

**INFLUENCE OF PRE-SCHOOL PLAYGROUND FACTORS ON  
PARTICIPATION OF CHILDREN IN PHYSICAL EDUCATION IN  
NAIROBI CITY COUNTY, KENYA**

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## **DECLARATION**

This research project is my original work and has not been presented in any other university/institution for consideration. This research project has been completed by referenced sources duly acknowledged where text, data (including spoken words), graphics, 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.

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I sincerely thank Almighty God for enabling me go through my academic life to this far. I also wish to acknowledge my supervisor, Dr. Juliet W. Mugo for her professional guidance. Finally, I wish to acknowledge my family and friends for their unwavering moral support.

## **DEDICATION**

I dedicate this work to my husband and my children for their great support during my academic endeavors

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## **ABBREVIATIONS AND ACRONYMS**

<b>COHSOD</b>	Council for Human and Social Development
<b>ECDE</b>	Early Childhood Development Education
<b>MoEST</b>	Ministry of Education, Science and Technology
<b>NACOSTI</b>	National Commission for Science Technology and Innovation
<b>PE</b>	Physical education
<b>ROG</b>	Republic of Guyana
<b>UK</b>	United Kingdom
<b>UNESCO</b>	United Nations Education Scientific and Cultural Organization
<b>UNICEF</b>	United Nations Children’s Fund
<b>USA</b>	United States of America

## ABSTRACT

Participation in Physical Education (PE) or outdoor activities in pre-school is one of the most important aspects that predict children's healthy growth and development. Outdoor activities enable the children to develop physically, mentally, cognitively and socially. Advocates in the field of education indicate that participation in outdoor activities has been hampered by various challenges that have either discouraged the children to participate or have denied them participation altogether. In recognition of this, the major aim of the study focused on how pre-school playground factors influence participation of pre-school children in physical education. Four specific objectives directed the study namely; to find out PE activities pre-school children engage in, and to establish the influence of pre-school playground factors (size of the playground, equipment there in, their maintenance and childcare) during PE. Bandura's Social Learning Theory of (1977) guided the descriptive research study, using the survey method. A 30% sample of 15 pre-schools out of the 50 targeted and 30 out of 100 teachers were selected for study. Questionnaires as well as observation checklists were used to collect data, and piloting conducted in four randomly selected schools in Kasarani, to determine the soundness of the entire research process. Data was analyzed descriptively and also by use of correlations. Findings show that the playground status of most of the preschools in Kasarani Sub-county of Nairobi was inferior and characterized by poor fencing and presence of unsafe materials. Most preschools in Kasarani lacked adequate equipment, especially the fixed ones, and where they were present, they were in pathetic conditions that made them unsafe for use by children. Childcare provided during P.E was regrettably inadequate. The study reveals that the status of childcare had significant influence on children's participation in PE. However, playground status and equipment had no significant-relationship with children's participation in PE. The study recommends that the stakeholders particularly the Ministry of Education, Science and Technology as well as the parents association should partner in ensuring that all preschools have adequate, varied and safe playground space in order to encourage the learners to participate in P.E. Regular supervision should also be conducted to ensure that the expected standards are adhered to at all times. It is also recommended that the county government should provide training programmes on childcare that requires all teachers to participate. It is anticipated that the rich data on influence of pre-school playground factors on the participation of young children in PE and intervention measures suggested for improvement will be useful to all stakeholders.

# **CHAPTER ONE**

## **INTRODUCTION AND CONTEXT TO THE STUDY**

### **1.1 Introduction**

Chapter one discusses the background to the study, problem statement, purpose and objectives of the study, general hypotheses, significance of the study, limitations and delimitations of the study, theoretical as well as conceptual framework and concludes with definitions of the terms as used in the study.

### **1.2 Background of the Study**

Physical education (PE) is an important learning activity and involves outdoor play meant to enhance development of pupil's motor skills, good physical health and also relieving stress (Gulhane, 2015). Due to its importance, the United Kingdom (UK) Expert Consensus Conference of 2001 recommended that children should be allowed at least one hour of free play outdoors daily Cavill, Biddle & Sallis, 2018). In pre-school, children engage in both free play and directed activities where children get to choose what they would want to engage in but also those that the teacher strictly guides on how they should be performed. During the study, made an attempt to find out, the types of PE activities pre-school children engaged in, apart from playground factors that influenced their participation in PE lessons.

Zask, Van Beurden, Barnett, Dietrich, Brooks, and Bear, (2014) in their study in USA observed that play during school break gave children opportunities to engage actively in play. However there were limited play opportunities for the children. Zack et al (2001) further argue that with the increasing strict policy regulation and strict supervision by

teachers and parents, children are not getting the required freedom to engage in active play. Engelen, Bundy, Naughton, Simpson, Bauman, Ragen, Baur, Wyver, Tranter, Niehues, Schiller, Perry and Van der Ploeg (2013); Bundy, Luckett, Tranter, Naughton, Shirley, Ragen and Greta (2009) point out that natural environment features and movable or recyclable materials stimulate pre-school children creativeness as pre-school children feel comfortable and in control of their surroundings. Sadly, Clements (2009) in a study in United States of America (USA) points out that children no longer spend the same time playing outdoors as children did in the past few years. The study found out that 56% of the parents spent three hours daily playing outside as compared to only 22% of their children playing outdoors.

Sebba and Robinson (2009) in UK, concurs with the above sentiments and further reveals that pre-school children are now increasingly using their break time in school to participate in other activities like volunteering instead of going out to the field and enjoying a bit of freedom. These cases are more evident in developing countries where schools look for ways to raise funds to purchase books and other learning materials. In a related study in Australia, Dymont and Bell, (2007) also found that schools have come up with strict policies to regulate play. Studies show that in developed countries this is a major cause for alarm as children spend their free time in sedentary past time increasing obesity and other health risk factors associated with lack of physical activity. Another related study in Australia by Hyndman, Benson, and Telford (2015) established a guide for educators to move beyond conventional school playgrounds which considered the pre-school playground as one of the most important setting to enhance student's development physically and mentally. Furthermore, Hyndman and Lester (2015)) show

that status of school playgrounds in terms of safety is also key in ensuring that children are free from danger or harm. Thus administrations in Australian schools have eliminated or reduced playground sizes to facilitate construction of other buildings and as a result, schools have small playgrounds or none at all leading to congestion and crowding during break times which is detrimental to children's holistic growth, development and learning.

This kind of phenomenon of prolonged physical activity according to Nonoyama-Tarumi, Yuko, and Kurt-Bredenberg (2009), is also common in schools where teachers have to strictly monitor children due to increasing risks of accidents either from natural disasters as in the case of Haiti schools or due to poorly maintained playgrounds. The above studies focused on issues to do with status of playground but in foreign context. The current studies focused on playground issues among pre-schools and in our local context.

Regionally, a report from UNESCO (2005) also shows that majority of schools in developing countries like Uganda and Zimbabwe were not adequately prepared to cater for the physical needs of the pre-school children. These schools lacked enough playing areas to facilitate proper interaction between the pupil and their environment. The situation is not very different in Kenya and Tanzania particularly with the introduction of free primary education (FPE). The move led to an influx of children as a result, children have to share scarce resources to facilitate learning. As a result, children's play activities are limited to those that do not require a lot of movement.

The situation about children being disadvantaged due to lack of adequate play opportunities or missing out on play appears to be almost the same worldwide thus it was

necessary to conduct the present study in order to be able to suggest the disadvantages this poses to children and what options could be undertaken to ease the problem. Moreover, locally in Kenya, pre-school safety during play has not been given much focus, and in most cases, children are left to play in the poorly maintained fields. Even though there is always a teacher supervising them, Bundy et. al. (2009) maintains that cramped spaces are a great barrier to pre-school children interacting with their natural environment. Parents and teachers have also become increasingly strict with supervision when children are out playing. It is common to find one or two teachers assigned to monitor pupils in the playground. This is attributed to the increasing accidents from playgrounds according to Nonoyama-Tarumi et al., (2009). Need for safety is driving parents and teachers to limit the child's freedom in the field and the need to be in control of their surroundings. The current study sought to find out how this limited access to play by children affected their participation in PE lesson. From the foregoing revelations, it is evident that participation in the playground is dependent on various issues, and with the increasing enrolment of children in urban schools, it called for research to determine how limited space, continued supervision, and introduction of equipment affects a learner's participation in the playground.

Nevertheless, despite the essential role that physical activity plays in the life of a child, PE as a subject faces various challenges in most African countries. These challenges include; reduced curriculum time due to pressure for good academic performance, poor state of facilities and inadequate equipment (DiFiore, 2010). A survey about the status of PE in African countries revealed that 75% of schools in Africa did not to meet the legal policy requirements for PE. The gaps included poor curriculum policies, low perceived

importance of PE, diversion of resources for PE to other projects, insufficient financial and material resources (Hardman & Marshall, 2000). The concern about the decline of PE and has also been raised in various global forums such as the World Summit on PE held in November in Berlin. PE experiences a low profile and status in African schools compared to other subjects. It has to compete for time and resources yet it requires high initial capital costs for facilities, recurrent maintenance, purchase and replacement of equipment in the schools (Hardman & Green, 2011).

Recent studies conducted in Kenya on children's outdoor play seem not to focus on the factors that determine children's engagement in play, but rather they appear to emphasize on outdoor play and children development as well as other aspects. These studies include; determinants of quality outdoor play environment in early childhood development centres (Wanjiku, 2016), effects of outdoor activities on development of preschool physical skills (Akoth, 2016), influence of preschool children safety in their participation in outdoor play (Macharia, 2012) and Ochanda (2015) on impact of play equipment on children participation in outdoor play. The above studies fail to explore playground factors that determine children engagement in outdoor play. Thus, the present study sought to establish the physical education activities that children were involved in, the status of pre-school playing-field, playground-equipment as well as care given to children, and in what way they influenced the participation of children in PE activities in Kasarani Sub-County in Nairobi City County, Kenya.

### **1.3 Statement of the Problem**

Participation in outdoor activities is one of the most important aspects that predict children's development. Physical education (PE) has the specific role of enhancing pupil's motor skills development, good physical health as well as relieving stress. Due to its importance, United Kingdom recommended provision of at least one hour of free play outdoors daily to children. Despite these colossal benefits of outdoor play, there have been concerns regarding the decline of physical education in various global forums. Specifically, it has been observed that there are limited outdoor play opportunities accessed by children not only globally but also regionally. The various difficulties that physical education faces in most African countries including Kenya, are challenges such as reduced curriculum time arising from pressure for good academic grades, poor state of facilities and inadequate equipment.

However, the aforementioned studies in Kenya failed to explore playground factors that determine children's engagement in outdoor play. Thus, the present study sought to establish the influence of factors related to playground size, playground equipment and childcare during PE lessons on participation of children in physical education.

#### **1.3.1 Purpose of the Study**

The purpose of this study was to establish the physical education activities that children were involved in, the status of pre-school playing-field, playground-equipment as well as care given to children, and in what way they influenced the participation of children in PE activities in Kasarani Sub-County in Nairobi City County, Kenya.

### **1.3.2 Objectives of the Study**

The specific objectives of the current study are:

- i. To find out the physical education activities pre-school children engage in.
- ii. To determine the influence of status of playground on the participation of pre-school children in physical education activities.
- iii. To find out the influence of status of playground equipment on the participation of pre-school children in physical education activities
- iv. To establish the influence of status of childcare on the participation of children in physical education activities

### **1.3.3 Study Hypotheses**

The study sought to test the following alternative hypotheses:

**HA<sub>1</sub>** Playground size influenced participation of children in physical education activities

**HA<sub>2</sub>** Availability of playground equipment influenced participation of children in physical education activities

**HA<sub>3</sub>** Child care in the playground influenced children's participation in physical education activities

### **1.4 Significance of the Study**

First and foremost, the study may benefit the children if the findings of this study are implemented and hence more seriousness may be put in ensuring that they actually participate in PE as they should, thereby promoting their holistic growth and development. The findings of the study may also benefit the Ministry of Education by

providing a basis for improving the existing policies which may lead to improved participation of pre-school children in outdoor activities.

The study findings may be also of help to pre-school management in Kasarani Sub-County in checking on their provision of appropriate types of play for children as well as status and type of play equipment thereby helping to increase participation in PE, thus improving their general wellbeing. Academicians interested in the area of pre-school development and participation in outdoor activities will further benefit from the findings of the study especially in their search for research gaps and enrichment of their literature review.

## **1.5 Limitations and Delimitations of the Study**

The section below presents the limitations and delimitations of the study

### **1.5.1 Limitations of the Study**

The research was faced by time constraints and to address the limitation, the researcher planned systematically the visits to the sampled schools so that the schools that were within the same locality were visited at the same time. The researcher also ensured the school administration had as little disruption as possible in their daily routines and also sought to interview the teachers when they were free.

Other challenges arose from accessibility of some pre-school institutions due to poor infrastructure and dusty roads during hot weather or muddy roads in rainy weather. To overcome these limitations, the researcher tried to be as objective as possible so that other researchers may find the study useful for use as a basis for research in other

geographical locations. As for the poor infrastructure, alternative transport such as use of motorbike was employed. Use of a dust mask and strong umbrella helped to guard against rain when the situation needed such interventions.

### **1.5.2 Delimitations of the Study**

The study was delimited to preschools in Kasarani Sub-Schools in Nairobi City County and therefore its findings and recommendations cannot be generalized in preschools in other counties due to regional, social economic and regional factors. However, the study findings could be used as a basis for further research in other counties in Kenya or regions elsewhere. The study focused on only size, childcare and maintenance of equipment as the aspects of playground status and hence other factors like teachers' attitude, location of schools among other factors which are also important were not covered. The study also targeted pre-school teachers because they are the ones involved with the children and are able to provide information about their participation in physical activities.

## **1.6 Theoretical and Conceptual Framework**

Section 1.6 describes the theoretical and conceptual frameworks.

### **1.6.1 Theoretical Framework**

The social learning theory by Bandura (1977) directed the study on pre-school playground factors influencing the active participation of children in physical education. This theory focuses on the learning that occurs within a social context. According to the theory, people learn from one another including such notions as observational learning imitation and modeling. Theorist Albert Bandura has conducted many studies to back

these hypotheses. He proposed that behaviors could influence both the environment and the person. Early experiences frame the life of a child and determine in most cases what personality traits they will take on. According to Bandura (1977) learning would be exceedingly laborious not to mention hazardous if people had to rely solely on the effects of their own actions to inform them what to do. Most behaviors that have been studied resorts back to observation, the behaviors have in turn modeled the basic interoperation of the perceived behaviors. Deviation from these behaviors is a choice of the individual but hard for them to change due to only knowing one way of living. The psychological theories prove that early stages of moral and cognitive developments in behaviors down the line. All behaviors we observe are not always learned or carried out, each determines on the rewards of the behaviours.

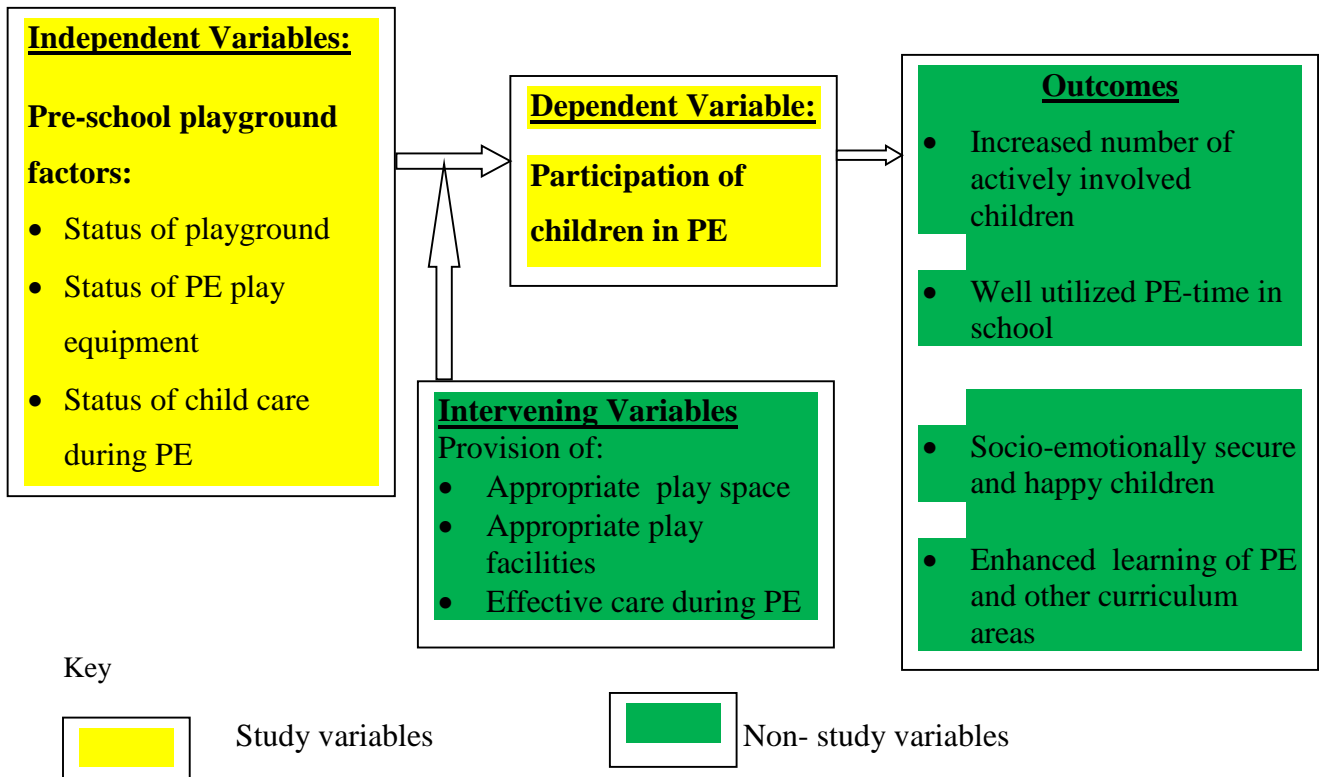
The three core concepts of the social learning theory are: the idea that people learn through observation, secondly that the idea that internal mental state is essential part of the process. Finally, this concept recognizes that just because one has learnt the behaviors they do not necessarily have to change their behaviors.

