DETERMINANTS OF QUALITY OUTDOOR PLAY ENVIRONMENT IN
EARLY CHILDHOOD DEVELOPMENT CENTRES IN NG’ENDA ZONE,
KIAMBU COUNTY, KENYA

NDOI JANE WANJIKU
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DEPARTMENT OF EARLY CHILDHOOD STUDIES

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MAY 2016
DECLARATION

I declare that this thesis is my original work and has not been presented for a degree in any other university for consideration. This research thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphic, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited in accordance with anti-plagiarism regulations.

Signature: _______________________________      Date: ____________________

Ndoi Jane Wanjiku
E55/22739/2011

This thesis has been submitted for evaluation with our approval as university supervisors.

Signature_________________________________ Date: _______________________

Dr. Nyakwara Begi

Department of Early Childhood Studies,

Signature: _______________________________      Date: ____________________

Dr. John Teria Ng’asike

Department of Early Childhood Studies,
DEDICATION

I dedicate this thesis to my husband Stanley, children Ekla, Dorcas and Peninnah for their encouragement, patience, understanding and support during my studies.
First and foremost I would like to express my gratitude to the almighty God for giving me strength and grace to write this thesis. Secondly, I am indebted to my supervisors Dr. Nyakwara Begi and Dr. John Teria Ng’asike for their kind advice and guidance throughout the progress of my study. My appreciation also goes to all my lecturers in the Department of Early Childhood Studies; particularly Dr. Esther Waithaka and Dr. Juliet Mugo for their professional guidance during my study time.

Special appreciation also goes to all the respondents (ECD managers and teachers) from both public and private ECD centres in Ng’enda Zone, Kiambu County for providing me with the information which led to completion of this thesis. I also wish to acknowledge all those who tirelessly assisted me in typesetting and editing of this work. Finally, I thank all people who assisted me directly or indirectly towards the successful completion of this work. May God Bless You All.
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<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACRWC</td>
<td>African states the African Charter on the Right and Welfare of the Children</td>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>CESA</td>
<td>Comprehensive Education Sector Analysis</td>
</tr>
<tr>
<td>CRC</td>
<td>Convention on the Rights of the Child</td>
</tr>
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<td>CWS</td>
<td>Church World Service</td>
</tr>
<tr>
<td>DEO</td>
<td>District Education Officer</td>
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<tr>
<td>ECD SSGK</td>
<td>Early Childhood Development Service Standard Guidelines for Kenya</td>
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<td>ECD</td>
<td>Early Childhood Development Centres</td>
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<tr>
<td>HIV</td>
<td>Human Immuno-Deficiency Virus</td>
</tr>
<tr>
<td>ICSS</td>
<td>International Conference on School Safety</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>QASOs</td>
<td>Quality Assurance and Standards Officers</td>
</tr>
<tr>
<td>SANA</td>
<td>Sustainable Aid in Africa International</td>
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<tr>
<td>SES</td>
<td>Socio-Economic Status</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>SSHE</td>
<td>School Sanitation and Hygiene Education</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>W HO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WC EFA</td>
<td>World Conference on Education for All</td>
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<tr>
<td>WEF</td>
<td>World Education Forum</td>
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ABSTRACT

Quality childcare include providing children the opportunity for outdoor play. In Kenya even though play is recognized as critical in children development, research in children’s play environment appears inadequate. The purpose of this study was thus to establish the quality of outdoor play environment in early childhood development centres in Ng’enda Zone of Gatundu South Sub-County. The study was also to determine the key factors influencing outdoor play environment in ECD centres. The study findings may be of significance to early childhood teachers, ECD managers and policy makers of early childhood programmes in that the results may help them to develop skills on school-based safety programmes that assist in promoting, protecting and improving the safety status of pre-school children while in the playgrounds. The study was based on Piaget Developmental Theory of Play. The study employed the descriptive survey research design targeting all the 31 ECD managers/head teachers and 112 teachers in the 31 ECD centres in Ng’enda Zone. Stratified random sampling was used to sample 10 ECD centres according to type of ECD centre. Ten head teachers and zonal education officer were selected purposively while simple random sampling was used to select the teachers. An interview schedule designed for managers/head teachers, a questionnaire for teachers and an observation checklist were used for data collection. Before actual analysis was done, a pilot study was conducted in 2 ECD centers which were not included in the actual analysis. The importance of carrying out a pilot study was to determine the reliability and validity of the research instruments. Data collected was entered in the computer for analysis using the Statistical Package for Social Sciences (SPSS). Qualitative data was first coded by organizing it into similar themes and then tallying all similar responses of each item. Descriptive statistics such as percentages, means and frequencies were used to report the quantitative data. Data was presented in form of tables and figures. The study established that the most available play materials in public ECD centres were small balls and tyres while in private ECD centres, swings, fixed tyres, small balls, and ropes were available. On the other hand, swings, climbing ladders, slides, fixed tyres and balancing frames were not available in public ECD centres as opposed to the private centres where balancing frames, hoops and see saw were unavailable. The study also found out that the most adequate playing materials in both public and private ECD centres were small balls, ropes and tyres. However, the most inadequate outdoor facility from all the sampled public pre-schools were;bar beams, followed by climbing ladders, slides and then fixed tyres. Most of the private ECD centres had inadequate playground compared with the number of children registered and therefore they did not facilitate effective children play activities. The study recommends that; government, parents and other education stakeholders should offer their support through funding of ECD centres and also provision of playing materials; Pre-school teachers in both public and private ECD centres should support children during outdoor activities especially in planning play activities. They should also give children time to explore and discover on their own through play activities. Ministry of Education should ensure that all the private ECD centres have adequate play space to ensure that children are engaged in outdoor activities; among other recommendations.
CHAPTER ONE
INTRODUCTION AND CONTEXT OF THE STUDY

1.0 Introduction

This chapter highlights the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations and limitations of the study, theoretical framework, conceptual framework and operational definition of terms.

1.1 Background to the Study

Good quality Early Childhood Development and Education contributes to the quality of education system as a whole. Children have a right to an environment which facilitates their physical development, cognitive, emotional and social skills. The outdoor play activities have been a crucial part of children’s lives. Therefore, there is need to give children allowance to play freely for enjoyment and relaxation outside the routine curriculum areas. Through such activities children gain a lot of experiences during their early years (Hughes 2009, Morita, 2004: cited in Waithaka, 2009).

According to Mussen (1983) cited in Waithaka (2009), play refers to an act of engaging in an activity for enjoyment and recreation especially among the children. It can also be defined as a young one’s form of learning. During play, young ones normally get information from the environment they are living in, which they later use it during their physical and psychological growth. Through play, kids also gain knowledge and grow as individuals and as members of the society. The most beneficial aspects of play include creativity and imagination, ability to work out problems, invention and reasoning,
figurative thinking and capacity of working together with others. Children learn through play and playgrounds are among the most important natural environments that enhance participation in both the structured and unstructured outdoor activities. Children therefore use the playground as a learning environment with corresponding behavioral consequences that enable them to digest both pleasant and unpleasant experiences. They do this by freely using their senses of taste, smell, touch, sight and hearing. Consequently, they start to take control of their feelings related to the experiences (Sheridan, 2001; Wolfgan, 2004 in Olgan and Kahriman-Ozturk, 2011). School playgrounds are the designated outdoor areas located in the school where children play or participate in sports and games with or without stationary and manipulative equipment (Johnson, Christie & Wardle, 2005). Moore (1996) views the playground as conceptually a pedagogical space centered on outdoor play.

For young children, safety involves feelings of security that is freedom from physical and emotional fear and all dangers. It also involves stability which means regular healthcare and nutrition for physical and intellectual development and finally safety involves regularity and predictability within the environment children live in and learn (Seifert & Hoffnung, 1987). School playground safety can be defined as strategies put in place by the learners, teachers, parents and other school stakeholders to either curb or eradicate unsafe conditions in the playing fields. These unsafe conditions may lead to accidents, body injuries, emotional and mental suffering to the young children while playing (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2010; Ministry of Education (MOE) & Church World Service (CWS), 2008). Playground should have various signs showing safety measures put in place in the play spaces while
pre-schoolers are at play. Among these indicators, one of them is enhancing the rights of children involvement in play. These include; provision of adequate, appropriately segregated and fenced play spaces with organized security, availability of play equipments and materials which are well maintained and are in good condition and enough surfacing that is fall-absorbent. Good supervision of the children while engaging in play and well organized outdoor activities are other indicators of safe playground.

Playground safety for young children is an individual and legal rights matter whose objective is to strengthen preschoolers’ engagement in outdoor learning activities. According to Convention on the Rights of the Child (CRC, 1989), safe playground are very crucial element in a child-friendly learning environment. This concept is also supported by other policy frameworks such as the World Conference on Education for All (WCEFA, 1990), the World Education Forum (WEF, 2000), the Millennium Development Goals (MDGs, 2000), International Conference on School Safety (ICSS, 2007) and for African states the African Charter on the Right and Welfare of the Children (ACRWC, 1999). These frameworks require the government to make sure that preschoolers play in a pleasant/child friendly environments. The policy also highlights that the playground should be child centered, comprehensive, gender equitable and effective in enhancing excellence in acquisition of physical (or motor) and psychosocial skills.

Kenya is a signatory to the various international frameworks that uphold the inalienable right of the child to safe and secure school environments. The legislation of the rights on young children’s safety can be inferred from the country’s Constitution (2010) Bill of Rights (Cap 4). The GoK has also translated and enacted the recommendations of the
global frameworks into the Children’s Act No. 8 of 2001 as a legal instrument to safeguard and promote the rights and welfare of children in Kenya. Article 23:2(a) and (b) of the Children’s Act, for instance, emphasizes the critical importance of safe and secure environments to enhance participation in learning activities that include outdoor play.

To operationalise the Children’s Act, the MOE in collaboration with the United Nation’s International Children’s Education Fund (UNICEF) and through the Kenya Education Sector Support Programme (KESSP 2005-2010) developed the Early Childhood Development Service Standards Guidelines for Kenya (ECD SSGK, 2006). The guidelines recommend outdoor play spaces that are big enough compared to the number children enrolled in the pre-school, including those with special needs (the vulnerable and disadvantaged), to play and run around safely. The play spaces should contain adequate age- and developmentally appropriate equipment and materials (also adapted for children with special needs), safe play area surfaces and servicing and maintenance of play materials once in a term.

The ECD SSGK (2006) also sets standards for ECD curriculum and pedagogy and recommends child centered and holistic approaches to teaching and learning where all learning is activity based and participatory using play (especially free choice activities) as the main learning method. As a result, the Kenya Institute of Education (KIE) has designed an ECD syllabus that outlines children’s structured activities. These include warm up exercises, body movement without apparatus (both loco motor and non-loco motor), body movements with apparatus, games, dances (to music, rhythm and instrumental) and swimming. Children are involved in these activities for thirty (30)
minutes every day and are supplemented by the unstructured ones during recess. The policy also recommends that children’s individual progress in the activities should be based on the Development and Readiness Progress Assessment tool to measure cognitive, physical, emotional, social and moral development (ECD SSGK, 2006).

It is therefore very crucial for ECD teachers and parents to provide space and opportunity for children to experience outdoor play activities especially in this era of creativity/innovation where individual talents can be developed and recognized, (Waithaka, 2009). Regulated play environments are advocated by some parents and teachers but according to Hasluck and Malone (1999) this involvement may cause negative long term consequences of outdoor play deprivation on cognitive, social and emotional competence to children. The importance of quality of outdoor play environment for children total or holistic development therefore cannot be ignored and hence the need for this study. Furthermore, in another study conducted in Lari Sub-county, Kiambu County, by Githuthwa (2011), the study results showed that most of the ECD centres had inadequate physical facilities and instructional materials compared to the number of children enrolled. The study also established that most of the staffs in sampled ECD centres had inadequate skills of using standardized teaching methods and also lacked skills of handling children. These findings imply that most of the ECD centres in Lari sub-county were ill equipped with both physical facilities and resources, meaning they were not adhering to the ministry of education ECD SSGK. As a result most of these centres were not according children opportunities for cognitive development which is normally acquired through engagement in play activities. It is therefore against this background the current study sought to find out determinants of
quality outdoor play environment in early childhood development centres in Ng’enda zone, Kiambu County, Kenya.

