AN EVALUATION OF THE INFLUENCE OF EARLY INTERVENTION SERVICES ON DEVELOPMENT OF CHILDREN WITH PHYSICAL DISABILITIES IN RUIRU SUB-COUNTY, KIAMBU COUNTY, KENYA

BY
NDERITU HELLEN WANJIRU
REG. N. E55/22871/2011

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE DEGREE OF MASTER OF EDUCATION (SPECIAL NEEDS EDUCATION) IN THE SCHOOL OF EDUCATION KENYATTA UNIVERSITY

APRIL, 2016
DECLARATION

I declare that this research thesis is my original work and has not been presented for the award of degree in any other university/institution. This research thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other works-including internet, the sources are specifically accredited through referencing in accordance with anti-plagiarism regulations.

Signature ........................................... Date .......... 9th March 2016

Nderitu Hellen Wanjiru
Kenyatta University
Department of Special Needs Education

Supervisors

This research thesis has been submitted for review with our approval as University Supervisors.

Signature ........................................... Date .......... 9th March 2016

Dr. Franciscakah I. Wamocho
Kenyatta University
Department of Special Needs Education

Signature ........................................... Date .......... 15th March 2016

Dr. Syprine Otieno
Kenyatta University
Department of Zoological Sciences
DEDICATION

This work is dedicated to all the children living with physical disabilities. Special dedication goes to my mother and my nuclear family. My mother was the source of my determination for my pursuit of perfection in my performance and for my joy of giving. My family believed in me and gave the support and unselfish love needed to make my goals their goals. My children Juma and Mariam have been my respite and always will be the sources of my inspiration.
ACKNOWLEDGEMENTS

Thanks to Allah. This thesis would not have been possible without his blessings of health, ambition and the opportunity to know all the right people. I thank Allah for blessing me with the unique ability to transfer my knowledge and experiences into instrumental and practical support for those in need.

First and foremost, I would like to express my sincere gratitude to my major advisors Dr. Fransiscah I. Wamacho and Dr. Syprine Otieno for their support, encouragement, patience and time throughout my degree requirements, including this thesis. I also owe thanks to my peers, readers and type setter Mrs. Eunice Onyango for their constructive criticism in the completion of this project. Their commitment, expertise, and insight were valuable.

A great special gratitude is forwarded to my wonderful parents for their pioneering spirit and their unconditional trust in me that completed this thesis. Of course, nothing bald has been accomplished without the genuine participation of all the respondents that made this work a reality.

I will forever remain indebted to my entire family whose love, respect and kindness, have been the sources of my emotional support.
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<tr>
<td>APDK</td>
<td>Association for the Physically Disabled of Kenya</td>
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<tr>
<td>DEO</td>
<td>Sub-County Education Officer</td>
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<tr>
<td>EARC</td>
<td>Educational Assessment and Resources Center</td>
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<td>EARS</td>
<td>Educational Assessment and Resource Services</td>
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<td>ECDE</td>
<td>Early Childhood Development Education</td>
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<tr>
<td>EFA</td>
<td>Education for All</td>
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<td>IDEA</td>
<td>Individuals with Disabilities Education Act</td>
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<tr>
<td>IEP</td>
<td>Individualized Education Program</td>
</tr>
<tr>
<td>IFSP</td>
<td>Individual Family Service Plan</td>
</tr>
<tr>
<td>JCIH</td>
<td>Joint Committee on Infant Hearing</td>
</tr>
<tr>
<td>KISE</td>
<td>Kenya Institute of Special Education</td>
</tr>
<tr>
<td>LRE</td>
<td>Least Restrictive Environment</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Developmental Goals</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>OHI</td>
<td>Other Health Impairments</td>
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<tr>
<td>PWD</td>
<td>Persons with Disabilities</td>
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<tr>
<td>SNE</td>
<td>Special Education Needs</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package of Social Sciences</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organization</td>
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<td>WHO</td>
<td>World Health Organization</td>
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ABSTRACT
The purpose of this study was to evaluate the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. The study adopted a descriptive survey design to select the respondents. The study targeted 8 heads of schools, 8 related service providers, 8 teachers, 160 parents and 160 children with physical disabilities. Purposive sampling was used to select 4 schools selected due to availability of communities which represent the range of variations on categories of physical disabilities, 4 heads of schools, 6 related service providers, 4 teachers, 1 EARC officers while stratified random sampling was used to select 32 parents of children with physical disabilities totaling to 47 respondents. The researcher used questionnaires and interview guide to collect data. The data collected were coded and analyzed manually. From the study findings, it was established that majority of schools involved parents in guidance and counseling, making the children get exposed to early intervention services. A correlation together with regression analyses were done and established positive relationship between most early intervention services. The value of R square of .928 showed that the model could accurately predict the outcome of the dependent variable to an accuracy level of 92.8% as well as that the independent variables account for 92.8% changes in the dependent variable. From the ANOVA, the model is significant (P<.05, df=5) and the value of R-Square=0.187 implies that a unit change in availability of intervention services, programs offered in isolation or combination, rate of parent commitment, relationship with personnel and teachers, related professionals’ involvement in the programs and services led to an increase in the rate specific milestones for children after receiving early intervention services by 18.7%. The study concluded that early intervention services affected the development of children with disabilities, parental involvement impacted positively on early intervention services. The study recommended that the Government to increase publication and dissemination of information regarding the benefits of early intervention services for children with disabilities.
CHAPTER ONE
INTRODUCTION AND BACKGROUND

1.0 Introduction
This study aimed at evaluating the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. Presented in this chapter is background to the study, statement of the problem, purpose of the study, research questions, significance of the study, delimitations and limitations, assumptions, theoretical framework and conceptual framework of the study and operational definitions.

1.1 Background to the Study
In recent years, professionals have begun to focus their attention on infants, toddlers and preschoolers with special needs, not just children between ages 6 and 18 years. Meeting the needs of infants with special needs presents a myriad of challenges for educators as well as personnel in related services. However, professionals have a mandate to serve individuals across the lifespan (Hallahan, Kauffman & Pullen, 2009). It is during the early years that the brains of infants and young children have the greatest capacity to change and the earlier intervention begins, the more opportunity for the brain to change and produce desired outcomes (Raj-pal, 2005).

Early intervention typically refers to a comprehensive set of individualized services designed to meet the developmental needs of infants and young children and their families (Hebbeler, et al., 2007). It represents a consortium of services, not just educational assistance but also healthcare, social services, family support and other benefits like supportive services from related services.
personnel. The aim of early intervention is to effect positively the overall development of the child's social, emotional, physical and intellectual wellbeing (Gargiulo, 2009).

Physical disabilities are impairments that interfere with an individual's mobility, coordination, and communication, learning and personal adjustment. The primary distinguishing characteristics of children with physical disabilities are medical conditions, health problems or physical limitations which necessitate multidisciplinary cooperation in the provision of appropriate early intervention strategies to enhance the child's participation in day-to-day activities. According to Hallahan et al. (2009) children with physical disabilities are those whose physical limitations interfere with school attendance or learning to such an extent that special services, training equipment, materials or facilities are required. This calls for the provision of early intervention strategies by professionals from different fields to promote their academic participation and socialization.

Prior to Public Law 94-142, for persons with disabilities, services for infants and preschoolers with disabilities or delays were virtually unheard of. In many instances, parents had to seek out assistance on their own. Public schools did not routinely offer early intervention or other supports (Gargiulo, 2009). In the United States, PL 99-457(Education of the Handicapped Act Amendments)was passed in 1986; it required all states to provide early intervention services for all 3-5 year-old children with disabilities. A section of this legislation, Title 1: (Handicapped infants and toddlers) established a new discretionary program designed for infants and toddlers and their families. In addition to providing infants and young children with services, the family
needs were to be addressed in an Individualized Family Service Plan (IFSP) (Macloughlin & Lewis, 2005).

In Egypt, early intervention and rehabilitation is a multi-disciplinary programme for early intervention and rehabilitation services for the children with disabilities. The program works on three components, providing its services to three main groups: the child, the family and the community. The component of the child strives to provide comprehensive assessment and early intervention programs for the children, developing and improving their skills through education sessions, speech therapy, psychotherapy, and physiotherapy sessions (JCIH, 2002).

In Kenya, the government recognizes the importance of Special Needs Education (SNE) as an important sector for accelerating the attainment of Education for All (EFA) and the Millennium Development Goals (MDGs). Following WHO (1994) strategy for improvement of the quality of life for People with Disabilities (PWDs) in developing countries, many countries in Africa including Kenya established different support programmes for children with disabilities. A task force on Special Needs Education (SNE) (2003) notes that, the success of SNE services requires specialists from different fields. This indicates that teachers alone cannot lead to the success of SNE unless the other services are provided by specialists from various fields with skills needed in different areas.

Educational Assessment and Resource Services (EARS) was introduced in 1984 with the primary purpose of ensuring early identification, assessment, intervention and placement of learners with special needs (New Constitution of Kenya, 2010). There are 52 Sub-County-based Educational Assessment and Resource Centres (EARC) countrywide complemented by 345 sub-centres all
involved in assessment, early intervention and efforts to advise parents of children with disabilities. The main objectives of EARC are to equalize education opportunities for children with special needs and facilitate their full integration into the school system and their community (MoEST, 2008).

Brauner and Stephen (2006) found that a wide range of sectors are involved in and share responsibility for identifying children with disabilities, providing ECD services and guaranteeing support for their families by the use of a comprehensive approach. There are currently many successful projects focusing on early development for children with disabilities throughout the world often in combination with good. The comprehensive approach is used for appropriate care and support including: early identification; assessment and early intervention planning; provision of services; and monitoring and evaluation. A life-cycle approach to programming also provides a helpful framework to identify priority and sustainable interventions during the early childhood stage and to ensure a continuum of quality care, health services, protection and education as a child transitions from birth into and through the first grades of primary school (Brauner& Stephen, 2006). Community-based rehabilitation (CBR) has also been one of the major approaches to addressing the needs of children with disabilities in different parts of the country. This approach empowers children and their families by bringing together communities and government and non-government health, education, vocational, social and other services.

