take care for child with ID are females. This research finding is further supported by the report by American Psychological Association (APA) (2017) which documented that women tend to be more collectivistic. They are focused more on serving family and community; this may confirm why they are more prone to caregiving activities than men at household levels.

Regarding the relationship to child, majority (70%) of caregivers were grandmothers, this illustrated that cases of children with ID being abandoned is still high among the

rural Luhya community in Kenya. The society frowns upon having a child with disability which is considered a curse or bad omen, this agrees with reports by (World Bank 2011; Trollope 2015). The studies reported that children with disability in Africa face stigma, discriminative cultural practices and violence even from their own families. Study recommends enhanced awareness and advocacy on disability awareness at family and community level.

5.3 Effect of sport socialization intervention programme on social behaviour functioning levels of children with ID.

Both the total peer social task rating scores and performance in the individual social tasks is discussed in this objective.

5.3.1 Total peer social task rating scores by child with ID

Analysis results illustrated that each of the seven(7) children (YAMY 3, YAKS 4,YAKS 5, YAKS 6, YARO 7,YARO 8, & YARO 9) recorded significant improvement at post-test compared to pre-test on child overall performance on social skill functioning. The results of the study demonstrated that all the seven children recorded higher social skill functioning after treatment compared to low /negative social strategies before intervention in all the six social tasks under investigation. During reversal treatment post intervention performance was retained but at reduced levels. Results on individual performance on each of the six social cues were presented in in form of x-control charts which presents social behaviour functioning levels at different data sets for each individual child during the study. Similarly social skill functioning was also assessed during manipulation of IV in different data sets. Analysis during 1:2,

1:3 pairing, recorded sustained and constant application of use of skilful strategy based on peer to peer interaction. However, during whole group pairing in week eleven (11), there was slight reduction in children's ability to engage use of more skilful strategies when playing with others. Large group could have been overwhelming and confusing to the child, leading to withdrawal for this child; as he observed others. Child with Down Syndrome at times revert to their own world even when prompted, their attention easily shifts due to effect of the disability. However, 1:1 peer support worked best for this child. Post–intervention, scores of child demonstrated sustained performance of intervention phase; hence benefits accrued are sustainable and applicable beyond intervention phase. Visual analysis between baseline and post intervention was evident that child level of social functioning improved during treatment.

Data was subjected to statistical analysis in SPC to determine for significant effect of programme. Result demonstrated that, the Sport Socialization Intervention Programme had special effect on child's sustained engagement with peers in the use of skilful strategies, with all data points plotted during and post intervention falling above the UCL by more than Six (6) consecutive point runs with SD of MR score of 0.57, UCL of -0.21 and LCL of -3.21.

The full attendance of children in all sessions for the 90 minutes per session for twenty eight sessions helped in improvement of the social behaviour functioning levels of the children with ID. Use of the three measures of child attendance, number of sessions and duration was a confirmation that the fidelity of implementation of the sport socialization may have been responsible for the improvement observed in the children with ID after the sport socialization intervention programme.

Findings were further corroborated by Drossinou-Korea-Maria-Nikolaus *et al* (2017) in Greece which established that educational interventions focus of enhancement of social skills. The investigation was on strengthening social skills in students with an intellectual disability in secondary schools using individual structured intergraded programme. Sample comprised of 9 students with mild intellectual disability.

Research by Güy (2016) on the consequences of intervention of video modelling and social stories for people with ID to teach social skills in Greece is in support of this study finding. The sample population comprised of 200 people with ID aged 20-25 years. Results showed 100% accuracy as they perceived these skills overtime and they generalized them in other cases of social interactions. This study was on older children using social stories and video modelling assessed perception and not person to person physical involvement.

Vigosky's social constructionism theory supports this finding as it stipulated that learners construct knowledge through interaction with the environment(Vigosky,1987). Other the other hand social learning theorists (Bandura,2004; Mcleod,2018), extrapolated Jean piaget,s theory of cognitive development, and documented that social acquisition and development of desired social behaviour is based on child,s cognitive development, and that children between age 8-14 are cognitively mature to take up physical activities that interpret health.

Despite various researchers have demonstrated that opportunities for learning social skills are inherent in inclusive settings for children with ID (Karvina and Radionova, 2016; Price, 2018; Santos and Morato, 2012). Evidence-based research on use of sport

as avenue of social skill development of children living with intellectual disabilities, has however over the past decades, only been explored by a few researchers(Bukhala, 2012; Bukhala, 2017).. This study contributed to sport socialization in social skill learning literature by examining the effect of a sport socialization intervention programme on social skill learning among children with intellectual disability in Kakamega, County, Kenya. These findings are further corroborated by those of Wairimu et al., (2016) which investigated on motor ability and social benefits of involvement of parents in organized physical activity programme of their children that showed marked improvement in their motor ability and social interactions after the programme compared to before .

Data analysis results presented earlier, demonstrated that all the seven children improved on their social skill functioning at post-test compared to pre-test. Age did not affect the children with ID learning of social skills, though study only compared child scores across data sets. These findings are contrary with research findings by Radionova (2016) which investigated on social interactions of younger children versus older Children with ID; whose results documented that older children find it difficult to interact, whereas younger ones easily interact. This study suggests necessity for further research to confirm the findings. The sport socialization intervention programme had impact on all children with intellectual disability in the learning of social skills irrespective of age. On the other hand findings agree with the research findings by Gosh and Datta (2012), Klavina & Block, (2008), whose research findings support that peer supported intervention programme enhances social skill learning in children and youths with ID and should be encouraged.

5.3.2 Performance on individual social tasks by child with ID

Data was also analysed in individual social tasks in the PSTRS used in this study; first data was analysed on individual social skill tasks of joining other children in play, responding to other children in play, response to name calling, passing ball to teammate, and playing games with other children and having conversations with other children as well scale highlighted earlier in Chapter four. These findings agree with research findings by (Brooks 2013) discussed earlier in the literature review. They investigated on impact of structured versus unstructured activities on social competence of 7-12 year old children with ID, using survey research methodology in the United States of America. Results in this study demonstrated that the more time spent in unstructured activities the more the social competence.

Findings not supported by Garrotte (2017), which investigated on acceptance of children with intellectual disability by their typically developing peers. Sample comprised of 38 junior classes, with 692 typical students and students with intellectual disability in Switzerland. Survey research methodology was used to gather data. Results established that children with intellectual disability though not popular but still accepted by their peers.

Research investigation by Brooks et al., (2015) also supports this study finding. The study investigated on interacting with typical classmates in extra-curricular activities of 40 children aged between 8=11 years old. Naturalistic observation was used in data collection to determine the nature of interactions. Results established that 9 students with intellectual disabilities had healthy interactions despite lacking social skills. The study concluded that putting students in social groups does not necessarily lead to social

integration and that social skill function may be a factor of other natural characteristic such as language expression and socio-cultural phenomenon.