1.2 Statement of the Problem

Quality of outdoor play environment forms an integral component of children’s participation in outdoor activities. In Kenya, there is a very scanty literature in relation to quality of outdoor play environment. As such, much of the information has to be retrieved form studies done in developed countries like America and Britain where ECD education is highly valued. Most of the Early Childhood Development centers in Kenya are characterized by poor physical conditions. For instance, a study conducted by Kerich (2015) revealed that most of the ECD centres did not give preschoolers chance for cognitive growth. Furthermore, the study established that many of these centres had inadequate equipment in relation to the number of children in the sampled centres.

Taking a lead in showing the important part of the outdoor play activities in cognitive growth, Early Childhood Development Service Standard Guidelines (2006) requires that for any ECD center to qualify for registration it should have not only an outdoor space for children’s play but also an assortment of play equipment to ensure holistic development of the children (Achoka et al., 2007). This implies that the outdoor play space must be more than simply places for children to run around, it should have adequate play equipment to cater for the cognitive, physical, social and developmental needs of the children. More so, meaningful planning of the environment should be done in a suitable context to provide profound outdoor play environment. In Ng’enda Zone of Kiambu County, the researcher noted that most of the ECD centres show deferred maintenance or unperformed planned maintenance, repairs, replacement and renewal. Majority of ECD
centres in this zone seemed not to value quality outdoor play environment. It is against such a background that the study set to investigate the determinants of quality play environment in ECD centers in Ng’enda zone of Gatundu South Sub-County.

1.3 Purpose of the Study

The purpose of the study was to establish quality outdoor play environment in Ng’enda Zone, Gatundu South Sub-County. The study was also to find out the determinants of the quality outdoor play environment in the zone.

1.4 Objectives of the Study

The objectives of the study were:

i. To establish the quality of outdoor play environment in ECD Centres in Ng’enda Zone, Kiambu County.

ii. To find out the influence of the type of ECD centre on the quality of outdoor play environment in ECDE centres in Ng’enda Zone.

iii. To determine the influence of location of ECD centre on quality of outdoor play environment in Ng’enda Zone.

iv. To establish the safety of outdoor play facilities available in ECDE centres.

v. To find out the strategies used to improve quality of outdoor play environment in ECD centres.

1.5 Research Questions

i. What is the quality of outdoor play environment in ECD Centres in Ng’enda Zone, Kiambu County?
ii. Does the type of ECD centre influence the quality of outdoor play environment in Ng’enda Zone?

iii. Does location of ECD centre influence the quality of outdoor play environment in the Sub-County?

iv. How safe are the play facilities available in ECDE centres?

v. What strategies could be put in place to improve quality of outdoor play environment in ECD centres?

1.6 Significance of the Study

The study may be useful to policy makers and ECD managers in the following ways: The study could point out to policy makers the major challenges faced by ECD providers in the implementation of quality outdoor play environment and come up with strategies of improving it. The study may give suggestions to ECD providers and teachers in a bid to ensure that child-friendly outdoor play environment and equipments are provided in ECD centers. The study findings may also be of significant to early childhood teachers, ECD managers and policy makers of early childhood programmes in that the results may help them to develop skills on school-based safety programmes that assist in promoting, protecting and improving the safety status of pre-school children while in the playgrounds. This may give the children opportunities to access creative play environments, where they can develop physically, socially, and mentally. The study may also contribute to the existing body of research on outdoor play and development in early childhood.

1.7 Limitations and Delimitations of the Study

This section consisted of both limitations and delimitations of the study.
1.7.1 Limitations of the Study

The study was limited to the fact that most of the study participants wondered how the study would help them and hence felt like it was a bother to fill in the questionnaire. To overcome this, a lot of explanation had to be done for them to understand the main purpose of the study. Furthermore, the researcher ensured the participants that the information they submitted would be held confidentially and would be used for academic purpose only. Another limitation the researcher encountered was that there was scanty literature on previous studies on the key determinants of quality outdoor play environment in early childhood development centres.

1.7.2 Delimitations of the Study

The study was carried out in early childhood development centres in Ng’enda Zone. The study focused on quality outdoor play environment in early childhood development centres, with emphasis on outdoor play resources, including playing fields, play equipment, safety of the play grounds and the quality of resources available for children in ECD centres.

1.8 Assumptions of the Study

The study was based on the assumptions that; all the respondents were truthful in their responses, the locale of the study provided adequate information required by the researcher and that teachers and school management understood the importance of play to children.
1.9 Theoretical Framework

The study was based on Piaget’s Developmental Theory of Play. According to Piaget (1983) play has a major role in child’s growth. Piaget viewed the role of children’s communication and interactions while engaging in play as a social-cognitive growth. According to Piaget, children interactions while playing assist them to know that other players have varying views from their own. Play, for Piaget, give children room to develop social competence through social interactions. Piaget perceived that there are two complementary processes which lead to adaptation. These are assimilation and accommodation.

Assimilation is the cognitive act of fitting information into an individual’s already existing mental structures. Accommodation refers to the process through which the individuals mental structures are modified or new ones formed in order to negotiate the unprecedented demands that occur. In assimilation the situation is altered to fit in the organism’s mental structures while in accommodation the mental structures are altered to fit in the new situation (Forman & Prifall, 1988) as cited by Waithaka (2009) through outdoor play environment exposure patterns of behavior are tried out and they are stored in the child’s memory. Piaget Rieber (1996) contend that play gives children a chance to practice what they are learning. Children also use what they learn in new forms of play and these help them to learn continuously (Waithaka, 2009). Schools are an avenue where children engage in play activities. In Early Childhood Centres, majority of the learning takes place in form of play sessions. According to the theory, this therefore implies that children in pre-schools, while engaging in outdoor play activities are able to
not only develop themselves, but also learn from other children. This is important while strengthening their social being.

In application to the study the theory puts attention to the importance of quality outdoor play environment during formative years. This theory explains the role that outdoor play environment has towards the development of the repertoires of children’s behavior with regard to cognitive, emotional, physical and social aspects. The theory describes quality outdoor as a means through which a child is exposed to experience that facilitates formation of mental structures. These structures enable the child’s mind to assimilate real life experience which could be difficult to accommodate. Involvement in a variety of quality outdoor environment games is crucial for optimal formation of mental structures. From this theory, the engagement of children in outdoor play environment is considered to be a key aspect in a child’s development.

1.10 Conceptual Framework

The study sought to establish the quality of outdoor play environment in Ng’enda Zone Gatundu District
Figure 1: Factors influencing the quality of outdoor play environment in ECD Centres

The independent variables of the study were type of ECD centres and location of ECD centre. It is expected that ECD centres with adequate outdoor play resources, outdoor play space and safe outdoor play resources comply with ECD service standard guidelines which is the intervening variable of the study. As a result those ECD centres were anticipated to offer quality outdoor play environment which is the dependent variable of the study. The quality of outdoor play environment offered to children, either high or low, will have an effect in facilitating the development of skills physically, cognitively, and socially.
1.11 Operational Definition of Terms

Adequacy of outdoor play environment – Open-air play area intended for ECD children and designed in such a way that they comply with the outdoor play area manual.

Child friendly play equipment – Refers to outdoor play tools or apparatus that give pleasure and are safe for use by ECD children.

Early Childhood Development (ECD) – Refers to an educational programme that concerns the development of children between birth and 8 years.

Location- Refers to a particular setting where ECD centre is found, that is urban or rural.

Outdoor play – Activities or games done in open air by children within the confines of ECD centres; through which they find stimulation, well-being, happiness, and help them grow physically, intellectually and emotionally.

Play equipment - Structures, including components and constructional elements on which, children can play outdoors or indoors, either individually or in groups, according to their own rules or own reasons for playing e.g small balls, bean bags, rocking horses, board tubs, see-saws, tyres.

Play fields – Safe open air grounds where children enjoy recreational activities

Provision of play equipment – Making apparatus or tools required for outdoor play available either by purchasing or seeking donation from well wishers

Quality outdoor play environment - Safe, secure and appropriate open play area that provide optimal conditions for physically active play for children.

School Environment – Involves all that is within the school – facilities, child-teacher ratios, teachers, parents etc.

Type – Refers to an ECD centre being either public or private.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter comprises a review of literature related to the study on the quality of learning environment in early childhood centres. The literature reviewed captures the following themes: Outdoor play environment in ECD centre, type of ECD centre and quality of outdoor play environment, location of ECD centre and quality of outdoor play environment and strategies used to improve quality of outdoor play environment in ECD centres. The chapter thereafter presents a summary of the literature reviewed.

2.1 Outdoor Play Environment in ECD Centres

Outdoor environment and play activities are an important and significant factor of the early childhood curriculum that provides opportunities for holistic development and learning experiences (Elias and Arnold, 2006). Even with the increment in the amount of time spent for children under six years, there is the further need to intentionally consider the quality of early childhood outdoor environment. This is so because it provides a great foundation for the children (Espinoza, 2002). According to Slutsky and Pistorova (2010), promotion for genuine early childhood skills through provision of quality outdoor play environment in Early Childhood Development centres lays a good education background which is very important for future growth of the child. As noted by Sylva (2004) the quality of Early Childhood Education has a considerable impact on learner’s academic outcome and also future life. In one study by Gardinal-Pizato, Marturano and Fontaine (2012) assessed the impact of access to early childhood education on the academic achievement of ECE children. A multivariate analysis showed ECE was consistently
associated with greater achievement. From the studies by Sylva (2004) and Gardinal-Pizato, Marturano and Fontaine (2012), it comes out clearly that early childhood education aids in improving the academic performance of children. These studies do not however establish the quality of outdoor play environment in the ECD centres, thus deriving a gap to be addressed in the current study.

Due to various changes in the society such as women empowerment, changes in family structures and most of the people engaging in income generating activities, most of the parents opt to take their children in child care centres. These centres act as social context in which early development takes place. In these centres children learn how to communicate and interact with others, familiarize with the school climate and also get involved in early learning of speech development (Shonkoff and Phillips, 2000). Since most of the time children spend their time with the caregivers, it is therefore very clear that the experience they enquire in ECD centers and while engaging with other children during outdoor play environment is very crucial. With this regard, ECD teachers must therefore ensure that preschoolers get access to outdoor play environments that support and provide quality experiences. Thus quality childcare should include ensuring that all children engage in play everyday especially during morning and evening hours ((Frost, 1992).

According to Bradbard, Endsley, and Readdick (1983), ensuring that the preschools have a good classroom environment can lead to an increased in the number of parents while selecting the ECD program for their children. Other factors that most of the parents normally consider are education cost, distance from home to preschool and availability of the caregivers while in school. However, other researchers such as Sylva, et al., (2006)
asserts that to ensure that parents lay a very good foundation of their children's development process today and in the future, parents should not only focus on the quality of the physical facilities in the ECD centres but also the most crucial learning materials available within the pre-school environment. This is because selection of the preschool had either a positive or negative impact on the growth of the preschooler. As noted by Towell (1997) compliance to regulations based on health and safety guidelines, enhances the school environment for the pre-school children.

The outdoor play environment can be defined as a place where children explore natural environment and have an opportunity of interacting with other children. This simply means that outdoor play environment is not a place where preschoolers learn academic lessons. For children to engage in outdoor play activities, it's the duty of the teacher to ensure that they capture the interests of all children by ensuring that they are friendly while in the classroom and also ensure that all children are given room to participate in all activities while in the play field (Lee, 2006, Edgington, 1998). As a consequence, this can positively influence preschooler to learn more and also like being engaged in play. It was therefore important to establish whether there are any determinants of quality outdoor play environment and also develop strategies that could aid in improving the quality of the play environment in ECD centres in Ng’enda zone.

To ensure good relationship between the educators and the children during outdoor play environment, a teacher must be ready to encourage, show love and care to the children and also view them as strong and competent. For instance, Tarman and Tarman (2012) conducted a study to establish educators’ engagement in preschoolers play and social interaction. The research employed a qualitative survey design whereby data was
collected through interview schedules. The study respondents were interviewed for 60-90 minutes. The study findings revealed that teachers should act as role models while engaging in outdoor play activities with the children. They should therefore demonstrate what they want the children to do instead of giving out directions. This provides an indication that teachers’ supervisory role in play is of great importance in enhancing quality indoor and outdoor play.

Children and teachers’ perception toward play is very crucial in any outdoor play environment. The teachers must be social, approachable and friendly to the preschoolers. They are also expected to portray an emotional feeling towards the child in case of any risks. This as a result will give children courage to play without fear because they know they are fully supported by their teachers in case of anything (Skinner, 2007). Similarly, research work by Murtaza (2011) reveals that given the chance and the conducive outdoor play setting, preschoolers will not differ in their growth and development despite of the background they come from. Thus, it’s good to ensure that all the children have chance of participating in play and learning activities in a better manner.