Despite all the strategies by the government, children do not experience necessary stimulation during the early years hence they may not be able to compensate for the critical loss (WHO, 2011). The situation has thus created a big discrepancy since a child who fails to get appropriate early intervention is unable to gain necessary life skills which help in increasing socialization and academic participation eventually becomes dependent on those around them. This is coupled
with range of biological and environmental factors that affect children’s development. These vary from: poverty; stigma and discrimination; poor caregiver interaction; institutionalization; violence, abuse and neglect; and limited access to programmes and services. Further efforts should be made to ensure community-based approaches, which involve parents, become an integral part of national health and education systems, policies and services. The government of Kenya provides funds and equipment to ensure that all children are in school. The government is committed to providing special education; however, the effective delivery of early intervention services to children with physical disabilities has not received adequate attention, thus necessitating the focus of the present study.

1.2 Statement of the Problem

Globally, the goal of early intervention is to affect positively the overall development of the child's social, emotional, physical and intellectual wellbeing by providing suitable support and services (Gargiulo, 2009). Ideally, early intervention services for infants and toddlers from birth through age 2 are to be delivered in "natural environments" where an Individualized Family Service Plan (IFSP) is devised for all recipients of early intervention services (Macloughlin & Lewis, 2005). A solution to the difficulty is to provide for effective early intervention programmes such as childcare centers, head-start, family day care providers and play groups that are serving typically developing children (Westling & Lise, 2000). Numerous comprehensive reports of early intervention research over the past four decades have shown that early intervention makes a difference in children’s development. Unfortunately, if children do not experience necessary stimulation during the early years, they may not be able to compensate for the critical loss (MoE, 2009). The government of Kenya has strived to come up with positive
policies with regards to early intervention. However, the implementation of these policies is in dire need.

According to the New Constitution of Kenya (2010), several constraints are faced in the EARCs, whose primary purpose is to ensure early intervention, assessment and placement. Since teachers posted to the centres are not trained in assessment, they conduct their services with knowledge acquired as trained special education teachers. Other professionals from other ministries like Health and Social Services are not always available. Problems cited in the Constitution are replicated in Kiambu County, Ruiru Sub-County which is the focus of the study. The situation has thus created a big discrepancy since a child who fails to get appropriate early intervention is unable to gain necessary life skills which help in increasing socialization and academic participation eventually becomes dependent on those around them. That is, there is a gap between the intents of the government of Kenya and the provision of early intervention services. This study therefore, is designed to evaluate the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya.

1.2.1 Purpose of the Study

The purpose of the study was to evaluate the influence of early intervention services on development of children with physical disabilities in primary schools in Ruiru Sub-County, Kiambu County, Kenya.
1.3 Objectives of the Study

The objectives of this study were to:

i. Identify early intervention services provided to children with physical disabilities in Ruiru Sub-County.

ii. Establish the parental involvement in early intervention services of children with physical disabilities in Ruiru Sub-County.

iii. Assess the participation of service providers in early intervention programmes and services in Ruiru Sub-County.

1.4 Research Questions

The study sought to answer the following questions:

i. What early intervention services are available to children with physical disabilities in Ruiru Sub-County?

ii. What is the level parental involvement in early intervention in Ruiru Sub-County?

iii. What is the role of service providers involved in early intervention in Ruiru Sub-County?

1.5 Significance of the Study

The significance of early intervention for children with physical disabilities could not be overemphasized, yet majorities of these children hardly satisfied their necessities. The study strived to create awareness to the relevant stakeholders and policy-makers on the gap that exists between early intervention for children with physical disabilities and the services provided to meet these needs. It is expected that the findings of this study may help to bring to light the real situation on the provision of early intervention services and what needs to be done by all who
handle children with physical disabilities. The study was necessary to provide advice to the community, families of children with physical disabilities, concerned authorities and other professionals who are involved with children with disabilities on the importance of early intervention which is to enhance academic participation and socialization. Early intervention helps to reduce some handicaps associated with the disability and helps the children to access the environment like their non-disabled peers thus becoming independent persons.

1.6 Scope and Limitation

1.6.1 Scope
The study confined itself to Ruiru Sub-County in Kiambu County where the focus was on educational institutions for children with physical disabilities and EARCs’ officers. It was limited to children with physical disabilities, parents of these children, relevant personnel, teachers and administrators of these institutions. The study investigated the early intervention services provided to children with physical disabilities.

1.6.2 Limitations
Kenya has over 19,000 public primary schools and only a small sample of four schools were selected for this study; for this reason the findings may not be generalized to all the public primary schools in the country. However, it provided an insight into the effects of early intervention services on children with physical disabilities in the public primary schools in the country in general.
1.7 Assumptions

i. Teachers were academically and professionally qualified.

ii. Schools selected for the study followed similar curriculum.

iii. Schools had enough teaching and learning resources for children with physical disabilities.

iv. Administrators, related personnel and parents were aware of the benefits of early intervention services to the children with physical disability.

1.8 Theoretical and Conceptual Framework

1.8.1 Theoretical Framework

The study was based on the work of Sigmund Freud (1978) on psychoanalytical orientation, a view that emotional or mental disturbance often had its roots in some traumatic experience of infancy or early childhood. Freud's theory on the cause of the adult's maladaptive behaviour can be traced to early traumatic event that the child/adult has repressed. Through psychoanalysis, this event is brought into a person's consciousness to be confronted and thus eliminated or put into perspective (Freud, 1978). In regard to early intervention effort, if infants and young children with disabilities or at-risk for developing a problem can be set on a positive developmental path, then the outcome for the child should be enhanced. However, if deviations from normal patterns go unchecked or become too pronounced, then subsequent outcomes are most likely to be negative. Similarly, John Locke's philosophy of "nurture" over "nature" postulates that, the child begins as a neutral being and the environment determines the direction and rate of child's future growth. Thus, the better the child's start during the early years, the greater the probability of
future success. Children experiencing poor beginnings might never be able to compensate for lost time or experiences (Dacey & Travers, 1996). Adoption of such a philosophy provides a strong pervasive support for the impact and importance of early intervention.

1.8.2 Relationship between Early Intervention Services and Development of Children With Physical Disabilities

Figure 1.1: Conceptual Framework

Source: Researcher's own conceptualization of the study problem
Figure 1.1 illustrates that children who receive early intervention services in their lives are able to gain access to the environment around them. The framework attempts to explain the provision of early intervention services such as Guidance and Counseling, assessment, medical services and other early childhood programmes. This is also accompanied by parental involvement and participation in early intervention by related service providers and professionals. Intervening variables are the benefits the child gets when accessing early intervention services which include proper diet, early stimulation and better environment. The children lose when they lack these services, while outcomes are the major benefits the children experience in the long run. This enables them to participate in life like their non-disabled peers and thus be fully retained in educational programmes. Eventually, the individual is able to become developed and hence self-reliant.
1.9 Operational Definition of Terms

**Assessment**: The systematic process of gathering educationally relevant information in order to make legal and instructional decisions about the provision of special services to children with disabilities.

**Children**: Refers to preschoolers who are below the age of puberty,

**Development Delays**: Conditions in which a child is behind in reaching developmental milestones.

**Development**: This is the growth or advancement of a child to come to an active or visible state or maturity.

**Disability**: Lack of capacity to perform an activity in a normal way.

**Due Process**: Procedural safeguard established to ensure the rights of children with disabilities and their families.

**Early Intervention**: Refers to a consortium of services, not just educational just educational assistance but also healthcare, social services and family supports necessary children’s development.

**Evaluation**: The process of making judgment on the status of early intervention services based on their influence on the development of children with physical disability.

**Individual Family Service Plan (IFSP)**: A document written for a child from birth to age 3 years and which outlines goals and objectives for a child's overall development and the priorities of the child's family and their needs as well.

**Intervention**: An introduction of an activity or programme designed to bring about changes for children with physical disabilities and their families.
Physical Disability: Disorder ranging from; orthopedic impairments, multiple disabilities, traumatic brain injury and other health impairments among children.

Screening: This is a brief assessment procedure designed to identify children who should receive more intensive diagnosis or assessment.

Special Education: Specially designed instruction to meet the unique needs of children with physical disabilities.

Special Needs: A treatment given to children whose development is unusual, that is, not following the recognized pattern seen in most.

Transition: The movement from one environment or service system to another. For the purpose of this study, it is the movement from early intervention programme to pre-school.

In summary, this chapter covered the background of study, statement of the problem, objectives of the study, research questions, significance of the study, scope and limitations of the study, assumptions of the study, theoretical and conceptual framework, and operational definition of terms. The next chapter reviewed relevant literature based on the global perspectives of early intervention services, parental involvement, and participation level and roles of related service providers in early intervention.
CHAPTER TWO
REVIEW OF LITERATURE

2.0 Introduction

This study aimed at evaluating the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. This chapter reviewed literary source based on the objectives of the study. These include global perspectives on: early intervention services provided to children with physical disabilities; parental involvement in early intervention services and participation of related service providers and professionals in early intervention programmes and services.

2.1 Early Intervention Services

Basically, early intervention services intend to minimize or totally take care of a disability. In most cases, children with physical disability have no problem with their cognitive ability and only need assistive services or devices to participate in daily activities like their non-disabled peers. There should be a clear vision before starting an intervention programme as to how success can be defined to avoid becoming unrealistic about what can be expected, and avoid down grading the actual accomplishments because they failed to meet some unrealistic level of expectation (Raj Pal, 2005).

The Infants and Toddlers with disabilities programme of individuals with disabilities Education Act (IDEA, Part C) was created in 1986 to enhance the development of infants and toddlers with disabilities, minimize potential developmental delay, and reduce educational costs to society by minimizing the need for special education services as children reach school age. Part C provides
early intervention (EI) services to infants and toddlers aged from birth to three years with developmental delays or medical condition likely to lead to developmental delay (Goode, et al., 2011). In the United States of America, more children are in need of services than are currently being served. In 2009, Part C served 348,604 children nationally, which represents 2.6% of the general population of children aged from birth to three years. However, research indicates that as many as 13% of birth to 3 year olds have delays that would make them eligible according to criteria commonly used by the states (Goode et. al., 2011).

Although the need for early interventions of disabilities is evident, the current state of routine screening practice in Kenya needs intensive training of screeners before more rigorous techniques are introduced (Muga, 2003). In an analytical comparative cross-sectional survey, Muga (2003), used two disabilities screening methods, multiphase sampling and multistage data collection procedures were employed. Qualitative research utilizing structured interview checklist was used for data collection. Results: out of the 399 children under study, 64 were disabled (50.5% male and 49.5% female). Educational Assessment Resource Centre services are a more definite case defining process of measuring the existence and degree of disability in children. It screens the children who are severely disabled leaving, the mildly disabled and medical conditions which when left untreated, could lead to possible disablement. There is still a wide disparity between the needs of persons with disabilities and provision of early intervention services in Kenya.