On the other hand this research findings disagrees with the research findings by (Everheart et al., 2012), which reviewed several studies on influence of structured physical activities on academic progress on elementary school children. Results demonstrated that structured physical activities provide more opportunities for ID for social skill development. This study used the middle approach of semi-structured where some datasets had structured sessions while others had unstructured components. Analysis results discounts the notion that structured activities are more beneficial in enhancing social skill learning compared to unstructured programmes. Some children responded well during structured sessions as opposed to unstructured. Child ID level and behaviour of the peer without ID could have more influence than the programme type, hence need for more research. Both sessions led to improved learning of social skills.

All these three studies held divergent views of the effect of programme type, but agree that sport participation in a peer supported programme improve social skill learning of children with ID. Study recommends further research to compare type of programme that results in better effect on social skill learning on child with ID between structured, semi-structure and structured programmes. All the three studies contended that sport programme irrespective of type can improve social skill learning of children with ID.

When analysis on social task of joining other groups of Children in play, results illustrated that, all the seven children recorded significant findings at post-test as

opposed to pre-test. Video images of participant with ID showed him/her smiling and listening and easily engaged in conversation with peers. This facilitated child's learning how to have conversation with peers through observation, imitation and getting corrective feedback from TD.

This finding agrees with that of (Ever heart et al., 2012) discussed earlier in literature search, which reviewed several studies on influence of structured physical activities on academic progress of elementary school children whose results demonstrated that structured physical activities provided more opportunities for ID to play with other children and learn social skills. However the study finding is not supported by Traquoila (2013), which investigated on acceptance of SNE in general education and found out that although ID was not popular but never the less they were accepted by peers The study concluded that social skills and social interactions have no relationships.

On responding to other children in play, the study involved, prompting, cueing, observation and individualized educational instructions. Data analysis illustrated that all the seven (7) children recorded significant improvement on responding to other children in play at post-test compared to pre-test. There were images of children having non-verbal conversations with peers from the video analysis. This research finding is in agreement with research findings by Bukhala (2012), which reported significant improvement in motor activities and psycho-social parameters. Bukhala's study used observation and parental report, while this study captured images and voices and images but both studies have established that social skill can be enhanced through socialization and peer support, hence peer tutoring should be encouraged as a medium of social skill learning among children with intellectual disabilities worldwide.

On child response to name calling, results from data analysis on child, response whenever a peer without ID called him by name posted significant findings by all the seven children at post-test, with each recording more than six point runs of plotted data falling above the UCL of X—Control charts in SPC. Video analysis displayed child smiling and moving towards the peer who called his/her name. These finding agrees with research finding Study by Faith et al (2012) on decoding child's social behaviour using dyadic video coding, demonstrated that after intervention the child looked up at peer when his name was called.

Analysis on children response to passing ball to team mate illustrated that all the seven children (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7, YARO 8 & YARO 9) improved in their response to passing ball to team mate whenever he/she is signalled. Participant three though improved but continued to display unskilful strategies, though to a minimal level. This could be attributed to programmed activities in the intervention, activity attendance and effective pairing of children with ID and their peer tutors. Personalized interactions and duration of contact in play led to enhanced responses from child with ID after the intervention. Child gradual reduction of ignoring others reduced toward the end of programme, post-termination score was highest, an indication that the child was able to smile and move towards a peer when called. Observation and imitation from peers worked for the Child. The trend was not consistent between data sets due to disability characteristics of mood swings which could have had a bearing on this trend.

Results on child performance on this social task of playing games with other children, illustrated that, all the seven (7) improved on picking the social cue in playing games with other children during post-test as compared to non-responsive at pre-test. The

verbal prompts from peers without ID and child's responses demonstrated, that child to child interaction in play has the capacity to help child with speech problems acquire language to some extent. These results point to the need for incorporation of occupational therapists and physical therapist as part of sport socialization intervention programme to enhance children's verbal communication abilities. These findings agree with those of Klavina and Radionova (2016), which investigated on effect of peer tutoring in a Global Partnering Education (GPE) involving youth with and without disabilities in USSR. Findings from this study demonstrated that during peer-mediated conditions interactions between target groups and trained peer tutors increased; whereas during teacher mediated conditions, interaction with peers declined. This was a demonstration in the current study that peer to peer interaction facilitated ability of child with ID to respond to peers without ID in play. This finding is further supported by that of Garrote (2016), which demonstrated further that peer interactions facilitate children with ID to play with others. Video capture showed that at times the child stopped engagement with peers and constantly required peer prompting and cuing to respond appropriately. Peer support and dietary intervention with a bottle of soda + slice of banana further motivated child and improved vigour in display of positive behaviour responses. This nutritional intervention was necessitated by children low energy levels and limited endurance. Peer support through sport based interventions should be encouraged and that inclusive sport programme is the way to go in social skill learning of children with ID.

Results regarding having conversations with other children recorded significant results by all the seven (7) children (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7,YARO 8 & YARO 9)

after intervention programme, and was maintained above the upper control limit threshold during post-termination assessment. The last task under social behaviour functioning evaluated in this study was having conversation with other children under objective two. Peer social task rating checklist to record and interpret different modes of communication child with ID used to engage in conversations with peers without ID during the programme intervention. This was done to capture the images, voices and social abilities of children with ID in a peer supported programme. This was to help get direct feedback from the children with ID themselves without the researcher having to rely on third party reporting. Each child's verbal and non-verbal communications were used in the interpretation of the research findings.

For instance YARO 7 had a low score at pre-test due to use of unskilful strategies of -4 which prevented child from engaging in conversation with other children. This was one of the oldest children in the programme at age fourteen (14). However, when intervention was implemented, child demonstrated consistent trend and level in having conversations with TD. Visual analysis of data sets between pre-test and post-test confirm improved level of social skill functioning of child on this task. Child engaged peers in conversations, recording score of 2 at post-test in peer social task rating. Video capture showed child listening to what other children said and nodding in the affirmative, whenever TD peer engaged him in conversation. Pairing of 1:1, 1:2 ratios with child without ID facilitated improved response; however, whole group participation reduced child's level of engagement hence, structured environment provided suitable opportunity for this child to engage with peers without intellectual disability.

These positive results were as a result of corrective feedback from peers without ID. Similarly, researcher observed that peer support cajoled the child with ID into action by making them laugh and engage in conversations with play mates while playing with same partner in facilitative play. The verbal prompts from peers without ID and child's responses demonstrated, that child to child interaction in play has the capacity to help child with speech problems acquire language to some extent. These results point to the need for incorporation of occupational therapists and physical therapist as part of sport socialization intervention programme to enhance child verbal communication abilities**.** This finding agrees with that of Lopez (2016) which investigated on the use of physical education buddies on conversation impact. Results demonstrated that when children with ID are paired with physical education buddies they improve on starting and maintain conversation with peers without ID. This was evidence that sport intervention with peer support helps children with ID to engage in conversations with other children and should be encouraged.

5.4 Ratings of social behaviour functioning levels across gender before and after sport socialization intervention programme.