In his study, Click (1998) observed that in a suitable environment set for child care development, preschoolers can improve their process of acquiring knowledge as they are given opportunity to participate in various activities and also discover on their own. To promote this, the play environment must be surrounded with variety of playing materials that the children can use to do experiment and also make their own discoveries. The play space must also be adequate enough compared to give each child enough space for playing (Sadu, 2004). In a research by Kerich and Okioma (2015) the researchers investigated the condition of outdoor play environment in ECD centers in relation to the
cognitive growth of the youngsters. The study sought to find out the status of outdoor play environment in relation to space, equipment and planning for the children’s cognitive development. The study used a sample of 20 ECD centres whereby data was collected using questionnaires, interview schedule and an observation checklist from the study respondents. The results of the analysis revealed that most of the ECD centres sampled did not give children a chance of acquiring knowledge through their own thinking (cognitive development). This finding was verified by the results which showed that almost all ECD centres sampled had only equipment and materials for physical play not cognitive development. This provides an indication that in ECD centres where the play environments don’t provide materials for the development of the children, a holistic growth in a child may also not be well enhanced.

The most important factor for outdoor play environment is to provide suitable play materials and equipments which are within the acceptable limits of safety of all children in all age groups. According to the Consumer Product Safety Commission (CPSC, 2010), playgrounds should be organized such that all the playing materials and equipment available should be arranged according to the children age, their sizes, abilities and developmental levels. For instance, handles of play materials should be small; bridges and platforms should be low and have guard rails and hand rails; slides should be short (under 4 feet), and stairs should have gradual (not steep) incline. Malone and Tranter, (2003) notes that a playground like this provides a child with an opportunity of participating in all activities they are interested in and also give them a room of being creative and discovering on their own.
Some researchers have however seen an inadequacy of the play materials in some ECD centres. For example, in one study, Kerich (2015) carried out a study with an aim of assessing availability of outdoor play materials in ECD centres located within the town. This was a descriptive study that used purposive sampling to select 20 urban ECD centres to participate in the study. Data collected from the field was quantitative in nature and was analyzed using descriptive statistics. The findings of the analysis revealed that most of sampled ECD centres settings enhanced children’s physical development to a very small extent. The study further established that most of the materials available promoted gross development which entails children’s body movement. These include materials used for climbing, sliding, jumping and swinging. However, it also emerged that the materials available in ECD centres were not enough compared to the number of children. More so, the study established that most of the ECD centres did not give children room of acquiring their own knowledge through their own thoughts (cognitive development). This provides an implication that though play environments may be available in ECD centres, whether or not they are equipped with adequate and necessary play materials is also a key determinant on whether the play activities are of quality. In the current study, the research sought to find out whether there is quality outdoor play in ECD centres in Ng’enda zone.

Children always feel safe when the play equipment and materials are appropriate and able to challenge their physical and intellectual capacities to meet their individual needs. Play equipment include play structures like sliding boards, ladders and parallel boards, knotted ropes, climbing poles, bridges, platforms and swings, walking boards, balance boards and sand boxes. There are also toys for play, (garden tools, large soft balls, bean bags,
rocking horses, boats and board tubs); sand box materials (funnel, strainers and empty plastic containers) wheel toys (tricycles, child size vehicles as well as wagons) and water play materials (KIE Syllabus, 2008; KIE, 1999). Play equipment and materials for pre-school children should be designed to stimulate them and also encourage the development of psychomotor skills. They should also be provided for children with special needs so that they participate in outdoor activities as a way of encouraging integration and inclusion of all children in the playground (Inan, 2009).

Layout of the equipment is crucial to enhancing children’s safety in the outdoor play environment. Structural integrity of the equipment for out door play environment should be a concern so that the equipment is not hazardous or flimsy that it can break while children are on it. Well laid outdoor play equipment provide easy navigation that builds confidence without sacrificing safety of the children (Braidekamp, 1992). Different equipments should be used in different zones. For instance, equipments used for physical development such as swings and slides should be located towards the outer side of the playground. Large muscles activities (those involving static balancing, gross body coordination and flexibility) should also be separated from the fine muscle activities (those requiring finger speed, arm steadiness, arm and hand precision and finger and hand dexterity). This also enables them to maintain their play areas, create positive emotional development and to explore new ideas through equipment they can handle (Braidekamp, 1992).

The school compound comprises of the various environmental components that a child encounter while growing up. These environmental aspects are in some instances invisible yet anyone including the child can feel them in their life. Positive perceptions
about the school, social interactions within the school compound, safe and well maintained building and play ground are some of the aspects of school’s physical environment. These environmental components can enhance children engagement to school which as a result leads to better academic outcome (McKenzie and Richmond, 1998).

The interaction between the children and the teachers (psychosocial environment) consists of attitude, thoughts and the values of the two parties. Physical and mental protection, positive social interactions, acknowledgement of the individual needs, victory of the individual and support for learning process all these are referred to as psychosocial environment. However, there are various factors which influences psychosocial environment within the school. One of these factors is high enrollment of children in ECD centres which act as one of the indicators showing that the physical facilities may be in poor conditions. Other factors includes, status of children’s family in terms of economy; social, cultural, and religious influences; as well as legal, political, and social institutions (Stevenson, 2001).

Kopela and Clarke (2005) emphasize that in order to build a healthy play environment for all children at all ages; it requires engagement of all school stakeholders’ i.e. children, teachers, nutrition service workers, parents, community members, among others. Furthermore, school need to engage even the public health, public safety, public welfare, and other community agencies. However, school managers have the role of ensuring that there is a good working physical and psychosocial environment. On the other hand, QASOs are expected to play their role of inspection schools to ensure that they adhere to the rules as stated in the education code that affect the school environment (Kopela and
Clarke, 2005). This study will therefore seek to establish the quality of outdoor play environment in ECD centres in Ng’enda zone.

2.2 Type of ECD Centre and Quality of Outdoor Play Environment

School environment is essential in enabling pre-school children to handle and persevere all the demanding activities with ease, it also enable learners to work as a team, learn from the mistakes and also learn how to follow instructions. Children acquire this knowledge by participating in outdoor play activities which assists them in cognitive development whereby they learn to pay attention, remembering rules, and improving their desires to achieve bigger objectives (Tomlinson and Hyson, 2012).

Early childhood care and education programs come in many forms. They can be categorized into two broad types: high cost and low cost programmes. High cost programmes are mostly offered in the urban centres where most parents are able to pay for their children. Most parents in this category buy play materials for their children to be used for outdoor play environment. Meals are provided at a cost and the children are able to participate in the outdoor play environment offered. Low cost ECD programmes on the other hand are mostly provided in rural areas. Most of the parents are not literate and therefore do not value ECD programmes. The low cost programmes however, appear to have lower structural quality compared to the high cost programmes and they lack quality outdoor play facilities and safety. This implies to this study where the high cost ECD centres, mostly belonging to private schools have more advanced play materials such as swings, climbing ladders among others. The low cost centres lack quality play materials. The most commonly observed materials are small balls, ropes and tyres which are inadequate for use by the many children in public schools.
Alderman et al., (2001) note that high cost ECD programs provide best results. Qualified teachers are involved in guiding the children in matters pertaining to outdoor play and teachers are given a chance to go for training as a way of enhancing their skills on children’s growth. Rivkin (2002) asserts that the type of environment provided in high cost ECD centres facilitate and guides play. It also offers exploration, promotes the holistic nature of children’s learning and encourages preschoolers to have freedom, be responsible and also engage in the learning atmosphere with the households and in the society.

A study done by Oketch et al., (2008) on school mobility in slum areas in Nairobi revealed that 55.6 percent of the parents transferred their siblings from public to private schools due to the influence of factors such as good classroom buildings and other physical facilities in the private schools and varieties of playing materials. A similar case was also seen in a research conducted by Adebayo (2009) which revealed that majority of the parents in Nigeria choose to take their children to private schools because of the quality of services provided in private schools. Is this therefore, an indication that there is a disparity between the quality of play materials in public and private ECD centres? This is something that the current study sought to establish in Ng’enda zone?

According to a report made by the government through the Ministry of Education (2007), Gatundu Sub-County has registered a high number of private ECD centres. The report showed that from year 2004 to year 2007, the sub county registered 34 private ECD centres compared to only 14 public ECD centres. This was further confirmed by a DICECE report in 2011 which showed that many parents were opting for private ECD centres, especially due to the quality services, in terms of quality education and low
student-teacher ratio therefore a personalized sense of touch of the child with the teacher. There however exists no study done to investigate the quality of the outdoor play environment in these centres. As such, the current study saw the need to fill this knowledge gap.

A study conducted by Wambui (2014) on Parents' Satisfaction with Quality of Services Offered in Early Childhood Development Programmes in Mang'u division; Kiambu County, Kenya. This study revealed that there was a significant difference in parental satisfaction with the quality of ECD services between public and private ECD centres. This meant that the type of ECD centres had a significant influence on parents' satisfaction with quality of services offered in the ECD program. The findings showed that parents at private ECD centres were more satisfied with the centres than those of public ECD schools.

Many ECD centres in rural areas have high outdoor play space compared to the ECD centres in urban areas. According to Consortium for Health, Intervention, Learning and Development (CHILD) centers report, play space should be adequate to hold the number of children enrolled in the ECD centres. Each child should have enough space while playing with other children to avoid risks that may occur. In addition, the play ground should be large enough to give children room of using various play materials and also engage in gross activities such as running. The recommended space should be $14m^2$ per child (Herrington et al., 2010). This is also the case in many public ECD centres in the rural areas of Gatundu Sub-County where the study was conducted.
In another study, Tarimo (2013) set out to investigate the use of play materials by the teachers as a teaching method in Tanzania in Mwanga district. This was a descriptive study that used purposive sampling to select 30 pre-primary schools as the study sample with one of the objectives being to find out the influence on the type of school on the use of play as a teaching strategy. The statistics used were both inferential and descriptive statistics. Inferential statistics included use of Chi-square whereby the research sought to determine how the school type influence play as a teaching strategies employed by the teachers. From the study findings, the null hypothesis was accepted that type of school does not have any significant influence on play as a teaching strategies employed pre-school teachers. This meant that the type of school did not significantly influence use of play as a teaching strategy. Though this study focused on whether the type of school influenced the use of play as a teaching strategy, the current study investigated whether the type of school had any influence on the quality of outdoor play environment in ECD centres in Ng’enda Zone.

2.3 Location of ECD Centre and Quality of Outdoor Play Environment

The location of the ECD centre has a great influence on the outdoor play environment. A significant number of preschoolers around the world especially those living in towns normally stay in unconducive environment where they are given little chance for play or leisure activities. This is due to factors such as overcrowding in towns, unsafe and polluted settings. Young siblings are at higher risks to both ecological and social deprivation. For instance, children raised in urban areas are less likely to engage in play and hence most of these children are not given room for cognitive development (Valentine and McKendrick, 1997). This clearly indicate that most of the children
brought out in cities are not given free time to engage with other children for play activities. This is because majority of the parents considered unregulated play as an activity of the past.

According to Tranter and Doyle (1996); Valentine and McKendrick, (1997), modern parents limit their children freedom of exploring the environment around them. The parents tend to be too protective of what would happen to their children due to insecurity especially in urban areas. Parents provide regulated play environment to their children which they are able to monitor or give responsibility to the caregivers in their absence (Hasluck and Malone, 1999; McKendrick, Bradford and Fielder, 2000). Regulated play environment may be crucial as it “guard” children from being exposed to risks,. However, this denies children their free choice activities and social interaction with other children and as a result would cause negative impact towards play in future (Tranter and Pawson, 2001).