Similarly, the major policy initiatives of the Ministry of Education Science and Technology (MoEST, 2008) focus mainly on children over three years. The access plan of the Education Sector Strategic Plan (ESSP), (2005) on early childhood, for instance, centres on ECD centers
attended by children over three years. The second objective of ESSP is to develop a multi-sectoral approach to ECD, which may lead to identification of services catering for young children. But the missing policy link for children under three years has not been explicitly addressed. The Education Act drafted within the MoEST singles out 3 and above 5 year olds as its target group. The draft sessional paper No. 1 of 2005 states that the focus of the MoEST will be 4 and above 5 year olds and implies that the provision for children under three years will be done in partnership with other stakeholders (UNESCO, 2005). Likewise, many country policies emphasize the importance of partnerships. But mentioning this incontestable principle is not enough. Partnerships cannot work unless the respective roles and responsibilities of different actors are clearly specified, along with the lines of authority to enable partners to coordinate and harmonize their activities.

Although early detection and intervention are essential for successful habilitation and rehabilitation of persons with disabilities, they are not being covered by special education and other related services in developing countries (Kristensen, Baine & Thorburn, 1997 as cited in Elliot, 2006). Accurate assessment is an important starting point for better understanding and anticipation of needs of children with disabilities and their families. Assessment goals are to obtain accurate information about a child in order to assist parents, health-care providers and teachers to better understand, plan for and support the development of the child. Assessment should be linked to intervention and should be an ongoing process of systematic observation and analysis (UNICEF, 2012). The Kenya government has established Educational Assessment and Resource Services (EARS) whose primary objective is to assess and plan for early intervention services.
Derrington, Shapiro and Smith (1999, cited in Downing, 2010) reported that approximately one-fifth of all infants born annually are at risk for developmental in Hawaii, US. Of these, approximately one-fourth will manifest significant delays at age 5. An additional 20-30% of each birth cohort will require special education services. Early intervention is a term commonly used to encompass a system of services delivered to children with or at risk for developmental delays between 0-3 years. These services include physical, occupational, psychological and speech therapy, family support, counseling and education. Benefits of early intervention have been repeatedly demonstrated through quality research studies. A 1990 evaluation of specific motor training for children with Down syndrome by Drowning (2010) involved 20 children. The treatment group (n\textsubscript{TX}=14) received intervention from 3 months of age until they could walk. The treated children performed better than control group (n\textsubscript{CNTRL}=6) on four areas: gross motor, fine motor, kinesthetic perception but tactile perception, muscle tone was not affected. According to Ndurumo (1993, as cited in Skelton & Rosenbaum, 2010), intervention strategies should include training in self-care skills. These skills include the ability to feed, bathe, groom and cloth oneself. Such skills are important in preparing a child with physical disabilities to lead an independent life.

Similarly, Guralwick (1991, as cited in Kenny & McGilloway, 2007) mentions the UCLA Young Autism Project that has been empirically studied. At the time treatment began, the children who had a mean age of 35 months in the experimental group received one-to one intervention 40 hours a week for 2 to 3 years. It was this article that started the belief autistic children required at least 40 hours a week. Kenny & McGilloway (2007) used the term "normal functioning" in this article and used IQ and class placement as outcome variables in this study. In a follow up study
of the children, aged between 9 and 19 years of age, the experimental group continued to have significantly higher IQs and better scores than the control group.

When parents are told about their child's disability or when they gain new and unexpected information at a later time (for example a pre-scholar begins to experience mild seizures), they may want repeated opportunities to speak with a professional to discuss the meaning or implications of this information. The parent will find the services of a Counsellor very crucial at this time (Pierpangelo & Giuliiani, 2008). The literature presents studies that only outline what should be done to young children who extremely need to be catered for but fail to show whether these early intervention services are provided, and if so, to what extent are they offered to children towards their development? It is against this perspective that this study intended to identify and investigate the effects of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County.

2.2 Parental Involvement

More attention to elements within the home environment is essential to ensure maximum impact of early intervention (Dukes & Smith, 2007). Parents and community are important partners in the whole education process of SNE. Parents ensure birth registration, safeguard children's rights and link the child to primary services. Critically, parents and community are primarily responsible for early identification of disabilities, assessment and intervention (New Constitution of Kenya, 2010). The tenets of family-centered philosophy include focusing on entire family unit, as opposed to solely on the child; addressing families' needs, goals, and priorities;
developing individualized intervention plans; and respecting families' unique strengths and capabilities (Trivette & Dunst, 2005).

According to Macloughlin & Lewis (2005), an Individualized Family Service Plan (IFSP) is a requirement devised for all recipients of early intervention service. The components of IFSP must include a statement of the child's present level of physical, cognitive, communication and social or emotional and adaptive development. Goals are chosen by the families through the annual or biannual IFSP, which evolves from a meeting and staff members talk together about current concerns as well as celebrating achievements (Pagliano, 1999, as cited in Shonkoff & Meisels, 2002). The current study advocated for full participation by parents in early intervention services of their child.

A study conducted in the United States by Bailey, Hebber, Spiker and Scarborough (2005), to find out the outcomes of parental involvement in early intervention revealed that, at the end of early intervention, most parents felt competent in caring for their children, advocating for services and gaining access to formal and informal supports. A nationally representative sample of 2556 parents in 20 states completed a 40 minute telephone interview on or near their child's birthday. The parents were generally optimistic about the future and about 80% of them believed that their family was better off as a result of early intervention. These findings strengthened the need for the current study to identify factors that were most likely to lead to successful outcomes of all families so that maximum benefits could be realized for children with physical disabilities and their parents.
Mcwilliam (2010) developed a model that emphasizes five components understanding the family ecology through eco-maps: functional needs assessment through a routine based interview; trans-disciplinary service delivery through the use of a primary service provider; support based home visits through parent consultation and collaborative consultation to child care through individualized intervention routines. These services are to be provided in the child's natural setting, preferably at a local level' with a family oriented and multi-dimensional team approach. Early childhood intervention may be provided within a centre- based program (such as Early Head-start in the United States), a home based program (such as a portage in Britain) or a mixed program (such as Life start in Australia).

At the pre-school level, Hornby (2005) cites the Perry Pre-school Project which included one and a half weekly visits for all children in the project and their mothers. Children who participated in the programme had significantly higher IQs than control group children throughout their first two years at school. Although IQ differences disappeared thereafter, follow-up study revealed that the programme produced important long-term benefits. These included increased academic achievements, decreased need for special education placement, less unemployment and fewer contacts with criminal justice system. Joint target-setting can strengthen relationships between parents and practitioner as well as proving hugely beneficial to the child. With their expert knowledge of their child, parents have much to contribute to planning these targets (Dukes & Smith, 2007).

In New Zealand, early intervention support is available for children from the time they are born until they are settled in school. Concerns about a disability should be discussed with the child's
parents or guardian as their consent is required before an early intervention team can work with the child. The early intervention team works collaboratively with families, educators and specialists from other agencies to strengthen and extend children's educational learning (MoE, 2002). Specifically, early intervention programs in which planned level of parental involvement was extensive yielded a mean effect of .70 in comparison to .03 for those studies in which the planned level of parental involvement was doubtful or non-existent. Similarly, if programs involved parents and children together in the intervention, a mean effect size .74 was achieved. For those programs in which parents or children were the focus of intervention separately, the mean effect was only .44 (Guralwick, 1991 as cited in Kenny & McGilloway, 2007). The concept of community participation and quality of life for PWDs is paramount to the delivery of quality health and social care services (Anderson, Bakirtzief, Brakel, Mutarlikar & Raju, 2006).

In summary, the literature presented therefore strongly supports parental involvement in general. However, none of the studies presented in the literature failed to measure the relationship between the parent’s involvement in early intervention services and child development. Instead, all researchers supported the notion that development of intervention programs would be of greater value if conducted during the first five years of the child's life. In the studies, the interventions were directed towards increasing the parenting skills to boost their child's development. It is against this backdrop that the current study intends to establish parental involvement in early intervention of children with physical disabilities in Ruiru Sub-County, Kiambu County.
2.3 Related Service Providers

Pagliano (cited in Shonkoff & Meisels, 2002) posits that an early intervention team generally consists of teachers with early childhood education training, special education specialists, speech and language pathologists, physical therapists, occupational therapists and other relevant support staff. A key feature of early childhood intervention is the trans-disciplinary model in which members discuss and work on goals even when they are outside their discipline. Research evidence indicates that teamwork results in more effective and efficient services than those provided individually (Cook, 1996 as cited in Artken, Bakker &Branscombe, 2009; Enderby, 2002).

Carey, Crocker, Coleman, Elias & Feldman (2009) noted that the role the pediatricians take in relation to early intervention services is variable and still evolving, but are a central part of multidisciplinary team serving the child and family and often act as the gateway for referrals, continuity for the family across the lifespan from early childhood through adolescence. Community pediatrics work with children and families in a holistic way, ensuring liaison between educators and other professionals and agencies as needed. One area of community pediatrics is neurodisability. Surgical procedures such as limb straightening can allow individuals with restricted growth or with malformed joints and legs to be more mobile and avoid any worsening effects of the condition (Hallahan, et al., 2009). In additions, occupational therapists, physiotherapists and speech-language pathologists provide services to help children achieve their highest attainable level of participation within home, preschool, childcare, and other community settings (Aitken, Bakker &Branscombe, 2009). In accordance with the World Health Organization's International Classification of Functioning, Disability and Health (2001), therapy
services consider the dynamic interaction between health conditions, environmental and personal factors that influence the child's functioning. However, in Kenya, studies show that there is a significant shortage of well-trained professionals with expertise in serving very young children with behavioural or emotional problems, that negatively impact early learning, social interactions, and the overall well-being of an estimated 9% to 14% of children aged birth to five (Brauner & Stephene, 2006). Brauner and Stephene (2006) further note that that at 9 months of age, only 9% of children who have delays that would make them eligible receive services; at 24 months of age only 12% of children who would be eligible receive services.

