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Suitability of Children's Outdoor Play Environment in City ECD Centers for Their Physical Development

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Abstract:

Play is a child's way of living and an imperative element of childhood. Outdoor play for children is regarded not as a crucial part of children's developmental stage but also important for their holistic development. This is because it involves cognitive, imaginative, creative, emotional, physical and social aspects. Since most of the children nowadays spent most of their time in school (ECD centres), the outdoor play environment in these centres should be well equipped and well designed to ensure their holistic development. This is especially important for children's physical development since most are active and in the rapid - growth stage. This study therefore set to investigate the status of play environments in Early Childhood Development (ECD) centers in relation to physical development of the children. The main concern of the study was to establish whether the ECD outdoor play environments were suitable enough for the children's physical development. The study was done in Kisumu city in Kenya. The city has 512 ECD centers with the majority of these being public and run by Parents Teachers Associations (PTAs). Purposive sampling was used to select all the 20 urban ECD centers within the city. Data was collected from the all the head teachers and the teachers in all the 20 selected centres by use of interviews, an event observation schedule and observation checklist. The data that was collected was mainly qualitative and thus was analyzed descriptively. The findings showed that play materials were available in most ECD centers, though they were few and not varied. Bean bags, balls, ropes and blocks were common in most ECD centers. This means that materials had to be shared between many children. Additionally, the results showed that children had limited opportunities for physical development in the outdoors. In the majority of the ECD centers, children mainly had opportunities for physical development, though in a small scale. The study recommends that teachers and head teachers should plan for enough space, opportunities, equipment and materials, and also design outdoor environment to enable the children engage fully in play for their physical development.

Keywords: Outdoor Play Environment, Physical Development, ECD Centres

1. Introduction

Play is a child's way of living and an imperative element of childhood. Outdoor play for children is regarded not as a crucial part of children's developmental stage but also important for their holistic development (Wellhausen, 2002). This is because it involves cognitive, imaginative, creative, emotional, physical and social aspects (Wood&Attfield, 2005). It is the main way most children express their impulse to explore, experiment and understand nature. Researchers have shown that play activities involve children's total self and thus balancing their mental, physical, social and emotional status (Santer *et al.*, 2007; Lester & Maudsley, 2007; Rogers& Evans, 2008). Additionally, early childhood scientists have discovered a strong relationship between childhood play and learning, especially in the areas of problem solving, language acquisition, literacy, numeracy and social, physical, and emotional skills (Ginsburg, 2007; Frost *et al.*, 2008).

Since most of the children nowadays spent most of their time in school (ECD centres), the outdoor play environment in these centres should be well equipped and well designed to ensure their holistic development. The environment should have all the features required for the children's physical, social and cognitive growth. This is especially important for children's physical development since most are active and in the rapid - growth stage. Playgrounds and outdoor play environments should be primarily designed to provide an opportunity to the children to develop their physical skills especially through vigorous exercise and play. Cole-Hamilton *et al.* (2002) suggests that any ECD outdoor play environment should provide opportunities for movement (running, jumping, climbing) as well as challenge in relation to the physical environment, and opportunities to play safely with natural elements (earth, water, fire).

Despite the fact that play has been recognized to have a central role in the children's physical learning and development, it has been observed that opportunities for children to play outdoors have been reducing (Burdette & Whitaker, 2005). Spontaneous unregulated play in neighborhood spaces, particularly in cities, is increasingly becoming an activity of the past. The same sentiments have been echoed by Clements (2004) who indicated that the opportunities for children to exercise or play outside have decreased for several reasons, among them safety concerns that have made children homebound.

This leaves the role of children's physical development via play activities to the schools (ECD centres) which they attend. To help facilitate the physical aspect of play activities in the outdoor setting, early educators in ECD centres should consistently provide children with a large variety of quality play materials and equipment such as swings, slides, climbers, tricycles and a sandbox. Spaces for children to engage in solitary play, props for dramatic play and materials for construction play (e.g., outdoor blocks, wooden boards and boxes, small cable spools, gardening space and tools, old tires) are also needed to enrich the variety and complexity of the outdoor playground. The teachers should also spend considerable planning time organizing these materials and equipment in the centres to ensure that the environment is not only interesting but also conducive and safe enough for the children. The teachers should periodically reorganize the playground to provide new and exciting choices for young children.

This study thus set to investigate the status of play environments in Early Childhood Development (ECD) centers in relation to physical development of the children. The main concern of the study was to establish whether the ECD outdoor play environments were suitable enough for the children's physical development.

2. Methodology

The study was done in Kisumu city in Kenya. It is a port city in Kisumu County, Kenya. It has an elevation of 1,131 m, with a population of 409,928 according to 2009 census (Linardet *et al.*, 2012). It is the third largest city in Kenya after Nairobi and Mombasa. Kisumu city has 512 ECD centers with the majority of these being public and run by Parents Teachers Associations (PTAs). Kisumu city was selected because it is expanding very rapidly and there was need to establish whether the expansion had any impact on availability of children's environment and play in the ECD centers.