Children learn through play and they are greatly influenced by nature, design and policies informing the use of school play environment (Moore, 1989; Titman, 1994; Moore and Wong, 1997). Moore and Wong's, (1997) came up with an idea of redesigning the school grounds on children’s play where part of it was changed into natural features. This created more positive relationship with each other and demonstrated new skills in play and learning activities. Teachers utilized the new space while enforcing and connecting children play experiences through the formal curriculum. In so doing, children played their role of being knowledge generators rather than knowledge consumers.
In 1999, Barbour conducted a study to two groups of children with different opportunities of engaging in play. This researcher established that in schools where children had chance of engaging in play activities, most of these children also interacted freely with others. In addition, play also promoted gross motor activity among children and also gives them room of discovering on their own. However, where children did not have the opportunity to engage in play activities, most of them had low physical competence (Barbour, 1999). To eliminate this difference between the two groups, Bablour (1999) recommended that the children who are not capable of playing due to their disability, should be provided by different play equipment and materials that can support them. Furthermore, teachers should encourage cooperative rather than competitive play among the two groups of children. This study by Bablour (1999) however does not show a clear indication regarding the location of the schools studied. This raises a concern as to whether the findings generated could be bias to one category of the ECD schools. The current study therefore sought to find out clearer differences on the ECDE playgrounds in ECD schools in rural and urban centre in Ng’enda Zone, Kiambu County.

Various elements may be important in high-quality school grounds. These include: water features; possibilities for children to choose their own play activities and create their own play places; access to nature (trees, ponds, shrubs, flowers, long grass, insects and animals); fields to play on; places and features to sit on, lean against or hide in; and an unstructured and manipulable environment, including loose materials for children to play with (Fjortoft and Sageie, 2000; Moore, 1986; White and Stoecklin, 1998). In this light, the current study therefore sought to establish the various elements in both rural and
urban ECD centres that are key determinants of quality outdoor play environments in ECD centres in Ng’enda zone.

In Zimbabwe, a study was done by Mugweni, Metureri and Ganga (2012). It was a qualitative case study conducted in four pre-schools (named centres A, B, C and D) in Masvingo city. The findings showed that the major challenge that was faced by the three centres sampled (A, B, C) was higher population compared to the facilities available. The study established that in the three centres there were no play space and also the play materials were not available. In addition to this, the study found out that preschoolers were overcrowded in a very small play ground hence hindering them from engaging in various activities such as running. However, in centre D the status of the environment was different whereby the play space was enough compared to the number of children. The study also found out that play materials were enough in this centre and this enhanced sustainable development in all preschooler’s domains of growth. A further analysis revealed that while the three pre-schools (A, B and C) were owned by individuals and the church, centre D was attached to a private primary school. These results provide an indication that the quality of play environment differed among various ECD centres located in different settings. However, despite the interesting findings, the study was conducted in Zimbabwe and thus the findings cannot be generalized in Kenyan ECD schools. The current study therefore sought to find out whether the location of ECD centres in Ng’enda zone influencers the quality of outdoor play environment in these centres.
2.4 Strategies Used to Improve Quality of Outdoor Play Environment in ECD Centres

The benefits of playground safety are promoted when the teacher play their role in supervision of children when they are engaging in outdoor play activities. This also is enhanced when the teacher ensures that all the playing material are in good condition and are appropriately placed. According to Hudson et al., (2002), safe outdoor playgrounds have sight angles that allow visual access to all parts of the play area and structures from at least two directions at any point of observation. The sight angles make it easier for the supervisor or teacher to see all the children at play in the different zones and hence respond to emergencies using the routes implied by the sight lines. A positive emotional environment is created, where children and the teacher are always in contact during the activities. This also enhances children’s discipline under the watchful eye of the teacher that surveys all corners and zones in the outdoor play area.

Pre-school outdoor play environment becomes unsafe for children and accidents occur when supervision is inadequate due to an inconsiderable ratio of teachers to children. The New Pre-Primary Approach (2000) recommends that pre-schools should provide the same ratio of supervisors or teachers on the outdoor play area. Hudson, Thompson, Cechota and Mack (2002) posit that the ratio should consider the developmental levels of the pre-schoolers to ensure adequate attention and emergency response is given to the young children. The ECD SSGK (2006) recommends a ratio of one teacher to fifteen (1:15) for three to four year old children, one to twenty five (1:25) for four to five year olds and one to thirty (1:30) for five to six year old children both indoors and in the outdoor play area. The guidelines further recommend a ratio of one teacher to one child
(1:1) for ECD special needs children with autism, combination of deafness and blindness, cerebral palsy and multiple disabilities; one teacher to fifteen (1:15) for the visually impaired and the physically handicapped pre-schoolers; one teacher to ten (1:10) for mild mental disability pre-schoolers and one teacher to twelve (1:12) for the deaf children. The ratio of the number of children to one teacher increases in rural areas. In most communities, Early Childhood Care and Development Educational (ECCDE) centers lack the financial capacity to employ sufficient number of teachers, that is, they are unable to establish and maintain a reasonable teacher per pupil ratio.

According to the Comprehensive Education Sector Analysis (CESA) team as cited in (UNICEF, 2003) the teacher per pupil ratios exhibited considerable regional disparity. Areas that recorded satisfactory ratios included Nairobi 1:34, Eldoret Municipality 1:32 and, Baringo 1:34. Some other areas were badly hit for example Turkana 1:504, Marsabit 1:330, Mt. Elgon 1:316, Bomer 1:294, Nyandarua1:227. This therefore shows that in most, rural areas, the teachers are responsible for the care of too many children than the normal expectations; this therefore becomes burdensome as the teacher cannot offer individualized attention to each child during play activities that require teacher guidance. The situation is also similar in the current study area whereby, in the public ECD centres which happen to be located in the village, the student-teacher ratio is very high compared to their fellows in the private ECD centres, mostly located in the village centres, which in turn affects the quality of outdoor play.

Santer and Griffins (2007) note that although free play is by definition child-led, adults have a crucial role in providing suitable environments and in facilitating children’s experiences. They further state that the primary role of the adult is to create both a
psychologically and physically suitable context in which children feel secure, develop a sense of their worth, and that of others, and have the freedom and autonomy to explore. An assistant teacher is therefore recommended for pre-school children in order for them to develop feelings of security and enhance children’s participation in outdoor play activities.

Safety rules and regulations in the outdoor play environment provide the pre-schoolers and teachers with the opportunity to participate in enhancing outdoor play environment safety. When the ‘dos’ and ‘don’ts’ of the outdoor play area equipment and activities are known and well internalized, children develop a positive attitude towards the activities involved. A helpful strategy to ensure children learn and understand the rules and regulations is to make them rehearse them indoors and outdoors. Rules and regulations ensure low incidence of indiscipline during the play activities processes and in the use of equipment and materials. They enhance learning and development of life skills such as cooperation, respect for the environment and others in the playground, communication and taking turns when using the equipment while climbing and landing from equipment to avoid falls. For example Macharia (2012) in his study established that apart from enhancing rules and regulations as one of the strategies for enhancing safety during children’s play, other adopted strategies in Naivasha district were: organizing play areas according to play activities/ age/ level of learning; fencing the school playground and play areas; collecting or clearing harmful sharp objects; leveling the playground surfaces; cutting grass and bushes; marking and zoning the play spaces; pre-visiting the play spaces before children use them and supervising the children’s play. All these provide an indication that various strategies can be put in place to improve the quality of outdoor
play. Are these the same strategies adopted in ECD centres in Ng’enda zone, Kiambu County? This is something the current study sought to find out.

In another study, Teria (2004) found out how pre-school teacher bridged children’s learning of mathematics concepts through play activities. According to Teria, mathematics was a critical subject whose performance would be enhanced by using play materials as a means of teaching and learning. The study used an expost facto descriptive survey research design and 32 randomly selected pre-school teachers. The study recommended that the managers of pre-schools should provide adequate space in indoor and outdoor, and appropriate learning resources for preschool children. This is an indicator that with such strategies being employed the learning of mathematics among pre-school children would be more enhanced. In the current study however, the researcher was not interested in the use of play in subject teaching. She sought to establish further strategies that would be adopted to improve the quality of outdoor play environment in ECD centres.

In yet another study, Ndugo (2015) conducted a study to find out the importance of incorporating of play in instructional in learning activities in ECD centres in Nyandarua County in Kenya. The research aimed at; finding out the extent to which teachers incorporate play activities while teaching, determining teachers’ attitude towards incorporation of play while teaching, establish their academic qualifications and also find out factors which undermined the incorporation of play during classroom instruction. The study employed a descriptive design targeting 150 pre-schools. From the study findings generated, the study recommended that the County and National governments should find
ways of providing pre-schools with play materials and equipments and that parents should also be encouraged to support the pre-schools in the provision of play materials. Through the adoption of this strategy, play in ECD centres would well be used for teaching and learning. In the current study however, the research will not investigate on the use of play in teaching and learning but will rather find out the key determinants of quality outdoor play environment in ECD centers in Ng’enda zone, Gatundu Sub-County,

2.5 Summary of Literature Review

This chapter has reviewed literature on outdoor play environment in ECD centres, outdoor play materials in ECD centres, factors influencing the quality of outdoor play environment and strategies for improving quality of outdoor play environment in ECD centres. The review shows that the quality of environment is crucial for successful growth and development of preschool children, and it influences the attitudes formed by children toward school. The literature on key determinants of quality outdoor play environment is however very scanty. Majority of the studies found, most of which were from outside Kenya focused on the use of play in teaching and learning of pre-school children, with very little or even no focus on the quality of outdoor play. For the few Kenyan studies reviewed, most of them are conducted in other Counties, with no single study done in Ng’enda Zone. This therefore raises the need for the current study therefore to bridge this gap by generating information regarding the key determinants of quality outdoor play in early childhood development centres in Ng’enda Zone, Kiambu County.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter gives a description of the research methodology. It captures the design of the study, study variables, location of the study, the study population, sampling techniques and sample size, research instruments and their administration, piloting, data collection procedures, data analysis methods and the logistical and ethical considerations used in the study.

3.1 Research Design

This study employed mixed method research design. This is an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study. Thus, it is more than simply collecting and analyzing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell & Plano Clark, 2007). The use of mixed method design enabled the researcher to gain an in depth understanding of the facts, knowledge, opinions and judgements for the purpose of this study. It also enabled the researcher employ a variety of tools structured to collect qualitative and quantitative data from the ECD headteachers/managers and teachers regarding the quality of outdoor play environment in ECD centres in Ng’enda Zone, Gatundu South Sub-County.
3.2 Study Variables

The study variables in this research are described in the following sub-sections.

3.2.1 Dependent Variable

The dependent variable was quality of outdoor play environment. It was measured by determining the safety of outdoor resources and outdoor space. Availability of play fields was also used to determine the quality of outdoor play environment and was measured by the existence of play fields and the availability of play equipment/materials. Safety of playground and materials was measured by the quality of play materials and plays ground and the frequency of their maintenance.

3.2.2 Independent Variables

The independent variables were:

i. Type of ECD Centre - The variable was measured by determining whether the ECD centre was low cost or high cost. The type of ECD programme provided had an influence on the quality of outdoor play environment.

ii. Location of ECD Centre - This variable was measured by indicating whether the type of ECD centre was in rural or urban setting.

iii. Strategies used to improve the quality of outdoor play environment in ECD Centres.

3.3 Location of the Study

The study was conducted in Ng’enda Zone in Gatundu Sub-County of Kiambu County, Kenya (See appendix V). The Sub-County lies at 177km² and has an approximate population of 107,049 people. The main economic activity in the sub-county is business
whereby majority of men and women engage in various business activities. The area is also known for agricultural farming with major crops grown being coffee, maize and beans. Animal husbandry and poultry farming are also common farming activities within the region. This study location was chosen since through the researchers’ observation, there were many mushrooming ECD centres in the region, majority of which did not meet the quality standard guidelines for early childhood development centres. This raised the need to find out the key determinants of quality outdoor play environment in these centres. In Ng’nda Zone, there are 31 ECD centers in Ng’enda Zone, among them 16 public attached, 4 public detached and 11 private centers. All these were targeted for the purpose of this study.

3.4 Study Population

The study targeted all 31 headteachers and 112 teachers in all the 31 Early Childhood Development Centers in Ng’enda zone of Gatundu South Sub-County. The ECD centers operating in Ng’enda Zone were categorized into public and private centers. The total population of children served in these centers during the time for data collection was 27,721, among them 12,336 girls and 15,385 boys (District Education Office, Gatundu, 2014).

3.5 Sampling Techniques and Sample Size

Sampling techniques refers to the procedures that will be employed to select the participants to be included in this study. The sample size on the other hand is the smaller portion of the larger population whom the study will include in the study.
3.5.1 Sampling Techniques

Stratified random sampling was used to select 10 ECD centres according to the type of centre. This sampling technique was considered since there being different categories of ECD centres in the study area, it would enable the researcher to categorize the centres into stratas of either public or private centres. This therefore gave each ECD centre an equal chance of being selected, thereby minimizing sampling error. The study purposively selected all the headteachers in the 10 sampled ECD centres to take part in the study. Out of the targeted 112 ECD teachers, the researcher randomly selected 60 ECD teachers. Statistics from Gatundu District Education Office (2014) showed that majority of the ECD teachers were females with just a few males. For this reason the researcher sampled all male teachers from the 10 schools to participate in the study. The Zonal education officer was also purposively selected to participate in this study. This gave a total sample of 71 respondents.