Interactions among early intervention providers, caregivers and children are an important feature for services delivery. However, recommended practice goes beyond simply involving caregivers in sessions. Caregivers must be explicitly taught to adopt the strategies being used in the session (Colvas, Sawyer & Campbell, 2010). In an interview, 31 early intervention providers were asked to describe ideal and typical home-visits (Fleming, Sawyer, & Campbell, in press as cited in Colyvas et al., 2010). When describing ideal visits, most participants described working with and teaching the caregiver which included using teaching techniques such as coaching, modeling, providing explanations and problem solving. In a comparable study, WHO (2001) noted that, family support professionals assist families to acquire parenting, child development and advocacy skills and address factors which may affect their capacity to care for their child by focusing on empowering and enhancing family functioning, which supports the effectiveness of therapeutic interventions.

In the US, teachers and specialists in early intervention advice on inclusive education of children with special needs in the institutions, they often have extensive experience or specialist
qualifications in working with children with particular needs. Some are involved in direct teaching while others fulfill a more advisory role (Dukes & Smith, 2007). Recent studies focusing specifically on pedagogic knowledge in early learning domains in US, have broadened the knowledge base about the impact of quality on children's development. Researchers note that quality rich stimulating environment is compromised when staff have inadequate or incorrect content knowledge and miss opportunities to Scaffold learning and extend children's thinking and problem solving (Markin, Conant, Killgore, & Yoshioka, 2002; Rowe & Bibby, 2006). Comparable to Kenya, more so in Kiambu, Ruiru Sub-County, the Early Education learning teachers are rarely trained in special needs education thus creating a gap in implementation of early intervention services. The current study therefore attempted to assess the participation of service providers in early intervention programmes and services in Ruiru Sub-County.

2.4 Summary and Research Gaps

From the reviewed literature, early intervention services promote academic participation and socialization of children with physical disabilities. Ziviani, Feeney, Rodger & Watter (2010) undertook an extensive literature review of effectiveness of early intervention programs for children with physical disabilities. The literature presented strongly supports parental involvement in general. However, none of the studies presented in the literature failed to measure the relationship between the parent’s involvement in early intervention services and child development. Instead, all researchers supported the notion that development of intervention programs would be of greater value if conducted during the first five years of the child's life. In the studies, the interventions were directed towards increasing the parenting skills to boost their
child's development. It is against this backdrop that the current study intends to establish the parental involvement in early intervention of children with physical disabilities in Ruiru Sub-County, Kiambu County.

Even though several studies show that early interventions are provided by various bodies, the inadequacy of the essential early intervention services in Kenya is the evidence of beggars with physical disabilities in the streets of major towns such as Thika and Nairobi City. It is against this perspective that this study intended to identify and investigate the effects of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County. In Kenya, early education learning teachers are rarely trained in special needs education thus creating a gap in implementation of early intervention services. The current study attempted to assess the participation of service providers in early intervention programmes and services in Ruiru Sub-County.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction
This study aimed at evaluating the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. This chapter presents methods that were used to carry out the study. It focuses on research design, variables, location of the study, target population, sampling techniques and sample size, research instruments, piloting, validity and reliability, data collection techniques and data analysis, logistical and ethical considerations.

3.1 Research Design
Descriptive survey design was the choice in this study since the purpose of the study was to observe, describe and document the aspects of the state of affairs as it naturally exists. According to Kombo & Tromp (2006), descriptive studies are not restricted to fact finding, but may often result in formulation of important principles of knowledge and solution to significant problems. They are more than just a collection of data. They involve measurements, classification, analysis, comparison and interpretation of data. The descriptive survey design was be suitable for this study because it determined and reported the way things were. It also enabled the researcher to obtain pertinent and precise information concerning the status of physical disability as a phenomenon among the children.
3.2 Variables

3.2.1 Independent Variables
The independent variables in the research included early intervention programmes and services; parents and families involvement in implementation of early intervention programmes and services; related professionals who offer services to children with physical disabilities and their families. These factors influenced the holistic development of PWDs so as to enhance their self-esteem and self-reliance to integrate them in the community.

3.2.2 Dependent Variables
The dependent variable was development of children with physical disability; was either positive or negative as determined by the independent variables. Thus, if children had sufficient access to the independent variables, then, they participated in different areas of life like their non-disabled peers. However, if the opposite was true, then the children were dependent on people around them thus denied them the opportunity of being self-reliant.

3.3 Location of the Study
The researcher carried out the research in Ruiru Sub-County in Kiambu County. It is 30km from Nairobi, the capital city of Kenya. Ruiru Sub-County is among the Sub-Counties that were created from the larger Thika Sub-County. The choice of Ruiru Sub-County was largely influenced by availability of different categories of children with physical disabilities that enabled the researcher to sample various categories. Educational reports also reveal that Kiambu County faces several limits based on adequacy of trained special education teachers and provision of quality early intervention services to increasing number of children with disabilities.
Being familiar with the research site also helped in gaining acceptance and reduced chances of hostility and indifference towards the researcher bearing in mind to avoid biasness.

3.4 Target Population

The study targeted schools in Ruiru Sub-County that have children with physical disabilities. The study population consisted of Eight (8) personnel who provided various services in early intervention programmes and services, eight (8) administrators who were the custodians of these children and oversee the coordination of activities carried out in schools, eight (8) teachers who provided academic services, two (2) EARC officers who coordinated activities and resources between government and beneficiaries and one hundred and sixty (160) parents of these children with physical disabilities. The target population was one hundred and eighty six (186) respondents from which the sample size was drawn.

3.5 Sample Size and Sampling Techniques

3.5.1 Sample Size

To get a representative sample, Ruiru-Sub-County was subdivided into 4 Zones and a school was selected per Zone using stratified sampling technique. The study sample size comprised of four (4) school administrators and the selected 4 schools had a range of categories of children with physical disabilities, one (1) teacher from each of the selected schools who handle children with physical disabilities of age 7 years and above in class four to eight giving a total of four (4) teachers, six (6) related personnel, one (1) EARC officer and thirty two (32) parents of these children. A total of 47 participants were selected for this study. This number represented more
than 20% of the teachers and parents of these children in the four schools, which was adequate to contribute a sample in a study of this nature (Cooper & Schindler, 2006).

3.5.2 Sampling Techniques

The study used purposive sampling to select four schools having different categories of children with physical disabilities. Stratified random sampling was used to select parents of children with physical disabilities to cater for gender and selected as respondents because they were judged to possess important information that was relevant to the study. Teachers and EARC officer were purposively selected on the basis of experience with children with disabilities. Assistive personnel were purposively selected since they directly served these children. School heads were purposively selected since they were in charge of the school administration and provided information on early intervention programmes and services in their schools. Target Population and Sample Size were summarized in Table 3.1.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Target Population</th>
<th>Sample Size</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>Head teachers</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Teachers</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Related personnel</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>EARC officers</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Parent/Guardian</td>
<td>30</td>
<td>130</td>
<td>160</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39</strong></td>
<td><strong>147</strong></td>
<td><strong>186</strong></td>
</tr>
</tbody>
</table>

The children with physical disabilities in target population included all categories: orthopedic impairments, multiple disabilities, traumatic brain injuries and other health impairments.
3.6 Research Instruments

The researcher used three instruments for data collection which included questionnaires and interview guide.

3.6.1 Questionnaires

The researcher used the questionnaire because it enabled her collect a large amount of data within shortest time possible. Questionnaires which consisted of open-ended questions were used to gather information on types of early intervention programmes and services, related personnel providers participation, parental involvement in the programmes and facilities available for these children with physical disabilities. Two sets of questionnaires were used in the study; one set had 15 items. Different questionnaires were designed for respective respondents and administered to the related personnel who included social workers, physiotherapists, occupational therapists, Counsellors, pediatrics, EARCs officers. The second set of 16 items was administered to the relevant teachers.

3.6.2 Interview Guide

A semi-structured interview guide with open-ended questions made it possible to obtain the data required to meet the objectives of the study by asking questions and then probing more deeply to collect in-depth information that was relevant to the study. The interview guide had 15 open-ended questions which were differently designed according to the respective respondent. The interview guides were conducted on the school-heads and parents to children with physical disabilities. This took duration of one day per school. The interview guides were utilized by the researcher to ensure direct and intensive investigation form the head teachers and parents.
3.7 Pilot Study

The researcher prior to visiting the schools of interest pre-tested the instruments in the neighbouring Thika Municipality at St. Patrick's School which had children with physical disabilities. It is 30km from Ruiru Sub-County. The researcher used both questionnaires and interview guides as instruments of study. The researcher piloted the instruments on a small representative sample of nineteen (19) respondents with similar characteristics to the research sample. This included one (1) school head, two (2) special needs teachers, three (3) related service providers, one (1) EARC officer, six (6) children with physical disabilities and six (6) parents of these children. Children with physical disabilities were selected because they were the key respondents who could provide their life experiences on the basis of early interventions provided. The purpose of piloting was to find out any weaknesses in the instruments, check for clarity of items or questions and to elicit comments from respondents that assisted in improving or modifying the instruments. Using the results from the pilot study, irrelevant and repeated items were completely deleted from both questionnaire and interview schedule by the researcher.

3.7.1 Validity

The pilot study enhanced the validity of instruments that was intended for this study. To further establish the validity, the researcher discussed the validity of the instruments with the supervisors at Kenyatta University whose suggestions and advice paved way forward for the researcher before data collection was done.

3.7.2 Reliability

The researcher established the reliability of the instruments by using the pilot study. The questionnaires were administered to the selected subjects in the pilot study who did not
participate in the main study. The responses were analyzed and the same questions were given to
the same respondents after two weeks and the answers scored manually. The correlation
coefficient (r) of the two tests was computed using Spearman’s Rank Order correlation
coefficient. The following formula was employed.

\[ r = \frac{N \sum XY - (\sum X)(\sum Y)}{N \sum X\sum Y - (\sum X)^2} \]

Where;  
\( X = \) score on test 1  
\( Y = \) scores on test 2  
\( \sum X = \) Sum of X Scores.  
\( \sum Y = \) Sum of Y Scores.  
\( \sum X^2 = \) Sum of Squares of X Scores  
\( \sum Y^2 = \) Sum of Squares of Y Scores  
\( \sum XY = \) Sums of Product X and Y scores  
\( N = \) Sum of paired scores  
\( r = \) Correlation coefficient

After the calculation, a correlation of 0.75 for the two halves was obtained hence the instruments
were considered reliable (Orodho, 2008).