In the context of this study, children are likely to accept physical education activities if they are conditioned with attractive playground. Once they have paid attention to the model through observation and imitating play activities as well as safe use of play equipment, they can easily retain the information, and actually perform the behaviors that have attracted them. Further through containing issues related to status of the playground as well as play equipment and safety, these practices will also be observed, imitated by children and hence they will repeatedly want to engage in the various play activities as

modelled by teachers which will in turn enhance their participation even more. The result will be children who are healthy physical, socio-emotionally and mentally leading to improvement and skill advancement. Finally, in order for continuous participation to be successful, pre-school children have to be motivated to practice play safely and with ease.

### 1.6.2 Conceptual Framework

The conceptual diagram shows the influence of the independent variable namely status of the playground, status of the play equipment and level of childcare can on the dependent variable (participation of children in physical education).



**Figure 1.1 Relationship Between Factors in the Play Environment and Children’s Participation in PE**

As Figure 1.1 above shows, children’s participation in PE is dependent on the presence of positive or negative factors in the play environment such as size of the playground,

equipment provided to children for use and level of care provided to them during physical activities. However, availing to children a playground that is adequate in terms of size as well as developmentally appropriate equipment and effective childcare may make PE more interesting and appealing to children, thus stimulating their participation. This would in turn lead to increased number of actively involved children, good utilization of PE-time and ultimately improved growth physically, socio-emotionally thus translating into secure and happy children. Progressively this would enhance their participation and learning of PE and other curriculum areas.

## **1.7 Operational Definition of Terms**

- Physical education (PE) -** It involves pre-school children's outdoor play including games, field events and natural activities that attract their attention.
- Pre-school-** Institution that caters for the holistic education and care by ensuring PE is offered to 4 – 6 year olds in Kasarani Sub-county as prescribed on the timetable released by the Ministry of Education.
- Children-** Young Stars aged four to six years in pre-primary 1 (PP1) and pre-primary 2 (PP2) in the sampled preschools.
- Playground-** A field that is specifically designed to be used in pre-school for children's play activities in the sampled schools.
- Playground equipment-** Permanently fixed resources and small movable materials/objects such as balls, swings, toys and other objects put in the playing field of sampled pre-schools in order to be used by PP1 and PP2 children during play and PE time.
- Maintenance-** It is the practice of ensuring that the preschool playground and equipment in pre-schools sampled are kept safe to ensure optimal standards at all times.
- Childcare -** Provision of physical, mental and socio-emotional nurturance to children during PE attained through training and practice.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.0 Introduction**

This chapter covers empirical literature relevant to this study, presented according to the following sub-topics: physical education activities in pre-school, factors influencing participation of children in outdoor activities and summary/ gaps to be filled in the study.

#### **2.1 Physical Education Activities in Pre-School**

Physical education (PE) or outdoor play is an important activity for all individuals but most importantly children because it has many benefits, some of which are; development of motor skills, good health and relieving stress (Gulhane, 2015). Sebba and Robinson (2009) describe outdoor play as pursuance of leisure activities in a natural or semi-natural environment. There are two types of outdoor activities that preschool children could engage in namely free play activities and directed ones. Physical education activities may be freely chosen by the children according to their interest or preference but under the teachers' supervision (KIE, 2002). Gichuba, OPatsa and Nguchu (2009) opine that following are some of the free activities preschool children may engage in: skipping with/ without ropes, swinging on wooden or metal swings, throwing and catching balls or beanbags, skittle aiming, sliding down gliders or swings, seesawing, lifting small objects, balancing objects over the head, balancing over a straight line on the ground, bouncing/ kicking balls, racing with tyres, going through tunnels, walking on tins. However, Gichuba et al. (2009) emphasize that there was a limitation on teachers' part to provide or improvise of the above portable materials.

According to Cavill et al (2018), the United Kingdom Expert Consensus Conference of 2001 developed a process initiated to make public health recommendations regarding young people of between 5-18 years and physical activity. Participants agreed on a consensus statement that made two core recommendations: to optimize current and future health, all young people should take part in physical activity of at least moderate intensity for 1 hour per day; and at least twice a week, some, young people who currently do little activity ought to participate in physical activity of at least moderate intensity as some of these activities help to enhance and maintain muscular strength and flexibility and bone health.

Physical education may also be directed by the teacher in order to teach them a new skill or to reinforce one that has been previously taught. There are three categories of outdoor play activities namely: running races, body movements/ exercises and songs/dances/ games. Running races may include free racing, potato race, obstacle race, tyre race, sack race, hopping on one race, frog jump race, running relays etc. Body movements and exercises include clapping hands over the head with feet astride, bending forwards, backwards and sideways with arms akimbo and feet astride, seesawing in pairs, cock fighting, tug of war, flying kites, walking like a soldier, an elderly person, crawling like a caterpillar, skipping in pairs, running on the spot, galloping forwards or sideways. Songs/ dances and games may include indigenous ones or those children as well as teachers may have composed. They include hop scotch and jump, killing rats, What time is it Mr. Lion, I have lost a letter, find it, statue game, mingling game, captain says jump, marobo, embe umbe, kamales, ukuti, nyuki, kofia ya baba etc.

Kenya Institute of Curriculum Development (2017) states that children need to be given activities from the three categories in order to ensure they develop satisfactorily, and most importantly physically. The policy recommends reforming the education and training sector to provide for the development of individual potential in a holistic and integrated manner, while producing individuals who are intellectually, emotionally and physically balanced. This made it convenient for teachers not to teach these subjects at the expense of learners being denied the opportunity to acquire skills in subjects like art and craft, music, physical education. Despite the school environment being an important venue for promotion of PE daily, a recent review conducted by Barbosa and de Oliveira (2016) measuring PE activities among preschool children during school time, showed the proportion of moderate-to-vigorous physical activity was only 3.3% of school time in 4–5 year old children. Chilean children engage in little total PE and excessive levels of sedentary behavior. While data on Chilean preschool children are sparse, a study of 6–9 y old children in a low-income district of Santiago, found that only 25% and 14% of children met the guideline for PE on weekdays and weekend days, respectively.

Physical education activities foster pre-school children's physical, mental and socio-emotional growth. They are therefore vital for their overall growth and development which can best be achieved when they are given opportunities to engage in both free choice and directed activities. However, research shows that only 22% of children have the opportunity to engage in outdoor activities in USA (Barton, Sandercock, Pretty, Wood, 2014). Participating in outdoor activities has been known to increase orientation to the natural environment and helps children strengthen their body muscles, develop their gross and fine motor skills, accuracy and estimation skills, control as well as co-

ordination of the different body parts. Physical activities also give children opportunities to freely interact thereby enhancing their social skills. They also derive a lot of excitement and boost their self-esteem when they master new skills.

## **2.2 Factors Influencing Participation of Children in PE/Outdoor Activities**

Various factors could influence children's participation in PE, however, in this study only three main aspects are considered.

### **2.2.1 Playground Status**

The playground is an important area for use by children during physical education. Bundy et. al. (2009), point out that the size of the playground is a major determinant of participation of pre-school children in various activities. A study by Goulimaris, Mavridis & Genti (2014) show that increasing urbanization are resulting in limited space that leads to overcrowding. This when coupled with the increasing school regulation policies including the need to cut down costs are a major cause of decreasing sizes of the playground especially in urban settings as (Wattchow, Jeanes, Alfrey, Brown, Cutter-Mackenzie, and O'Connor(2013) observe in their study. According to a study by Engelen et al (2013) a play size of 3m<sup>2</sup> per child is an important factor in a positive outdoor participation in different activities. Therefore, school playgrounds that allow this ample space per child is more likely to record a positive participation among pre-school children than those with limited space per child. The children in these schools are more like to take part in physical activities that is a crucial part of their overall development. However, an important aspect that arose from the study was on the different activities engaged in by different pre-school children of different ages.

Akoth (2016) conducted a study on the impact of outdoor activities on pre-school children's physical skill development in Langata Sub County, Nairobi County Kenya, and the findings on provision of outdoor play facilities and equipment in preschools revealed that private preschools established in middle class estates had variety of facilities and equipment. Most public preschools had one type of equipment or none at all despite having big play grounds. Some of the equipment available were either broken down or in bad shape. The study also revealed that all the schools had some improvised materials either donated by parents or made by teachers themselves in order to enhance active play.

In a related study in Ng'enda Zone of Gatundu South Sub-County also in Kenya, Wanjiku (2016) purposely aimed to establish the quality of outdoor play environment in early childhood development centres. The study established that the most available play materials in public ECD centres were the portable type and specifically small balls and tyres while in private ECD centres, fixed equipment such as swings and large tyres as well as portable ones like 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 the portable type including small balls, ropes and tyres. Most of the private ECD centres had inadequate playground compared with the number of children registered which therefore implies they did not facilitate effective children play activities, a concern in the current study.

Hyndman and Lester (2015) conducted a study in Australia on the relationship between elementary school children's enjoyment of school playground activities and participation in physical activity during lunchtime recess that consisted of 105 children aged eight to 12 years old. It was discovered that children's enjoyment of more vigorous-type school playground activities including playing tag games, running/sprinting, playing with sporting equipment and man-made equipment such as sporting facilities (and playground equipment) were significant predictors of children's pedometer or distance covered on foot determined by number of steps per minute during school lunchtime recess. Children's enjoyment of vigorous school playground or physical activities shows physical activities during school lunchtime recess are important to children.

Children engage in different outdoor activities during different stages; hence, there is a need to provide adequate and separate playing areas for different age groups. For example, Eleni (2015) points out that those pre-school children aged twelve years engage in team work as well as structured games. On the other hand, the younger pre-school children focus on vigorous games, creative, anaerobic and highly fantasy focused games. Spatial distribution and proper arrangement of the playground is important provided that the size of the playground is adequate for the pre-school children enrolled in a school.

Lopes, Vasques, Ferreira, Leite de Oliveira Pereira, and Ribeiro Maia,(2015) explain that the size of a playground is an important factor in influencing the participation of school children in outdoor activities as long as the individual needs of different age groups are provided for in their separate play areas. Therefore, according to the different activities pre-school children engage in, Strong, Malina, Blimkie, Daniel, Dishman, Gutin,

Hergenroeder, Must, Nixon, Pivamik, Rowlan, and Trudeau, (2005), suggest that school playgrounds should be divided into separate play areas in order to accommodate the different needs of the pre-school children. However, these studies do not take into consideration the different a small school playground can influence the interaction of pre-school children of different ages. The different activities children engage in simulate their participation in the playground and future studies should investigate how small playgrounds influence interaction of children of different ages and their drive to engage in various activities.

In India, Kumar (2018) in his study on the importance of physical education in today's schools, points out that being physically active is one of the most important stay healthy. Furthermore Kumar emphasizes that physical education helps students to improve activities involving speed, agility, body strength, endurance, building strong bones and muscles, reducing anxiety and depression, flexibility, balance and coordination, as well as cardiovascular or respiratory functions, among others. However, Kumar laments that that there is lack of adequate time and trained teachers in the field of physical education to ensure it is taught alongside other curriculum areas.

Wright, Zittel, Gipson and Williams (2019) conducted a study that involved assessing physical development and activities in the playground as indicators of school readiness among 172 preschoolers. Wright et al (2019) revealed that the Pearson correlation results on physical development and physical activity are significantly and positively correlated with learning performance. However, research on physical development particularly amongst preschool-age children trailed behind when compared to other learning levels

involving older school children. This implies that the playground is not adequately used for the purpose for which it is intended.

UNESCO (2005) reports emphasize that schools in developing countries like Uganda and Zimbabwe were not adequately prepared to cater for the physical needs of the children despite the implementation of Education for All plan that dictates all children need to have access to basic education of good quality. This implies creating an environment in schools and in basic education programmes in which children are both able and enabled to learn. Such an environment must be inclusive of children, effective with children, friendly and welcoming to children, healthy and protective for children and gender sensitive.

Bundy et al (2009) examined the lifetime flexibility of playfulness and the ability to enhance it using various interventions. The Test of Playfulness was used to evaluate children's playfulness level and results indicate that it is responsive to intervention and can be change over time. The study by Hyndman, Benson & Telford (2015) also identified that having nets as well as shaping fields in a certain manner helps the children remain safe. The presence of barbed wire although meant to secure the playground may be a hindrance to the participation of children in PE activities and use of a safety wall that can cause minimal injury should be considered. Proper maintenance of the playground like filling up of holes was also identified as a major factor in enhancing the physical environment through proper surfacing. Therefore, through provision of loose parts in the playgrounds, offers children a variety of options to prevent boredom in their playgrounds and at the same time preventing occurrence of injuries during innovative play.

Similarly, Reimers and Knapp (2017) conducted a study to investigate playground usage and physical activity levels of children based on playground spatial features. The study used a quantitative and observational approaches, where 10 playgrounds in one district in a small sized tow in Germany. Playground usage and physical activity levels of children were assessed using a modified version of the System for Observing Play and Leisure Activity in Youth. Negative binomial models were used to analyze the count data. According to this study, the number of children using the playgrounds and the number of children actively playing in them were higher in those with more varied facilities and without naturalness. Girls played more actively in playgrounds without multi-purpose areas. Cleanliness, aesthetics, facility quality, division of functional areas and playground size were not related to any outcome variable. However, this study was conducted in a single district, therefore the study findings could not be generalized for all districts in Germany.

In another related study, Cozett, Basset and Leach (2016) investigated factors influencing participation in physical activity among school children aged between 11 and 13 years in Western Cape, South Africa. The study used a sample of 348 children, from grade 4 to grade 7 selected from 2 different schools within the Metropole South Education District of the Western Cape. Data collection was conducted using the Children's Physical Activity Correlates Questionnaire. Descriptive and inferential statistics were used to analyze the data. Pearson correlation and regression analysis were performed to determine the relationship between the variables and to determine the strongest predictors of physical activity, respectively. According to the findings, availability of physical activity equipment among other factors influencing participation of children in physical

activities. This echoes the findings of Reimers and Knapp (2017), which explained that different aspects of equipment such as availability influenced participation of school children in physical education activities. However, the study was conducted on only 2 schools, which reflected a small study sample. Therefore its application and generalization of its findings would limit success of recommendations. The above studies were conducted in developed countries and thus the researcher purposed to conduct the present study within our regional context.

A similar study was conducted by Eigobobo, Nzomiwu, Amobi, and Etim (2014) to investigate the standard of playgrounds and safety measures in prevention of traumatic dental injuries in selected public and private primary schools in Lagos Enugu and Rivers states of Nigeria. The study employed multi-stage sampling technique to select 180 schools (30 private and 30 public schools in each state) spread across the 3 states. A structured questionnaire was administered to obtain information from the head teachers of 180 selected schools in Southern geo-political zones of Nigeria. According to the findings of the study, Playgrounds provide a recreational refuge for children and play a role in the development of their cognitive, psychosocial, and physical coordination skills. Unfortunately, the status of playground may also be a source of traumatic dental injuries. This was most common in places where playground surfaces were bare earth. Such sentiments were echoed by Broekhuizen, Scholten, and de Vries (2014), whose study explained that such aspects of playground affected participation of the children in physical activity exercises. This study was conducted in three different states in Nigeria with adequate study sample; hence its findings could effectively be replicated for other

states with Nigeria. The current study used questionnaires but the present one used both questionnaires and observation schedule.

In Kenya, Mugo (2009) states that the preschool playing field should be well leveled, be free from harmful objects/ environmental pollutants (long/short grass, poorly drained surfaces). She further points out that if the playground's safety is not ensured, children are bound to get hurt. This might equally prevent or minimize their participation in pre-school which was the core purpose of the present study.

In a related study, Githaga (2018) on school factors influencing the frequency of teaching of physical education in lower primary classes in Laikipia County, Kenya revealed that physical education was not being implemented as per the policy guidelines of the Ministry of Education due to lack of poor status of playfields. However, although the study by Githaga shows that physical education in Laikipia County was not being implemented as it should; the study was conducted in a county under different geographical conditions and resources. Furthermore, the children under study were from lower grade 1- 3 leaving out those who are most vulnerable in preprimary school due to their very tender age.

### **2.2.2 Status of Physical Education Equipment**

The World Education Forum held from 26<sup>th</sup> to 28<sup>th</sup> April of the year 2000 in Senegal, adopted the Dakar Framework for Action and Education for All. It expresses the international community's collective commitment to pursue a broad-based strategy for ensuring that the basic learning needs of every child, youth and adult are met within a

generation and sustained thereafter. The World Education Forum in Dakar provided the opportunity to assess the achievements, lessons and failures of the past decade. It further affirmed that African governments shall in terms of quality and non-discrimination for teachers, whose salary levels have led them to seek supplementary resources; for pedagogical and play equipment.

Availability of PE equipment in pre-school children's playgrounds is an important factor that may influence their participation the different outdoor activities. Taylor, Farmer, Cameron, Meredith-Jones, Williams and Mann (2011) in their study in New Zealand affirm that the presence of play equipment including sports and recreational facilities indeed enhance the participation of primary school children in outdoor activities. Large permanently fixed PE equipment such as swings, climbing frames/ladders, tyres, play huts, see saws, sand pit as well small moveable apparatus including balls, bean bags, skipping ropes, rings, hoops, toy cars, skittles, wooden blocks/ bricks, musical instruments, kitchen and farm tools should be availed to children in order to strengthen their large and fine muscles. Children's playgrounds should thus be fitted with different play equipment to help them participate in different outdoor activities. The above study was conducted in primary school in New Zealand a first world country while the current one focussed on pre-school children in Kasarani Sub-county of Nairobi in Kenya.