Table 3.1: Sampling Frame

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<thead>
<tr>
<th>Category of respondents</th>
<th>Population</th>
<th>Sample</th>
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<tr>
<td>Headteachers</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Teachers</td>
<td>112</td>
<td>60</td>
</tr>
<tr>
<td>Zonal Education Officer</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>143</td>
<td>71</td>
</tr>
</tbody>
</table>

3.5.2 Sample Size

A sample is a small portion of a target population. Sampling means selecting a given number of subjects from a defined population as representative of that population. Any statements made about the sample should also be true of the population (Orodho 2004).
For this study, 10 (32%) ECDE centres were utilized. The 10 pre-schools represented 32% of the targeted 31 pre-schools, which is in line with Gay (1992) recommendation of 10.0% minimum sample size.

3.6 Research Instruments

The main instruments used for data collection in this study were questionnaires administered to the ECD teachers, an interview schedule administered to the ECD headteachers/managers and to the Zonal education officer and an observation checklist.

3.6.1 Interview Schedule

An interview is essentially the oral in-person administration of a questionnaire to each member of a sample. According to Gay (1992), the interview is most appropriate for asking questions which cannot effectively be structured into a multiple-choice format. Furthermore, an interview allows the researcher to ask for clarifications and gain more insightful responses than would be possible using questionnaires.

The researcher personally conducted face to face interviews with the pre-school headteachers/managers and the Zonal education officer (see appendix III). This method was preferred to mailing the questionnaire due to its flexibility, easy interpretation of the meaning of questions, developing rapport with the respondent and allowing face-to-face contact between the interviewer and interviewee. The interview method therefore allowed the researcher to get in-depth information on the quality of learning environment in ECD centres. In addition to the interviews, field observations were made in each of the sampled centres, using an observation guide.
3.6.2 Questionnaire for Teachers (see appendix II)

The questionnaire for teachers comprised of three sections. Section A collected teachers’ demographic data including gender of teachers, work experience, academic and professional qualifications of the ECD teachers. Section B gathered data on the quality of outdoor play environment in ECD centres. The researcher considered a questionnaire for data collection as it gives the respondents freedom to express their views or opinion and to make suggestions (Gay, 1992).

3.6.3 Observation Checklist (see appendix IV)

The researcher constructed an observation checklist that was used in documenting aspects on quality of outdoor play environment. These included; adequacy of play spaces, proper maintenance and safety of playgrounds, availability of fixed playground equipments and proper servicing and maintenance of play equipments. The items on the observation checklist were measured on a Yes/No scale where Yes scored (1) and No scored (0). Similarly, play materials that were available scored (1) while those not available scored (0).

3.7 Pilot Study

Prior to the data collection a pilot study was conducted in two ECD Centers. The piloted ECD centers were randomly selected and did not participate in the final study. According to Mugenda and Mugenda (1999), piloting ensures that research instruments are stated clearly and have the same meaning to all the respondents. During piloting process, the researcher booked an appointment with the school heads of the sampled ECD centres on when to conduct the pilot study. On the agreed date, she then visited the schools and distributed the questionnaires to the ECD teachers. The data collected was then analyzed.
Piloting enabled the researcher to pre-test the research instruments and also to modify and remove ambiguous items from the questionnaires.

3.7.1 Validity of the study

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results (Mugenda and Mugenda, 1999). In this study, face validity and content validity of the instruments was considered. Face validity in this study was done through piloting. The researcher considered face validity since it helped her ensure the clarity of the questions in the data collection instruments. Those items that were found unclear or ambiguous were reviewed and improved in order to make them more understanding to the study respondents. According to Borg and Gall (1989), content validity of an instrument is improved through expert judgment. As such the researcher prepared the instruments in close consultation with her supervisors to ensure that the items in the questionnaire covered all the study objectives and variables of the study.

3.7.2 Reliability of the study

Mugenda and Mugenda (2003) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trial. In order to improve the reliability of the instrument, an assessment of the consistency of the responses on the pilot questionnaire were made to make a judgement on their reliability. Test-retest technique of reliability testing was employed whereby the pilot questionnaires were administered twice to the respondents, with a one week interval, to allow for reliability testing. The scores were then correlated using Pearson Product-Moment Correlation formula which yielded a reliability coefficient of 0.79. The researcher used Pearson Product-Moment Correlation in order to determine whether the study
respondents differed in the responses that they gave during the first and second rounds of the questionnaires administered. A correlation coefficient of 0.7 or higher was accepted as recommended by Mugenda and Mugenda (2003).

3.8 Data Collection Procedures
The researcher booked an appointment with the sampled pre-schools through the ECD managers. The researcher then visited pre-schools on the agreed date and administered questionnaires to teachers and conducted face to face interviews with the ECD managers. The filled-in questionnaires were then collected on the same day. As the teachers filled in the questionnaires, the researcher documented various aspects of quality outdoor play environment in the observation checklist. The researcher also booked an appointment with the Zonal district education officer when she conducted the face to face interview on quality outdoor play environment in ECD centres. The researcher took a period of two weeks to collect data in all the 10 sampled ECD centres.

3.9 Data Analysis Procedures
After all the data was collected, it was coded and entered in the computer for analysis using the Statistical Package for Social Sciences (SPSS). The data collected was both qualitative and quantitative in nature. Martin and Acuna (2002) states that SPSS is able to handle large amount of data, and given its wide spectrum of statistical procedures purposefully designed for social sciences, it is also quite efficient. Qualitative data was analyzed thematically in line with the study objectives. The data was first coded by organizing it into similar themes and then tallying all similar responses of each item. Frequency counts were then made of all respondents making similar responses. Descriptive statistics such as percentages, means and frequencies were used to analyze
the quantitative data. Bell (1993) maintains that when making the results known to a
variety of readers, simple descriptive statistics such as percentages have a considerable
advantage over more complex statistics. Similarly, Borg and Gall (1989) agree that the
most widely used and understood standard proportion is the percentage.

3.10 Logistical and Ethical Considerations
The researcher sought authority of conducting the study by obtaining a letter of
introduction from Graduate School, Kenyatta University (see appendix V). Thereafter,
the researcher sought authority from the District Education Officer Gatundu and National
Council for Science Technology and Innovation (NACOSTI) (See appendix VI). The
following ethical considerations were made:

3.10.1 Care and Protection of Research Participants
In order to ensure the protection of the research participants, the researcher ensured that
the following issues were made clear to them: that the researcher is a student at
Kenyatta University taking a Masters of Education in Early Childhood Development
Studies; the respondents were informed that no penalties were to be meted for refusal to
participate in the study; all the respondents were informed that they were free to
participate or reject participation and that the research participants would be provided
with free airtime worth Ksh.100 by the researcher as a sign of appreciation.

3.10.2 Protection of Research Participant Confidentiality
In order to ensure the protection of the research participants’ confidentiality, the
researcher assured the respondents that the information they gave would be treated
confidentially and would be used only for academic purposes. The study participants
were also given a code which protected their identity. The information given by respondents was treated confidentially and was used only for academic purposes.

3.10.3 Informed Consent Process

Prior to conducting the interviews or filling-in the questionnaires, the participants were required to sign a consent form indicating that: Their participation was purely voluntary; they had the right to decline to answer any question or end the interview at any time and that they had the right to ask questions related to the study at any time.

3.10.4 Community Consideration

The researcher visited the participating schools in advance to explain her intention of collecting data and also get a chance to create rapport with the participants. It was during this visit that the researcher and the participants agreed on a convenient date and time when to conduct the interviews, fill in the observation checklist and also administer the questionnaires.
CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.0 Introduction

This chapter presents data analysis and interpretations of the study findings. The main objective of the study was to establish the quality of outdoor play environment in Ng’enda Zone, Gatundu South Sub-County. The study also determined the key factors influencing the quality of outdoor play environment in Early Childhood Centres, with a view of recommending measures for improving the quality of outdoor play environment in ECD centres in the Zone.

Data used in the study was obtained through the use of a questionnaire, interview schedule and observation checklist. The questionnaire was designed to collect data from 60 ECD teachers; interview schedule was used to collect data from 10 ECD managers and the Zonal education officer while observation checklist was used by the researcher to document aspects on quality of outdoor play environment in the 10 sampled ECD centres in Ng’enda zone. Among the 60 ECD teachers, 56 completely filled and returned their questionnaires giving a questionnaire return rate of 93.3%. In addition to this, all the ECD managers and the Zonal education officer participated in the study, yielding a total of 67 respondents.

4.1 General and Demographic Information

This section captures information on respondents’ gender, their teaching experience, academic qualifications and professional qualifications. It also focuses on the type of the sampled ECD centres. The importance of capturing this information is to provide a better
understanding of the study respondents and hence provide a good foundation for detailed
discussions of results based on the specific objectives of the study.

Table 4.1: Teacher’s demographic characteristics

<table>
<thead>
<tr>
<th>Teachers’ Gender</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>25.0</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>19</td>
<td>33.9</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teachers’ work experience</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Less than one Year</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>1-5 years</td>
<td>10</td>
<td>17.9</td>
<td>13</td>
</tr>
<tr>
<td>Over 5 Years</td>
<td>23</td>
<td>41.1</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional qualifications</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>DICECE Certificate</td>
<td>8</td>
<td>14.3</td>
<td>20</td>
</tr>
<tr>
<td>DICECE Diploma</td>
<td>22</td>
<td>39.3</td>
<td>3</td>
</tr>
<tr>
<td>P1 Certificate</td>
<td>3</td>
<td>5.4</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
<td>23</td>
</tr>
</tbody>
</table>

As shown in Table 4.1, out of the 33 (58.9%) teachers in public ECD centres, 14 (25.0%)
were males while 19 (33.9%) were females. The table also illustrates that all the 23
(41.1%) teachers from the private ECD centres were females. This shows that most of the
teachers in the sampled ECD centres were females, meaning there was a gender
imbalance among staff in ECDE centres. This confirms statistics from Educational
Statistical Booklet (2003) that most of the ECD teachers were females.

In terms of the teaching experience, the table further indicates that most of the teachers in
public ECD centres had a teaching experience of over 5 years whereas those from private
centres had taught for 1 to 5 years. This implies that teachers in public ECD centres had a long time experience compared to those in private ECD centres.

Information presented in the table further shows that most of the teachers in public ECD centres had attained DICECE diploma while those in private ECD centres had certificate qualifications. This implies that all the pre-school teachers who took part in the study had the capability to give reliable responses to this study since they were professionally qualified for the job. This was in line with the Early Childhood Development Service Standard Guidelines for Kenya (2006) which indicates that among other qualifications, an ECD teacher should possess at least a certificate in ECD offered by the government or from other institutions authorized by the government.

4.2 Type of ECD Centre and Quality of Outdoor Play Environment in ECD Centres

The outdoor environment provides optimal conditions for physically active play among children in the ECD centres. To determine whether ECD centres in Ng’enda Zone had safe, secure and appropriate open play area, the researcher first determined the number of children in ECD centres in both public and private centres. Table 4.2 illustrates the number of children in ECD classes in both public and private centres.

<table>
<thead>
<tr>
<th>No. of Children</th>
<th>Type of ECD Centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>20 and below</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>21-30</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>31-40</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>41-50</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>3.3</td>
<td>23</td>
</tr>
</tbody>
</table>
Table 4.2 indicates that 44.6% of the teachers in public ECD centres stated that they had between 31 and 50 children in their classes while 30.3% of teachers from private ECD centres reported that they had 30 children and below in their classes. This illustrates that teachers in public ECD centres had large classes compared to those in private centres. The results imply that public ECD centres were not adhering to Early Service Standard Guideline which states that an ECD classroom should accommodate a maximum of 25 children (Republic of Kenya, 2006).

The research further asked the respondents to rate the availability of outdoor play materials and their adequacy in relation to the number of children enrolled in the sampled ECD centres. The results of this analysis are presented below.

### 4.2.1 Availability of Outdoor Play Materials in ECD Centres

To assess the availability of outdoor play materials in ECDE centres, the study first sought to establish outdoor activities children were involved in both public and private ECD centres. Table 4.3 presents the results.