3.8 Data Collection Procedure

The researcher first obtained a research permit from National Commission for Science,
Technology and Innovation (NACOSTI) following the introduction letter obtained from the
graduate school. This permit was presented to District Education Officer- Ruiru Sub-County who
wrote a covering letter to all the sampled schools to request them to allow the researcher to
collect data and information from their schools. The study took a period of 2 weeks. On the first week of the study, the researcher booked appointments with the head teachers of the sampled schools and notified them of the purpose of the study. During the second week, the researcher personally visited the sampled schools on the appointed days and dates to administer the questionnaires to the teachers and related personnel. Administrators were also interviewed on the same day. Information from semi-structured interview guides was recorded through note taking. The respondents were given ample time to fill in the questionnaire before collection on the same day. On the second day, parents were interviewed after which the researcher collected filled questionnaires from teachers and related personnel with the help of two trained research assistants. The quantitative and qualitative data collected were then stored safely before data analysis.

3.9 Data Analysis

Data collected was analyzed using descriptive statistics. Data analysis employed both qualitative and quantitative procedures. For qualitative data analysis, the researcher went through interview and guide questions, analyzed and coded the transcripts according to themes. Thus the findings were presented using graphics and direct quotations to show relationships between variables. Quantitative data analysis was derived from closed-ended questions. The questionnaires which were completely filled were edited, coded, entered into the computer and analyzed descriptively with the aid of Statistical Package for Social Sciences (SPSS). Multiple regression analysis was done to show the relationship between early interventions provided, parental involvement, participation of related professionals and the rate specific milestones for children receiving early
intervention. The following linear regression equation was used to compute the relationship between the variables:

\[ Y = X_1 + X_2 + X_3 + X_4 + X_5 + e, \]

where;

- \(Y\) - Milestones accomplished by child,
- \(X_1\) - frequency of professional involvement,
- \(X_2\) - parent commitment,
- \(X_3\) - parent relationship with personnel,
- \(X_4\) - programs offered in combination,
- \(X_5\) - child exposure to intervention, and
- \(e\) - Error

The data was presented in frequency tables, charts, and graphs, as well as percentages to give a clear visual presentation.

### 3.10 Logistical and Ethical Considerations

The researcher obtained an introduction letter from Graduate School of Kenyatta University, which was submitted to the National Council for Science and Technology where a permit to conduct the study was issued. The researcher established rapport and assured the respondents the information from the research was confidential and would be only used for the purpose of research work. Participants were informed not to write their names on the research instruments to ensure anonymity. For consent, participants were requested to sign a consent note indicating their willingness to participate in the study.
In summary, this chapter described the methods used during the data collection based on research design, variables, location of the study, target population, sampling techniques and sample size, research instruments, piloting, validity and reliability, data collection techniques, data analysis and ethics. The next chapter showed the analysis, presentation and discussion of the collected data.
CHAPTER FOUR
PRESENTATION, FINDINGS AND DISCUSSIONS

4.0 Introduction
This study aimed at evaluating the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. This chapter presents the data analysis and discussion of the study findings. The data was presented in the form of frequencies and percentages using pie-chart, graphs and frequency tables. The data presented covers response rates for the questionnaires and interviews. The objective of the study was to establish the effectiveness of early intervention services on development of children with physical disabilities in Ruiru Sub-County. Results on demographic characteristics of these respondents were presented in the first section of the chapter. Section two of the chapter presents the findings based on the following themes: early intervention services available; parental involvement; and role of related services providers and professionals.

4.1. Response Rate
The study administered questionnaires and interview schedules to the parents of the children with disability, teachers, administrators and related personnel from the target population in collecting data with regard to the influence of early intervention in development of children with disability. The questionnaire response rate results are shown in Figure 4.1.
Figure 4.1: Response Rate

From the study, all the 47 respondents of target respondents participated in the study leading to 100% response rate. The response rate composed of 32 respondents from parents and guardians of the children with disability, 4 head teachers of the special schools, 4 teachers, 6 related personnel and 1 EARC officer. This response rate was good and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

4.2 General and Demographic Characteristics of Respondents

A demographic analysis of the respondent was undertaken; this was to ensure that the respondents were representative and minimize any risk of bias.

4.2.1 Distribution of Respondents by Gender

A descriptive analysis of the gender of the respondents by different groupings analyzed was done and presented in Figure 4.2.
The findings in Figure 4.2 show that half (50%) of the head teacher respondents were males with the remaining (50%) being females. Thus it can be noted that both males and female head teachers were equally distributed. Based on the gender distribution of teachers, it was indicated that female respondents made up 75% of the respondents whilst males made up 25% of the respondents. The study therefore noted that, female teachers were more than the male teachers.

The findings in Figure 4.2 also revealed that 33% of the related personnel were male while 66.6% were female. This implied that gender was generally well spread among the professionals working in care giving of children with disabilities. Where there is an interesting observation is in the family setting where more females were involved in care giving than males and the difference is by a big margin. Finally, out of the 32 parents who participated in the study less than a quarter were males while over three quarters were females. This means that 19% of the parents who participated in the study were males while 81% of the parents were females.
4.2.2 Academic Qualification of Respondents

Local Community groups consist of members with different academic qualifications. This difference might contribute to differences in the responses given by the respondents. The study therefore sought to establish the highest academic qualifications attained by the respondents. The responses on this question are depicted in the figures and tables below.

![Academic Qualification of the respondents](image)

**Figure 4.3: Academic Qualification of Respondents**

From Figure 4.3, the findings show that majority (36%) of the respondents studied to the college level, 24% attained secondary level, 19% attained University education and 15% attained primary school level of education. However, only 6% of the respondents studied to a post graduate level.
4.3 Early Intervention Services Available to Children with Physical Disabilities

In an analysis to determine the early intervention services available to children with physical disabilities. This analysis sought to investigate the early intervention services offered by the different schools to children with physical disabilities as well as the childhood programs the school has included in their curriculum.

To achieve this, the study first sought to find out the number of students in the respective sampled schools the results showed the following:

<table>
<thead>
<tr>
<th>Schools</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mwiki</td>
<td>78</td>
<td>29.4</td>
</tr>
<tr>
<td>Gitothua</td>
<td>51</td>
<td>25.8</td>
</tr>
<tr>
<td>Thome</td>
<td>33</td>
<td>16.7</td>
</tr>
<tr>
<td>Magomano</td>
<td>36</td>
<td>18.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>198</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings indicate that Mwiki had the highest number of children with disabilities having 78 children followed by Gitothua with 137 children. The findings also revealed that Magomano had 36 children while Thome 33 children with disabilities. It is thus noted that a total of 198 children with disabilities were represented in this study.
### Table 4.2: Percentages of Schools offering Intervention Services

<table>
<thead>
<tr>
<th>Whether guidance and counseling is offered in school</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid yes</td>
<td>4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whether medical intervention services are offered in schools</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid yes</td>
<td>2</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>no</td>
<td>2</td>
<td>50.0</td>
<td>50.0</td>
<td>100.0</td>
</tr>
<tr>
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<td>100.0</td>
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<table>
<thead>
<tr>
<th>Whether assessments are offered in schools</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>75.0</td>
<td>75.0</td>
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<td>25.0</td>
<td>100.0</td>
</tr>
<tr>
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<table>
<thead>
<tr>
<th>Whether physiotherapy services are offered in schools</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
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<td>75.0</td>
<td>75.0</td>
<td>100.0</td>
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<tr>
<td>Total</td>
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<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whether occupation therapy services are offered in schools</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid yes</td>
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<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>no</td>
<td>2</td>
<td>50.0</td>
<td>50.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whether headstart programs are offered in schools</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid yes</td>
<td>4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the table above we note that all the four schools offer guidance and counselling services as well as head start programs, however only 25% of the schools offer physiotherapy services to the children. Additionally, 50% of the schools offer medical intervention services and occupational therapy services, lastly 75% of the schools offer assessment services as an early intervention service to the disabled children.
From the interview schedule a descriptive analysis was undertaken to determine the early intervention services employed by parents. Parents were asked to state whether their children had had early intervention services. The following findings were depicted as presented in Figure 4.4.

![Pie chart showing percentage of parents whose children have early intervention services](image)

**Figure 4.4: Percentage of parents whose children have early intervention services**

Findings from figure 4.4 revealed that 68.75% of the parent respondents have an intervention service available for their children while only 31% of the parents have no intervention services available to the children. An analysis conducted to determine the ages of the children when their parents started exposing them to early intervention services. The results were shown in Figure 4.5.
Findings from figure 4.5, the study revealed that majority (37.5%) of respondents started early intervention mechanisms for their children at an age of 4. 18.75% started exposing their children to early intervention mechanisms at an age of 5 and 3, 9.38% started exposing their children to intervention mechanisms at an age of 2 while slightly over 15% exposed their children at an age of 6. We therefore note that a majority of the parents exposed their children to intervention mechanisms at an average age of 4.