The results from data analysis in objective three of the study illustrated that learning of social skills improved significantly across both gender. Boys had a magnitude of improvement range of 50% to 62.3%, compared to girl's improvement range standing at 56% to 60% at post-test. Improvement was observed in all the children irrespective of gender. This finding is supported by Kaufman et al (2015), which documented that when boys and girls are given same opportunities in sport, it can have a social impact on them irrespective of gender. However, research by Gilbert and Bennett (2012); Garrote

(2017) did not support this finding when they documented that social interaction and social skill were not related. The study also reported that females with disabilities are more at risk of physical violence, exploitation and harassment which limits their opportunities for social interaction and development of appropriate social skills. Despite these research documentation, large body of literature has documented that cultural and traditional beliefs and gender norms result in girl's isolation from Sports (UNICEF, 2013; world Bank, 2011; who, 2017). It is suggested in this study that both boys and girls should be given equal opportunities to participate in Sports and develop their abilities in social behaviour functioning.

Results on adaptive behaviour functioning regarding on performance by gender further confirmed that girls had magnitude of improvement between 21.4 to 42.8, while boys recorded an improvement slightly lower at 14.36% to 35.7% at post-test compared to pre-test. The girls performance is influenced by home environment; which socialize them into more home making skills which influence adaptive behaviour functioning. This finding is supported by Santos (2014) which documented that a similarity in adaptive behaviour learning was influenced by curricula and disability type and not gender. A research study Gender equality in Ireland (GEI, 2013) give credence to this research finding by stating that economic participation, different behaviors and aspirations of men and women are equally valued and favoured. This study therefore concludes that, gender issues are critical and dominant in the Sustainable Development Goals (SDG goal 5) on gender equality in sports; hence sports interventions should be geared towards both males and females alike.

5.5 Pro-Social Skills of Adaptive Behaviour Functioning levels of children with ID before and after the sport socialization intervention programme.

Results demonstrated that each of the seven children (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7, YARO 8 & YARO 9) in the programme except YAKS 5. Although Yaks 5 registered non-significant improvement after the sport socialization intervention programme, improvement in social behaviour functioning level functioning was observed and documented. This finding is supported by research studies (Morris & Costello, 2016; Price, 2018; Santos et al., 2010; Santos & Morato, 2012; Santos, 2014) which documented that parental involvement helps in improving their children's Activity of Daily Living (ADL).Further; the studies highlighted the importance of ABS for long term outcomes in children with intellectual disabilities.

The research findings by Santos (2014) used the Portuguese version abs which has not been validated; hence results are yet to be authenticated as evidence based intervention in enhancing adaptive behaviour functioning of children with ID. On the other hand this finding disagrees with Schwartz (2015) which documented that Children with Attention Hyper Activity Disorders (ADD) who scored less in cognitive areas during pre-therapy sessions also scored less in dressing skill during post-therapy. The implication was that the intervention had no effect of adaptive behaviour functioning of the child. This assertion find support with a related study on athletic ability of learners with physical disabilities in Kenya which found out that one child in particular posted no-significant results because of multiple disabilities (Thangu et al. 2015). The study investigated on athletic ability of children with physical disabilities and reported that the child with multiple disabilities was not able to perform the stork jump. This finding has

implications for a multi-disciplinary approach involving other allied professionals in order to assist children with muscles weaknesses and multiple disabilities to benefit from sport socialization intervention programmes in future.

5.6. Perceived Benefits of the Programme:

The results from the sport intervention programmes suggested that the study had had positive impact on all involved and even strengthened community-university partnership through this project. in the study based on the study outputs as discussed below

5.6.1 Typically developing Peers (Children without disabilities)

Teachers in special units reported improved school attendance and children being happier playing with other children during break time and more tidy than before. Typically developing peers reported that, they are no longer afraid to play with child with ID, and even reported visiting them at their home and playing with them, as well as more accommodating to them in school. For complete report on impact refer to (Appendix xi) on programme impact. The sport socialization intervention programme was effective in enhancing social skill learning of children with ID in Kakamega County Kenya.

5.6.2 Children with intellectual Disability

The Children with ID acquired social skills and improved on their adaptive behaviour functioning levels. This enabled them to function independently at home, in school and in the community. Their health and wellbeing was enhanced after the intervention based on feedback from teachers of special units from the respective schools. This culminated in the attainment of Sustainable Development Goal (SDG 4) as envisaged in the UN charter.

5.6.3 Parental Education component

These observations agrees with Favazza et.al (2016), Wairimu et al 2016) which documented that the intervention programme had effects on parents, community and university faculty staff who participated in the young athletes curriculum study in Nairobi County Kenya.

On parents Education component of the programme, the finding is also supported by Bukhala (2016; 2017) on enhancing sport participation through volunteer coaches and documented the coaches being more confident of working with the children and mothers running income generating in one of the study sites. Study concludes that involving parents in the education their children may help in upgrading their children's skill and enhancing social skill learning as well as provide support to their children knowledgeably. Research findings by Price, 2018) also support this finding by stating that adaptive skills learnt in the intervention is generalizable in other situations in the community and the child's life. However, there is need for university to partner with local communities to support community health promotion programmes as a way of sustaining the gains made in this research study and move the scope of this conversation forward. This is because the children had average adaptive behaviour functioning levels, which can be enhanced by similar supportive intervention programmes. The intervention benefited all those who were involved in the study, through perceived benefits and multi-level impact in Appendix (xi & xii). These findings are supported by previous researchers (Bukhala, 2017; Favazza et al., 2016; Wairimu et al., 2016), which stated that sports programmes for children and youth with ID has perceived benefits and multi-level impact on all in involved.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes the research study, presents the main findings, conclusions of the research recommendations for action, improvement and further research. The conclusions were derived from the literature review and findings from the research instrumentation presented in the preliminary chapters. All the instruments have been attached in the research appendices (iii, iv, v & vi). The study examined the effects of a sport socialization intervention programme on social skill learning among children with intellectual disability in Kakamega County.

This was done by looking at previous research studies on social skill training in inclusive settings at school level, then by examining the review of literature and finally by quasi-experimental research that examined the effects of the sport socialization intervention programme among learners with intellectual disabilities in Kakamega County Kenya, based on the following objectives;

1. To establish the demographic characteristics of children with ID and their parents in Kakamega County, Kenya.
2. To determine the effect of Sport socialization intervention programme on social behaviour functioning levels of children with ID in Kakamega County, Kenya.
3. To compare ratings of social behaviour functioning levels across gender before and after a sport socialization intervention programme in Kakamega County, Kenya.

4. To compare pro-social skills of adaptive behaviour functioning levels of children before and after the sport socialization intervention programme in Kakamega County, Kenya.

6.2 Research question

The study answered the research question below in assessing objective one of the study.

1. What are the demographic characteristics of children living with intellectual disability and their parents/guardians in Kakamega County?

6.3 Hypotheses

The study also tested the following null hypotheses during the research intervention.

HO_1: Sport socialization intervention programme has no significant impact on social behaviour functioning levels of children with ID between pre-test and post-test.

