Influence of Status of Playground on the Participation of Pre-School Children in Physical Education Activities

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Abstract: **The main aim of this study was to establish the influence of condition of playground on the participation of pre-school children in physical education (PE) activities in Kasarani Sub-county, Nairobi City County, Kenya. Bandura's Social Learning Theory of (1977) guided the descriptive design study and specifically used the survey method. Out of the 50 targeted pre-schools, 15 (30%) of them and 30 (30%) out of 100 teachers formed the sample size. Questionnaires as well as observation checklists were employed to collect data, and piloting conducted in four randomly selected pre-schools, to determine the soundness of the research instruments. 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. The study findings further revealed that 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's rating from observations made practically also concurred that the status of the playground equipment was medium, since even in schools where equipment were present, some were not functional while others were in deplorable condition. The study thus concluded that the condition of playgrounds in most preschools in Kasarani was generally poor hence leading to low participation of preschool children in P.E. Despite the fact that inferential results show that there is no significance between the condition of the playground and children's participation in P.E, the study recommended that playgrounds must be safe because they serve to improve children' holistic growth, development and learning. Hence the Ministry of Education, preschool proprietors, managers, administrators, teachers, parents and other pre-school stakeholders should be tasked to ensure the playground surfaces are safe for children's use always, in order to minimize injuries while at the same time increasing participation in physical education activities in the outdoor pre-school environs.**

Key Words: **Status of Playground, Participation, Pre-School Children in Physical Education Activities**

I. INTRODUCTION

Physical education 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). In pre-school, children engage in both free and directed play 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. Zask, Van Beurden, Barnett, Dietrich, Brooks, and Bear, (2014) in their study in USA observed that play during school break-time children get opportunities to engage actively in play. 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) affirm that condition of school playground in terms of safety is also key in ensuring that children are free from danger or harm.

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's development as well as other aspects (Wanjiku, 2016; Akoth, 2016; Ochanda, 2015; Macharia, 2012). Wanjiku (2016) specifically focussed on determinants of quality outdoor play environment in early childhood development centres, Akoth (2016) on effects of outdoor activities on development of preschoolers physical skills, Ochanda (2015) on impact of play equipment on children's participation in outdoor play and Macharia (2012) on influence of preschool children's safety in their participation in outdoor play. The current study however explored playground factors that determine children's engagement in outdoor play.

Participation in PE or outdoor activities is an important aspect that can predict children's development and learning. It also enhances 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. However, the aforementioned studies in Kenya failed to explore playground factors that determine children's engagement in outdoor play and thus there was need for this study.

II. PURPOSE OF THE STUDY

The purpose of this study was to determine the influence of status of playground on the participation of pre-school

children in physical education activities in Kasarani Sub-County in Nairobi City County, Kenya.

III. LITERATURE REVIEW

The size of the playground is an important factor in influencing the participation of school children in outdoor activities but apart from that, the individual needs of children for the different age groups must be provided for in their separate play areas as Lopes, Vasques, Ferreira, Pereira, and Maia (2015) explain. In a study conducted in Australia by Hyndman and Lester (2015) 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.

In yet an associated study, by Wright, Zittel, Gipson and Williams (2019) that involved assessing physical development and activities in the playground as indicators of school readiness among 172 preschoolers, Pearson correlation results on physical development and physical activity revealed that they were 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, yet the Education for All (EFA) plan dictates that all children need to have access to basic education of good quality.

A similar study by Hyndman, Benson & Telford (2015) in Australia, also identified that having nets as well as shaping fields in a certain manner helps the children remain safe. In addition, 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, such provision 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. Presence of barbed wire although meant to secure the playground may be a cause of injuries and hindrance to the participation of children in PE activities which was the main concern in this study.

Similarly, Reimers and Knapp (2017) conducted a study in Germany, to investigate playground usage and physical activity levels of children based on playground spatial features. The study used quantitative and observational approaches, with 10 playgrounds in one district in a small sized town. 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. Among the findings it was observed that the number of children using the playgrounds and those actively playing in them were higher where there were more varied facilities. However, the study was conducted in a single district, and its findings could not be generalized for all districts in Germany let alone our regional or local context.

Regionally in Western Cape, South Africa in a related study by Cozett, Basset and Leach (2016) investigated factors influencing participation in physical activity among school children aged 11 to 13 years. According to the findings, availability of physical activity equipment among other factors like Reimers and Knapp (2017), also explained, influenced participation of school children in physical education activities. However, the study involved only a sample size of 2 schools, which would be too small for generalization elsewhere or to our local context.

Eigobobo, Nzomiwu, Amobi, and Etim (2014) in a study in Nigeria, investigated 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. 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 which suggests that it may limit participation in outdoor activities which was the core in the current study.

Locally 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 more current research, Akoth (2016) conducted a study on the impact of outdoor activities on pre-school children's physical skill development in Langata Sub County. The findings on provision of outdoor play facilities and equipment in preschools revealed that private preschools in middle class estates had variety of facilities and equipment. 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. However, despite having big play grounds, most public preschools had only one type of equipment or none at all while some of the equipment available were either broken down or in bad shape.

Wanjiku (2016) also in a related study in Ng'enda Zone of Gatundu South Sub-County, purposely aimed to establish the quality of outdoor play environment in early childhood development centres. The study found out that the most available play materials in public Early Childhood Development (ECD) centres were the portable type including 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. However, most of the private ECD centres had inadequate playground space, compared with the number of enrolled children, which therefore implies they did not facilitate effective play activities, a major concern in the current study.