Broekhuizen et al (2014) conducted a systematic review on playground characteristics that influence pre-school children's physical activity whereby 17 observational and 13 experimental studies were analyzed in the USA, UK and Belgium. The findings revealed that 77% and 94% of the studies respectively displayed moderate to high methodological

approaches, observational studies revealed a positive association availability of play equipment and children`s physical activity level. Further, there was a significant association between children`s physical activity and reduced playground density. The above study similarly focused on first world countries (USA, UK and Belgium) using observation and experimental procedures of collecting data, to come up with conclusions regarding characteristics that influenced pre-school children`s physical activity procedures. The current study however, was conducted in our local context and employed questionnaires as well as observation to understand how school factors influenced pre-school children`s participation in PE.

Dyment and Bell (2007 in a related study explored how ‘green’ school grounds, which contain a greater diversity of landscaping and design features, affect the quantity and quality of physical activity among elementary school children. Teachers, parents and administrators associated with 59 schools across Canada completed questionnaires ( $n = 105$ ). Analysis reveals that through greening, school grounds diversify the play repertoire, creating opportunities for boys and girls of all ages, interests and abilities to be more physically active. Complementing the rule-bound, competitive games supported by asphalt and turf playing fields, green school grounds invite children to jump, climb, dig, lift, rake, build, role play and generally get moving in ways that nurture all aspects of their health and development. Of particular significance is the potential to encourage moderate and light levels of physical activity by increasing the range of enjoyable, non-competitive, open-ended forms of play at school.

Escalante, Backx, Saavedra and Garcia (2012) argues that school playgrounds equipped with many equipment as well as sports facilities with appropriate multi-colours are attractive to children and encourage them to participate in outdoor activities. A study by TsitskariTzetzis, and Vernadakis, (2014), found that in most cases, children going to schools with adequately or moderately equipped playgrounds are more physically active as compared to those who go to inadequately equipped school playgrounds. The findings are also supported by Escalante, Garcí'a-Hermoso, Backx, and Saavedra (2014) that shows that children at different ages will always utilize whatever is available to ensure that their different needs of play are met. However, the findings of these studies differ with a study by Zask et al (2014) which found that no relation exists between the availability to school playground equipment and the participation of pre-school children in outdoor activities.

This is also concurs with the findings of Engellen, Bundy, Naughton, Simpson, Bauman, Ragen, Baur, Wyver, Tranter, Niehues, Schiller, Perry, van derPloeg (2014) who showed that there is no permanent increase in the participation of children in outdoor activities with the availability of playground equipment apart from balls. The studies by Escalante et al, (2012); TsitskariTzetzis, and Vernadakis (2014); Escalante et al (2014) show that there was a relationship between availability of play equipment and children's engagement in physical activities. However, Zasket et al (2014); Engellen et al (2014) on the contrary state otherwise. The above study findings were therefore inconclusive, thus the current study was meant to shed new light with regard to influence of playground equipment on children's participation in PE.

Escalante et al., (2014) delved deeper in their study and divided the playground equipment into different categories to determine their influence on participation in outdoor activities. The systematic review divided the equipment into playground markings, physical structures, playground markings and game equipment. Results however found that portable equipment alone does not increase the participation of pre-school children in playground activities. Moreover, when the different categories are combined, for example multi-coloured markings and physical structures results in an increase in the moderate to vigorous physical activities as well as vigorous physical activity during the different break times in schools Lopes et al., (2015). It is vital to note that the participation in outdoor activities under study showed that the increase is only short or medium term. The study by Escalante et al., (2014), further show that there is no evidence on the necessary equipment that should be used to facilitate long term participation. This called for further investigation using the current study which employed a surveyed target that responded to questionnaires and observation made to complement the results from the systematic review used in the study by Escalante et al. (2014) which is also outdated now, by virtue of it being 6 years since it was conducted,

Routine preventative and maintenance of playground equipment and facilities however is important in ensuring the safety of pre-school children as well as prevention of injuries. By performing routine checks, it will be possible to prevent and correct hazards in playgrounds. This may be a solution to the increasing concerns by parents and other education stakeholders on the increasing cases of injuries arising from falls and playground equipment. Wyver, Tranter, Naughton, Little, Sandseter and Bundy (2010) state that many cases of playground hospitalization injuries may result from lack of

proper maintenance of playgrounds as well as playground equipment. Maintenance of the playgrounds is thus directly related to the safety of pre-school children in the playground.

According to Lopes et al., (2015), no matter the type, space and amount of supervision care provided for the pre-school children, lack of proper maintenance of the playing ground as well as equipment is a major concern which Mugo (2009) agrees with in order for the pre-school children as well as the parents. Equipment maintenance was also discovered to be a major issue by Hyndman, Benson and Telford (2015) who added that playgrounds that are well maintained encourage pre-school children to participate in different activities and offer minimal risks to the children and as a result, the teachers do not have to strictly supervise them. This assurance extends to the preschoolers the freedom to be creative as well as increase diversity of their playtime as they participate in PE. Maintenance of pre-school children's play equipment was therefore an important study variable observed in the present study so as to gauge how it influenced the above learners' participation in PE.

In UK, Ridgers, Stratton and Fairclou (2006) in their study, on physical activity levels of children during school playtime explained that their engagements are determined by the availability and type of the playground equipment. While this study applied a considerably large sample, all the schools portrayed global context while the current focused on regional and more specifically, sheds more light on local perspective.

Regionally in Kenya, Karande (2014) similarly investigated school based factors influencing participation of physically challenged learners in public primary schools in

Kiambu Municipality. She used a descriptive study design on a target population of 20 head teachers, 100 teachers and 43 physically challenged learners in 20 public primary schools in Kiambu Municipality. Data was collected using questionnaires that were standardized for the study. According to the findings, lack of an enabling environment characterized by irrelevant physical facilities or inadequate equipment that are unsuitable for physically challenged hindered their participation in physical education activities. The study was however conducted in public primary schools while the current one targeted pre-school children.

Macharia (2012) also in a related study in Naivasha Kenya conducted a study that concerned itself on provision of developmentally appropriate equipment to preschool children including their safety and maintenance among other factors that may influence participation in physical education activities. However, although the studies by Macharia (2012); Wyver et al (2010) and Eigobobo et al (2014) focused on playground maintenance and how to keep children safe, none of the studies investigated how increased barbing, lawn mowing or presence of dusty playgrounds influence children's participation in PE. Therefore, it called for a study to investigate the component on influence of maintaining pre-school playgrounds to ensure pupils' safety while at the same time encouraging participation.

### **2.2.3 Status of Childcare**

Provision of positive child care to children in terms of love/ affection, physical/ socio-emotional care, developmentally appropriate activities, even supervision during play and even engagement in safe behaviours are important factor particularly in regard to

influencing their participation in the different learning activities (Mugo 2009). Pre-school children require encouragement to try out directed activities that the teacher has taught during physical education and even empathy in case they accidentally get hurt in the process.

In the early care and education setting, policies exist that can either help or hinder the case for outdoor play for children. Dymont and Bell (2007) suggest that school rules and policy are needed to ensure the culture of the school ground is explicitly targeted as a means of promoting physical activity. Teachers on the early childhood playground continue to view supervision as the dominant role of the teacher, while the children expend their 'surplus energy' and take a break from the more formal learning activities that occur inside the classroom (Dymont & Coleman, 2012). Surplus energy theory promotes the misconception that children are physically active and on the go most of the time they are on the playground, although Dymont and Coleman (2012) found that almost half of outside time is spent in sedentary physical activity.

It is therefore important for pre-school teachers to understand the role of the various physical activities and being able to select suitable one for the children according to their age. It is also vital for teachers to ensure safe engagement of children in directed activities which train them to listen, follow instructions and also learn new skills. The teacher specifically plans/ selects the activities, demonstrates how they should be performed and also checks to see that they are done in the right way so as not to cause any injury in children. In addition, the teacher ensures that all children participate and that they get equal chances to lead in the various activities. Directed physical activities

include running races (sack race, potato race, tyre race, obstacle race); body movement / exercises (bending forwards/ backwards/ sideways, star jump, jumping with feet together, galloping, skipping/ with or without ropes, running on the spot, seesawing in pairs cock fighting) as well as songs, games and dances .However, participation in outdoor activities has considerably gone down in schools over time as the demand by parents and need for child safety care due to fear of injury increased.

Clements (2009) in a study in USA however, affirms this statement based on evidence from mothers and pre- school children who participated in the above research. The mothers affirmed that their children in the present generation participated more in play activities than they did themselves when they were young. Therefore, in order to ensure active participation of children during PE, proper care should be ensured while in the school playgrounds. In fact, safety guideline handbooks have been published including the Handbook for public playground safety by United States consumer to ensure that children are secure during PE. Moreover, child care in all forms in the playground area is a duty of the school management (Clements, 2009). It, not only helps reduce fear and risk of injury during PE, but also protects pre-school children from possible injuries and enhances their participation in the various physical play activities. As such, children should be well taken care of and never be allowed to engage in PE un-attended. During the present study, efforts were made to find out if teachers ensured child-safety during play and whether or not, it contributed to increased participation in PE.

In agreement with Clements (2009) findings, Taylor et al., (2011) concerning child-safety rightly affirm that in most cases, parents warn their children not to play unsupervised. As

a result, the pre-school children will always be wary of playing unsupervised in the school playgrounds thereby reducing or denying them their play time altogether. In another study in Victorian schools in Australia, all educators in the schools are allocated to conduct child care during the different breaks. However, Chancellor (2013) also reports that the impact of the constant care is not well understood, but with child safety care being part of the curriculum as well as a demand from the ministry of education, there was thus a need to understand its effects on student participation in PE locally.

Wyver et al., (2010) in Australia also regarding child safety indicates that playground policies have had an impact on student participation in outdoor activities. This is as a result of the increasing need for safety measures that call for strict supervision during playtime. However, Chancellor (2013) adds that due to the stringent measures imposed on children in terms of playground policies to ensure their safety, they lack the opportunity to become active, creative as well as being able to develop diverse play ideas. Unlike in the past where pre-school children were given a free reign over their play time, pre-school children are now under organized, supervised and directed play time by teachers/ caregivers who “fear” for their safety as Lopes et al. (2015) observe. There was therefore a need to conduct the present study on the effects of strict child care on the pupil’s participation on the playground.

In a similar research in Australia, Shields and Synnot (2016) conducted a qualitative study to investigate perceived barriers to participation in physical activity for children disability. In this study, ten focus groups, involving 63 participants (23 children with disability, 20 parents of children with disability and 20 sport and recreation staff) were

used. Data collected was analyzed and revealed that besides other factor such as availability of equipment, the physical state of the children limit them from participating in physical education. For instance, learners with total disability lack the capacity to engage in physical activities. The current study involved children with disabilities and their parents while the current one targeted pre-school children and their teachers.

In a related study in Ghana, Sofo and Asolo (2016) while investigating barriers to providing quality physical education in primary schools used a sample of 296 primary school teachers purposively selected from four regions or locations in the country. An 11-item 5-point Likert-type questionnaire served as the data source. Descriptive and inferential statistical tools were used for data analysis. According to the study findings, teaching was identified as a major factor towards participation of children as it is affected by a number of reasons. They included lack or inadequate teachers` guide, inadequate time allocated for physical education, and lack of support from fellow teachers or departments. The above study, investigated barriers to providing quality physical education in primary schools while the current one centred on influence of playground factors on the participation of pre-school children in physical education activities.

Locally, in Kenya, the government as demonstrated by Ministry of Education in MoE (2008), also views child-care as important and as such it has stipulated safety standard manual for schools. In addition, Macharia (2012); Sirima (2015) have conducted studies associated with child-safety care and as it relates to participation in physical education. Macharia (2012) specifically used self-administered questionnaires on teachers and head teachers to collect data concerning supervision of children. According to the study

findings, provision of child-care in terms of supervision, to a large extent ensures control of the children and their full participation in outdoor activities. However, this study did not develop a mechanism of collecting data through observation by the researcher or children themselves which could increase accuracy of the findings. The current study relied not only on self-administered questionnaires but also on observation.

Sirima (2015) conducted a similar study that investigated challenges facing the teaching and learning of physical education in public primary schools in Bwiri/ Nanguba Zone, in Samia Sub-County, Kenya. Descriptive design approach was used for this study which targeted 18 head teachers, 176 teachers and 2,946 pupils in primary schools in Bwiri/Nanguba Zone. A total of fifteen (15) sampled schools took part in the study. The head teacher of each sampled school was interviewed; 2 teachers and 20 pupils from each sampled school, filled a questionnaire, which was the main data collection tool used. Observation checklist was also used to enhance collection of adequate data for the study. According to the findings of the study, it was identified that teachers did not adequately prepare physical education programmes, which was reflected in ineffective participation of children in physical education activities. While this study investigated challenges facing the teaching and learning of physical education in public primary schools, the focal point of the current research was on influence of playground factors on the participation of pre-school children in physical education activities.

### **2.3 Summary and Research Gaps**

Literature review has covered types of physical education activities in pre-school and has also shown that limited space especially in urban setting where schools lack playgrounds

for use, influence participation of children in PE activities. However, these studies do not provide alternatives that such category of schools could employ to ease or solve the problem. Some studies claim that intensive childcare limits participation of children in different outdoor activities, thus there was need to investigate this matter further as it lacked conclusive evidence. While the studies had concrete results, most of them did not give an implementation strategy or a comprehensive recommendation to the stakeholders. Therefore, the challenges or solutions identified in the studies were never applied. Therefore the current study endeavoured to provide a comprehensive recommendation for implementation of its findings by the various stakeholders.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the research design, study area, study population, sampling, data research tools, validity, reliability, data collection/ analysis and ethical considerations in research.

#### **3.2 Research Design**

The study adopted a descriptive research design, and specifically survey method. It was relevant for use particularly because data collection was done through administration of questionnaires as Kothari (2004); Kombo and Tromp (2007) suggest,. The design was also useful in describing issues specifically where they arose clarification sought from the respondents about such problems.

##### **3.2.1 Variables of Study**

The study comprised two study variables namely dependent and independent.

- **Dependent variable**

The dependent variable was the participation of children in physical education. Active participation where more than 75% of the children were engaged was awarded 3 points, 50% engagement 2 points and 25% or below, 1 point.

- **Independent variable**

The independent variables constituted the factors that could influence participation of children in PE namely status of: playground, play equipment used and childcare given.

The variables were measured using the following indicators:

**i) Types of PE Activities Children Engaged in**

Teachers were to choose and indicate the types of PE activities their children most frequently engaged in. Activities in which no play materials or equipment were frequently used were awarded 1 point, where small moveable materials were most frequently used were awarded 2 points while those in which large permanently fixed equipment were most frequently used were awarded 3 points.

**ii) Status of Playground**

It involved adequacy of the play space, fencing and its safety.

**-Adequacy:**

Playground allowing for 3 meters of play space per child as recommended by Engelen et al. (2013), was assigned 3 points, while 2 meters playground space per child was deemed moderate and 1 meter space or below per child was considered inadequate and will be awarded 1 point.

**- Playground fencing:**

Availability of fence, securely fenced field and condition of type of fence used) was assigned a maximum of 3 points, 2 points where any two indicators were present and a minimum of 1 point based on the presence of any one of these factors.

**-Safety of playground in terms of:**

Leveling, presence/ absence of harmful objects, presence/ absence of environmental pollutants (long/short grass, well drained field/ one with stagnant or dirty water) was

assigned a maximum of 3 points, 2 points for any two and a minimum of 1 point based on the presence of these factors

**iii) Status of play equipment:**

It involved their adequacy, variety and safety.

**-Adequacy:**

Presence of four to five large permanently fixed equipment in the preschool (e.g. Climbers Swings, Slides/gliders, Seesaws, Sand pit) was deemed high or adequate and assigned 3 points, two to three number of equipment were viewed as moderate and assigned 2 points while zero to one was regarded as low or inadequate and assigned 1 point. Similarly, for small moveable materials (e.g. Balls, Tyres, skipping ropes, Beanbags, Toy cars), the same scale was used.

**-Variety:**

Presence of 11 – 15 different types of play equipment/ materials were taken to be highly varied, and assigned 3 points, 5 – 9 were deemed moderately varied, and assigned 2 points while 0 – 4 were categorized as low and assigned 1 point.

**-Condition:**

Condition of play equipment was examined based on how intact or not it was; broken or splintered but not in use; or broken/ splintered and in use. Based on the above aspects, the researcher awarded a maximum of 3 points and a minimum of 1 point for each of them.

#### **iv) Status of Childcare:**

It was determined by the teacher's ability to supervise vigilantly supervise children, ensuring they engaged in safe behaviours/ play and whether or not the teacher was trained in childcare as well as certified as a first aider).

#### **-Supervision:**

Ensuring close watch over children (all the time) while engaging in PE was assigned 3 points, 2 points for watching over children half way the lesson and 1 point where children were only watched over for quarter of the lesson

#### **-Physical behaviours:**

Encouraging children in engagement in safe physical activities, teachers' being good safety role models during PE and ensuring children took turns or shared PE material/ equipment that may have been in-adequate were awarded a maximum of 3 points. 2 points where any two of the above indicators were observed and a minimum of 1 point for each of these indicators.

#### **Teacher training:**

Components of teacher training in childcare, administration of simple first aid in the event of any accidents during PE and certification as a first aider by a recognized first aid body such as Red Cross or St. John's was awarded a maximum of 3 points and a minimum of 1 point based on presence of each of the above three indicators.

### **3.2.2 Location of Study**

Nairobi County and Kasarani Sub-county were both purposively selected for study out of all the 47 counties of Kenya. Nairobi City County was considered for study it has characteristic of diversity and particularly because it harbours many preschools from all

socio-economic groups or families within a small geographical area whose teachers and administrators were the major participants in the study. As for Kasarani Sub-county, it was also purposively considered due to the perception of parents or community members who do not view PE as a serious subject and prefer teachers to concentrate more in academic work.