**Table 4.3: Outdoor Play Activities Children Engaged in Across Type of the ECD Centre**

<table>
<thead>
<tr>
<th>Outdoor Activities</th>
<th>Type of ECD Centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Unstructured (unplanned) activities</td>
<td>24</td>
<td>42.9</td>
</tr>
<tr>
<td>Structured (planned) activities</td>
<td>5</td>
<td>8.9</td>
</tr>
<tr>
<td>Both structured and unstructured</td>
<td>4</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3.3</strong></td>
<td><strong>58.9</strong></td>
</tr>
</tbody>
</table>
As shown in Table 4.3, 42.9% of the teachers in public ECD centres stated that children in their centres engaged in unstructured activities, 8.9% of them stated structured activities, while 7.1% cited that they engaged in both structured and unstructured activities. On the other hand, majority of the teachers in private ECD centres stated that children were involved in structured activities (30.4%) and both structured and unstructured activities (21.4%). This shows that teachers in private ECD centres were more organized in outdoor activities compared to their counterparts in public centres. The results therefore implies that children in public ECD centres had freedom to engage in activities of their choice compared to those in private ECD centres.

According to the Children’s’ Act (2001), failure to engage children in outdoor activities deprives them of the freedom of choice and expression. This is a violation of the rights of children. Hayes (2004) noted that most children in pre-schools engage in activities selected by the teacher. This is an indication that they have limited freedom to choose their own activities other than those suggested by the teachers. After determining the form of outdoor play activities that the children engaged in, the study further sought to establish the availability of various play materials and equipments in both the public and private ECD centres. Table 4.4 below indicates the observations made.
Table 4.4: Availability of Play Materials and Equipments in Public and Private ECD Centres

<table>
<thead>
<tr>
<th>Play materials</th>
<th>Availability</th>
<th>Public</th>
<th></th>
<th>Private</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Swings</td>
<td>Available</td>
<td>1</td>
<td>1.8</td>
<td>22</td>
<td>39.3</td>
<td>23</td>
<td>41.1</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>32</td>
<td>57.1</td>
<td>1</td>
<td>1.8</td>
<td>33</td>
<td>58.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Climbing ladders</td>
<td>Available</td>
<td>0</td>
<td>0.0</td>
<td>10</td>
<td>17.9</td>
<td>10</td>
<td>17.9</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>33</td>
<td>58.9</td>
<td>13</td>
<td>23.2</td>
<td>46</td>
<td>82.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Slides</td>
<td>Available</td>
<td>0</td>
<td>0.0</td>
<td>13</td>
<td>23.2</td>
<td>13</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>33</td>
<td>58.9</td>
<td>10</td>
<td>17.9</td>
<td>43</td>
<td>76.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Fixed tyres</td>
<td>Available</td>
<td>1</td>
<td>1.8</td>
<td>19</td>
<td>33.9</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>32</td>
<td>57.1</td>
<td>4</td>
<td>7.1</td>
<td>36</td>
<td>64.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Balancing beam</td>
<td>Available</td>
<td>3</td>
<td>5.4</td>
<td>5</td>
<td>8.9</td>
<td>8</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>30</td>
<td>53.6</td>
<td>18</td>
<td>32.1</td>
<td>48</td>
<td>85.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Small balls</td>
<td>Available</td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Ropes</td>
<td>Available</td>
<td>30</td>
<td>53.6</td>
<td>21</td>
<td>37.5</td>
<td>51</td>
<td>91.1</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>3</td>
<td>5.4</td>
<td>2</td>
<td>3.6</td>
<td>5</td>
<td>8.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Tyres</td>
<td>Available</td>
<td>30</td>
<td>53.6</td>
<td>13</td>
<td>23.2</td>
<td>43</td>
<td>76.8</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>3</td>
<td>5.4</td>
<td>10</td>
<td>17.8</td>
<td>13</td>
<td>23.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Hoops</td>
<td>Available</td>
<td>8</td>
<td>14.3</td>
<td>3</td>
<td>5.4</td>
<td>11</td>
<td>19.6</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>25</td>
<td>44.6</td>
<td>20</td>
<td>35.7</td>
<td>45</td>
<td>80.4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>See saw</td>
<td>Available</td>
<td>12</td>
<td>21.4</td>
<td>8</td>
<td>14.3</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
<td>21</td>
<td>37.5</td>
<td>15</td>
<td>26.8</td>
<td>36</td>
<td>64.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>58.9</td>
<td>23</td>
<td>41.1</td>
<td>56</td>
<td>100</td>
</tr>
</tbody>
</table>
As shown in Table 4.4, over 50.0% of the teachers in public ECD centres reported that swings, climbing ladders, slides, fixed tyres and balancing frames were not available in their centres. The most common play materials in these centres were small balls and tyres. On the other hand, over 30.0% of the teachers in private ECD centres stated that swings, fixed tyres, small balls, and ropes were available in their centres. Balancing frames, hoops and see-saw were not available in most centres. This was reported by at least 20.0% of the teachers in private centres who took part in the study. Among the headteachers interviewed, most of them and especially in private ECD centres reported that swings, climbing ladders, slides and fixed tyres were available in their centres while those from public centres reported that the most common playing materials available in their schools were tyres and small balls.

These findings were in line with the results by Shresthna, Eastman and Hayden (2009) who established that only a few government supported centres were equipped with such amenities as swings, see-saw and slides. This was a clear indication that most ECD centers did not have enough outdoor play materials and equipments. To back this finding, the study sampled a picture of the condition in one of the public ECD centre during an outdoor activity by the children.

### 4.2.2 Adequacy of Outdoor Play Materials in ECD Centres

The adequacy of outdoor play materials in ECD centres was established by providing respondents with a list of various play materials used by children during outdoor activities. They were asked to rate their adequacy in their respective centres. Table 4.5 illustrates results of this analysis.
Table 4.5: Adequacy of Play Materials in Both Public and Private ECD Centres

<table>
<thead>
<tr>
<th>Play materials</th>
<th>Type of ECD</th>
<th>Very adequate</th>
<th>Adequate</th>
<th>Inadequate</th>
<th>Very inadequate</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Swings</td>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
<td>10.7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>4</td>
<td>7.1</td>
<td>7</td>
<td>12.5</td>
<td>9</td>
</tr>
<tr>
<td>Climbing ladders</td>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>1.8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>3</td>
<td>5.4</td>
<td>4</td>
<td>7.1</td>
<td>5</td>
</tr>
<tr>
<td>Slides</td>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>5.4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>8</td>
<td>14.3</td>
<td>6</td>
<td>10.7</td>
<td>2</td>
</tr>
<tr>
<td>Fixed tyres</td>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
<td>10.7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>6</td>
<td>10.7</td>
<td>8</td>
<td>14.3</td>
<td>4</td>
</tr>
<tr>
<td>Balancing beams</td>
<td>Public</td>
<td>1</td>
<td>1.8</td>
<td>8</td>
<td>14.3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>4</td>
<td>7.1</td>
<td>2</td>
<td>3.6</td>
<td>4</td>
</tr>
<tr>
<td>Small balls</td>
<td>Public</td>
<td>9</td>
<td>16.1</td>
<td>20</td>
<td>35.7</td>
<td>0</td>
</tr>
<tr>
<td>Ropes</td>
<td>Public</td>
<td>8</td>
<td>14.3</td>
<td>24</td>
<td>42.9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>11</td>
<td>19.6</td>
<td>9</td>
<td>16.1</td>
<td>3</td>
</tr>
<tr>
<td>Tyres</td>
<td>Public</td>
<td>6</td>
<td>10.7</td>
<td>17</td>
<td>30.4</td>
<td>3</td>
</tr>
<tr>
<td>Hoops</td>
<td>Public</td>
<td>7</td>
<td>12.5</td>
<td>5</td>
<td>8.9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>11</td>
<td>19.6</td>
<td>5</td>
<td>8.9</td>
<td>4</td>
</tr>
<tr>
<td>See saw</td>
<td>Public</td>
<td>4</td>
<td>7.1</td>
<td>5</td>
<td>8.9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>0</td>
<td>0.0</td>
<td>9</td>
<td>16.1</td>
<td>0</td>
</tr>
<tr>
<td>Bar frame</td>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>5</td>
<td>8.9</td>
<td>2</td>
<td>3.6</td>
<td>6</td>
</tr>
</tbody>
</table>

As shown in Table 4.5, majority of the teachers in both public and private ECD centres stated that the most adequate playing materials in their centres were small balls, ropes and tyres. However, the most inadequate outdoor facility from all the sampled public preschool was bar beams (37.5%), followed by climbing ladders (28.5%), slides (25.0%), and then fixed tyres (21.4%). In private pre-schools, the most inadequate outdoor facility was balancing frames (21.4%); swings (19.7%), seesaw (17.8%) and hoops (12.5%).
This shows that outdoor facilities available in most ECD centres were not adequate to cater for all children. This was in line with results obtained by Tarimo (2013) in his study on use of play as a teaching strategy in pre-primary schools in Mwanga District, Tanzania. The study findings had revealed that most of the play materials in pre-primary schools were inadequate. This information was supported by the zonal education officer in the interview schedule who also indicated that the play materials in most ECD centres within Ng’enda Zone were inadequate.

Table 4.6: General rating of Adequacy of Play Materials in both Public and Private ECD Centres

<table>
<thead>
<tr>
<th>Adequacy of Play Materials</th>
<th>Type of ECD Centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Very adequate</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Adequate</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td>Inadequate</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td>Very inadequate</td>
<td>10</td>
<td>17.9</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
</tr>
</tbody>
</table>

As shown in Table 4.6, of the 58.9% of the teachers in public ECD centres, 5.4% of them rated play materials available in ECD centres as adequate while 53.6% of them rated them as inadequate. Of the 41.1% of the teachers in private centres, 19.6% of them rated available play materials as adequate while 21.4% of them rated them as inadequate. The results imply that in most ECD centres, playing materials were not adequate compared to the number of children registered in those centres. This concurs with Kerich (2015) whose study established that though play equipments were available in ECD schools, the equipment were inadequate in number in most of the schools. These results were
supported by the report obtained by the researcher through interviews with the headteachers that outdoor playing materials available in ECD centres were not adequate to cater for all the children.

### 4.2.3 Safety of Outdoor Play Facilities Available in ECD centres

To establish the safety of outdoor play facilities available in ECD centres, the study first sought to find out whether the sampled ECD centres had playground for outdoor activities. Through observation, the researcher observed that while all the public ECD centres had a playground within the school compound, not all the private ECD centres had a playground for their outdoor activities. The study also sought to find out whether supervision of children when engaging in outdoor play activities was enhanced. As such, the respondents were asked to indicate the persons that supervised the children during the outdoor activities. Table 4.7 presents the responses given.

#### Table 4.7: Person’s Responsible for Supervision of Children During Outdoor Activities

<table>
<thead>
<tr>
<th>Person’s responsible for supervision</th>
<th>Type of ECD centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>All pre-school teachers</td>
<td>33</td>
<td>58.9</td>
</tr>
<tr>
<td>ECD managers</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>58.9</strong></td>
</tr>
</tbody>
</table>

As shown in Table 4.7, all the teachers (58.9%) from the public ECD centres and 35.7% of teachers from private ECD centres reported that all the pre-school teachers were responsible for supervision of children during outdoor activities. This shows that in most of the ECD centres pre-school teachers were responsible of all the children while at
school. However, it emerged that in few private centres (5.4%), ECD managers were also responsible for the same. This implies that in most of the ECD centres in Ng’enda Zone, the teachers were the ones responsible for the supervision of the children. According to Macharia (2012), a playground without active supervision is an unsafe environment and allows unsafe acts to occur, such as fighting, aimless wandering, venturing into unsafe areas and using equipment inappropriately (Macharia, 2012).

Play sites should be divided into zones for different activity types. Table 4.8 shows the arrangement of the play facilities in both public and private ECD centres.