A person correlation analysis conducted to establish whether there existed any relationship between the interventions mechanisms employed revealed the following.
Table 4.3: Correlation between intervention services offered to children

<table>
<thead>
<tr>
<th>Correlations</th>
<th>has assessment been offered to your child</th>
<th>have headstart programs been offered to your child</th>
<th>have guidance and counseling been offered to your child</th>
<th>has portage been offered to your child</th>
<th>has ADL been offered to your child</th>
<th>has medical intervention been offered to your child</th>
</tr>
</thead>
<tbody>
<tr>
<td>has assessment been offered to your child</td>
<td>Pearson Correlation</td>
<td>.864**</td>
<td>-.062</td>
<td>.108</td>
<td>.094</td>
<td>-.062</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.736</td>
<td>.557</td>
<td>.607</td>
<td>.736</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Have headstart programs been offered to your child</td>
<td>Pearson Correlation</td>
<td>.864**</td>
<td>1</td>
<td>-.122</td>
<td>.271</td>
<td>.005</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.507</td>
<td>.133</td>
<td>.977</td>
<td>.507</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>have guidance and counseling been offered to your child</td>
<td>Pearson Correlation</td>
<td>-.062</td>
<td>-.122</td>
<td>1</td>
<td>.051</td>
<td>-.194</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.736</td>
<td>.507</td>
<td>.782</td>
<td>.288</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>has portage been offered to your child</td>
<td>Pearson Correlation</td>
<td>.108</td>
<td>.271</td>
<td>.051</td>
<td>1</td>
<td>-.010</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.557</td>
<td>.133</td>
<td>.782</td>
<td>.959</td>
<td>.644</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>has ADL been offered to your child</td>
<td>Pearson Correlation</td>
<td>.094</td>
<td>.005</td>
<td>-.194</td>
<td>.010</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.607</td>
<td>.977</td>
<td>.288</td>
<td>.959</td>
<td>.045</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>has medical intervention been offered to your child</td>
<td>Pearson Correlation</td>
<td>-.062</td>
<td>-.122</td>
<td>.855**</td>
<td>-.085</td>
<td>-.357*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.736</td>
<td>.507</td>
<td>.000</td>
<td>.644</td>
<td>.045</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).
The finding from table 4.3 shows the relationship between the intervention services parents have exposed to their children, who have physically disabilities. It was noted that there exists a positive correlation between children exposure to assessments and head start programs with the Pearson coefficient being 0.864 (P<.05) this implies that a majority of the parents who have exposed their children to head start programs have also exposed them to assessment intervention services. Additionally, there also exists a positive Pearson correlation (0.855, P<.05) between parents who have exposed their children to guidance and counseling and parents who have exposed their children to medical intervention services. This implies that a majority of the parents who have exposed their children to medical intervention services have also exposed their children to guidance and counseling as part of the intervention services. Lastly, there exists a negative Pearson correlation between parents who have offered their children as part of intervention mechanisms and those who have exposed them to medical intervention services (P<.05). This shows that majority of the children who have been exposed to medical intervention services have not been exposed to full intervention mechanism.

These findings are in concurrent with the study conducted by Hornby (2005) cites the Perry Preschool Project which included one and a half weekly visits for all children in the project and their mothers. Children who participated in the programme had significantly higher IQs than control group children throughout their first two years at school. Although IQ differences disappeared thereafter, follow-up study revealed that the programme produced important long-term benefits. These included increased academic achievements, decreased need for special education placement, less unemployment and fewer contacts with criminal justice system. Joint target-
setting can strengthen relationships between parents and practitioner as well as proving hugely beneficial to the child.

### 4.4 Parental involvement in early intervention services of children with physical disabilities

A qualitative analysis conducted to establish how the administrators involved the parents of the children in the programs and services revealed that a majority of the schools involved parents by inviting them to guidance and counseling sessions as well as sharing reports by several other professionals with them. In addition, the administrators recorded the interaction that existed between them and the children as very good as shown in the figure below.

![Figure 4.6: Parents participation in early intervention services](image-url)

**Figure 4.6: Parents participation in early intervention services**

From the figure 4.6, it was found that 75% of the administrators rated the participation of the parents as very good while only 25% rated the participation of parents as fairly good; we therefore conclude that parent participation was very good.
Parents involved in the study, additionally stated that they were involved in the programs and services provided to their children through frequent and regular sharing of information between them and the schools as well as constant reporting of any progress and set-backs in the overall performance of their children. In addition a descriptive analysis conducted to establish the major challenges parents experience when becoming involved in early intervention services for their children revealed the following:

**Figure 4.7: Challenges parents face when becoming involved**

Figure 4.7, majority (43.75%) of the parents are faced with the challenge of lack of proper guidelines concerning the early intervention services, 25% are faced with the challenge of lack of follow up by the professionals while 18.75 are faced with the challenge of lack of enough special needs education teachers, lastly 6.25% of the parents cite lack of adequate equipment and insufficient related personnel as their biggest challenges.
A further descriptive analysis was conducted to establish the progress of the children after starting to use early intervention services and programs. The study revealed the following findings.

![Pie chart showing improvement in performance of children after receiving early medical intervention]

**Figure 4.8: Improvement in performance of Children after receiving early medical intervention**

The study revealed that majority of the parents (63%) are of the opinion that their children have improved after starting to use early medical intervention services, 28% were of the opinion that their children have slightly improved while only 9% stated that there was no improvement. Since over 9% of the parents noted some kind of improvement, early intervention mechanisms had a positive effect on the children’s progress.

A descriptive analysis was done to establish the relationship the related personnel had with the parents of the children they attended. The following results were revealed.
The study noted that majority (71.43%) of the related personnel relate very well with the parents of the children with disabilities while only 14.29% rated their relationship with the parents as either fairly well or well, we therefore note that the related personnel relate very well with the parents of the children.

To establish the involvement of parents on the programs and services the children were involved in, descriptive analysis was conducted to find out their level of commitment the results indicated the following:

Figure 4.9: Relationship between related personnel and parents of disabled children
Figure 4.10: Level of commitment by parents of children with disability

From the study findings, it was noted that majority of the parents, slightly above 85% are very committed to the progress of their children while only 14.29 percent are not committed to the progress of their and programs their children are involved in.

Further, a descriptive analysis showing the milestones accomplished by the children after being exposed to early intervention services revealed the following:
Figure 4.11: Milestones accomplished by the children

From the study findings, majority of the respondents 71.43% greatly improved after being exposed to early intervention services, 14.29% slightly improved or barely improved. Since a majority of the children recorded some signs of improvement, we note that the early intervention services had positive impact on their overall progress. Findings from the interview schedule revealed that all parents agreed that early intervention had a positive influence on academic performance among their children. The findings also showed that early intervention positively contributed towards the development of children’s social life; this was due to the fact that the level of stigmatization was lowered in the long-run. Through early intervention, parents also agreed to some extent that children could equally access necessary facilities and hence could attend schools. These findings coincided with the findings of the study by Gargiulo (2009) who argued that aim of early intervention is to effect positively the overall development of the child's social, emotional, physical and intellectual wellbeing.
A Pearson correlational analysis showing the relationship that exists between parent commitment and opinion of improvement of the children revealed the following:

**Table 4.4: Correlations between parental involvement in early intervention services and performance of children**

<table>
<thead>
<tr>
<th></th>
<th>how do you rate parent commitment</th>
<th>rate specific milestones for children before and after receiving early intervention services</th>
</tr>
</thead>
<tbody>
<tr>
<td>how do you rate parent commitment</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7</td>
</tr>
<tr>
<td>rate specific milestones for children before and after receiving early intervention services</td>
<td>Pearson Correlation</td>
<td>.944**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
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<tr>
<td></td>
<td>N</td>
<td>7</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

From the table, it was revealed that there exists a strong positive correlation (0.944, P<.05) between parent commitment and milestones accomplished by the children. This therefore shows that parent involvement has a great impact on the average performance of the children with physical disabilities when they are exposed to early intervention services. These findings were supported by Bailey et al (2005) who reported that parents were generally optimistic about the future. About 80% of the parents believed that their family was better as a result of early intervention services. Their study found out that, the outcomes of early intervention revealed
that, at the end of early intervention, most parents felt competent in caring for their children, advocating for services and gaining access to formal and informal supports. The findings reinforce the need for experimental research to identify factors that are most likely to lead to successful outcomes of all families so that maximum benefits can be realized for children with physical disabilities and their parents. These findings are supported by a study done by Dukes & Smith (2007), parental involvement is critical as they are vital partners in whole process of development and education of their physically challenged children. This is due to the fact that they are primarily responsible for early identification of disabilities, assessment and intervention as stipulated in the Kenya Constitution (2010).

4.5 Role of related service providers and professionals involved in early intervention

The last research objective was to assess the role of related service providers and the professionals involved in early intervention services. A descriptive analysis was conducted to establish how frequent the schools requested the services of other professionals. The result was presented in Figure 4.12.
The study findings revealed that, majority (50%) of the respondents reported that related professionals were involved in early intervention programs and services on a daily basis. However, in some of the institutions they engaged in early intervention programs and services after duration of one weekly or after a fortnight. This shows that the related professionals were largely engaged in offering early intervention services to the children.

The study further conducted a descriptive analysis to establish the assistance teachers require from the professionals the results were as shown below.
From the study findings, 35% of the teachers require assistance from medical intervention professionals, 23% require assistance from physiotherapists, 17% of the teachers require assistance from guidance and counselling experts while 12% from occupational therapists. This therefore shows that the related professionals and personnel’s are highly involved and play a major role in the early intervention services and programs the schools offer the children.

Lastly, a descriptive study was undertaken to establish the professionals the related personnel collaborate with whilst undertaking their duties.
Figure 4.14: Professionals Collaborations

From the table above we note that in majority of the cases, the related personnel collaborate with the special education teacher (78%) followed by the parents of the children, the counsellor and the physiotherapist are both ranked at 65% while the school psychologist is required in 55% of the cases, the social worker is required in the least amount of cases (34%) while the community pediatric, Occupational therapist and the speech therapist are required in 45% of the times.

Lastly, a regression analysis was conducted to establish factors that lead to positive performance of the children with disability. The dependent variable was rating by the related personnel on the milestones accomplished by the children whether they’ve improved or not while the independent variables included frequency of intervention by professionals, parent commitment, parent
relationship with professionals, whether the early intervention programs were offered in combination or in isolation and whether the child was exposed to any form of intervention services.

The study findings revealed that the R square value is .928, which shows that the model can accurately predict the outcome of the dependent variable to an accuracy level of 92.8% as well as that the independent variables account for 92.8% changes in the dependent variable (See Appendix E). This value is high enough and hence it can be concluded that the model is reliable. From the ANOVA (See Appendix F) it is noted that the model is significant (P<.05, df=5). The value of R-Square=0.187 implies that a unit change in availability of intervention services, are the programs offered in isolation or combination, rate of parent commitment, relationship with personnel and teachers, related professionals’ involvement in the programs and services will lead to an increase in the rate specific milestones for children after receiving early intervention services by 18.7%.

Basing on the coefficient correlation, the model: $Y = 0.843X_1 + 0.128X_2 + 0.263X_3 + 0.211X_4 + 0.521X_5$ was derived (See appendix G). Thus from the equation it was found that; professional involvement, parental relationship with personnel, provision of programs and child exposure to intervention positively and significantly influence the development of a child at high level as compared to parent participation. Therefore, it is evident from the findings that all the five coefficients are positive and that for increased child improvement, the frequency of professional intervention should be increased, parents should be more committed, programs should be offered in collaboration and the children should be exposed to early intervention services and programs.
However, the study observed that even though there is a positive correlation between the five independent variables and child development (beta >0.1), the variables are not significant since their p-values are greater than 5% (p>0.05).