### **3.3 Study Population**

This study targeted all the 50 pre-schools in Kasarani Sub-county as well as 100 pre-primary 1 (PP1) and pre-primary 2 (PP2) teachers or 50% in each category. As Ngechu (2004) demonstrates, this population composed of the participating teachers who were involved in the study, were a properly defined set of respondents from whom the sample was selected.

### **3.4 Sampling Techniques and Sample Size**

The techniques used in sampling and determination of a suitable sample size are described in this section.

#### **3.4.1 Sampling Techniques**

##### **i. County and Sub-county**

Purposive selection of the County and Sub-county was done (see section 3.3).

##### **ii. Pre-primary Schools:**

Random selection of 15 or 30% of them by rotary, out of the 50 targeted pre-schools in Kasarani Sub-county was done.

### iii) Pre-primary Teachers

As for the teachers, out of the 100 schools, one pre-primary 1 teacher and another one from pre-primary 2 or 30 (30%) of them per preschool were selected purposively from the schools sampled but where there were more than two teachers, random sampling applied, ending up with the two desired participants.

### 3.4.2 Sample Size

The size of the study sample is provided in Table 3.1.

**Table 3.1 Sampling frame**

<b>Respondents</b>	<b>Target sample 100%</b>	<b>Sample size 30%</b>
Pre-schools	50	15
Teachers	100	30

The study sample consisted of 15 (30%) pre-schools out of 50 and 30 (30%) out of the 100 targeted PP1 and PP2 teachers in Kasarani Sub-county. The calculations of the sample size are shown in the sampling grid.

### 3.5 Research Instruments

In this study the main data collection instruments was questionnaires for teachers and observation checklist. The questionnaire contained both open and closed ended questions with the quantitative section of the instrument utilizing both a nominal and a Likert-type scale format which is characteristic of mixed methods approach as (Kothari, 2003;

Orodho, 2010) demonstrate. The study further employed observation checklist as confirmatory tool during the time of data collection.

### **3.6 Pilot Study**

Piloting was done in four days using 4 randomly selected pre-schools in Kasarani Sub-county where questionnaires were administered to 8 teachers as the researcher also undertook observation. The participating preschools were not included in the main study to guard against respondents becoming too familiar with the items in the study instruments. The exercise was necessary to ensure that all the research processes were in order and also to ascertain the dependability or soundness of data collection instruments as Sekeran (2003); Joppe (2000), Cooper and Schindler (2003) advise.

#### **3.6.1 Validity of Instruments**

Content validity of the instruments was ensured by constructing them within the strict confines of the study objectives as well as reviewed literature in order to guarantee that that they measured what they ought to measure. Validity was also ensured through their appraisal by the supervisor and the defense committee who are experts in the area of early childhood at Kenyatta University.

#### **3.6.2 Reliability of Instruments**

To ascertain that the instruments were authentic, the Split Half reliability technique was employed. Thus the study items in the research instruments were split into two equal halves. Thereafter, Cronbach alpha was used to correlate the two halves using Spearman's correlation coefficient ( $\rho$ ) whereby, an alpha coefficient of 0.7 was

obtained and accepted as reliable. Orodho (2004) affirms that if an alpha coefficient of 0.7 or above is obtained like in the current research, the study items are reliable.

### **3.7 Data Collection**

About one month was used to collect data from teachers in regard to playground factors influencing children's participation in PE in two phases. In phase one, the researcher distributed the questionnaires to the sampled teachers covering 3 pre-schools per day. During this time, it was also ensured that any clarifications that arose were made. The teachers were also informed that the filled questionnaires would be collected after within one week starting with the 1<sup>st</sup> to 15<sup>th</sup> school which took 3 weeks or a day in each school. During this time, the researcher also made actual observations of the status of the playground, play equipment and engagement of children in both free and directed physical activities while collecting the filled in teacher questionnaires.

### **3.8 Data Analysis**

Data analysis was done using both qualitative and quantitative methods but first the process involved editing data. Specifically, qualitative or non-numeric data particularly from observations was organized according to themes based on the study objectives and presented as discussions in narrative form. For quantitative data, simple statistics involving means, frequencies and percentages were employed and the results presented using frequency tables, percentages, pie charts and bar graphs. To find out whether or not there was a significant relationship between the independent and dependent study variables, Pearson's correlation coefficient was used. According to David (1938) a sample size equal or superior to 25 suffices. Furthermore, multiple regression models

were employed to determine the overall fit (variance) and the relative contribution of each of the sub-variables to the total variance, and the following hypotheses were tested;

**H<sub>01</sub>** There is no significant relationship between playground size and participation of children in physical education activities

**H<sub>02</sub>** There is no significant relationship between availability of playground equipment and participation of children in physical education activities

**H<sub>03</sub>** There is no significant relationship between child care in the playground and children's participation in physical education activities

### **3.9 Logistical and Ethical Considerations**

The following are the logistical and ethical considerations that were ensured by the researcher.

#### **3.9.1 Logistical Considerations**

An introductory letter was sought from the Graduate School of Kenyatta University in order to facilitate being granted permission by National Commission for Science Technology and Innovation (NACOSTI) to collect data. Clearance to engage with the schools was also sought from administrators of the sampled pre-schools and the classroom teachers to visit their classes during interviews and observation time.

#### **3.9.2 Ethical Considerations**

Observation of ethics started with the researcher conducting herself in a professional manner in order to earn respect from the participants. Specifically, ethical issues such as

confidentiality of information as well as anonymity of participating teachers were ensured by asking them not to write their names on the questionnaires.

## CHAPTER FOUR

### FINDINGS, INTERPRETATION AND DISCUSSIONS

#### 4.1 Introduction

This chapter, presents results from analysis of the data collected, interpretation and discussion of the findings. Qualitative data has been organized into themes as per the objectives and presented in narrative. In addition, both descriptive and inferential statistics have been analyzed and discussed. In descriptive statistics, the researcher adopted percentages, means and standard deviations based on their applicability. For inferential data, the study has employed Pearson's correlation coefficient to show the significant relationship between the independent variables (school factors) and the dependent (participation of children in physical education). Multiple regression model has also been utilized to determine the relative contribution to the total variance of each of the sub-variables as guided by the following objectives:

- i. To find out the physical education activities pre-school children engage in.
- ii. To determine the influence of status of playground on the participation of pre-school children in physical education activities.
- iii. To find out the influence of status of playground equipment on the participation of pre-school children in physical education activities
- iv. To establish the influence of status of childcare on the participation of children in physical education activities

However, the general information regarding the study participant's response rate and their demographic data are presented first.

## 4.2 Response Rate

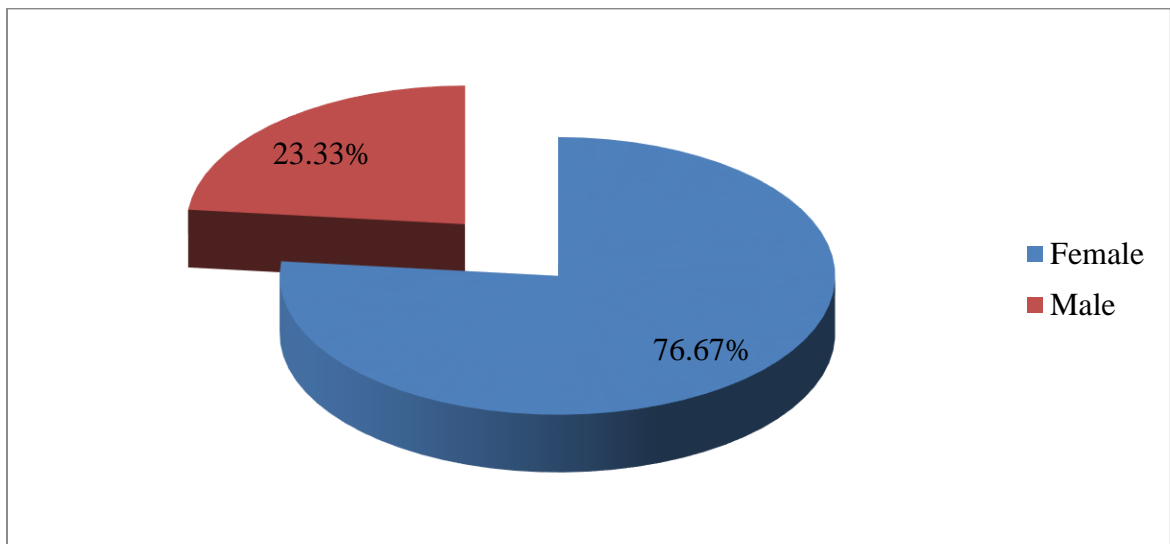
The study targeted 30 respondents, of which all filled and returned the questionnaires. This gives 100% response rate which was attained due to the researcher's diligence in following up the study participants. According to Sifuna (2009), the higher the response rate the higher the probability that the information gathered will be reliable.

## 4.3 Demographic and General Information

In this section, the researcher considered gender and school category. These aspects were deemed important since they had a potential to affect the responses provided by the respondents.

### 4.3.1 Distribution of Teachers by Gender

Respondents were asked to indicate their gender as shown in figure 4.1



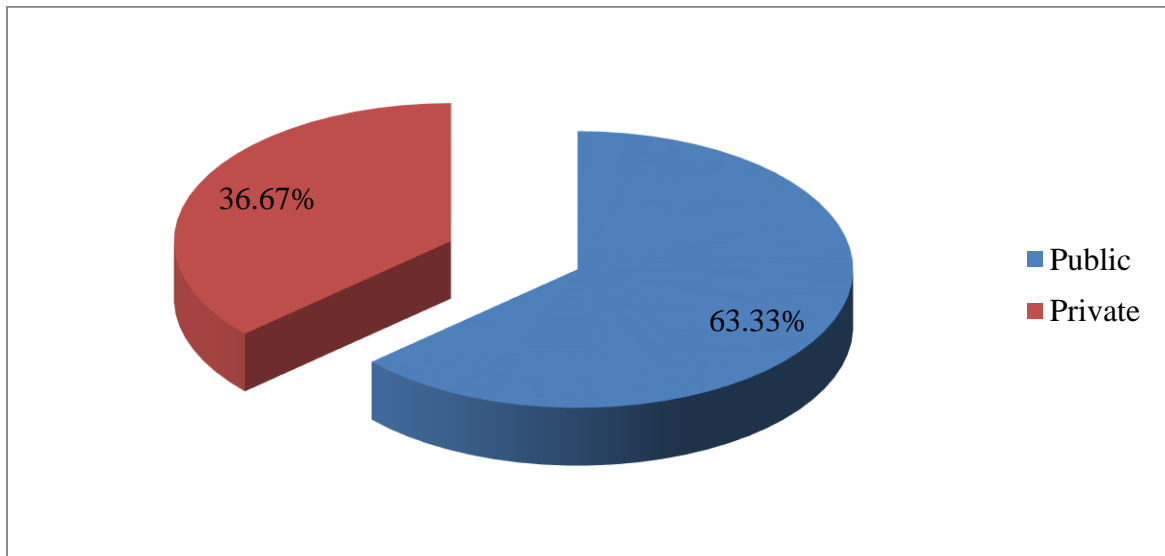
**Figure 4.1: Preschool Teachers' Gender**

From the findings, majority of the preschool teachers presented in this sample (76.67%) were female while 23.33% were male. The findings imply that most of the teachers in

Kasarani preschools are female. Several other findings, such as Chancellor (2013) have indicated that female representation in instruction of preschoolers is high compared to male. Furthermore, Ministry of Education, Science and Technology (2010) indicated that male teachers shy away from teaching preschool children.

#### 4.3.2 School Type

The researcher wanted to establish whether the preschools under study were private or public. Respondents were therefore, asked to indicate their school type as shown in Figure 4.2



**Figure 4.2 Respondents' School Type**

Most of the respondents (63.33%) indicated that their school type was public while 36.67% said it was private. The implication is that most preschools in Kasarani were government sponsored. Clements (2009) also found that almost all government sponsored primary schools had preschools. Basically, most preschools are started by local churches after which they are converted to public through official application. However, Hyndman

et al. (2015) indicates that the private sector continues to increase their investment in preparatory centers over the world.

#### 4.4 Types of PE Activities among Children

The first study objective sought to find out from the participating teachers the different types of physical education activities they engaged their pre-school children in. The question asked was two-tier whereby they were to indicate whether their children engaged in PE activities daily, and which specific activities were availed to children. Their responses are as recorded in figure 4.1 and Table 4.3 respectively.

**Table 4.1 Whether PE was Conducted Daily in Pre-school**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Yes	22	73.3
No	8	26.7
<b>Total</b>	<b>30</b>	<b>100.0</b>

From Table 4.1 most of the teacher respondents 22 (73.3) indicated that PE activities were availed to children on a daily basis, while only 8 (26.7) differed with the majority. This shows that although the Ministry of Education has spelt out that PE should be availed to children on a daily basis, even though some schools did not comply. This demonstrates lack of appreciating that physical activities are important for children's motor development as the Republic of Guiana's MoE (2016) indicated.

Thereafter, the teachers were asked to rate the types of PE activities that their children most frequently engaged in during PE in order to develop their fine and gross motor skills. Engagement without materials was assigned 1 point, with small moveable/portable materials 2 points and with large permanently fixed equipment 3 points.

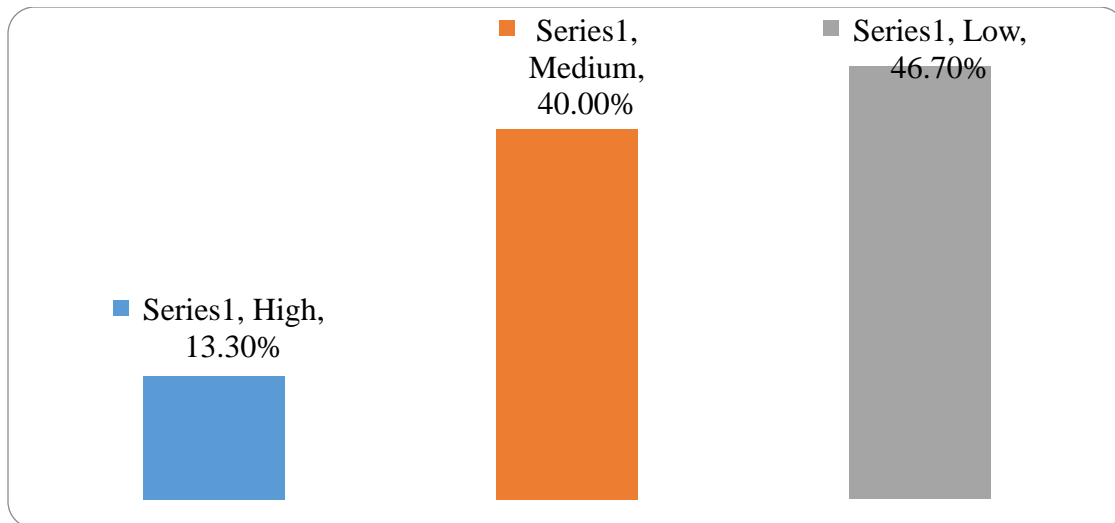
**Table 4.2 Types of PE Activities Children Most Frequently Engaged in**

<b>PE Activities</b>	<b>Frequency</b>	<b>Percentage</b>
Without play materials	17	56.7
With small portable/ moveable materials	9	30.0
With large permanently fixed equipment	4	13.3

\*Multiple observation (N=15)

As Table 4.2 shows, majority of teachers indicated that the PE activities their children engaged in most frequently were those that did not require use of any play materials while the activity in which children least engaged in, most unfortunately was with large permanently fixed equipment. Kenya Institute of Curriculum Development (2017) states that children need to be given activities from the three categories in order to ensure they develop satisfactorily most importantly physically.

The researcher further made personal observations to determine the frequency of participation of children in the above PE activities using a 3-point scale, (low, medium and high), and Figure 4.3 highlights the findings.



**Figure 4.3 Researchers’ Observation on Level of Children’s Participation in PE**

Actual observations by the researcher on the contrary show that, most of the schools recorded low participation of children in PE (46.7%) followed by those that had medium level participation (40%). Only 13.3% of the 15 schools recorded high level of preschool children participation in PE. Basically, the findings indicate that participation of preschool children in PE was generally low. This is supported analysis of results from Chile's 2016 report card on physical activity for children and youth by Barbosa and de Olivera (2016) that showed that children engage in little total PE and excessive levels of sedentary behavior.

The researcher further sought to personally observe, which specific activities children were mostly engaged in and presents the results of her observation in Table 4.3.