**Table 4.8: Arrangement of the Play Facilities in the Play Space**

<table>
<thead>
<tr>
<th>Arrangement of play facilities</th>
<th>Type of ECD centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public f</td>
<td>%</td>
</tr>
<tr>
<td>According to play activities</td>
<td>2</td>
<td>3.6</td>
</tr>
<tr>
<td>According to age of children or level of learning</td>
<td>5</td>
<td>8.9</td>
</tr>
<tr>
<td>According to play equipment</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>No arrangement of play facilities</td>
<td>25</td>
<td>44.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>58.5</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.8 revealed that 44.6% of the teachers from public ECD centres said that play facilities in their centres were not arranged in any order. On the other hand, 16.1% of the teachers from private ECD centres said that play facilities were arranged according to play activities while 12.5% teachers said that play activities were arranged according to the age of children or the level of learning. This was in accordance with the researchers’ observation that in majority of the public ECD centres, the play equipments were not organized in any order and any child could use them for play. In the private
ECD centres however, the researcher also observed that the play equipments were organized for the children depending on their age categories. This is draws an implication that the organization of the play facilities in the ECD centres sampled was different.

It is important to organize the playgrounds for children to use them for different activities. Clayton and Forton (2001) posit that if the play area is clearly defined with distinct boundaries, children will use it more appropriately and successfully, hence fostering skills of competence and independence (Kentucky State Dept of Education, 1991, Greenman 1998). Children feel secure when they know which part of the playground is safe and beneficial for them and where particular play activities are to take place, especially in the unstructured activities. The play areas should therefore be more orderly, predictable and familiar for the children to use them confidently and successfully. Maslow (1943) theory of human motivation also states that children need a play environment that encourages and enables them to fulfill their own potential. From the study findings, it emerged that most of the teachers from private ECD centres reported that playing materials in their schools were arranged either according to the play activities or according to the age of children or the level of learning.

This findings agrees with the Early Childhood Development Service Standard Guidelines for Kenya (2006) that states that learning in preschools should be through play and hence activity based. In addition, the Service Standard Guidelines of Kenya states that ECD children should be grouped according to age, interest and ability for learning purposes. On the same note, the Consumer Product Safety Commission (CPSC, 2010) recommends young children’s playground should be composed of age appropriate equipment scaled to their sizes, abilities and developmental level. However, these results were contrary to the
findings established from the public ECD centres where 44.6% of the teachers stated that play facilities in their schools were not arranged in any order. This therefore, calls for an improvement of the playing environment especially in public ECD centres. The study further asked the ECD teachers whether they had any playground rules and regulations. The responses obtained are in table 4.9 below.

**Table 4.9: Playground Safety Rules and Regulations**

<table>
<thead>
<tr>
<th>Availability of Safety Rules</th>
<th>Type of ECD centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>30</td>
<td>53.6</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
</tr>
</tbody>
</table>

As reflected in Table 4.9, 53.6% of the pre-school teachers from public ECD centres and all the teachers (41.1%) from private ECD centres indicated that their schools had playground safety rules and regulations. These findings were also verified by all the headteachers interviewed who said that their schools had playground safety measures. This shows that most of the pre-schools sampled had playground safety rules and regulations. One headteacher in a public ECD centre said “Our school prohibits sliding on slippery ground as one of the safety rules” while another teacher from a private ECD centre reported “our school playground is fenced around to ensure safety to the playing children” The importance of setting rules and regulations during outdoor activities is to ensure low incidences of the injuries and also indiscipline cases during play activities processes and in use of equipment and materials. These findings were in line with the Centre-Based Child Care Policy Document (2006) which requires that all licensed child
centers are required to have an outdoor play area safety policy. After determining the safety rules and regulations in ECD centres, the research further sought to seek teachers’ opinions regarding playgrounds in the ECD centres. Table 4.10 depicts the teachers’ ratings of the adequacy of playground in relation to the number of children in both public and private ECD centres.

Table 4.10: Adequacy of Playground in Relation to the Number of Children in Both Public and Private ECD Centres

<table>
<thead>
<tr>
<th>Adequacy of playground</th>
<th>Type of ECD centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Very adequate</td>
<td>15</td>
<td>26.8</td>
</tr>
<tr>
<td>Adequate</td>
<td>14</td>
<td>25.0</td>
</tr>
<tr>
<td>Inadequate</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>Very inadequate</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>58.9</td>
</tr>
</tbody>
</table>

From results presented in Table 4.10, it is clear that most of the teachers (51.8%) from public ECD centres rated the playground in their schools as adequate in relation to the number of children whereas majority of the teachers (32.2%) from private ECD centres rated the playground as inadequate. These findings concurred with the report obtained by the researcher through the interviews conducted from 10 headteachers of the sampled ECD centres.

The results of the analysis revealed that 60.0% of the interviewee reported that the playground area in most ECD centres (private centres) were not spacious to accommodate the number children enrolled while 40.0% of them stated that they were
adequate. This shows that most of the private ECD centres were not adhering to the guidelines set on Outdoor Play Area Standard Manual for Centre Based Child Care (2006) that outdoor play areas must be large enough for the number of children in the preschool to explore, discover, experiment, manipulate and create basic information about the world while at the same time responding to their need for safety. It also recommends that the ideal play space per child should be seven square meters (7m²) inclusive of fixed equipment and protective surfacing zone.

During the field work, the researcher also sought to map-out the condition of the infrastructure in the ECD centers visited. The researcher looked at the condition, adequacy and availability of the playground and play materials in the ECD centres. Table 4.11 presents the results from observations conducted by the research.

**Table 4.11: Condition of the Sampled ECD Playground**

<table>
<thead>
<tr>
<th>Play ground</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Play space is adequate</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Playground is well kept</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Playground is fenced</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>The grass/bushes are cut</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>The play ground is out of dangerous objects</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Pits on the playground are provided</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fixed playgroup equipments are provided</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>The equipments are appropriate sizes for ECDE children</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>The equipments are regularly serviced and maintained</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>A soft landing place for slides is provided</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>The swings are at low level for ECDE children</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>
Results presented in Table 4.1 indicate that most of the ECD centres observed by the researcher were not adequately equipped with enough play space (60.0%) and the playground was not well kept (70.0%). The result also revealed that most of the play equipments were not kept in the appropriate sizes for ECD children (60.0%) and they were not regularly serviced and maintained (80.0%).

Table 4.12 shows availability of physical materials in the 10 sampled ECD centres.

**Table 4.12: Availability of Physical Materials**

<table>
<thead>
<tr>
<th>Physical/Psychomotor materials/equipment</th>
<th>Available</th>
<th></th>
<th>Not Available</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Fixed equipments e.g. tyres, swings and slide</td>
<td>4</td>
<td>40.0</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Balancing frames</td>
<td>2</td>
<td>20.0</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>See saw</td>
<td>1</td>
<td>10.0</td>
<td>9</td>
<td>90.0</td>
</tr>
<tr>
<td>Soft landing for slides</td>
<td>0</td>
<td>0.0</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As shown in Table 4.12, out of the 10 sampled ECD centres, 4 (40.0%) had fixed equipments, 2 (20.0%) had balancing frames while 1 (10.0%) had a see saw. None of the ECD centres had soft landing for the slides. These results imply that most of the ECD centres were equipped at least with one or more of the physical materials for outdoor play. However, the results could indicate that the equipments available in the sampled ECD centres were inadequate to meet the needs of learning needs of the pre-school children in these centers. These findings are in line with Githuthwa (2011) who found out that there was a problem of lack of adequate physical facilities and instructional materials in ECD centres in Lari, Kiambu County.
4.3 Strategies to Improve the Quality of Outdoor Play Environment

Improving the status of the playground focuses on the provision of children with quality outdoor environment with minimum risks of accidents and supporting optimum participation of children in outdoor activities. This means that a well planned and maintained playground fosters an environment that makes the play activities to be enjoyed and less stressful experiences (Bower, Hales, Tate, Rubin, Benjamin & Ward, 2008).

The fourth objective was to determine the strategies for improving quality of outdoor play environment in ECD centres. To address this objective, teachers were asked to indicate challenges they experienced during outdoor activities and also suggest measures that could be put in place to address those challenges. Table 4.13 illustrates teachers’ responses on challenges they experience while supervising children during outdoor activities.
Table 4.13: Challenges Teachers Experience while Supervising Children During Outdoor Activities

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequacy of play equipments/materials</td>
<td>56</td>
<td>100.0</td>
</tr>
<tr>
<td>Lack of interest to participate in activities since playing materials were not enough and some children tend to own the available materials</td>
<td>45</td>
<td>80.4</td>
</tr>
<tr>
<td>Some children get hurt while playing</td>
<td>41</td>
<td>73.2</td>
</tr>
<tr>
<td>Overexcitement of the children hence making them not to follow instructions</td>
<td>37</td>
<td>66.1</td>
</tr>
<tr>
<td>Number of children being too high for one teacher especially in public ECD centres (Teacher-pupil ratio)</td>
<td>33</td>
<td>58.9</td>
</tr>
<tr>
<td>Children fight due to inadequacy of playing materials</td>
<td>28</td>
<td>50.0</td>
</tr>
<tr>
<td>Population is higher than the available playground</td>
<td>23</td>
<td>41.1</td>
</tr>
<tr>
<td>Un-conducive playing environment (too dusty)</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td>Some children were too selfish to share with others</td>
<td>19</td>
<td>33.9</td>
</tr>
</tbody>
</table>

As shown in Table 4.13, over 60.0% of the teachers stated that the major challenges they experienced during outdoor activities were; inadequacy of play materials/equipments (100.0%), lack of interest among children to participate in activities since playing materials are not enough (80.4%) and overexcitement of the children hence making them not to follow instruction (66.1%). Other challenges mentioned by at least 30.0% of the respondents were some children were too selfish to share with others and un-conducive playing environment. The results were confirmed by headteachers who reported that most of the cases reported to them by pre-school teachers were children fighting over playing materials, breakages of the equipments and occurrences of injuries during outdoor activities. After identifying the challenges that the teachers encountered while
supervising children during outdoor activities, the study then asked the teachers to recommend strategies that could be employed in order to improve the outdoor play environment. Results of their responses are presented in table 4.18.

Table 4.14 depicts strategies that can be put in place to improve outdoor play environment

**Table 4.14: Strategies for Improving Outdoor Play Environment**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring all ECD centres have adequate playing materials</td>
<td>56</td>
<td>100.0</td>
</tr>
<tr>
<td>Planting grass in the playing ground</td>
<td>51</td>
<td>91.1</td>
</tr>
<tr>
<td>Increasing the number of existing playing materials and provision of different varieties</td>
<td>43</td>
<td>76.8</td>
</tr>
<tr>
<td>Increasing the number of ECD teachers especially in public schools where the number of children is too high compared to the number of children</td>
<td>39</td>
<td>69.6</td>
</tr>
<tr>
<td>All private ECD managers should ensure that their schools have adequate playground</td>
<td>38</td>
<td>67.9</td>
</tr>
<tr>
<td>Ensuring that all the playing materials were well fixed</td>
<td>31</td>
<td>55.4</td>
</tr>
<tr>
<td>Ensuring that children were supervised while playing</td>
<td>27</td>
<td>48.2</td>
</tr>
<tr>
<td>Involving parents in the provision of playing materials</td>
<td>22</td>
<td>39.3</td>
</tr>
<tr>
<td>All the playing material should be well kept</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td>Ensuring total safety of the play areas and materials</td>
<td>17</td>
<td>30.4</td>
</tr>
</tbody>
</table>

As shown in Table 4.14, all the teachers (100.0%) recommended that all the ECD centres should have adequate playing materials. Results in the table further revealed that 91.1% and 76.8% of the teachers suggested that the playing grounds should be covered with the grass to avoid dusty environment which is uncoducive for the children and there is need to increase the number of existing playing materials and provision of a variety of the
playing materials respectively. According to the Consumer Product Safety Commission (CPSC, 2010) young children’s playground should be composed of age appropriate equipment scaled to their sizes, abilities and developmental level. For instance, handles of play materials should be small; bridges and platforms should be low and have guard rails and hand rails. Over 60.0% of the respondents further suggested that the number of pre-school teachers should be increased especially in public ECD centres to enhance children’s supervision during outdoor activities. This will help achieve the ECD SSGK (2006) recommendations of a ratio of one teacher to fifteen (1:15) for three to four year old children, one to twenty five (1:25) for four to five year olds and one to thirty (1:30) for five to six year old children both in indoors and in the outdoor play area.