HO_2: There is no significant difference in social behaviour functioning levels by gender of children with ID between pre-test and post-test in Kakamega County, Kenya.

HO_3: There is no significant difference in pro-social skills of Adaptive Behaviour functioning levels of Children with ID before and after the sport socialization intervention programme in Kakamega County, Kenya.

6.4 Summary of the Study findings.

The findings of this study have been summarized below according to each of the four objectives that guided this study.

6.4.1 Demographic characteristics of Children with ID and parents (objective one)

i. Seven children completed the intervention programme and their results were used for data analysis.

ii. Programme was implemented with high fidelity.

iii. All parents/guardians who accompanied their children to the programme were females as no male parent / guardians accompanied the child.

iv. This study further recommended that more efforts on disability awareness needs to be focused on poverty eradication among families of children with intellectual disabilities to cushion them from adverse effects of poverty as a strategy to empower persons with disabilities and their families in Kenya.

6.4.2 Effect of sport Socialization Intervention programme on social behaviour functioning levels of children with ID. (Objective two)

i. The magnitude of improvements between pre-test and post-test on social skill learning were as follows: YAMY 3 (56.7%), YAKS 4 (60%), YAKS 5 (63.3%), YAKS 6 (51.6%), and YARO 7 (56.7%), YARO 8 (48.3% and YARO 9 (50%) respectively.

ii. Results from the statistical data analysis also indicated that all the seven children recorded Nine (9) consecutive point runs above the Upper Control Limit (UCL): YAMY 3 standard deviation of MR score at 3.17, 2.53 for YAKS 4, 2.28 for YAKS 5, 2.59 for YAKS 6, 3.17 for YARO 7, 2.34 for YARO 8 and 2.34 for YARO 9. From this analysis report, all the scores during and after intervention

were above the threshold of special effect at Six (6) consecutive point runs above UCL. Each of the children improved on their social skill learning both in trend and level after the fourteen (14) weeks sport socialization intervention programme. The skill learnt were generalized and sustained even after two weeks of termination of treatment.

iii. Each child in the programme recorded significant improvements after intervention with Null hypothesis that expected no significant difference on child learning of social skills after intervention being rejected.

iv. 5X5 sessions per week 1:2; 1:3 accounted for the highest improvement compared to 1x1 sessions per week and whole group participation.

v. It was concluded in this study, that the sport socialization intervention programme in Kakamega County was effective in enhancing social skill learning of the seven (7) children with ID over a fourteen week period.

vi. The subjects recorded low scores of negative use of unskilful strategies which prevented display of social skill cues during pre-test, compared to positive scores at post-test; where subjects adopted skill full strategies that enhanced display of appropriate social behaviours when engaging with peers without ID during and after intervention. This is in line with Competency based curriculum strategy of enhancing learners' skill competencies through partnership and cooperative learning.

vii. The First stated null hypothesis that expected no significant effect of sport socialization intervention programme on social behaviour functioning of children

with ID between pre-test and post-test was proven to be false, therefore rejected based on the study findings.

6.4.3 Rating of social behaviour functioning levels across gender before and after the sport socialization intervention programme (Objective three).

It was not possible to compare performance across gender statistically, due to limited data points and nature of study design which was only within an individual. However, the magnitudes of improvements were compared between boys and girls to provide comparison in gender rating as follows:

i. Boys registered an improvement range of 50% - 63.3%, whereas girls had a range of 56%-60%. It can be concluded that the intervention programme improved social skill learning of both boys and girls. All recorded above 50% magnitude of improvement. Being male or female had no effect on the social skill learning by the children.

ii. Statistical analysis of the results illustrated that all the children with ID recorded more than six consecutive point runs above UCL, which was +3SD above base line mean. Results were statistically significant on social skill rating at post-test

iii. Gender rating on adaptive behaviour rating also demonstrated that girls registered a magnitude of improvement range of 21.4% - 42.8%, while boys range was 14.3%-35.7%. All improved though girls scored higher than boys. High score by girls could be due to cultural orientation and socialization into home making skills which influence activities of daily living and ABS functioning levels.

iv. Statistical analysis illustrated significant improvement of six children with ID at Six consecutive point runs of plotted data above the UCL. Although YAKS 5 improved statistically his performance was not significant with only one (1) data point above UCL. So the programme had no special effect on his learning of adaptive behaviour learning.

v. The second stated null hypothesis that expected no significant difference in social behaviour functioning levels by gender of children with ID between pre-test and post-test was neither rejected nor retained. Results were inconclusive on statistical significance of the null hypothesis under review.

6.4.4 Pro-social aspects of Adaptive Behaviour Functioning (ABS) of the children with ID before and after intervention. Results demonstrated that (Objective four)

i. There was marked increase in pro-social aspects of adaptive behaviour functioning levels of the seven children with ID after intervention compared to before.

ii. Post-intervention also demonstrated that skill learnt were sustainable and generalizable in other situations, hence adaptive behaviour is replicable.

iii. Statistical analysis of x-control chart of SPC illustrated that all children except YAKS 5 registered more than six consecutive point runs above UCL.

iv. Although one Child (YAKS 5) had non-significant performance with only 1 point run above UCL, the child improved his adaptive behaviour functioning levels. This child had multiple disabilities including hemiplegia. The study recommends that multidisciplinary approach with physical and occupational

therapist may help children with multiple disabilities reap maximum benefits from the intervention if this strategy is incorporated early in the sport socialization intervention programme.

v. The Third null hypothesis that expected no significant difference in pro-social skills of adaptive behaviour before and after sport socialization intervention programme was proven false and hence rejected for the six children. However the same null hypothesis was true for YAKS 5 and therefore retained.

vi. Non-significant findings for YAKS 5 may be attributed to multiple disability of hemiplegic cerebral palsy which affected child's ability to respond and carry out social tasks under investigation.

6.5 Conclusion

Based on the study findings, the following conclusions were derived for each of the objective(s) that guided this research study.

6.5.1 Demographic characteristics of Children with ID and parents (objective one)

The first objective of this sought to establish the demographic characteristics of the seven children (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7, and YARO 8 & YARO 9) and their parents. This study concluded that disability characteristics affected social behaviour responses of children with ID before intervention. Majority of parents 72% were semi-skilled and were of low socio-economic -status and this limited their abilities to provide balanced diets for their children, appropriate clothing and this affected their self-esteem and child's ability to socialize with others. This situation also affected pro-social skills of adaptive behaviour functioning levels before intervention.

However, after intervention study established that age and gender did not affect social behaviour functioning of the children. Nevertheless, disability level played a role in adaptive behaviour functioning baseline behaviours. Study further concludes that socialization of children with ID is also affected by parents socio-economic status; children from middle to high socio economic family status displayed high levels of self - esteem and were better dressed and cleaner before intervention. However, after intervention all the children improved in both self-esteem and hygiene; and were also more confident in interacting with peers without ID. The children's hygiene status were observed before and after intervention through video records, during snack breaks as they washed their hands and also through mode of dressing and parental records from adaptive behaviour checklist where keeping clean was an item in the tool(ABS).