**Table 4.3 Major PE Activities Observed**

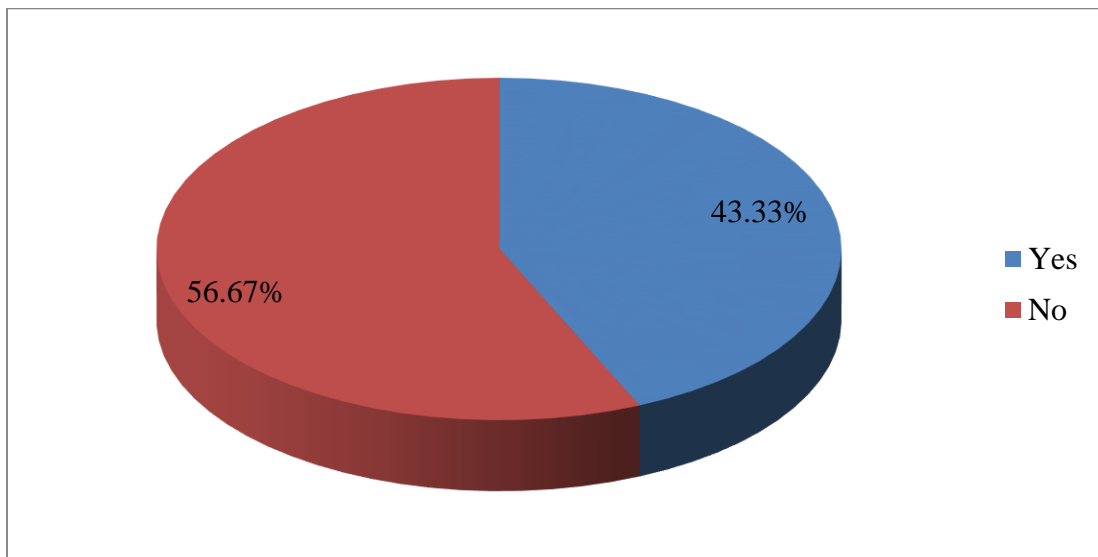
<b>PE activity</b>	<b>Frequency</b>	<b>Percentage</b>
Passing the ball	15	100
Star jump	11	73.33
Seesaw	6	40
Frog jump	10	66.67
Horse ride	11	73.33

\*Multiple observation (N=15)

The findings show that most of the children observed, engaged in ball passing (100%) comprising of football, throwing the ball as well as fighting for the ball. The other prominent activities observed include: star jump (73.33%), horse ride (where one child acted as a horse) (73.33%) and frog jump (66.67%). The findings are in harmony with responses of the 30 teachers sampled for the study as it has been clearly demonstrated that not all children in their schools, participated in PE activities involving large play equipment or even the fixed ones small moveable apparatus thereby hindering opportunities of children to engage in varied activities that help to build muscle strength and endurance. This finding implies that outdoor activities that majority of preschool children engaged in were free play activities. This finding concurs with the view of Sebba and Robinson (2009) that children prefer to freely choose Physical Education activities according to their interest or preference with or without supervision of teachers. The finding also underscores the fact that there was a limitation on teachers' part to provide or improvise portable materials like balls, ropes, rings, tyres, bean bags and the like for use by children which are necessities covered during teacher training material development sessions which Gichuba et al. (2009) emphasize on.

#### 4.5 Status of the Playground

The second objective of this study was to determine the influence of status of playground on the participation of pre-school children in physical education activities. Basically, the researcher considered several aspects including knowledge of teachers on the correct playground space per child, as recommended by the government of Kenya, through Ministry of education. Thus the first question the participating teachers were asked, was to indicate whether they were aware of the recommended playground space and secondly, if they knew the approved size. Their responses are as displayed in figure 4.4



**Figure 4.4 Teachers' Knowledge on Recommended Playground Space**

Most of the teachers (56.67%) admitted that they were not aware of the recommended playground space while 43.33% indicated they were aware. The findings raise questions on the kind of training teachers undergo since it is expected that this is part of the content in teacher training. With regard to the question as to the exact approved playground space per child, only three teachers were able to mention the correct answer, representing only

10% of the teacher respondents which Wattchow et al (2013) also affirms. The implication is that 90% of the teachers were not aware of the exact recommended playground space per child. Engelen et al. (2013) recommend a playground space of 3m per child.

Respondents were further asked to indicate whether their school playground was safe for use by children in terms of being well leveled and free from harmful objects using a 2-point scale, Yes or No. Their responses are as indicated in Table 4.4.

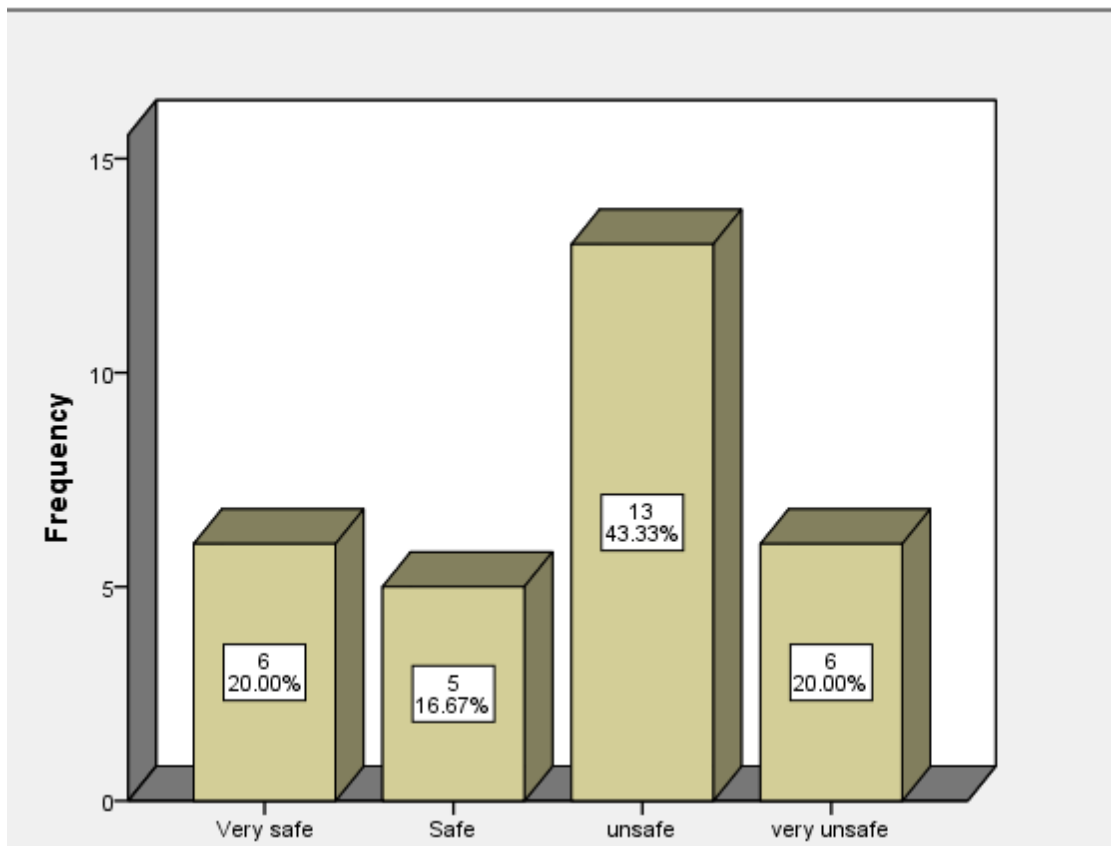
**Table 4.4: Safety of Pre-school Playground**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Yes	25	83.3
No	5	16.7
<b>Total</b>	<b>30</b>	<b>100.0</b>

Majority of the respondents (83.3%) indicated that their playgrounds were well leveled and that there were no harmful objects and other environmental hazards. This finding is good news unlike in the study by Eigobobo, Nzomiwu, Amobi, and Etim (2014) in Nigeria which revealed that bad status of playground may be a source of traumatic dental injuries for children, a most common occurrence in places where playground surfaces were bare earth. Further, the results of the current study indicate that only 16.7% of the respondents pointed out that their school playground was not well leveled. In a similar study in Kenya, Nonoyama-Tarumi et al., (2009) showed that pre-school safety had not

been given much focus, and in most cases, children are left to play in the poorly maintained fields which may be attributed to the above accidents.

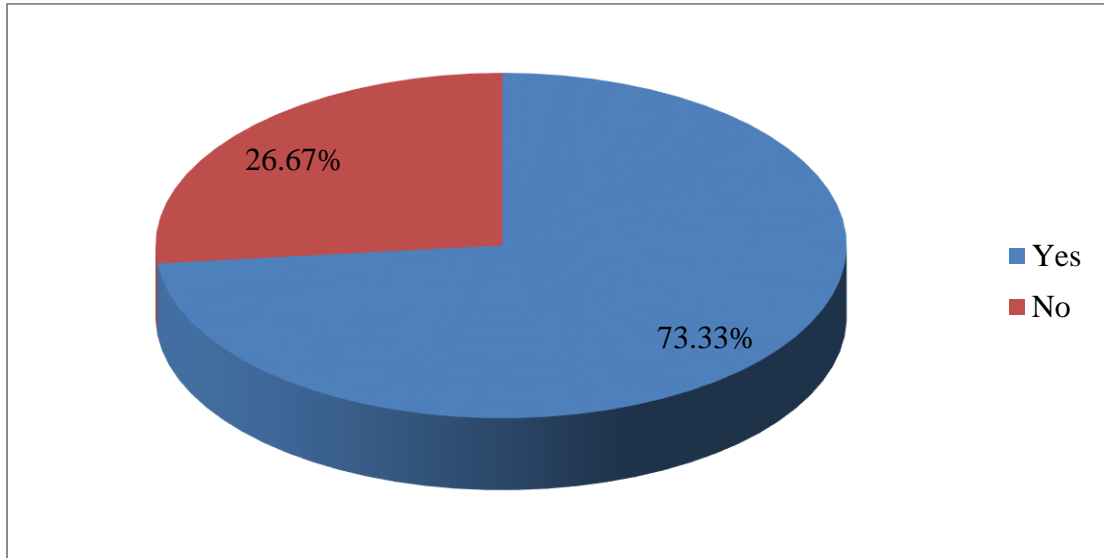
The participating teachers were further asked to describe the level of safety in these playgrounds, using a scale that rated them from very safe assigned 1 point to very unsafe 4 points. Their responses are as displayed in Figure 4.5



**Figure 4.5 Respondents' Opinion on Safety of Play-ground Space**

From the findings, it can be observed that majority of the respondents perceived the playground space as unsafe (43.33%). In fact, more than 50% of the respondents felt the playground space was either unsafe or very unsafe. Basically, that meant, the playground space was unsafe for children's use for play or PE lessons, an aspect that respondents felt

could hinder participation of children in play. Bundy et al. (2009) also explains that playground safety is deteriorating especially in urban setting. Respondents were further asked to indicate whether their preschools were secured with fence.



**Figure 4.6 Fence Security**

From the findings, 73.33% of the respondents agreed that their schools were secured with fence. On the other hand, 26.67% said their schools did not have fence. However, respondents who said they had fence were asked to indicate the level of safety of their fence. Their responses were as indicated in Table 4.5.

**Table 4.5 Safety of the Pre-school Fence**

	<b>Frequency</b>	<b>Valid Percent</b>
Very Secure	5	21.7
Secure	6	26.1
Insecure	6	26.1
Very Insecure	6	26.1
<b>Total</b>	<b>23</b>	<b>100.0</b>

Almost all responses had equal frequencies (26.1%). However, it is notable that the larger proportion of respondents felt the fence was not secure for children participation in play. A study by Eleni (2015) makes a similar claim; the researcher finds that poor maintenance of fences deterred children from participating in play. Eleni mentions warning from their parents as reason why children in non-fenced preschools were not enthusiastic to participate in physical education activities. Basically, the extent to which school fences were present was cited as having effect on willingness of the children in participate in various co-curricular activities such as ball games and hide and seek.

Other than seeking the opinions of the preschool teachers, the researcher made observations in all the 15 schools where research was conducted in Kasarani. The observation was put in scale of 1 to 3, where 1- low, 2-medium and 3-high. The results were as displayed in table 4.6.

**Table 4.6 Researcher's Observation on Status of Play-ground**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
i) Adequacy of playground space per child	15	1.6667	.81650
ii) Fencing - (availability of fence, type of fence, condition of the fence)	15	1.9333	.96115
iii) Safety (levelling, presence/ absence of harmful objects, environmental pollutants)	15	1.7333	.88372
<b>Average</b>	<b>15</b>	<b>1.777767</b>	<b>0.887123</b>

On average, the status of the playground was medium ( $m=1.78$ ,  $s=0.89$ ). The adequacy of playground space, fencing and safety were all rated as medium by the researcher. None of the schools visited had a completely secure playground. Playgrounds were characterized by debris, congestion and poor fences. In fact, most of the fences could not hinder anything from affecting the children. The researcher further observed that some playgrounds had potholes, water pools while others were too squeezed, with most of them not meeting the 3m square threshold. Even in cases where the ground met such requirements, some sections were actually dangerous bushes that could harbour some reptiles such as snakes and other dangerous organisms.

There were also preschools that did not have even their own playgrounds. Some private preschools were located in squeezed buildings that did not have any field. In such

preschools, managements were making arrangements to use public fields that were characterized with very poor maintenance and were actually very insecure for children.

Wattchow et al (2013) had also observed that most preschools in urban centers were not healthy for children since they had replaced open fields with tall buildings that were not useful to children at all. The researcher had warned that if such culture continues, the world will end up with sick population. The study further sought to establish the relationship between playground status and children’s participation in physical education. Pearson’s correlation coefficient was used at 95% confidence interval (Table 4.7).

**Table 4.7 Correlation Between Status of Playground and Children’s Participation in PE**

		playground status	Child participation in Physical education
playground status	Pearson Correlation	1	.766
	Sig. (2-tailed)		.068
	N	15	15
Child participation in Physical education	Pearson Correlation	.776	1
	Sig. (2-tailed)	.068	
	N	15	15

From the findings, there was a positive relationship between playground status and children’ participation in physical education ( $r=0.766$ ). The findings imply that changes in playground status influence participation of children in physical education. However, there was no significance relationship between playground status and children’ participation in physical education ( $p=0.068>0.05$ ). The implication is that even though

there is a linear link between the two variables (playground status and children's participation in physical education), children opted to either take part in physical education or withdraw regardless of the status of the playground.

These findings are supported by those of Lopes et al. (2015) which revealed that the playground status such as its size is an important factor in influencing the participation of school children in outdoor activities as long as the individual needs of different age groups are provided for in their separate play areas. Similarly, Eleni (2015) explained that when playground is made to become attractive to children, they are likely to engineer their own play activities and participate without coercion. However, the findings from the researcher's own observation show that the status of the playground in most of the preschools in Kasarani was characterised by unkept fields and unfriendly environment. As such, the study finds it as a major contributor to low participation of children in PE. This can be deduced from the fact that the findings have shown that there existed a positive relationship between the status of the playground and participation of children in physical education.

From the open-ended questions, the researcher relatively established that most of the respondents showed similar findings, that there is a positive relationship between status of the playground and participation of children in physical education. For instance, when asked to indicate how the size, safety, and the space of the playing field influenced participation of children in PE, one of the respondents said:

*'...When the fields are bare, with no grass, most children do not play there. When there is enough grass in the field, especially during the rainy season, many*

*children run to the field to play. Even us as teachers, we do not feel encouraged to take children for physical education when the field is bare’.*

Another one said:

*‘Most of the fields in town are not fenced and are often intruded by strangers. In other schools, such as ours, there is no space to play. We normally go to some open grounds within the community. However, most of the community fields are never maintained and we only take the children there when necessary like during sports competition. Unfortunately, even where the fields are well maintained, children are not free to go to such fields on their own. I believe that’s a major setback when it comes to participation of children in PE.*

Similar to the argument above, another respondent said:

*‘In our school, participation of children in PE is very good. Almost all children engage into different play activities whenever they are free with or without a teacher. We encourage them to do so because our field is in very good condition. As you can see the field is well fenced and has only two exits. Only one is open and there is a watchman there. Have you visited some other schools in this region, they are pathetic! In such schools, very few children participate in play, you can go and observe for yourself’.*

In fact, there were those who lamented with regard to those in authority and one of them had this to say:

*‘Our country is very funny; imagine this is Nairobi, just close to the headquarters of the Ministry of Education, yet the environment in our preschools is pathetic.*

*There are very good guidelines on paper, but they remain just there. One wonders how some of the preschools continue to operate in such conditions and the authorities are just here. Unfortunately, there is little we can do because in every meeting we raise the issues of poor playgrounds but the management is obsessed with the notion of inadequate finances'*

Findings from these open-ended responses reveal that preschool teachers were forced to accept the reality in their respective schools, despite the fact that they were aware that poor playground status was affecting participation of children in physical education. In fact, some argued that the management was only concerned about more enrolment without considering the fact that some preschools had very small playgrounds that could not support adequate participation of children in physical education. It was also established that despite the area being in Nairobi County, where ministry supervision was expected to be more thorough, there were many flaws as far as status of the playground is concerned. It was also argued that the continued lack of proper playgrounds has led to emergent of activity-phobia learners, who feel that participating in physical education is a form of punishment that should be avoided at all times. In fact, most of the teachers argued that some children no longer find it interesting to participate in play yet they are expected to be very active at their age.

#### **4.6 Status of Playground Equipment**

In the second objective, the researcher sought to establish the status of playground equipment, in terms of availability, variety, maintenance and general safety.

Respondents were asked to indicate whether the playground equipment displayed in table 4.8 were present in their schools.

**Table 4.8 Availability of Play-ground Equipment**

<b>Equipment</b>	<b>Available</b>		<b>Not available</b>	
	<b>Frequency</b>	<b>Percent</b>	<b>Frequency</b>	<b>Percent</b>
Climbers	13	43.33%	17	56.67%
Swings	29	96.67%	1	3.33%
Slides and gliders	9	30.00%	21	70.00%
Seesaws	21	70.00%	9	30.00%
Balls	30	100.00%	0	0.00%
Tyres	11	36.67%	19	63.33%
Skipping ropes	28	93.33%	2	6.67%
Beanbags	14	46.67%	16	53.33%
Toy cars	2	6.67%	28	93.33%
<b>Average</b>	<b>17</b>	<b>58.15%</b>	<b>13</b>	<b>41.85%</b>

From the findings, it can be observed that most of the equipment listed in table 4.6 were available on average (58.15%). Some of the equipment that were highly rated as available include: swings (96.67%), seesaws (70.00%), balls (100%) and skipping ropes (93.33%). Some of those that were highly rated as unavailable in most of the schools include: toy cars (6.67%), slides and gliders (30%) and tyres (36.67%). In general, it can be explained that some important equipment were missing from many of the schools as reported by the respondents. As such, participation of children in play could have been affected by the unavailability of important equipment. These findings are in line with Taylor et al. (2011) who found that large permanently fixed PE equipment such as swings, climbing frames/ladders, tyres, play huts, see saws, sand pit as well small moveable apparatus

including balls, bean bags, skipping ropes, rings, hoops, toy cars, skittles, wooden blocks/bricks, musical instruments, kitchen and farm tools should be availed to children to boost their participation in play. The researcher further recommends that pre-school children's playgrounds should thus be fitted with different play equipment to help pre-school children participate in different outdoor activities.