Other recommendations that were made by at least 30.0% of the respondents included; ensuring total safety of the play areas and materials, keeping playing materials in good condition and involving parents in the provision of playing materials. Through interviews, the researcher noted that most of the headteachers suggested that the government should support all the public ECD centres with funds to cater for playing materials and also help in renovation and maintenance of available physical materials. They also recommended that the Ministry of Education should come up with policies to ensure that all the ECD centres were adhering to the guidelines set on Outdoor Play Area Standard Manual for Centre Based Child Care (2006). Another recommendation made by the headteachers and the Zonal education officer was that the Parents should be involved in the provision of playing materials in the ECD centres such as small balls, tyres, ropes among others.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS OF THE STUDY

5.0 Introduction

This chapter presents summary of the study findings, conclusions and the recommendations made in relation to the problem under investigation. The chapter also gives areas for further studies.

5.1 Summary of the Study

The main objective of the study was to establish the quality of outdoor play environment in Ng’enda Zone, Gatundu South Sub-County. The study used a sample of 10 headteachers, 60 teachers and one Zonal education officer hence a sample of 71 respondents. The following were the main study findings:

- In terms of quality of ECD centres in Gatundu Sub-County, the study established that the most available play materials in public ECD centres were small balls and tyres. Swings, climbing ladders, slides, fixed tyres and balancing frames were not available in these centres. On the other hand, majority of the teachers in private ECD centres stated that swings, fixed tyres, small balls, and ropes were available in their centres. Balancing frames, hoops and see saws were not available in most centres. This was reported by a few number of the teachers in private centres who took part in the study.

- With regard to the influence of type of ECD centre on the quality of outdoor play environment, the study found out that in most of these ECD centres, outdoor facilities available were not adequate to cater for all children. Majority of the teachers in both public and private ECD centres stated that the most adequate playing materials in
their centres were small balls, ropes and tyres. However, the most inadequate outdoor facility from all the sampled public pre-school was bar beams, followed by climbing ladders, slides, and then fixed tyres. In private pre-schools, the most inadequate outdoor facility was balancing frames; swings, see-saws and hoops.

- The study findings also revealed that majority of ECD centres were in the rural centres, Ng’enda Zone being a rural. However, there were those ECD centres, especially the private ones that were located in village shopping centres and were considered to be upgraded rural ECD centers.

- Regarding safety measures, the study found that all the teachers from the public ECD centres and a relatively high number of teachers from private ECD centres reported that all the pre-school teachers were responsible for supervision of children during outdoor activities inorder to ensure children safety during outdoor play activities. There was also a big number of teachers from public ECD centres who said that play facilities in their centres were not arranged in any order. This was therefore identified as a risk factor that was associated with children’s injuries during outdoor activities and one of the major challenges teachers experienced during outdoor play environments in public ECD centres.

- The study also identified that some of the strategies that could be put in place in order to improve the quality of outdoor play environment in ECD centre were: Ensuring that all ECD centres had adequate playing materials, planting grass on the playing ground, increasing the number of existing playing materials and provision of different varieties, increasing the number of ECD teachers especially in public schools where
the number of children was too high compared to the number of children and that All private ECD managers should ensure that their schools have adequate playgrounds.

5.2 Conclusions

Based on the findings of the study presented above, the study concluded that the most available play materials in most public ECD centres were small balls and tyres whereas swings, climbing ladders, slides, fixed tyres and balancing frames were not available in these centres. On the other hand, in the private ECD centres, swings, fixed tyres, small balls, and ropes were available whereas balancing frames, hoops and see-saws were not available in most centres. It was also concluded that in both the private and public ECD centres, the quality of outdoor play environment was not fully satisfactory. However, in the public ECD centres, some facilities like the outdoor space was bigger than in the private centres. On the other hand, the outdoor play equipments/facilities in the private centres were of more quality than those in the public centres. When it came to the location of the ECD centres, the study came to a conclusion that majority of ECD centres in Ng’endu zone, Gatundu South Sub-County were located in the rural areas with few of them being located in the village town centres.

5.3 Recommendations of the Study

Arising from the study findings, the following recommendations were made:-

i. The management of ECD centres should ensure that their schools are equipped with the necessary play materials and that they are adequate for play activities for the children in these ECD centres.

ii. The government through the ministry of education should inspect the ECD centres in Ng’enda Zone to ensure that there is quality outdoor play environment.
iii. The managements of the public ECD centres should come up with strategies to equip their centres with outdoor play materials. This could for example be done by involving the parents in equipping of the centres.

iv. Pre-school teachers in both public and private ECD centres should support children during outdoor activities to ensure that they engage in safe outdoor play activities.

5.4 Areas for Further Research

i. Due to time and financial constraints, the study was carried out only in Ng’enda Zone, Gatundu South Sub-County. The study findings therefore cannot be generalized in the whole country and as such there is need to conduct a similar study in the whole country to find out whether the same results would be obtained.

ii. A study should also be carried out to investigate the influence of quality outdoor play activities on children’s academic achievement.
REFERENCES


Consortium for Health Intervention Learning and Development: An Information Guide to Young Children’s Outdoor Play Spaces.


APPENDIX I

CONSENT FORM

Informed Consent

My name is Jane Wanjiku Ndoi. I am a M.Ed student from Kenyatta University. I am conducting a study on ‘Key Determinants of Quality Outdoor Play Environment in Early Childhood Development Centres in Ng’enda zone, Kiambu County, Kenya.’ The information could point out to policymakers the major challenges faced by ECD providers in the implementation of quality outdoor environment and come up with strategies of improving it.

Procedures to be followed

Participation in this study will require that you fill in the questionnaire and I will also ask you some questions noting down your responses. You are free to skip specific questions and continue participating at no penalty. You also have the right to refuse participation in this study. Please remember that participation is voluntary. You may ask questions related to this study at any time. You may refuse to respond to any questions and you may stop an interview at any time.

Discomforts and risks

Most interviewees will find the discussion interesting and thought-provoking. If, however, you feel uncomfortable in any way during the interview session, you have the right to decline to answer any question or to end the interview.
Benefits

If you participate in this study you will help the researcher identify the major challenges faced by ECD providers in the implementation of quality outdoor play environment and come up with strategies of improving it.

Reward

Participation in this study is voluntary. You will not be paid for your participation. You may withdraw and discontinue participation at any time without penalty. If you decline to participate or withdraw from the study, no one will be told.

Confidentiality

You will be assigned a code number which will protect your identity. All data will be kept in secured files. All identifying information will be removed from questionnaires as soon as your participation is complete. No one will be able to know which your questionnaire responses are.

Contact information

If you have any questions you may contact Dr. Teria Ng’asike on 0719890857 or Dr. Nyakwara Begi on 0722250188 or Kenyatta University Ethical Review Committee Secretariat on kuerc@ku.ac.ke

Participant’s statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction.
My participation in this study is purely voluntary. I understand that all the information I will provide will be treated with utmost confidentiality.

**Name of Participant:** ………………………………………………………………

………………………………………………………………………………………..

Signature or Thumbprint  Date

**Investigator’s statement**

I, the undersigned, have explained to the volunteer in a language he or she understands, the procedures to be followed in the study and the risks and benefits involved.

**Name of Interviewer:** ………………………………………………………………

………………………………………………………………………………………..

Interviewer’s signature  Date
APPENDIX II

QUESTIONNAIRE FOR ECDE TEACHERS

Section A: Demographic Data

1. Your Gender [ ] Male [ ] Female

2. Indicate the type of the ECD centre you are currently teaching
   [ ] Public [ ] Private

3. State your teaching experience as an ECD teacher
   [ ] Less than 1 year [ ] 1 – 5 years [ ] Over 5 years

4. State your academic qualifications
   [ ] Standard 7/8 [ ] Form IV [ ] Above Form IV

5. Indicate your professional qualifications
   [ ] DICECE Certificate
   [ ] DICECE Diploma
   [ ] Montessori Diploma
   Others (please specify)..........................................................

6. How many children do you have in your class? ..............................................

Section B: Quality of Outdoor Play Environment

7. What outdoor activities do children participate in while in the playground?
   [ ] Unstructured (unplanned) activities
   [ ] Structured (planned) activities
   [ ] Both structured and unstructured
8. Which of the following play equipment(s) and materials are found in the ECD centres playground? Use a tick [ √ ] to indicate your response.

<table>
<thead>
<tr>
<th>Play equipment and materials</th>
<th>Available</th>
<th>Not available</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climbing ladders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slides</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed tyres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balancing frames</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small balls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ropes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See saw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How often do the pre-school children go for outdoor play activities per week?

- [ ] Once
- [ ] Twice
- [ ] Thrice
- [ ] Four times
- [ ] 5 days

**Safety of Outdoor Play Facilities**

10. Who is responsible for supervision of children during outdoor play activities?

- [ ] All pre-school teachers
11. How are the play facilities arranged in the play space?

- [ ] According to play activities
- [ ] According to age of children or level of learning
- [ ] According to play equipment

12. Does the school have playground safety rules and regulations?

- [ ] Yes
- [ ] No

13. In your opinion, how do playground safety rules and regulations influence children’s participation in outdoor play activities?

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

15. Explain how you ensure the safety of the play area and play materials/equipments

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

Adequacy of Outdoor Play Materials

14. How adequate is the playground for the number of children in your class?

- [ ] Very adequate
15. In the following table, rate the adequacy of play materials in your ECDE centers. Tick appropriately ['√']

<table>
<thead>
<tr>
<th>Play equipment and materials</th>
<th>Very adequate</th>
<th>Adequate</th>
<th>Inadequate</th>
<th>Very inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climbing ladders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed tyres</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balancing frames</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small balls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ropes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyres</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See saw</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bar beams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. In general, how do you rate the adequacy of play materials in your ECDE centers?

[ ] Very adequate

[ ] Adequate

[ ] Inadequate

[ ] Very inadequate

17. If the materials are inadequate, how does this affect children’s participation in outdoor play activities?
Section C: Strategies That Can Be Put In Place to Improve Quality of Outdoor Play Environment

18. What challenges do you experience while supervising children during their outdoor play activities?

19. In your opinion, what strategies do you think can be put in place to improve quality of outdoor play environment?

THANK YOU FOR PARTICIPATING
APPENDIX III

INTERVIEW SCHEDULE FOR HEADTEACHERS/ZONAL EDUCATION OFFICER

1. How would you describe the adequacy of space compared to the number of children in the centre to play and turn around safely?

2. How would you rate the adequacy of outdoor play materials in your ECD centre?

3. If yes, how do playground safety rules and regulations influence children’s participation in outdoor play activities?

4. Who is responsible for supervising children during outdoor play activities in your centre?

5. Are there challenges reported to you by the person’s responsible of supervising children during their outdoor play activities?

6. What strategies do you think can be put in place in your ECD centre to improve quality of outdoor play activities?

THANK YOU FOR PARTICIPATING
## APPENDIX IV
### OBSERVATION CHECKLIST

<table>
<thead>
<tr>
<th>Play ground</th>
<th>Yes</th>
<th>No</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play space is adequate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playground is well kept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playground is fenced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The grass/bushes are cut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The play ground is out of dangerous objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pits on the playground are provided</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed playgroup equipments are provided</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The equipments are appropriate sizes for ECDE children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The equipments are regularly serviced and maintained</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A soft landing place for slides is provided</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The swings are at low level for ECD children</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical/Psychomotor materials/equipment</th>
<th>Available</th>
<th>Not Available</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed equipments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed play equipment in good condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft landing for slides</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Principal Secretary,
Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION NDOI JANE WANJIKU—REG. NO. E55/22739/11.

I write to introduce Ms. Ndoi Jane Wanjiku who is a Postgraduate Student of this University. She is registered for M.Ed degree programme in the Department of Early Childhood Studies.

Ms. Ndoi intends to conduct research for a M.Ed. Proposal entitled, “Key Determinants of Quality Outdoor Play Environment in Early Childhood Development Centres in Agenda Zone, Kiambu County, Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N, MBAABU
FOR: DEAN, GRADUATE SCHOOL
APPENDIX VI

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:

MS. JANE WANJIKU NDOKI

of KENYATTA UNIVERSITY, 338-1030

Gatundu, has been permitted to conduct

research in Kiambu County

on the topic: KEY DETERMINANTS OF
QUALITY OUTDOOR PLAY ENVIRONMENT
IN EARLY CHILDHOOD DEVELOPMENT
CENTRES IN NGENGA ZONE, KIAMBU
COUNTY, KENYA

for the period ending:

31st May, 2015

Applicant's Signature

National Commission for Science, Technology & Innovation

Date of Issue: 24th March, 2015

Fee Received: Ksh 1,000

Permit No: NACOSTI/P/15/0616/5436

Director General

National Commission for Science, Technology & Innovation

[Signature]

[Stamp]
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 and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 433

CONDITIONS: see back page