6.5.2 Effect of sport Socialization Intervention programme on social behaviour functioning levels of children with ID. (Objective two)

The second objective sought to determine the effect of the intervention on social behaviour functioning levels of children with ID in Kakamega County, Kenya. From the study outcomes, it was concluded that the sport socialization intervention programme was effective in enhancing social behaviour functioning levels of children with ID. This should be enhanced as part of therapeutic modalities in the management of social skill deficits in children with ID globally. The study further concluded that PSTRS and ABS tools used in this study are viable methods of assessing social skill levels of learners with intellectual disabilities even in developing countries. Sport socialization intervention programme if implemented with fidelity is malleable in social skill learning by children with ID in Kenya. The results registered significant improvement both in

social tasks for the seven7 children (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7, YARO 8 & YARO 9) with Intellectual disabilities in total PRSTS and individual tasks of social skill learning of: joining groups of other children, responding to other children, response to name calling, playing games with other children passing ball to team mates and having conversation with other children. These results also implied that core competency curriculum in physical education can best be implemented through similar interventions, since the core competencies of communication and collaboration were evident as learners practised in small groups and played games during the intervention. The competency of self-efficacy of child with ID was also enhanced during the intervention.

6.5.3 Rating of social behaviour functioning levels across gender before and after the sport socialization intervention programme (Objective three)

The third objective sought to compare if there were differences in social behaviour rating by gender before and after the sport socialization intervention programme. From the study outcomes, it is concluded that: gender did not affect social behaviour responses at post-test. Both boys and girls recorded low scores at pre-test, compared to improvement at post-test. Disability type and intervention programme affected the rate of social behaviour functioning levels.

Results on ABS functioning by gender demonstrated that girls appeared to have improved by a slightly higher percentage than boys, this was occasioned by the majority of items being more prone to home care activities. Study recommends cultural shift to expose both gender to home care activities to enhance their activities of daily living. The

statistical analysis did not register significant findings as it could not conduct statistical analysis by gender. This was occasioned by the study design; hence need for further research on gender differences in social skill behaviour responses.

6.5.4 Pro-social aspects of Adaptive Behaviour Functioning (ABS) of the children with ID before and after intervention. Results demonstrated that (Objective four)

This Fourth objective sought to compare pro-social skills of adaptive behaviours functioning of child with ID before and after the programme. Based on the outcomes of the experimental research. This research finding makes the following conclusions. That sport socialization intervention programme was effective in enhancing pro-social skills of adaptive behaviour functioning levels of children with ID (YAMY 3, YAKS 4, YAKS 5, YAKS 6, YARO 7, YARO 8 and YARO 9) after fourteen (14) weeks of exposure to the sports socialization intervention programme. The skills learnt were also applicable and generalizable in play situations and other areas of life. It was also the conclusion of this study that social aspects of inclusive settings are important for social integration and functional inclusion at household and family levels. Exercise therapy is an important therapeutic modality and should be incorporated by physiotherapist in the management of multiple disabilities. Multiple disability management requires multi-disciplinary approach involving social workers, clinicians, adapted physical activity specialists and occupation therapists as they are integrated at school and community settings. In summary, this study further concludes that, a Sport socialization intervention programme improved pro-social skills of adaptive behaviour functioning levels of the children; and if well programmed, implemented and supervised, it can be used as

therapy for purposes of enhancing social skill learning of Children with ID at primary school level and those in home-based care. The implication of this is that special needs teachers in the zones targeted by the study should in cooperate this socialization as daily teaching strategy in enhancing development of appropriate adaptive behaviour in children with intellectual disabilities in the special units within the school set up, in Kakamega, County

6.6 Recommendations

Based on the outcomes of this research study, the following are recommended corrective practices and measures that could contribute to wholesome approach to the effective management of children with ID in areas of sport socialization and social skill enhancement in inclusive settings. These recommendations as presented based on the objectives that guided this study.

6.6.1 Demographic characteristics of Children with ID and parents (objective one)

6.6.1.1 Recommendations for Practice

To be able to incorporate holistic approach socialization for children with intellectual disability, the study recommended that:

i. Parents and significant others should allow their children to play freely with children without disabilities in their neighbourhood to facilitate child to child interaction to enhance social skill learning.
ii. Parents need to participate in the activities of their child with intellectual disability so as to develop positive attitude for active living.

6.6.1.2 Recommendations for Policy

This study recommended that parents of children with intellectual disability should be enlightened and encouraged to care and provide for their children, just as they care for the TD

This study recommends that social protection legislation should be enforced at community level by the National Council of rights of Persons with Disabilities (NCPWD) to protect children with ID from being abandoned and neglected.

6.6.1.3 Application of the findings

i. This Study recommends that, there is need to establish variables that determines fathers' involvement and support for their child with ID. This is because all parents /guardians who accompanied the children with ID to the intervention were all females (100%). No male parent/guardian accompanied children to the study site.

ii. This study recommended that parents/guardians of children with ID should be equipped with social sport skills through social skills training and physical activity involvement with their children and other children without disability, this will enable them train their children in social behaviours and support them in physical activity participation knowledgeably.

iii. This study further recommends the need for parents to collaborate with teachers of their child with ID in the implementation of the competency based curriculum in physical education. This is because, during this study, values such as respect for self and others, as well as social cohesion was acquired as children with TD guided and provided corrective feedback to their peers living with ID.

iv. This study further recommended that both parents should be involved in supporting and be actively involved in their children's learning of social skills and adaptive behaviours both within the homestead and at school.

6.6.2 Effect of sports Socialization Intervention programme on social behaviour functioning levels of children with ID (Objective two).

6.6.2.1 Recommendations for Practice

i. Adapted physical education teachers should design sustainable community health promotion programmes for programme sustenance.

ii. Teachers in charge of special units catering for children with ID should be exposed to in service training on the role of inclusive social physical activities to sustain the programme in the school and community.

iii. Peer tutoring model (pairing of ID and TD) should be adopted as an instructional strategy to improve social skill learning of children with ID at various levels.

iv. Sport socialization intervention programme for children with ID should be adopted by adapted physical education practitioners as part of the therapeutic modality in the management of children's stereotypic behaviours at school and for those on home-based care.

6.6.2.2 Recommendations for Policy

i. Kenya National Paralympic committee KNPC) and Special Olympics of Kenya (SOK) should develop policy on inclusive sport at community level to help children with ID develop their talents learn sports skills and social integration.

ii. Special Olympics of Kenya and association of persons living with intellectual disability should enhance campaigns to create awareness about the benefits of physical activities on the training of social skills in children with ID.

6.6.2.3 Application of the findings

i. Replication of this programme at community level so that more children with ID in school, out of school and those on home based care can benefit in the areas of social skill learning through sport based interventions.
ii. National county sports editions should incorporate unified sports for children with ID.
iii. This is grounded on the study outcomes which demonstrated that the sport socialization intervention programme is effective in enhancing social behaviour functioning levels of children with ID.
iv. Sport socialization intervention programmes should be availed to all children as they are more successful for children due to concept of learning through play.
v. Sport socialization intervention should be availed to all children with disabilities in and out of school, since the programme was malleable in supporting social skill learning of children with disabilities in Kenya.
vi. Study further recommends that social physical activities should be part and parcel of the school physical education programmes.