Other than availability, the researcher further sought to examine the adequacy of these equipment based on the opinions of preschool teachers. Respondents were asked to rate in the adequacy in a scale of 3, where 1 was low, 2 was medium while 3 was high. Their responses were as displayed in Table 4.9.

**Table 4.9 Table Descriptive Statistics on Adequacy of Playground Equipment**

	N	Mean	Std. Deviation
Large permanently fixed equipment (Climbers Swings, Slides/gliders, Seesaws, Sand pit	30	2.0667	.78492
Small moveable materials (Balls, Tyres, Skipping ropes, Beanbags, toy cars	30	2.3333	.71116
<b>Average</b>	<b>30</b>	<b>2.2</b>	<b>0.74804</b>

The findings show that adequacy of the playground equipment was generally rated as medium (m=2.2, sd =0.75). It further be noted that adequacy of small, movable materials such as balls and tyres was rated higher than large permanently fixed equipment such as climbers and sand pit. Escalante et al. (2014) found similar results where most schools

had adequate simple play equipment but had very inadequate large and fixed equipment. It was also important to examine the condition of these equipment since some schools could be having the required equipment but in bad condition, hence rendering them useless to children. The findings on the condition of the playground equipment are displayed in Table 4.10. Respondents were asked to rate the condition in a scale of 3, where 1 was low, 2 was medium while 3 was high.

**Table 4.10 Descriptive Statistics on Condition of Playground Equipment**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Large permanently fixed equipment (Climbers Swings, Slides/gliders, Seesaws, Sand pit	30	2.3000	.70221
Small moveable materials (Balls, Tyres, Skipping ropes, Beanbags, toy cars	30	2.3333	.71116
Average	30	2.31665	0.706685

In general, the condition of playground equipment was rated by respondents as medium (m=2.3, sd= 0.7) with the condition of small moveable materials such as skipping ropes and toys being rated worse (m=2.33, sd=0.71) compared to the large permanently fixed equipment such a seesaws and gliders (m=2.3). To ascertain the reality of the responses provided by preschool teachers, the researcher made her own observation in each of the schools involved in the study. The observation was also rated in the same scale discussed in this section. The findings were s displayed in Table 4.11.

**Tale 4.11 Researcher’s Observation on Adequacy of Play-ground Equipment**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
i) Adequacy of play equipment	15	2.2000	.77460
ii) Variety of types of play equipment	15	2.2000	.77460
iii) Condition of playground equipment in terms of safety (Intact/ not broken, No splintage, of equipment in use.	15	2.4000	.82808
<b>Average</b>	<b>15</b>	<b>2.266667</b>	<b>0.792427</b>

From the findings of the researcher’s observation, the adequacy of the playground equipment can be rated as medium ( $m=2.27$ ,  $sd= 0.79$ ). While some schools had fairly adequate equipment, others did not even have any noticeable large equipment. For instance, a considerable proportion of playgrounds lacked swings, seesaws and sand pits, despite the fact that they are recommended as good precursors of attracting children to participate in physical education activities.

The researcher further observed that variety of playground equipment was conspicuously missing from many playgrounds. Though most of them had at least 3 small equipment and 1 large one, there are those that had only one or two varieties of only small equipment. As such, the researcher rated most of them medium as shown from the findings in table 4.7. The condition of the equipment fared worse than the adequacy and variety. In fact, the researcher noted that some equipment were pathetic to an extent that

they were unsafe for use by children and in other words not developmentally appropriate or acceptable. Mugo (2009) and Macharia (2012) emphasize the need for children’s play equipment to be safe. As for the large equipment, most of the schools that had swings for example, were not usable while seesaws were restricted in a number of schools due to poor condition. In general, the researcher was not impressed with the condition of equipment in any of the preschools visited.

The study further sought to establish the relationship between status of playground equipment and participation of children in physical education. The researcher used Pearson’s correlation coefficient at 95% confidence interval (Table 4.12).

**Table 4.12 Correlation Between Status of Playground Equipment and Children’s participation in PE**

		Status of playground equipment	Child participation in Physical education
Status of playground equipment	Pearson Correlation	1	.683
	Sig. (2-tailed)		.079
	N	15	15
Child participation in Physical education	Pearson Correlation	.683	1
	Sig. (2-tailed)	.079	
	N	15	15

The findings show that there was a moderate positive relationship between status of playground equipment and children’s participation in physical education ( $r=0.683$ ) but there is some randomness that appears to be affecting the relationship of the variables under study here. This finding may be due to the fact that naturally children develop interest in physical activities through play and hence would locally devise their own play

materials within their surroundings. This is in harmony with what Hyndman and Telford (2015) state, that pre-school children have the freedom to be creative as well as increase diversity of their playtime.

The finding of moderate positive relationship between status of playground equipment and children's participation in physical education imply that the better the status of the equipment, the more the children participated in physical education activities. It also means that participation of children in PE would reduce significantly if the status of playground equipment was not favorable for children.

The findings of this study concur with the argument by some of the earlier scholars. For instance, a study by Tsitskari-Tzetzis, and Vernadakis (2014), found that in most cases, children going to adequately or moderately equipped schools are more physically active as compared to those who go to inadequately equipped school playgrounds. The findings are also supported by Escalante, Garcí'a-Hermoso, Backx, and Saavedra (2014) that shows that children at different ages will always utilize whatever is available to ensure that their different needs of play are met.

One of the teachers explained that the rate of enrolment was not commensurate to the availability of playground equipment and decried that;

*'...it is like playground equipment are not part of consideration when children are enrolled in schools. Nowadays there are very many children coming to school but little is being done regarding provision of playground equipment. It is sad that the*

*number of children continues to rise but we are unable prioritize the provision of play equipment to nurture play as the new competency based curriculum dictates.*

Another one said,

*'...there is no much distinction between old and young children. They all fight for the same dilapidated equipment. In fact, they make their own funny equipment; to play with and some are unsafe for use. The management is simply concerned on classroom activities; yet the competency based curriculum emphasizes the need for more gaming than classroom activities especially with young children'*

Some teachers singled out public primary schools as the most notorious in failing to take adequate measures to improve playground equipment,

*'...in most public schools they are not serious about children's participation in physical education activities. They simply tell children to jump up and down and go back to class; but it is not because the teachers do not value their physical fitness, it is that they overstretched with work and the large numbers in class. However, most of our counterparts in private schools try to provide time for play unlike us in public schools'.*

Others said that even the available equipment were not safe for young children and reiterated that;

*'...most of whatever we call equipment are not safe either; for instance, the levers used are made of poor wood that can break any time. In fact, it has happened several times leading to serious injuries to children. We really need proper enforcement on safety standards in these schools'.*

However, some defended their institutions as good examples in the region. For instance, one of the teachers said;

*'...in our school children really participate in physical education activities largely because our equipment are modern and quite enough compared to other schools in the region. In fact, parents like our school because children come out happy and with multiple co-curricular skills besides their academic brilliance. We have both movable and immovable equipment as well as soft objects like balls and ropes.'*

However, it is important to note that such complements were rare and were only coming from teachers in private schools. The researcher also observed that situations in public schools were actually worse compared to private. Some teachers argued that the management in the private schools was not actually concerned with the provision of PE equipment. One of the respondents said:

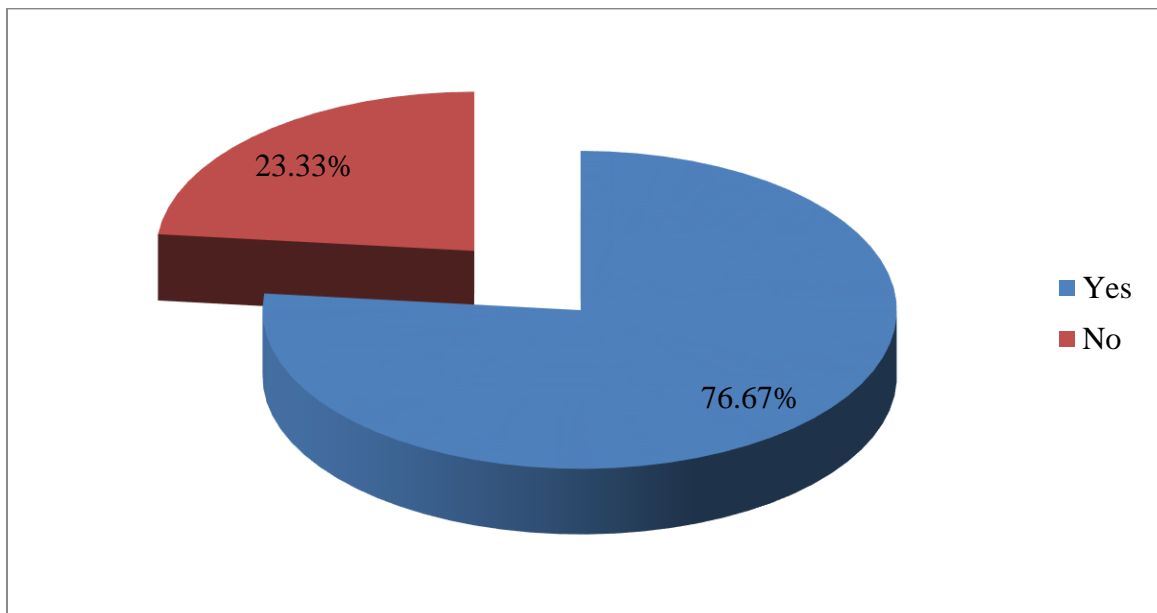
*'...whenever we attend meetings, we raise the issue of PE equipment but the management brushes our requests saying the government should not just provide books and classrooms but also avail play equipment. They say that they are not allowed to request for money from parents and yet the government is not providing them. ....so let's work with what we have.'*

Definitely, the researcher's analysis of the respondents' opinions paints a picture of a hopeless situation, with no current or future plans in regard to looking into how to improve participation of children in PE. This is happening even as the Ministry of Education has started to roll the new competency based curriculum that puts a lot of

weight on physical education activities. In fact, the new curriculum reorganizes PE skills as an achievement that should be graded in the final assessment, and especially in the lower grade.

#### 4.7 Status of Childcare

The fourth objective of this study was to establish the status of childcare during play and whether it influenced participation of children in physical education activities. However, the respondents were first asked to state whether there was a policy that required teachers to supervise children while participating in physical education. The findings are as displayed in figure 4.7



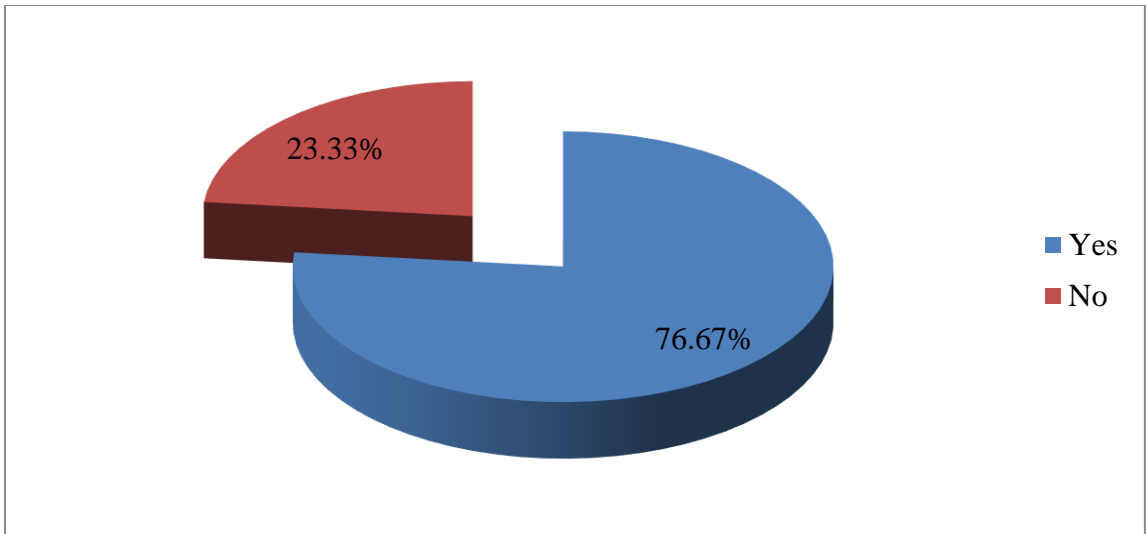
**Figure 4.7 Supervision policy**

From the findings, most of the schools under study (76.67%) had a policy requiring teachers to supervise children while participating in physical education. Only 23.33% of the teachers reported that their schools did not have supervision policy in their schools. It

can therefore be explained that most school managements valued the importance of child supervision while participating in physical education.

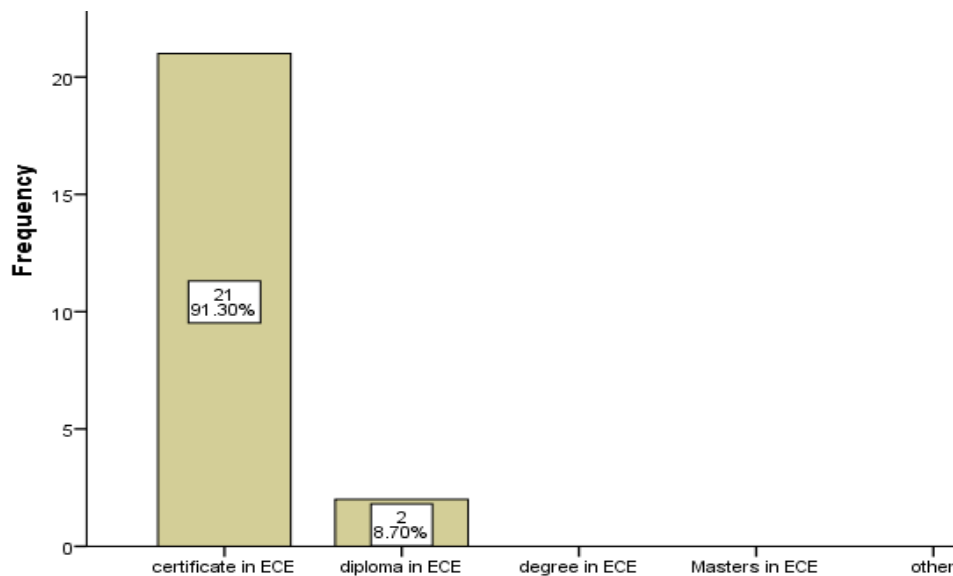
In fact, Lopes et al., (2015) had explained that, across the world, there exist very good policies and guidelines on supervision of children while participating in different physical education activities. The researcher quoted UNICEF (2010) as one of the documents that underscored children security and the need to be accompanied by safe adults at all times. Moreover, the Ministry of Education (2016) required all preschool to be accompanied by their teachers when engaging into physical education activities. This further implies that any disconnect could only be attributed to negligence on the part of the management or the teachers themselves.

Even as supervision policies existed, the researcher intended to establish whether teachers in these preschools were trained on basic supervision skills such as providing basic life support though first aid and other important aspects or supervision. Respondents were asked to indicate whether they were trained on such aspects of supervision as displayed in Figure 4.8



**Figure 4.8 Teacher’s training on child supervision**

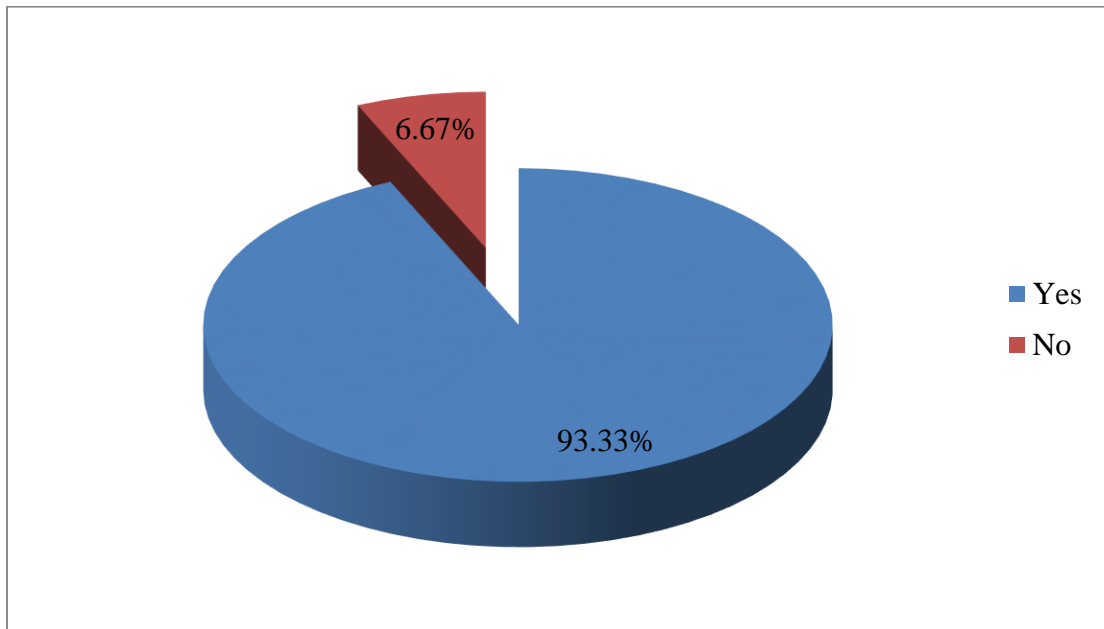
Again, most of the preschool teachers admitted that they had been trained in child-care and in the administration of simple first aid to children while participating in physical education (76.67%) with only an insignificant (23.33%) saying they were not trained on the same. Furthermore, the researcher sought to establish the levels of training the respondents had accrued by the time this study was conducted



**Figure 4.9 Professional Qualification of Teachers**

Most of the teachers who admitted that they had training, had a bare minimum qualification, which was a certificate in ECE (91.30%). Only 8.7% had a diploma in ECE. There was no respondent who had above diploma course. Basically, the findings show that professional qualification was limited since most of the teachers in these preschools had only a certificate while others lacked the bare minimum required as indicated in the above discussion. The implication is that most teachers had no much information in regard to advanced children care, hence making it hard for them to apply and implement various guidelines of childcare practices in preschools.