The study findings were in congruent with Pagliano (1999) who affirmed that an early intervention team generally consists of teachers, special education specialists, speech and language pathologists, physical therapists, occupational therapists and other relevant support staff. A key feature of early childhood intervention is the trans-disciplinary model in which members discuss and work on goals even when they are outside their discipline. Research evidence indicates that teamwork results in more effective and efficient services than those provided individually. Another study conducted by Carey et al. (2009) revealed that the role the pediatricians take in relation to early intervention services is variable and still evolving, but are a central part of multidisciplinary team serving the child and family and often act as the gateway for referrals, continuity for the family across the lifespan from early childhood through adolescence. Community pediatrics work with children and families in a holistic way, ensuring liaison between educators and other professionals and agencies as needed.

In summary, this chapter has presented analysis of the collected data. Both qualitative and quantitative data have been presented and discussed in this chapter. The next chapter gave summary, conclusions and recommendations.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study aimed at evaluating the influence of early intervention services on development of children with physical disabilities in Ruiru Sub-County, Kiambu County, Kenya. This chapter provides the summary of the findings, conclusions and recommendations based on the objectives of the study. The chapter finally presents the suggestions for further studies. The specific purpose of this study was to determine the influence of early intervention services to development of children with physical disabilities. The specific objectives of the study were to establish the parental involvement in early intervention services of children with physical disabilities; to identify early intervention services provided to children with disabilities including guidance and counseling, assessment, medical services and early childhood programs and; to assess the participation of related service providers and professionals in early intervention programs and services in Ruiru Sub-County and to determine challenges hindering provision of early intervention services. The study used parents, administrators and related personnel whose children suffer from various physical disabilities as the target population. The study employed stratified random sampling to realize a sample size of 47 respondents all of whom were able to respond to the research instruments used to collect data during the study.
5.2 Summary of the Study

5.2.1 Summary of Chapters

Chapter one covered the background of study, statement of the problem, objectives of the study, research questions, significance of the study, scope and limitations of the study, assumptions of the study, theoretical and conceptual framework, and operational definition of terms. The next chapter discussed early intervention services, parental involvement, and participation level and roles of related service providers in global perspective.

Chapter two reviewed relevant literature based on the global perspectives of early intervention services, parental involvement, and participation level and roles of related service providers in early intervention.

Chapter three described the methods used during the data collection based on research design, variables, location of the study, target population, sampling techniques and sample size, research instruments, piloting, validity and reliability, data collection techniques, data analysis and ethics.

Chapter four showed the analysis, presentation and discussion of the collected data. The chapter has presented analysis of the collected data. Both qualitative and quantitative data have been presented and discussed.

Finally this chapter gave general summary, conclusions and recommendations of the study based on the study findings.

5.2.2 Summary of Findings

The study made some important findings which went a long way in achieving the objectives.

In an attempt to realize the first research objective, the study established that a total of three hundred and fifty six children had various forms of disabilities. The four schools offered
guidance and counselling services as well as head start programs, however only 25% of the schools offered physiotherapy services to the children. Additionally, 50% of the schools offered medical intervention services and occupational therapy services, lastly 75% of the schools offered assessment services as an early intervention service to the children with physical disability. Majority of the parents on the other hand, made sure that their children received early intervention services where they were exposed at the ages between two and six years old. As such, a Pearson correlation analysis was run to establish the nexus between early interventions services offered to children with disability and realized that there existed a positive correlation between children exposed to assessments and those in the head start programs; those children exposed to guidance and counselling, and those exposed to medical intervention services. Conversely, the Pearson correlation revealed a negative correlation between children offered as part of the intervention mechanism and those on medical services.

Secondly, the study realized that, majority of the schools involved parents in guidance and counselling sessions as well as sharing reports by several other professionals with them. Most administrators rated parents’ participation and their involvement in intervention measures as good. On improvement of the children who were put through early intervention services, most parents were in agreement that early intervention services was beneficial since it had a positive effect on the child’s progress. To affirm the desire to meet the research objective, the correlation analysis done revealed that there was a strong positive correlation between parent commitment and milestones accomplished by the children.

Lastly, the study found that professionals are largely engaged with offering early intervention services to the children. The related personnel are highly involved and play a major role in the early intervention services and programs the schools offer the children. Thus regression analysis
established that the frequency of professional intervention should be increased, parents must be more committed to create a positive relationship between them and related professionals. Additionally, programs should be offered in teamwork and children exposed to early intervention services and programs.

5.3 Conclusion
The study concludes that early intervention services positively affect children with disabilities. As established by the study, early intervention services have enhanced development of children with disabilities, efficiency in service delivery being one of the key issues that has to enable the success of early intervention services for children with disabilities.

Secondly, the study findings show that parental involvement has a great impact on the average performance of the children with physical disabilities when they are exposed to early intervention services. Since a majority of the children recorded some signs of improvement, we note that the early intervention services had positive impact on their overall progress and as such, were very crucial on development of children with disabilities. The lack of early intervention services have led to many children with disabilities having lives compounded by their disabilities while early interventions would have mitigated against these complications. While early intervention services may not lead to a cure against the disabilities, the study concludes that the benefits in terms of psychological and social development of these children are important. Economic benefits are also related to the type and quality of early intervention services. The study also concludes that without these interventions and participation of professional caregivers,
children with disabilities will have lives full of complications and hardships. Lastly, the study concludes that the related professionals and personnel involve and play a major role in the early intervention services and programs the schools offer the children.

5.4 Recommendations

The study makes the following policy recommendations to the Government of Kenya.

i. To increase the publication and dissemination of information regarding the benefits of early intervention services for children with disabilities

ii. To make compulsory the taking of children with disabilities to early intervention centres as well as make these services free in line with the Free Primary Education.

iii. To increase the number of centres that offer early intervention services to children with disabilities in all parts of the country.

iv. To train and employ more related personnel in the available institutions of special needs towards facilitating the provision of early intervention services to children with disabilities.

v. To create centres of awareness as well as sensitize the public on the need to come out strongly and support children with disabilities through early interventions.

vi. To equip the Educational Assessment and Resource Centres (EARCs) with all the essential aids facilities in order to enhance equal education opportunities for children with special needs and facilitate their full integration into the community.
5.5 Recommendations for Further Research

The study also makes the following recommendations for further research

i. This study observed that not all the parents got involved in the programs and services provided to their children due other factors related to perceptions and personal beliefs on children with disability in the family. Thus, a research should be carried out to investigate the role of socio-cultural aspects in development of children with disabilities. This would help to assess the reasons why parents do not engage in early intervention services.

ii. The current study observed that finance was a challenge when it comes to affordability of facilities for managing children with disabilities by the parents. Therefore, a research study should be done to evaluate the relationship between families with high incomes and the low levels of interventions for children with disabilities.

iii. It is evident that even after starting to use early intervention services, some children could not improve. This might be due to stigmatization among the children with physical disabilities. Hence, a study should be conducted to establish the effects of stigma on provision of services to children with disabilities.
REFERENCES


APPENDICES

APPENDIX A: INTERVIEW FOR ADMINISTRATORS

I am conducting a study on ‘the effects of early intervention on overall performance of children with physical disabilities in Ruiru Sub-County, Kiambu County’. You are assured that your responses will be treated with strict confidence and the information you give will be used for research purposes only. You are requested to respond to all the statements in each section.

Background Information

1. Male □ Female □
2. Name of your school
3. Highest level of profession qualification
   P1 □ Master's Degree □
   Diploma □ Others □
   Bachelor's Degree □
   PGDE □
4. How many children with physical disabilities are in the institution? ..............................................
5a. Which types of early intervention services are offered in the institution? (Put a tick appropriately).
   Guidance and counselling □
   Medical intervention services □
   Assessment □
   Physiotherapy □
   Occupational Therapy □
Head-start programmes  

Others (specify).................................................................................................................. 

b. Are the programmes offered in isolation or in combination?........................................... 

c. If in combination, please specify the ones offered in combination................................ 

6a. Are the equipment and facilities available in the institution appropriate for providing early 
intervention to children with physical disabilities? Yes……No……… 

b. If the answer to the above question is ‘NO’, which specific equipment or facilities are 
necessary in provision of early intervention services in the institution? Please specify……... 
.................................................................................................................................................. 

7. How do you involve the parents of children with physical disabilities in the programmes or 
services offered to their children? Briefly explain......................................................... 
.................................................................................................................................................. 

8. How is the participation of the parents in the programs or services? (Put a tick where 
necessary). 

  Very good  
  Fairly good  
  Good  
  Below average  

9a. Who are the other related professionals involved in offering early intervention services? 

  Counsellor  
  Physiotherapist  
  School nurse  
  Social worker  
  Occupational therapist  
  Special education teacher
b. How often are these related professionals involved in the programmes or services?

Daily [ ] Monthly [ ]

Once a week [ ] Every two weeks [ ]

Termly [ ] Very rarely [ ]

c. Are there challenges with related professionals? Yes………No………..

Briefly explain……………………………………………………………………………………………………

10. What challenges do you encounter in offering services to children with physical disabilities in the institution?.................................................................................................

..............................................................................................................................

11. What is the average age of children with disabilities who receive early intervention services in the institution?...................................................................................................

12. Are the children integrated into the education system after receiving early intervention services? Yes……………No…………..

13. What is the retention rate of these children with physical disabilities who have undergone early intervention services as opposed to those children who have not?

Below 5% [ ] 10% [ ] 30% [ ]

50% [ ] Above 60% [ ]

14a. How many children with physical disabilities have not undergone early intervention?.................................................................................................................................

b. How many children in the school have undergone early intervention?………………

c. In your opinion, do they perform better than their abled counterparts?
15. What are your recommendations about early intervention for children with physical disabilities as an administrator?

Thank you very much for your cooperation.
APPENDIX B: AN INTERVIEW GUIDE FOR PARENTS

The information requested from you will be treated with a lot of confidence and is totally for academic work. Kindly provide to the following information about yourself and your child.