6.6.3 Rating of social behaviour functioning levels across gender before and after the sport socialization intervention programme (Objective three)

6.6.3.1 Recommendations for Practice

i. Both boys and girls should be given equal opportunities to participate in sport and develop their abilities.

ii. Both boys and girls with intellectual disabilities should be socialized into physical activity and support each other as they develop their talents and social skill through play.

6.6.3.2 Recommendations for Policy

i. This study also recommended that NCPWD, FIDA and SOK to be sensitized to create more awareness on intellectual disability and their rights to play so that boys and girls are socialized to support each other as they interact in sport.

6.6.3.3 Application of the findings

i. Ministry of Sports, Culture and Heritage and non-governmental organizations should advocate for both boys and girls with ID to be given opportunities to participate in sports.

ii. There is need to establish determinants of gender participation in sport among children with intellectual disability in order to enhance their social behaviour levels...

iii. All children with intellectual disabilities should be trained in social skills and adaptive behaviour functioning irrespective of their gender.

iv. Directorate of quality assurance and standards should enforce the teacher of physical education to children with intellectual disabilities in special units. this is very important in enhancing competencies such as negotiation and problem solving skills at school and within the family set up.

6.6.4 Pro-social aspects of Adaptive Behaviour Functioning (ABS) of the children with ID before and after intervention. Results demonstrated that (Objective four)

6.6.4.1 Recommendations for Practice

i. Ministry of education should enforce the school health promotion programmes to specifically target special units in dental hygiene, hand washing .This could strengthen their adaptive skill functioning and independent functioning.

ii. Teacher's in-charge of special units in the school whose pupils were selected should expand the environmental school health programme to include adaptive skill training for children with intellectual disability in the units.

6.6.4.2 Recommendations for Policy

i. Kenya Institute of Curriculum Development (KICD) should incorporate components of community service learning (involvement in community sports participation and health promotion programmes such as hand washing, to strengthen adaptive behaviour functioning and community integration.

ii. Adaptation of physical education curriculum in a manner that it is competency based for children with intellectual disabilities a according to their different capabilities.

6.6.4.3 Application of the findings

i. Sport based interventions should be encouraged as part of treatment therapy in the management of adaptive behaviour functioning levels among children with ID as ABS has long-term social behaviour outcomes for these children.

ii. Due to the fact that the ABS tool used in objective four was more oriented to home making skills that favoured girls over boys, this study recommends that researchers should develop improved abs tools that enhances more gender sensitive items i.e. dental hygiene, good grooming and parental engagement in sport intervention set up to impart values and life skills as part of adaptive behaviour functioning training.

6.7. Recommendations for Further Research.

Based on the findings and conclusions of the study the following recommendations were made.

1. The study findings in objective one cited low parental/guardian's socio-economic status, however the study did not test how this affected social behaviour functioning levels of their children. This study therefore recommends that a study should be conducted to establish the impact of parental socio-economic factors on social behaviour functioning levels of their child with intellectual disability.

2. Due to the positive effect of the sport socialization intervention on social behaviour functioning levels of children with intellectual disability in objective

two of this study. This study recommends replication of the study on groups of children with similar social skill deficits like Autism Spectrum Disorder (ASD) and Cerebral Palsy (CP).

3. The findings in objective four reported non-significant findings for YAKS 5 on pro-social skills on adaptive behaviour functioning after intervention, this study recommends that future sport socialization intervention studies should use a multi-disciplinary approach in sport socialization intervention programme involving occupational therapist, clinicians exercise therapist and sport scientists. This will assist children with multiple disabilities and muscle weaknesses benefit from such research interventions.
4. The study recommends replication of these studies in more counties with children with intellectual disability to benefit other children with disabilities since SSD results on children with disability are neither generalizable nor applicable to all.

5. The study further recommends development of Sport socialization intervention software's like video modelling for training social behaviour of children with ID in primary schools and other learning institutions in Kenya.

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APPENDICES

APPENDIX I: PARENT'S CONSENT FORM

I am Roselyne Ajwang Odiango, a PhD student at Masinde Muliro University. I will be evaluating Socialization into adapted Physical activities and Sport programme for young children of age 8-14 years with and without intellectual disabilities for the next few months. The programme will include sports activities, songs, fun games running, jumping, kicking, stopping, dribbling, and goal keeping in simple soccer games for the purpose of social skill development of the children. The program will also train your on hand washing, hygiene, tale manners when taking meals, washing and keeping utensils and how to be responsible in relating to other people and children. I am writing to invite you to accompany your child to participate and give consent for your child's participation. The evaluation will involve observation and assessment of social skills and adaptive behaviour skill level of your child. We will ask you questions related to your child demographic characteristics, adaptive behaviour and social skills to help us gather some personal information related to your child's social development, physical activity levels as well as adaptive behaviour levels. The study will involve video capture of you and your child; this will be used for research purposes only. Participating in this study is Voluntary .All information will be kept confidential and we will assign your child numbers so that your names will not be attached to the data. Benefits to participation will include learning more about your child, s social ability, adaptive behaviour and learning new ways to support your child. In addition, more awareness skills and information on support groups will be discussed with the other parents who will also accompany their children. If you agree, kindly sign the consent part of the form.