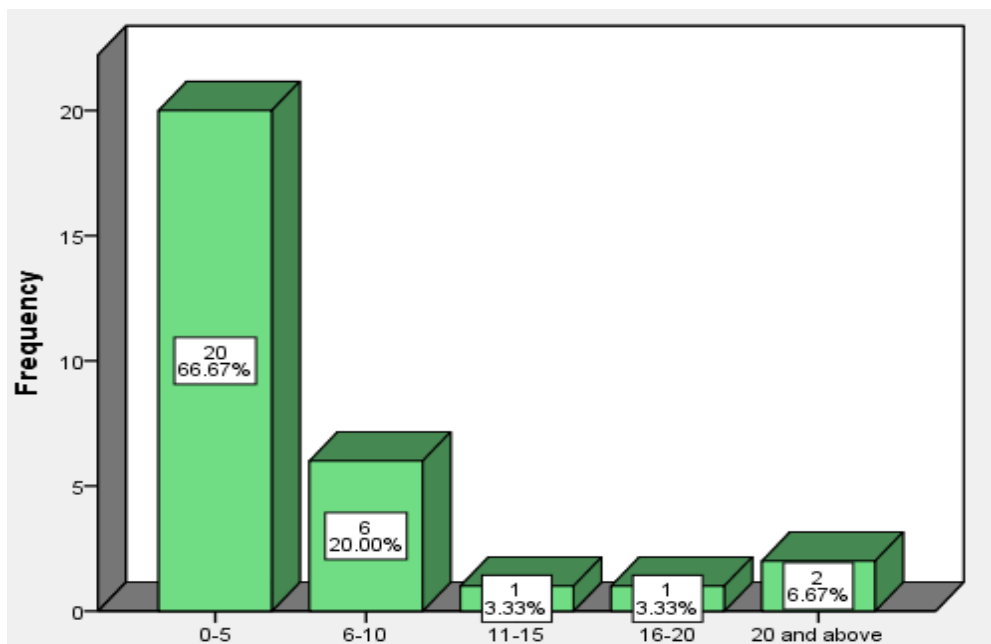
The researcher further intended to gauge the opinions of the respondents on whether teachers' level of childcare improves with years in service. The results were as displayed in figure 4.10



**Figure 4.10 Whether Teachers' Level of Childcare Improves with experience**

From the results in figure 4.10, it can be observed that majority of the respondents (93.33%) admitted that years of experience improved the ability of teachers to provide better childcare services in their respective preschools. The implication was that teachers who had been in employment longer were better placed to provide better childcare compared to the new ones.

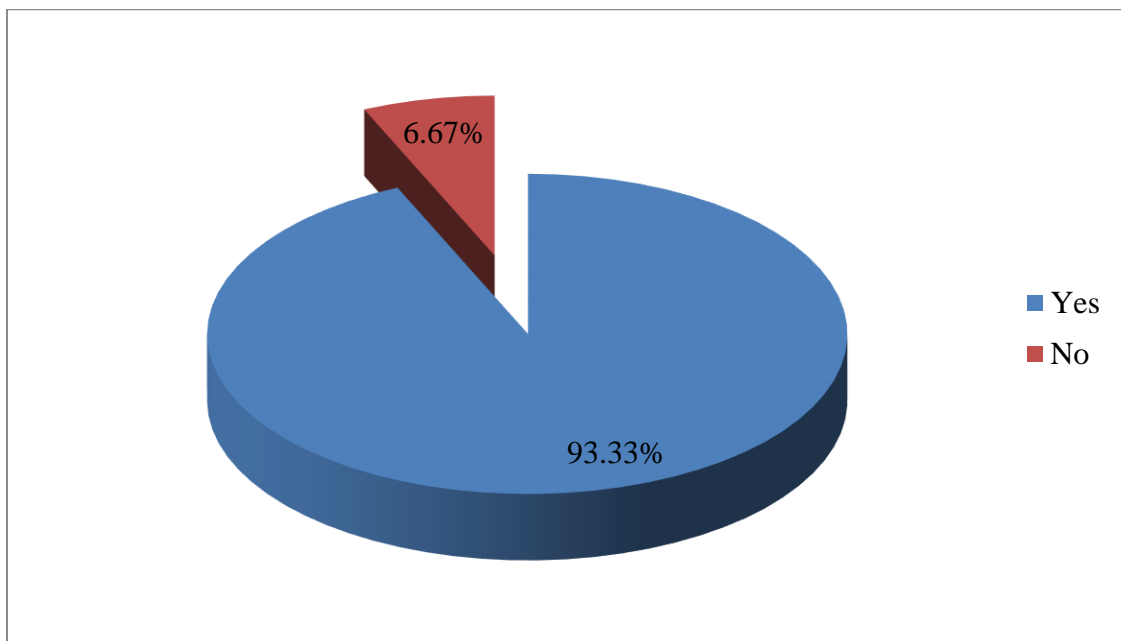
Furthermore, Taylor et al., (2011) argue that there is need to ensure every preschool had at least one highly experienced teacher in order to guide others on unique aspects of childcare. In fact, the researchers argue that some virtues can only be learnt through experience. Such virtues include the need to understand and appreciate the uniqueness of different children and how to handle them using individualized methods. Owing to this fact, the researcher asked the teachers to indicate their years of service as preschool teachers. This was necessary in order to evaluate the proportion of teachers who could offer better childcare services to children. The results are displayed in Figure 4.11.



**Figure 4.11 Teachers' Work Experience in Years**

The findings show that majority of teachers (66.67%) had an experience of five years and below while 20% had an experience of 6 to 10 years. Only a paltry had more than 10 years of experience. Basically, the findings reveal that majority of the teachers were not in a position to provide optimal childcare services. As such, it can be explained that most preschools in the region lacked adequate teachers to provide appropriate childcare services. This scenario could have led to reduced participation of children to physical education.

Moreover, Clements (2009) also contends that participation in outdoor activities has considerably gone down in schools over time as the demand by parents and need for child safety care due to fear of injury increases. To ascertain this, respondents were asked to indicate whether participation of children in play increased as a result supervision. The findings are displayed in figure 4.12



**Figure 4.12 Whether Children's Participation in PE Improved with Supervision**

From the findings, majority (93.33%) of the respondents admitted that supervision of children while they were engaged in physical education activities improved their level of participation. This affirms that childcare practices such as supervision were important in promoting participation of children in physical education. Supervision has also been emphasized by Mugo (2009) and Taylor et al., (2011), who assert that children should not be allowed to play without an adult supervisor. The findings in table 4.13 display the findings from the researcher's own observation. The observation was rated on a scale of 1-3, where 3 represented high (excellent childcare services), 2 represented medium (moderate childcare services) and 1 represented low (poor childcare services)

**Table 4.13 Researcher's Observation on Status of Childcare**

	N	Mean	Std. Deviation
i) Supervision: (caregivers ensuring vigilant supervises of children during PE)	15	2.2667	.88372
ii) Ensuring safe behavior (engagement in safe play activities during PE, being good safety role model during PE and ensuring children take turns or share in-adequate play or learning materials)	15	2.2000	.86189
iii) Training as a teacher/ in administration of simple first and certification as a first aider	15	2.4000	.82808
v) Average	15	2.2889	0.857897

From results in table 4.13, it can be shown that most of the preschools observed by the researcher had either poor or moderate childcare services. In fact, the researcher established that some schools did not have any evidence of child supervision in play while others had just minimal supervision. Though the researcher found that some teachers had evidence of first aid training, there was little evidence of practice in the same. Some chose to get out of school during break time while others restricted their children from joining some games since they could not avail themselves for supervision. That is, some children preferred engaging in indoor play activities as opposed to those done outdoors. However, the researcher noted that some preschool had a very good plan of childcare where teachers were under instruction to always accompany the children in physical education and had actually made it compulsory for children to participate in the same.

The researcher further sought to examine the relationship between status of childcare in preschools and the participation of the children in physical education activities. The researcher employed Pearson's correlation coefficient to test whether status of the childcare among preschools in Kasarani was significantly related to children's participation in physical education activities. A 95% confidence interval was used to test the significance of the relationship (Table 4.14).

**Table 4.14 Correlation between Status of Childcare and Children’s Participation in PE**

		Status of childcare	Child participation in Physical education
Status of childcare	Pearson Correlation	1	.544
	Sig. (2-tailed)		.038
	N	15	15
Child participation in Physical education	Pearson Correlation	.544	1
	Sig. (2-tailed)	.038	
	N	15	15

The findings show that there was a moderate, positive and significant relationship between status of the childcare in the playground and the participation of preschool children in physical education activities ( $r=0.544$ ,  $p=0.038<0.05$ ). From the findings, it can be deduced that a favourable state of childcare in the playground would lead to a significant shift in participation of children in physical education activities. The findings further imply that if the status of the childcare in the playground is not favorable to the children, definitely, participation would be affected negatively. The research shows that any shift in the way childcare program is handled in the relevant schools would significantly shift participation of children in PE to the better or worse depending on the nature of the shift.

The finding in this study corroborates well with studies done in other places within and outside the country (Kenya). For instance, Clements (2009) found that a simple perception of insecurity in the playground would lead to very poor participation of children in PE. The researcher argues that safety concerns, especially in urban enters

greatly influence the way parents guide their children. When parents feel that safety is not guaranteed in the preschools where they take their children, the most likely option is to caution teachers and the management of the schools not to allow their children to get out without the presence of their representatives.

Mugo (2009) cautions that there is no reason as to why children should not be accompanied by their teachers in the playground. The researcher argues that in case the class teacher is not able to accompany them for play, any other teacher or caretaker should do so and if not, such activity should be postponed to another time. According to Chancellor (2013), the Ministry of Education requires that children must be accompanied by their teachers when undertaking physical education activities. However, the findings of the current study found many flaws in the regulation, with some teaching ignoring the directive. In such cases, children whose parents warn them not to participate in any activity without a teacher, definitely do not participate in PE, which is not only detrimental to their health according to WHO (2013), but also deprives them of their rights to enjoy their childhood games.

Even though some teachers were quite defensive of themselves and their role in childcare while in play, most admitted that there were many flaws in supervision that affected the participation of children in PE. For instance, one of them said,

*'...as much as we try to follow the guidelines, sometimes we are overwhelmed with work and we are not available all the time. However, we accompany them sometimes, especially during the short breaks. But you can be sure, even during short breaks we may fail due to preparation of lesson plans and all that'*

Another one was more categorical,

*'...yes, we know we are supposed to accompany the children during play, but we do not have time for that. The workload we have does not allow us to accompany them all the time as is required. Imagine I have to teach and do other administrative roles as well.'*

Some blamed other things such as poor pay and general lack of motivation to do so,

*'...supervising children in the playground is not easy. The way they pay us is very demoralizing and not commensurate with expectations on the ground. One has to keep on thinking of how to finance their personal needs through other income generation activities especially during break before the break ends.'*

It was also apparent that some fields were huge and it was sometimes almost impossible to control all the children in a large field and a teacher had this to say.'

*'...imagine supervising young children in this big field. When they get out they scatter everywhere no matter how you try to control them. Even if I sit here to watch over them, it might be hard for me to see each activity they undertake. Unless all the teachers agree to get out and supervise the children during the break, but even that is difficult especially during long breaks or during lunch hour because the teacher needs time to cool off too.'*

Other respondents blamed poor parenting for the difficulty in implementing childcare activities in the playground and explained;

*'...some children are very notorious. You cannot really supervise them because you will become crazy shouting at them. Moreover, we are not allowed to instill corporal punishment on the children. Some keep on fighting others instead of playing. There are some behavioral aspects that seem very difficult to control even in class, leave alone in the playground. Parents need to play their role of teaching their children good manners before releasing them to school.'*

When asked whether they felt that their failure to comply with childcare procedures had affected the participation of children in physical education activities, most of the teachers admitted and one of them said;

*'...yes we I do admit but as much as we blame the teacher, we need to get the true picture of things. The teacher is overwhelmed with many activities in the school. The teacher is tasked with instructing large number of learners, is underpaid, the demotivated, and is still expected to do the childcare job...I think that's too much for a preschool teacher.'*

The findings from these opinion teacher respondents were very crucial in understanding how the teachers felt about childcare programmes, which they are tasked with ensuring that the required childcare arrangements are made at all times while in the playground. The findings have shown that preschool teachers acknowledged that there were flaws in the way childcare programmes were implemented and that such mishaps were affecting participation of children in physical education. However, it was clear that teachers were not willing to take the blame in its entirety. Most of them blamed large enrolments of preschoolers, lack of motivation from the employer, bad parenting practices among

others aspects as the reason why childcare was not being conducted as expected. However, it was clear that childcare in private preschools was better than in public schools. Among other reasons, respondents cited the causes listed down;

*'...in private schools, we strictly observe childcare as a matter of duty and not choice. The management requires us to be out with children whenever it's time for play. One does not have a choice; otherwise one risks getting warning letters on their desk.'*

Another one had this to say,

*'...private schools are more serious when it comes to participation of children in physical education. We are forced to accompany them there. In fact our school does not have a field. We go to some public fields and we must accompany the children there, stay with them until it's time for another activity. In fact, we don't just sit to watch them play; we guide them on regular bases and we are used to that. But in public schools, no one bothers much; even the head teachers there do not have a tight grip of their members of staff like in the private sector.'*

The findings here show that the management in some of the schools, especially the public ones, was to blame for poor childcare practices in playgrounds when children were expected to participate in physical education activities. There was a clear indication that respondents could comply with regulations of child supervision in the playfields, but only if they were pushed to do so to the edge by the managements of the respective preschools. In fact, in schools where head teachers were requiring teachers to be personally present in the playgrounds when children were participating in play without

excuses, there was adequate evidence of good participation in PE. The implication is that lack of proper childcare practices in most of the playgrounds in Kasarani was robbing children of their right to participate in physical education activities adequately.

The findings have also painted most of the teachers as those that lack self-direction and self-motivation. The fact that most of them needed close supervision for them to do what they already knew they needed to do meant that they were also failing in their role as trustee-parents of these children. In the fact, the researcher realized that in preschools where the head teacher was not present during the time of collecting data, there were very few teachers who accompanied their learners in the playground, which signals that majority required constant supervision themselves in order to play their usual roles. However, it is also important to note that some preschool teachers portrayed great passion in handling preschool children and did not require anyone to watch them. They were aware that they were parents and were ready to model the right behavior in-front of their children, based on what they knew and believed were good practices according to the following teachers' sentiments;

*'...some of us care about our work and do not require anybody to watch over us, or even think about the meagre pay we get for our services. We do it as a calling and as parents as well. I know there are those who found themselves in this profession by mistake, as for me, I was called to be a teacher and I do my work as I know it and nothing else is important to me. For instance, I accompany my children to play every day; I play with them and I feel extremely happy doing so.'*

In order to be able to point out or determine correctly whether any significant statistical relationships existed between the variables being tested, the researcher went ahead to test the hypotheses under study as explained in section 4.8.

#### 4.8 Regression Analysis

To specifically determine correctly whether or not there were any significant statistical relationships between children’s participation in PE vis'-a-vis status of the playground with regard to its size, status of the play equipment in terms of adequacy and status of childcare, the researcher employed multiple regression model at 95% confidence interval to test the three hypotheses namely;

**H<sub>01</sub>** There is no significant relationship between playground size and participation of children in physical education activities

**H<sub>02</sub>** There is no significant relationship between availability of playground equipment and participation of children in physical education activities

**H<sub>03</sub>** There is no significant relationship between child care in the playground and children’s participation in physical education activities

The multiple regression analysis entails the model summary, ANOVA and the coefficients tables. Table 4.15 presents the model summary of ANOVA.

**Table 4.15 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.770 <sup>a</sup>	.593	.483	.57458

a. Predictors: (Constant), playground status, status of playground equipment, status of childcare).

The results in table 4.15 shows that, with an r-square of 0.593, the independent variables (playground status, status of playground equipment and status of childcare) predict 59.3% of the children’s participation in physical education. This finding demonstrates that other factors beyond the scope of this study predicted 40.7% of children’s participation in physical education. The implication is that playground factors had a moderate determination on whether children would participate in physical education activities or not. The findings of the study corroborate with those of Hyndman and Telford (2015) which revealed that playground factors were the most significant aspects that influenced children’s participation in play. Play being one of physical education activities, is greatly dependent on playground factors such as availability of playground equipment. The study further sought to establish whether these factors had significant influence on children’s participation in physical education activities (Table 4.16).

**Table 4.16 ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.302	3	1.767	5.353	.113 <sup>b</sup>
	Residual	3.632	11	.330		
	Total	8.933	14			

a. Dependent Variable: Child participation in Physical education

b. Predictors: (Constant), status of childcare, status of playground equipment, playground status

The results show that playground factors (playground status, status of playground equipment and status of childcare) had no significant influence on the children's participation in physical education activities ( $p=0.113>0.05$ ). From the findings, it is clear that the status of the playground, playground equipment and childcare, would greatly determine whether the children participated or failed to participate in physical education (Mean square=5.353). However, there is no significant relationship between the product factors and child participation in Physical education ( $\text{sig}=0.113>0.05$ ).

To establish the exact influence of each playground factor on children's participation in physical education, the regression coefficients were obtained (Table 4.17).

**Table 4.17 Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.867	1.974		3.479	.005
1 Playground status	.814	.572	.719	3.173	.071
Status of playground Equipment	.439	.471	.419	.084	.053
Status of childcare	.302	.494	.239	.613	.042

a. Dependent Variable: Child participation in Physical education

If the product factors were differentiated as shown in Table 4.17 and subjected on a one-tailed test, only status of childcare had a significant influence on children's participation in physical education ( $p=0.042<0.05$ ) at 95% confidence interval. Basically, one cannot ignore child care through supervision, motivation and guidance when trying to solve the problem of low participation of preschoolers in physical education. However, such factors as status of playground and equipment had positive influence on children's

participation in physical education at 95% confidence interval but with no significance ( $p=0.071>0.05$ ,  $p=0.053>0.05$ ). Table 4.18 shows the summary of the verdict on the analysis of study hypotheses.