Githaga (2018) on school factors influencing the frequency of teaching of physical education in lower primary classes in Laikipia County, 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.

IV. RESEARCH METHODOLOGY

The current study employed the descriptive research design, and specifically survey method. The descriptive research design was useful in describing issues specifically where they arose or clarification sought from the respondents about such problems. The method of choice was also appropriate for use since it facilitated data collection through administration of questionnaires, a main feature of surveys (Kothari, 2004; Kombo & Tromp, 2007). The study sample comprised 15 (30%) pre-schools out of 50 while for teachers, one each from pre-primary 1 and pre-primary 2 or 30 (30%) of them per preschool were selected purposively from the schools sampled. However, where there were more than two teachers in a pre-school, random sampling applied.

For data collection, a questionnaires for teachers was the main data collection instrument used, while an observation checklist was further employed information obtained through the questionnaires. Data analysis was done using both qualitative and quantitative methods. 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.

V. FINDINGS AND DISCUSSIONS

The objective of this research paper 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 1.

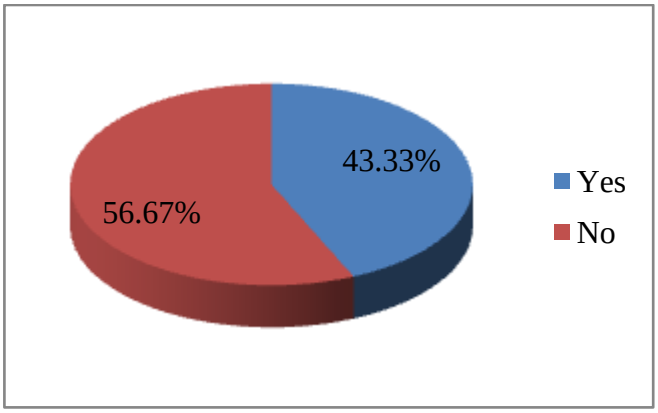

Figure 1: Teachers' Knowledge on Recommended Playground Space

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 1.

Table 1: Safety of Pre-school Playground

Response		Frequency	Percent
	Yes	25	83.3
	No	5	16.7
	Total	30	100.0

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. 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 1point to very unsafe 4 points. Their responses are as displayed in Figure 2.

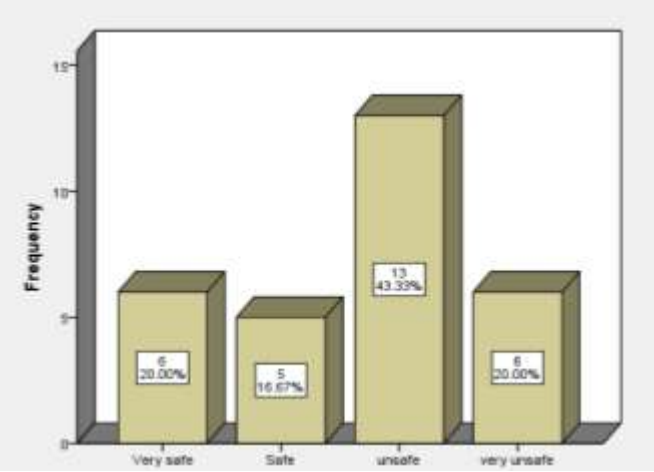

Figure 2: Respondents' Opinion on Safety of Play-ground Space

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.

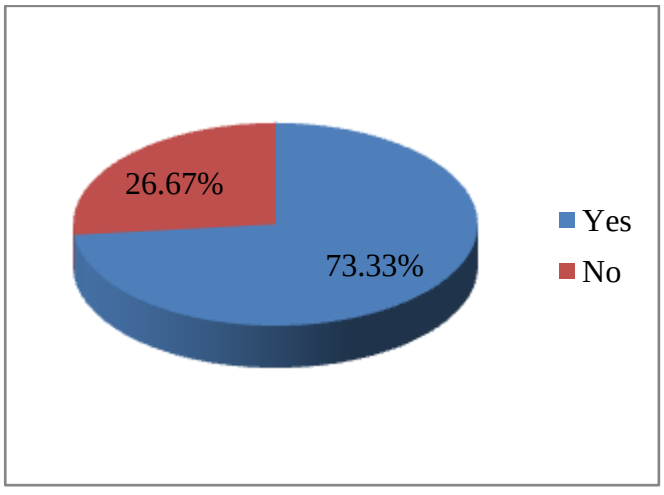

Figure 3 Fencing of Preschool

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. Teacher respondents who indicated that their pre-schools had a fence were asked to show the level of safety of their fence. Their responses were as indicated in Table 2.

Table 2: Safety of the Pre-school Fence

		Frequency	Valid Percent
	Very Secure	5	21.7
	Secure	6	26.1
	Insecure	6	26.1
	Very Insecure	6	26.1
	Total	23	100.0

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. 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, using a 1 – 3 rating scale where 1 point represented low, 2-medium and 3-high as Table 3 shows.

Table 3: Researcher's Observation on Status of Play-ground

	N	Mean	Std. Deviation
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
Average	15	1.777767	0.887123

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 habour some dangerous organisms like snakes.

Further, some preschools particularly private sponsored ones did not have their own playgrounds and were located in

squeezed buildings that did not have any field. In such preschools, managements made arrangements to use public fields that were poorly maintained 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).

Table 4: 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' 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.

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.

VI. CONCLUSION AND RECOMMENDATIONS

The study concluded that the playground status of most preschools in Kasarani was poor and characterized by poor fencing and presence of unsafe materials, which led 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. The study recommends that 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.

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