Sincerely,

Signature----------Name----------Date----------

I give my consent on behalf of my child (name) ----------

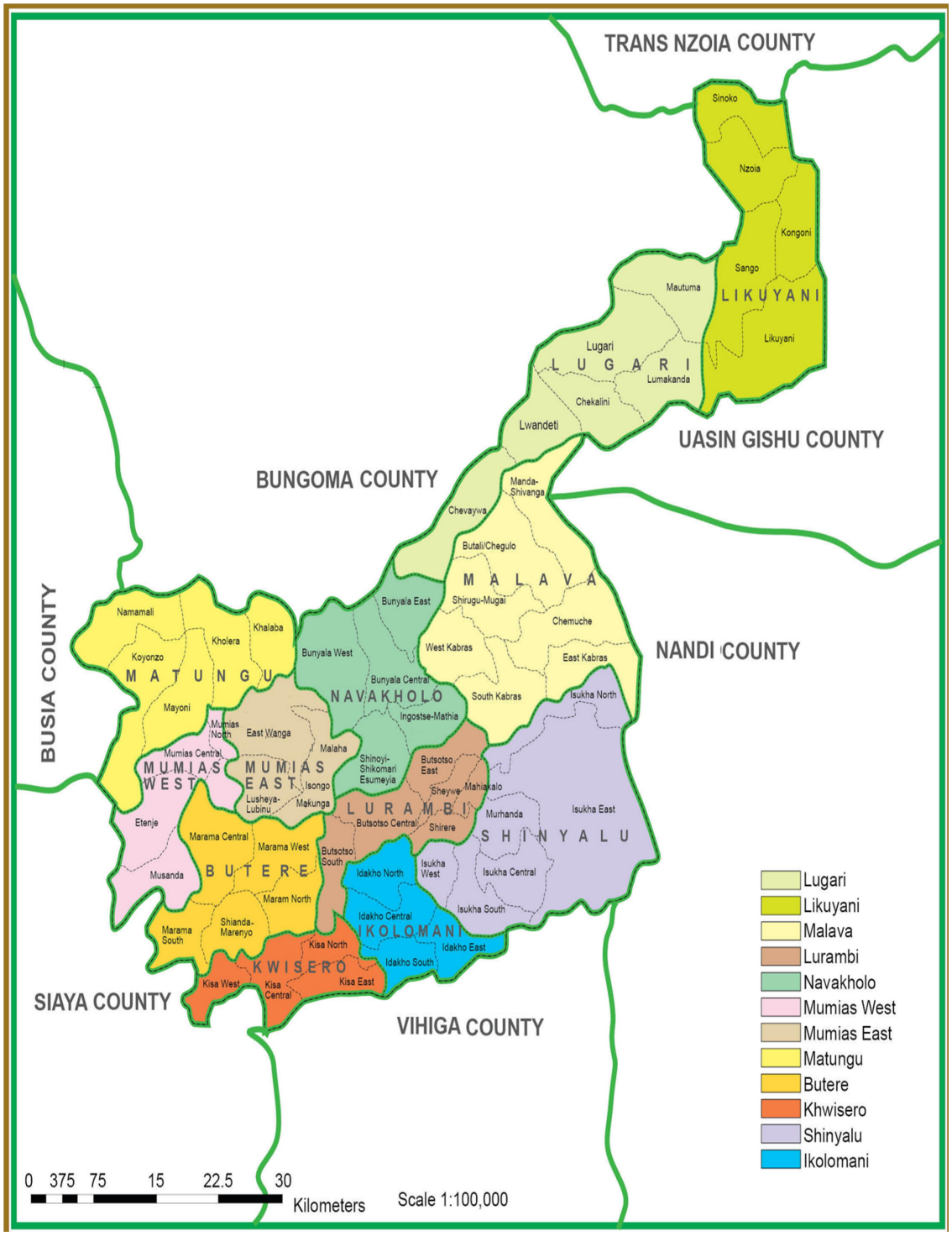
Parent's Signature **Name** **Date**

I do not give my consent on behalf of my child (name) ----------

Parents Signature **Name** **Date**

You can contact the research Team through these mobile: **0725300432/ 0725829073/.**

APPENDIX II: MAP SHOWING KAKAMEGA COUNTY, KENYA.



APPENDIX III: A SPORTS INTERVENTION PROGRAMME

Descriptions	**Demonstrations**	
WEEK ONE & TWO	**Baseline (pre-testing)**	
WEEK THREE		
Step and Jump	Encourage child to step up on two boxes and jump down.	
Jumping a block	Encourage the child to jump the block	
WEEK FOUR		
Kicking	Encourage the child to kick the ball to each other 15m apart	
Minor Game of Soccer		
WEEK FIVE-assessment		
WEEK SIX-Throw-in and rolling ball		
Throw-in Rollin the Ball	Encourage child to throw ball furthest he/she can Partners sit 15m apart and roll ball to each other	
WEEK SEVEN -Trapping and Goal keeping		
Trapping	In pairs encourage child to follow ball path and stop with feet assisted by buddy	

Basic soccer skill of goal keeping		
WEEK EIGHT & NINE- Mini Game in the learnt skills and Assessment		
WEEK TEN -Dribbling		
Dribbling the ball Mini-Game of Soccer	Paired Partners Stand 15m apart Encourager a pair to dribble ball to each other	
WEEK ELEVEN, WEEK TWELVE & WEEK THIRTEEN-mini-games in the learnt Skills		
Combined activities fun activities and group competitions with non-intervention.		
WEEK FOURTEEN-post testing and focus group discussions**.**		

APPENDIX IV: VIDEO CODING CHECKLIST.

Assessed child's effort in executing various social tasks during the Study.

Child, s Name/Code: ----------Gender: ----------Age: -----

SOCIAL TASKS	**COMMENT/SCORE**
Joining Other Children in Play (JOP)	
Responding to Other Children in Play (ROC)	
Name Calling (NC)	
Passing Ball to Team mate (PBT)	
Playing Games with Others (PGO)	
Having Conversation with Other Children (HCC)	

0=Significant effort used to engage. **2=little effort used to engage**

APPENDIX V: PEER SOCIAL TASK RATING SCALE (PSTRS).

This table is developed to assess how often a child attempts various social tasks and child's success at each task which is peer oriented

Child's Name/Code----------Age----------Gender----------Ability-----

Social Task	**Social Strategy**	**Comments /Score**
Joining group of children in play	**When child joins group he/she:** -watch and wait to be invited +wait and try to join without being disruptive to group. - ignores playmates	
Responding to other children	**When a peer approaches, child with ID:** **-**ignores or withdraw from him/her +respond in a warm and friendly way -child appears awkward or uncomfortable	
Name calling	**When peer calls child with ID by name he/she:** -withdraws and walks away +responds in affirmative and moves toward the caller -does not respond at all	
Passing ball to teammate	**When team mate signals for ball to be passed to him/her, child with ID:** **-**ignores and doesn't pass ball +responds in a warm manner, smiles	

	and passes ball to target	
Play games with others	**When child play games with others they:** **+**play fair and follow rules +wait to take turns -Act like sore looser +lose and win graciously	
Having conversations with other children	**When child with ID has conversation children they:** **-**Fail to stay on topic Talk about themselves/focus on their interest—fail to understand what other child is saying +communicate clearly +listen well to what others are saying	

+=Skillful strategy (5-1) - =Unskilful strategy (1-5)

APPENDIX VI: ADAPTIVE BEHAVIOUR SCALE (ABS) CHECKLISTS

Will be used to assess child's adaptive strengths and weaknesses in pro-social aspects of adaptive behaviour/child's awareness of others.to be filled by research assistants in consultation with parents and caregivers

Child's Name/Code----------Age----------Gender----------

Pro-social aspects of Adaptive behaviour	**ID**	**Comment/Score**
Knows names of family members		
Interacts with others in community		
Knows his name		
Knows his parents' names		
Can wash his own hands well		
Child helps in household chores		
Child engages in family activities		
New friend nominations		
Play with other children in the neighbourhood		
Plays at home with other children		
Communicates his needs		
Run errands in the home		
Participates in family conversations		
Total Raw scores		

+ (1) =presence of pro-social aspect of ABS - (0) =Absence of pro-social aspect of ABS

APPENDIX VII: INSTITUTIONAL ETHICAL APPROVAL

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Tel: 056-31375
Fax: 056-30153
E-mail: directorrel@mmust.ac.ke
Website: www.mmust.ac.ke

P. O. Box 190
Kakamega
50100
Kenya

Institutional Ethics Review Committee (IERC)

MMU/COR: 403012(12) 23rd November, 2017

Odiango Roselyne Ajwang
Registration No. HPS/LH/004/2014
Masinde Muliro University of Science and Technology
P. O. Box 190-50100
KAKAMEGA

Dear Ajwang,

RE: ETHICAL APPROVAL TO CONDUCT RESEARCH

The IERC received your proposal titled "***effects sports Socialization intervention program on social skill development among children with intellectual disabilities in Kakamega county, Kenya***". The IERC, MMUST chapter therefore grants ethical clearance for you to conduct your research as proposed. In case of any adverse reactions to the patients, please report to IERC, MMUST.