SECTION A

1. Male □ Female □

2. Profession/job……………………………………

3. Religion…………………………………………

4. Status: Married □ Single □ Divorced □

5. Highest level of education attainment

- Primary level □
- Secondary level □
- Bachelor's degree □
- Master's degree □
- Others, (specify)……………………………………………………………………………………………………………………

6. a) Has your child received any form of early intervention services? Yes □ No □

b). If ‘yes', how did you get to know about the early intervention programme or services that your child is receiving currently? Explain briefly………………………………………………

7. At what age did your child start receiving any form of early intervention service?

8. Which of the following early intervention services or programs has been offered to your child?

- Assessment □
- Head-start (educational) programs □
- Guidance and counselling □
- Portage □
ADL

Medical intervention services

Others, please specify……………………………………………………………………

9. In which ways are you involved in the programme or services provided to your child?..........................................................................................................................
........................................................................................................

10. What problems do you experience when offering early intervention services to your child?
Lack of adequate equipment
Insufficient related personnel
Lack of enough special education teachers
Lack of proper follow-up by professionals
No proper guidelines

Others, (please specify)………………………………………………………….

11. Have you ever received any form of training on how to develop your skills on how to facilitate the development of your child back at home?
Yes □ No □

12. How is your relationship with the personnel and the teachers who handle your child?
Very good □ Fairly good □ Good □ Poor □

13. How do you compare your child's overall performance after starting to receive early intervention services?
Improved □ Slightly improved □ No improvement □

b. Kindly mention some specific tasks that your child can perform since he/she started receiving early intervention services…………………………………………………………
14. Which of the following assistive devices does your child use?

- Wheelchair
- Crutches
- Splints
- Commode chairs
- Calipers
- Wedges
- Cossets
- Walkers
- Adapted spoons
- Stands

15. What is the outcome of early intervention as regards to the following?

a. Academic performance

B. Social performance

C. Accessibility to necessary facilities

D. School attendance

16. What are your recommendations as a parent of a child with physical disability?
APPENDIX C: A QUESTIONNAIRE FOR TEACHERS

I am conducting a study on ‘the effects of early intervention on the overall performance of children with physical disabilities in Ruiru Sub-County”. The information requested from you shall be confidential and used for this study only. Please respond to the statements as accurately and honestly as possible.

**Background Information**

1. Male ☐ Female ☐

2. Name of your school…………………………………………………………………

3. Highest level of professional qualifications

   P1 ☐
   Diploma ☐
   Bachelor's degree ☐
   PGDE ☐
   Master's ☐

   Others, (please specify)…………………………………………………………..

4a. Have you undertaken any training in special needs education?

   Yes ☐ No ☐

   b. If the answer to the above question is yes, what level did you attain?

   Certificate ☐
   Diploma ☐
   Bachelor's degree ☐
   Master's degree ☐

   Others (please specify)…………………………………………………………..
5. Kindly mention the MOST common assistive devices used by the children?

Adapted chairs
Walkers
Boots and calipers
Splints
Braces
Wheelchairs
Crutches

Others (please specify)………………………………………………..

6. What assistance do you get from other related professionals?

Physiotherapy
Guidance and counselling
Assessment
Occupational therapy
Medical interventional services
Social work

7. Are the facilities for early intervention appropriate and available?

Well-equipped
Well-maintained
Barely available
Not available

8. (a) Do some of the children require medical services?

Yes  No
(b) If the answer to the above question is ‘yes', please list some of the medical related services provided to the children.

1 [ ] 2 [ ] 3 [ ] 4 [ ]

9. Do you think there is a relationship between the overall performance of children with physical disabilities and provision of health care services?

Yes [ ] NO [ ]

Please give reasons for your answer………………………………………………………………………

10. How often are parents of these children involved in their children's programmes?

Daily [ ] Weekly [ ]

Monthly [ ] Rarely [ ]

11. What is the relationship between you and the parents?

Very good [ ] Fairly good [ ]

Good [ ] Poor [ ]

12. What challenges do you encounter in providing early intervention services?

Lack of equipment [ ]

Lack assistance from other professionals [ ]

Lack of support from authority [ ]

Lack proper coordination with parents [ ]

Others (please specify)………………………………………………………………………

13. How can you rate the overall performance of these children after being in any of the early intervention programme?

Greatly improved [ ] Improved [ ]
14. What is the retention rate after receiving early intervention?

Below 5% □ 10% □ 30% □ 50% □ Above 60% □

15. How does the government support the early intervention programmes?

By providing materials and equipment □
Organizing refresher courses □
Providing related professionals □
Paying salaries □

Others (please specify) .................................................................

16. What are your recommendations on the early intervention programmes?
APPENDIX D: QUESTIONNAIRE FOR RELATED PERSONNEL

I am conducting an educational research on "the effects of early intervention on the overall performance of children with physical disabilities in Ruiru Sub-County, Kiambu County". You are assured that your information will be treated with strict confidence and will be for research purposes only and therefore requested for cooperation and maximum assistance.

**Background Information**

1. Gender: Male [ ]   Female [ ]

2. Designation…………………………………………………………………………………………………………………………

3. Academic Qualifications

   (a) Certificate Level [ ]
   (b) College Diploma [ ]
   (c) Graduate [ ]
   (d) Master's [ ]

4. Professional Qualifications (please tick where necessary)

   Trained in special education [ ]
   Guidance and Counselling [ ]
   Physiotherapy [ ]
   Social worker [ ]
   Occupational therapist [ ]
   Special education assessor [ ]

Any other, (please specify)……………………………………………………………………………………………………
5. Early intervention requires the services of different professionals. Which of the following professionals do you work collaboratively together?

- Counsellor
- Physiotherapist
- Speech therapist
- Special education teacher
- Occupational therapist
- School psychologist
- Social worker
- Parents
- Community pediatric

6. Are the facilities and equipment used in the provision of early intervention appropriate and adequate?

- Excellent
- Good
- Fairly good
- Poor

7. What are the different services offered to children with physical disabilities?

- Counselling
- Medical intervention services
- Portage work
- Educational programs
- Physiotherapy
- Speech therapy
- Social work
- Occupational therapy

Any other, (please specify)………………………………………………………………

8. How do the parents of these children get involved in the provision of early intervention services? (Briefly explain)……………………………………………………………………
9. How do you relate with parents of children with disabilities?

- Very well
- Well
- Fairly well
- Not friendly

10. How can you rate the commitment of parents towards their children's development in the programmes?

- Very good
- Good
- Fairly Good
- Below Average

11. What challenges do you encounter while carrying out your duties?

- Lack of equipment and poor facilities
- Lack of funds to facilitate the programs
- Lack of co-operation from stakeholders
- Others (please specify)

12. How can you rate the specific milestones for individual children with physical disabilities before and after receiving early intervention as regards to social, physical, academic or any other milestone?

- Extremely improve
- Improved
- Fairly improve
- Barely improve

13. What is the percentage of the children who participate and access education system after early intervention services?

- Below 5%
- 10%
- 30%
- 50%
- Above 60%
14. Do you anticipate for these children to be self-reliant after going through early intervention programmes?

   Strongly Agree □    Strongly Disagree □
   Disagree □          Undecided □

15. Kindly give recommendations on how to improve early intervention services delivered to children with physical disabilities.

   ………………………………………………………………………………………………………
   ………………………………………………………………………………………………………
   ………………………………………………………………………………………………………

   Thank for your cooperation.
**APPENDIX E: MODEL SUMMARY**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
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</thead>
<tbody>
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<td>1</td>
<td>.963&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.928</td>
<td>.868</td>
<td>.433</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), has your child any form of intervention services, are the programs offered in isolation or combination, how do you rate parent commitment, rate your relationship with personnel and teachers who handle your child, how often are the related professionals involved in the programs and services?
APPENDIX F: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>5</td>
<td>2.909</td>
<td>15.529</td>
<td>.002b</td>
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<tr>
<td>Residual</td>
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<td>6</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15.667</td>
<td>11</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: rate specific milestones for children before and after receiving early intervention services
b. Predictors: (Constant), availability of intervention services, are the programs offered in isolation or combination, rate of parent commitment, relationship with personnel and teachers, related professionals’ involvement in the programs and services
APPENDIX G: COEFFICIENTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig. (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-2.891 1.716</td>
<td>-</td>
<td>.143</td>
</tr>
<tr>
<td></td>
<td>How often are the related</td>
<td>.843 .506</td>
<td>.662</td>
<td>1.66 .147</td>
</tr>
<tr>
<td></td>
<td>professionals involved in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the programs and services?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How do you rate parent</td>
<td>.128 .312</td>
<td>.122</td>
<td>.411 .695</td>
</tr>
<tr>
<td></td>
<td>commitment?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rate you relationship with</td>
<td>.263 .265</td>
<td>.274</td>
<td>.993 .359</td>
</tr>
<tr>
<td></td>
<td>personnel and teachers who</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>handle your child?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the programs offered in</td>
<td>.211 .424</td>
<td>.091</td>
<td>.497 .637</td>
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<tr>
<td></td>
<td>isolation or combination</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Does your child have any</td>
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<tr>
<td></td>
<td>form of intervention services?</td>
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<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: rate specific milestones for children before and after receiving early intervention services
APPENDIX H: RESEARCH AUTHORIZATION LETTER

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 318571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke

Ref: No.

NACOSTI/P/15/2592/4490

Hellen Wanjiru Nderitu
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Influence of early intervention services on development of children with physical disabilities in Ruiru District, Kiambu County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Kiambu County for a period ending 31st December, 2015.

You are advised to report the County Commissioner and the County Director of Education, Kiambu County before embarking on the research project.

On completion of the research, you are required to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

SAID HUSSEIN
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

Date: 16th January, 2015

9th Floor, Uhuru House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA
THIS IS TO CERTIFY THAT:

MS. HELEN WANYURU NDERITU
of KENYATTA UNIVERSITY, 1444-618 ruaraka, has been permitted to conduct research in Kiambu County on the topic: "INFLUENCE OF EARLY INTERVENTION SERVICES ON DEVELOPMENT OF CHILDREN WITH PHYSICAL DISABILITIES IN RUURU DISTRICT, KIAMBU COUNTY, KENYA" for the period ending 31st December 2026.

Full Secretary
National Commission for Science, Technology & Innovation

Applicant's Signature

CONDITIONS
1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two (2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA
National Commission for Science, Technology & Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A. 4011

CONDITIONS: see back page