**Table 4.18: Final Verdict of the Null Hypotheses**

<b>Hypothesis</b>	<b>Verdict</b>
<b>H<sub>01</sub></b> :-There is no significant relationship between playground size and participation of children in physical education activities	Accepted
<b>H<sub>02</sub></b> :-There is no significant relationship between availability of playground equipment and participation of children in physical education activities	Accepted
<b>H<sub>03</sub></b> :-There is no significant relationship between child care in the playground and children’s participation in physical education activities	Rejected

Findings in Table 4.18 demonstrate that the null hypotheses: ‘H<sub>01</sub>:-There is no significant relationship between playground size and participation of children in physical education activities’ and ‘H<sub>02</sub>:-There is no significant relationship between availability of playground equipment and participation of children in physical education activities’ were accepted. However, the hypothesis, ‘H<sub>03</sub>:-There is no significant relationship between child care in the playground and children’s participation in physical education activities’ was rejected. The findings further show that the regression model was well defined and that there existed a linear relationship between the playground factors and children’s participation in physical education activities. Other studies such as Sebba, and Robinson

(2009) found that children were increasingly deactivated by playgrounds that lacked naturalness and were poorly maintained, an implication that the status of the playground matters to a great extent.

According to Mugo (2009) there are several specifications of playground status that must be taken care of in order to fit preschool children: well leveled playground, free from harmful objects/ environmental pollutants (long/short grass, poorly drained surfaces). The researcher asserts that failure to pay attention to playground status can pose danger to children when participating in physical education. In this study, it has been established that failure to maintain the minimal standards of playground status can deter children from participating in physical education altogether.

The findings further show that the status of playground equipment had a significant influence on the participation of preschool children in physical education ( $p=0.035<0.05$ ) at 95% confidence interval. According to Escalante et al., (2014), there are three major categories of playground equipment that needs to be considered when assessing their status: playground markings, physical structures and game equipment. The findings show that, depending on the status of the playground equipment in terms of availability, adequacy, usability and variety, children can either be attracted or detracted from participating in physical education. The implication that, any effort meant to solve the problem of low or non-participation of children in P.E must consider the status of playground equipment if such endeavours were to be successful.

Similarly, TsitskariTzetzis, and Vernadakis (2014) found that schools that had many playground equipment, with various varieties and coloured using children-friendly colours had children who were more active in physical education compared to the ones that had limited equipment and age insensitive. Basically, these findings underscore the need for playground equipment that are sensitive to children of different gender, age and physical status.

The findings further show that status of childcare significantly influenced participation of children in physical education ( $p=0.042<0.05$ ) at 95% confidence interval. Depending on how the preschool teachers and the management instituted childcare in their preschools, children could either participate well or poorly. The findings imply that one must consider childcare when solving problems associated with poor participation of children in P.E. Aspects such as supervision have great weight in determining whether children will be free in participating in P.E or not. In urban places where there are threats of trespassers, children require participation for them to feel free to participate in play activities.

According to Clements (2009), children have significantly reduced their participation in P.E due to fear of injuries and intrusion by strangers, all of which require close supervision in order to build their confidence and create a sense of safety. However, it was clear in this study that what was happening in Kasarani is not what is expected to boost participation of children in physical education. Some teachers failed to do their work because of some reasons that did not even concern the children themselves. From the open-ended responses analyzed in the previous part of this chapter, some teachers

failed to supervise children during physical education because of demotivation and busy schedule. Other blamed poor parenting and large fields in some of the schools that discouraged them from accompanying children while undertaking physical education activities.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

In this chapter, the researcher discusses the summary of the study and provides conclusion and recommendations in line with the research objectives. The chapter is a continuation of the results presented in chapter four of this study.

#### **5.2 Summary**

The summary has been presented according to the order of study objectives as follows:

##### **5.2.1 Physical Education Activities Pre-school Children Engaged in**

In line with Ministry of Education (2008), the study findings indicate that PE activities were availed to children everyday and only a few schools did not comply. Further, findings from observations made by the researcher show that most of the children engaged in ball games comprising football as well as throwing and catching activities. The other prominent activities observed include: star jump, horse ride (where one child acted as a horse) and frog jump. Further findings revealed that PE activities the children engaged in most frequently were those that did not require use of any play materials while the activity in which children least engaged in, most unfortunately was with large permanently fixed equipment. However, most of the schools recorded low participation of children in guided PE activities where children are supposed to learn important physical skills.

### **5.2.2 Status of Playground and Participation of Children in Physical Education**

The research findings have shown that most of the preschool teachers did not know the space recommended by the Ministry of Education for children to participate in physical education activities. Moreover, most of the respondents admitted that their playgrounds were majorly unsafe for children to participate in physical education as expected. Though most of the respondents said their schools were secured with fence, the level of security was in doubt from the perspective of teachers. On visiting the schools under study, the researcher rated most of the playground status as medium. Playgrounds were characterized by debris, congestion and poor fences.

Moreover, it was established that status of playground had a positive influence on participation of preschool children in P.E. However, findings from the correlation and regression statistics have shown that status of the playground was not significant on the children participation in physical education activities. The findings have shown that based on whether the status was friendly or unfriendly to preschool children their participation in physical education activities would be positive or negative.

### **5.2.3 Status of the Playground Equipment and Participation of Children in Physical Education**

Even though most of the preschools visited had some playground equipment, simple materials and equipment characterized most of the preschools. For instance, while most schools had balls and ropes, equipment such as swings, slides and gliders seesaws were conspicuously missing from the playgrounds of many preschools. Furthermore, most of the respondents rated the adequacy of playground equipment as medium, especially due

to the fact that large equipment were not present in most of the preschools. The researcher further rated the status of the playground equipment as medium, with the condition of most of them being rated as poor. Even in schools where equipment were present, some were not functional while others were in deplorable conditions. Such pathetic condition of playground equipment was mentioned by teachers as a major contributor to low participation of children in P.E.

Moreover, findings from the correlation and regression model have shown that the status of playground equipment positively affected the participation of preschool children in physical education activities. The findings have shown that based on whether the status of the playground equipment was adequate and safe to use or not, children would not significantly be affected because engagement in play is an inevitable and children would be creative to devise their own equipment in their local surrounding.

#### **5.2.4 Childcare and Participation of Children in Physical Education**

Most of the preschools visited lacked child supervision policy, though most teachers indicated that they were trained on child supervision. This could portray a failure on the side of management to come up with tailor-made and localized child supervision policy and ensure its implementation. The ability to provide childcare was mentioned by respondents as being determined by training and experience, where majority explained that quality of childcare improved with increase in the experience of teachers and caregivers. Despite this fact, most of the teachers had less than 5 years experience in providing care to children, hence alluding to poor childcare services within the preschools. Basically, the researcher rated the status of childcare in most of the

preschools as medium, characterized by poor supervision, failure to adequately manage child behavior while participating in play as well as inadequacy of teachers trained on first aid skills and other childcare aspects. Further, the argument from most of the respondents was that they lacked motivation to implement childcare requirements and were therefore, involving themselves with other things. Findings further show that childcare practices were better in private schools compared to the situation in public ones. The findings from the correlation and regression statistics further show that there existed a significant influence of childcare practices on children' participation in physical education activities. Better participation was observed in situation where childcare practices were practiced significantly and vice versa.

### **5.3 Conclusion**

Based on the summary provided above, the researcher can conclude the following:

1. That the playground status of most of the preschools in Kasarani was poor and characterized by poor fencing and presence of unsafe materials, hence leading to low participation of preschool children in P.E. However, participation of children in physical education is still felt since there is no significance between the status of playground and children's effort to engage in P.E. Hence the null hypothesis stating that 'there is no significant relationship between status of the playground and participation of children in play' was accepted.
2. That most preschools in Kasarani lacked adequate equipment, especially the fixed ones, and in preschools where they were present, they were in deplorable conditions that made it unsafe for children to use them. The study concludes that status of playground equipment positively influenced participation of children in physical

education. However, the relationship between status of playground equipment and participation of children in physical education was not significant and therefore the null hypothesis stating that *'there is no significant relationship between status of the playground equipment and participation of children in physical education'* was accepted.

3. That childcare provided to children during P.E was inadequate and quite unprofessional due to low experience by most of the teachers and lack of training on childcare services such as first aid, hence discouraging the children to participate in P.E. The study concludes that the status of childcare positively and significantly influenced participation of children in physical education. Therefore, the null hypothesis stating that *'there is no significant relationship between status of childcare and participation of children in physical education'* was rejected.

## **5.4 Recommendations**

The following recommendations have been made based on study findings and conclusions with respect to various stakeholders.

### **5.4.1 Recommendations for Government and Preschool Administrators**

1. Findings reveal that majority of the preschool children liked to engage in free choice play activities as opposed to direct or guided activities that required supervision. Thus the parents association should be encouraged to partner with the government in equipping the schools with adequate and variety of playground materials in order to encourage the learners to participate in more diverse activities.

- i) Findings demonstrate that a few pre-schools have unsafe playgrounds. A safe playground ought to have a strong focus on outdoor activities that improve the physical and psychological growth and development of the children, while at the same time ensuring children's safety in the outdoor environs. Hence the Ministry of Education, preschool proprietors, managers, administrators, teachers, parents and other ECDE stakeholders should be tasked to ensure the playground surfaces are safe for children's use in order to minimize injuries as much as possible.
- ii) It was also observed in many schools, some important equipment were unavailable which could hamper children's participation in PE. It is therefore recommended that routine inspections are done by the County Government Department of Education to ensure that preschools have varied playground facilities to ensure children's holistic growth and development. The play equipment and materials should be age appropriate and placed in different areas within the playground to enhance children's safety..
- iii) The findings have also revealed that few teachers have an advanced certificate (Diploma or Degree) in early childhood studies. Such teachers require opportunities to attend seminars, workshops and refresher courses to remind them of do's and don'ts during PE, in order for them to fully appreciate the role they can play in supervision of children during outdoor play activities as well as the provision of playground facilities with an aim of promoting participation by preschool children.

### **5.5 Suggestion for Further Studies**

The researcher suggests further and in-depth study to be conducted on why public schools were found to fare badly when compared to private ones in provision of play equipment and childcare practices.

- i. The study findings also suggest that some children preferred engaging in indoor play activities as opposed to those done outdoors. There is need for a study to investigate the real reasons why children would prefer to engage in other forms of play activities that do not entail outdoor activities in the playground.

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## APPENDICES

### APPENDIX I: INTRODUCTION LETTER

Dear respondent,

I am a student at Kenyatta University pursuing a Masters Degree program in Education. I am carrying out a study on 'Influence of Play Ground Factors on Participation of Children in Outdoor Activities'. I request you to participate in answering this questionnaire to the best of your knowledge and honesty. Your personal information will not be revealed at any point of analyzing the results of this study and the findings will be purely for academic purposes only. The study is not expected to cause any harm or damage the image of the institution. You are allowed to quit your participation at any stage. The recommendations of the study will help to improve participation of pre-school children in physical education.

Sign \_\_\_\_\_  
Mary Wambui Githinji  
E55/OL/21955/2012

Date \_\_\_\_\_

## APPENDIX II: QUESTIONNAIRE FOR PRE-SCHOOL TEACHERS

### Section A: Biographic information

Please tick the most appropriate answer that describes your conviction.

1. What is your gender? Female [ ] Male [ ]
2. Is your preschool public or private? Public [ ] Private [ ]

### SECTION B: INFLUENCE OF PLAYGROUND FACTORS ON CHILDREN'S PARTICIPATION IN PHYSICAL EDUCATION

#### I) Types of PE Activities Children Engage In

3. Do children in your class engage in physical education activities every day?  
Yes [ ] No [ ]

If your answer in question 3 above is Yes, please indicate by ticking in the appropriate choices given, which best represents the type of PE activities children in your school most frequently engage in.

- Without play materials [ ]
- With small portable material [ ]
- With large permanently fixed equipment [ ]

#### II) Status of the Playground

4. Are you aware of the recommended playground space per child?  
Yes [ ] No [ ]

If yeas, what is the recommended playground space per child?

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5. Is your preschool playground well leveled, free from harmful objects and other environmental hazards? Yes  No

If yes, how could you describe the level of safety of your preschool playground space?

Very safe  Safe  Unsafe  Very unsafe

6. Is your preschool playground secured with a fence? Yes  No

If yes, how secure can you say your preschool fence is?

Very secure  Secure

Insecure  Very insecure

7. In your opinion, how can participation of children in physical education are affected by size of playground space, fencing and safety of the playing field?

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### III) Playground Equipment

8. Which ones of the playground equipment listed below are available in your preschool?

Equipment	Available	Not available
Climbers		
Swings		
Slides and gliders		
Seesaws		
Balls		
Tyres		
Skipping ropes		
Beanbags		
Toy cars		

9. How adequate in relation to number of children and safety in terms of condition are the equipment in question 9 above? Indicate in the table below using the scale, High, Medium or Low.

Equipment	Adequacy			Condition		
	High	Medium	Low	High	Medium	Low
Large permanently fixed equipment (Climbers Swings, ,Slides/gliders, Seesaws, Sand pit						
Small moveable materials (Balls, Tyres, Skipping ropes, Beanbags, toy cars						



15. What is your teaching experience in years?

- |             |     |             |     |
|-------------|-----|-------------|-----|
| 0 – 5 yrs   | [ ] | 6 – 10 yrs  | [ ] |
| 11 – 15 yrs | [ ] | 16 – 20 yrs | [ ] |
| Above 20yrs | [ ] |             |     |

16. Does childcare in the playground in general promote participation and safety of children in physical education activities?

- Yes [ ]                      No [ ]

Briefly describe your answer to question 16 above

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### APPENDIX III: OBSERVATION CHECKLIST

Based on the indicators given in section 3.2.1, observations will be made and scored.

<b>1. Frequency and types of PE Activities children engaged in</b>	<b>Frequency will be indicated</b>		
Daily participation in PE	Yes [ ]	No [ ]	
b) Types of PE activities mostly observed	Without play materials	[ ]	
	With small portable materials	[ ]	
	With large fixed equipment	[ ]	
<b>2. Factors influencing participation of children in PE</b>	<b>Presence/ absence of factors named, which may have influenced children's level of participation in PE</b>		
<b>Status of Playground</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
i) Adequacy of playground space per child	[ ]	[ ]	[ ]
ii) Fencing - (availability of fence, type of fence, condition of the fence	[ ]	[ ]	[ ]
iii) Safety (leveling, presence/ absence of harmful objects, environmental pollutants)	[ ]	[ ]	[ ]
<b>Status of Playground Equipment</b>			
i) Adequacy of play equipment	[ ]	[ ]	[ ]
ii) Variety of types of play equipment	[ ]	[ ]	[ ]
iii) Condition of playground equipment in terms of safety (Intact/ not broken, No splintage, of equipment in use.	[ ]	[ ]	[ ]
<b>Status of Child care</b>			
i) Supervision: (caregivers ensuring vigilant supervision of children during PE)	[ ]	[ ]	[ ]
ii) Ensuring safe children's behavior during PE; good safety role modeling; ensuring turn taking/ sharing in-adequate PE materials	[ ]	[ ]	[ ]
iii) Training as a teacher & in administration of simple first and certification as a first aider	[ ]	[ ]	[ ]

## APPENDIX IV: APPROVAL LETTER FROM GRADUATE SCHOOL



KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 24<sup>th</sup> March, 2017

TO: Githinji Mary Wambui  
C/o Early Childhood Studies Dept.

REF: E55/OL/21955/12

### SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 25<sup>th</sup> January, 2017 entitled "Influence of Pre-School Playground Factors on Participation of Children in Physical Education in Kasarani, Nairobi City County".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

A handwritten signature in blue ink, appearing to read 'Gideon Kaimenyi'.

GIDEON KAIMENYI  
FOR: DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Early Childhood Studies

Supervisors:

1. Dr. Juliet W. Mugo  
C/o Department of Early Childhood Studies  
Kenyatta University

GK/lnn

## APPENDIX V: AUTHORIZATION LETTER FROM GRADUATE SCHOOL



### KENYATTA UNIVERSITY GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 8710901 Ext. 57530

Our Ref: E55/OL/21955/12

DATE: 24<sup>th</sup> March, 2017

Director General,  
National Commission for Science, Technology  
and Innovation  
P.O. Box 30623-00100  
**NAIROBI**

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR GITHINJI MARY WAMBUI – REG. NO.  
E55/OL/21955/12

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

Ms. Githinji Mary intends to conduct research for M.Ed Research Proposal entitled, "Influence of Pre-School Playground Factors on Participation of Children in Physical Education in Kasarani, Nairobi City County".

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Lucy N. MBAABU', written over a horizontal line.


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


GK/lnn

## APPENDIX VI: PERMIT LETTER FROM NACOSTI

**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 Officer 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**

  
**NACOSTI**

**National Commission for Science,  
Technology and Innovation**

**RESEARCH CLEARANCE  
PERMIT**

Serial No. **A14176**

**CONDITIONS: see back page**


**THIS IS TO CERTIFY THAT:**

**MS. MARY WAMBUI GITHINJI**  
**of KENYATTA UNIVERSITY, 43844-100**  
**NAIROBI, has been permitted to conduct**  
**research in Nairobi County**

**on the topic: IMPLICATIONS OF**  
**PRE-SCHOOL PLAYGROUND FACTORS ON**  
**PARTICIPATION OF CHILDREN IN**  
**PHYSICAL EDUCATION IN KASARANI,**  
**NAIROBI COUNTY**

**for the period ending:**  
**23rd May, 2018**

**Permit No : NACOSTI/P/17/88702/17269**  
**Date Of Issue : 24th May, 2017**  
**Fee Received :Ksh 1000**



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

**Applicant's  
Signature**