On behalf of IERC and the University Senate, receive my congratulations. We wish you success in your research endeavour.

Yours faithfully,

Dr. Nguka Gordon
Chairman, Institutional Ethics Review Committee

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)
- DVC (A & F)
- DVC (A&SA)

APPENDIX VIII: APPROVAL OF RESEARCH PROPOSAL

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: odel@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Open Distance and e-Learning (ODeL)

Ref: MMU/COR: 509099

Date: 25th July 2017

Odiango Roselyne Ajwang
HPS/LH/004/14
P.O. Box 190-50100
KAKAMEGA

Dear Mrs. Roselyne,

RE: APPROVAL OF PROPOSAL

Following communication from the Departmental Graduate Studies Committee and the Faculty Graduate Studies Committee, I am pleased to inform you that the ODeL Board meeting held on 19th January 2017 considered and approved your PhD proposal entitled: ***"Effects of Sports Socialization Intervention Programme on Social Skill Development among Children with Intellectual Disabilities in Kakamega County, Kenya"*** and appointed the following as supervisors:

1. Dr. Peter Bukhala – Department of Health Promotion and Sport Science - MMUST
2. Dr. Gordon Nguka – Department of Nutrional Sciences – MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director ODeL. Such reports should be copied to the following: Chairman, School of Public Health Biomedical Sciences and Technology Graduate Studies Committee, Chairman, Department of Health Promotion and Sport Science and Director SGS. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of three years from the date of registration to complete your Doctoral thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

Dr. Gordon Nguka
Ag. DIRECTOR OPEN DISTANCE AND E-LEARNING (ODeL)

APPENDIX IX: RESEARCH AUTHORIZATION

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/79123/20692**

Date: **16th January, 2018**

Roselyne Ajwang Odiango
Masinde Muliro University of Science and Technology
P.O Box 190-50100
KAKAMEGA.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effects of sport socialization intervention program on social skill development among children intellectual disabilities in Kakamega County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Kakamega County** for the period ending **16th January, 2019.**

You are advised to report to **the County Commissioner, the County Director of Education and the County Commissioner of Health Services, Kakamega County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA.
FOR: DIRECTOR-GENERAL/CEO
Copy to:

The County Commissioner
Kakamega County.

The County Director of Education
Kakamega County.

THIS IS TO CERTIFY THAT:
MISS. ROSELYNE AJWANG ODIANGO
of MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY, 0-50100 KAKAMEGA,has been permitted to conduct research in *Kakamega County*

on the topic: *EFFECTS OF SPORT SOCIALIZATION INTERVENTIONPROGRAMME ON SOCIAL SKILL DEVELOPMENT A MONG CHILDREN INTELLECTUAL DISABILITIES IN KAKAMEGA COUNTY,KENYA*

for the period ending:
16th January,2019

Permit No : NACOSTI/P/18/79123/20692
Date Of Issue : 16th January,2018
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

APPENDIX X: MENU FOR PARTICIPANTS LUNCH PREPARED WITH PARENTS/CAREGIVERS OF THE CHILDREN

DAY	MENU INGREDIENTS
Monday	Maize and Beans (Githeri) + a banana
Tuesday	Beef, Kales & Ugali + a slice watermelon
Wednesday	Chapattis + green grams + an orange
Thursday	Rice + Beans + a banana
Friday	Ugali + matumbo + a mango
Saturday	Ugali + Kales + an egg + an apple

PARENT: NAME: ---------- SIGN----------

RESEARCHER: NAME: ----------SIGN ----------

YOUNG LEADER: NAME----------SIGN----------

APPENDIX XI: PERCEIVED BENEFITS

What if any benefits did you observe as a result of participating in the intervention programme?

YAL

- Young leader reported being better able to support children's development and utilize new skills learnt in the intervention programme to make similar programmes.
- Impact of programme was enormous for Parents and Children with ID**.** Improved social skill functioning for children. They made friends with other children they didn't know before Children were eager to go to school and proceed to the programme.
- -Children with ID looked different from day One of the intervention. Some children who were withdrawn; not socializing, not communicating are now playing and communication to others.
- "Yaks 5"improved, he no longer cries and talks to himself, and he listens and joins others in activities.
- -Parents/Caregivers have gone out of their way to help child practice learnt skills at home. Parents/Caregivers expressed that they now feel relieved after learning that a child with ID isn't a Personal problem. They realized there are other children with disabilities common in the community.
- Parents made friends with each other and formed support group for all whose children were in the programme.
- Children without disability now appreciate and readily assist and play with child with ID.

Parents/Caregivers.

- "F" likes school and is not ashamed in her presence of other children**.**
- He can express himself when he wants something.
- He can attend church and greets elderly people and other children.
- Family has benefited by learning that child can depend on himself and helps with household chores of fetching water and washing plates.
- Through the project family benefited by gaining more knowledge about people with intellectual disabilities and how to live with them.
- "We now know we need to give him more freedom to socialize with others.

APPENDIX XII: MULTI-LEVEL IMPACT

Summary of multi-level impact of socialization intervention programme
FAMILY:
Parents' perception changed since they realized their child with ID could learn and play with other children. Parents spoke of support they received talking to and connecting with other parents, realizing that their child is not the only one with disability. Parents said that they have gained more knowledge about causes of disability, how to relate, communicate and help child learn activities of daily living. Parents reported that their child with ID is now engaged in family routines (wash dishes, sweep the house and fetch water). Family members no longer despise the child; siblings have greater respect for the child. Parent income-generating project is still on in one site and has improved family income. Family members now talk more to the child, play with him and family in general is more expressive of affection and love for the child.
Community and neighbourhood and TD
Child is more confident and able to play, speak with other children. Child now leaves the house to play with neighbourhood children. Child is visited by TD at their home to play and do house chores together. Neighbourhood children invite their children to play, culminating into new perceptions and new friendships. Parents became change advocates, speaking on behalf of others with disability. All children were registered with NCPWD after learning from programme. Parents registered with county and accessed funds to boost their project.
University Community: Students& Staff
Students were more positive and increased volunteerism. Learnt that children with ID can learn and change, support parents in their project. Students now instruct and do physical therapy in one of the special schools near the university. Staff support the parents by buying their products and referrals of others.

APPENDIX XIII: FREQUENCY ATTENDANCE CHECKLIST

Weeks																	
S/N no.	Participants Code	Age	Gender	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.																	
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	