The study used phenomenology design. The research design seeks the individual's perceptions and meanings of a phenomenon or experience (Creswell, 2013). The study population comprised of all the teaching staff (head-teachers and ECD teachers) in all the ECD centers in the city. Heads of ECD centers were selected because they plan for the resources to be used by children in the center. On the other hand the teachers were selected because they are involved in the preparation of activities for children and in the organization of outdoor play space.

From the study population, purposive sampling was used to select urban ECD centers within the city. These centers were identified with the help of District Centre for Early Childhood Education (DICECE) Officers. The number of ECD centers that formed sample was 20.

Data was collected from the all the head teachers and the teachers in all the 20 selected centres by use of interviews, an event observation schedule and observation checklist. The data that was collected was mainly qualitative. In this case, head teachers and ECD teachers were interviewed to elicit information on the nature of the outdoor playgrounds in their centers in relation to the physical development of the children. For observation purposes, a checklist was used to obtain information on the availability of play equipment, which offers an opportunity for physical development in outdoor play.

The data collected was qualitative and thus was analyzed descriptively. Data from the various instruments was described and interpreted from the researcher's perspective and compared with other researchers views which either supported or contradicted the presentation of the data. Data analysis in this study took place simultaneously with data collection. As each individual responded to the interview questions, the responses were analyzed and compared for relevance of the research themes.

3. Results

3.1. Physical Development Activities

Thirteen teachers stated that they provided opportunities for children to engage in physical activities by setting aside space for children to use for running, jumping, hopping and crawling, during free play. There was consensus among the teachers that they provided materials and equipment to encourage the children to perform physical activities. Eighteen out the twenty teachers provided bean bags for throwing and catching activities, sixteen teachers availed climbing frames for climbing exercises while eighteen teachers provided slides. Twelve teachers had ropes for skipping and jumping. Ten teachers indicated that she gave the children tyres which the children pushed as they ran. Three teachers talked of providing see-saws for children to practice balancing and rocking their bodies.

There were six teachers who stated that they had installed see – saws for the children. One teacher said that the ECD centre had hoops that help children to perform twisting activities. A further two stated that they had ladders. One teacher mentioned that she had made blocks that children played with during outdoor play. She stated:

"I avail wooden blocks for outdoor play because children like moving them from place to place to construct whatever they want. As they do so, they strengthen their gross motor muscles."

One teacher said there were two bicycles that children rode whenever they were playing outdoors. There was also one other teacher who responded by saying that she improvised toy cars for children to play with.

3.2. Results of Checklist for Equipment and Materials for Physical Development

Information derived from the checklist showed that fifteen ECD centers had swings and five did not have. The information contradicts the results derived from the head teacher's interviews which indicated that eighteen of them budgeted for swings. It is therefore evident that the fact that the head teachers may budget for the equipment does not imply that they actually purchase all of them. The swings were inadequate in all the ECD centres going by the recommended ratio by the Ministry of Education that one equipment should serve ten children. Twelve ECD centres had swings that were sturdy and firmly fixed while three ECD centres had shaky swings. The swings in ten ECD centres were of child height and ten ECD centers had swings that were quite high for children's use. In centers where the swings were high, the teachers and head teachers ignored the place of age and developmental appropriateness in the selection of children's play equipment. The equipment should be child size to avoid unnecessary difficulty when in use. The ropes that connected the frames and seats were smooth and strong in eleven ECD centres while in it ECD centres the materials utilized to connect the seats and the frames were rough and dirty. Whereas the unappealing handles could discourage the children from using the swings, the health of children is important and teachers should always strive to maintain very high standards of hygiene in all areas in which children operate. Slides were found in nine ECD centres and were missing in the eleven ECD centres. In the nine ECD centres where the slides were available, it is only in one that the slides were adequate. The eight ECD centres had inadequate slides. Sliding is one activity that many young children enjoy and lack of slides deprives them of the happiness and the physical development skills offered by slides. In two of the ECD centres the landing ground around the slides was covered with saw dust. The other seven ECD centres placed the slides on a hard ground that could easily cause some harm on children's bodies. This situation regarding children's safety when using large equipment is confirmed by the fact that one teacher talked of ensuring that equipment do not expose children to any hazards during play.

Six ECD centres provided see-saws for children's outdoor play while fourteen of them did not have. Children enjoy working in pairs and the sensation of moving up and down and ECD centers that lack see-saws deny children the opportunity to have fun. In addition to training children to work with others, see-saws also improve children's balance and co-ordination skills. In twelve ECD centres, the see-saw were adequate compared to four ECD centers where they were not adequate. Three ECD centres had safe see-saws that the sitting area had been enclosed to prevent children from falling. The remaining three ECD centres had unsafe see-saws which had unenclosed sitting areas and the surrounding ground was rough and wet.

Merry go rounds were available in four schools and were unavailable in sixteen centres. In three, ECD centres the merry go rounds were adequate as each could accommodate six children at a go. It is only in one ECD centre that the merry go round was not adequate to serve the number of the children in the centre. In terms of safety, it was observed that the materials used to make the merry go round were quite weak in two ECD centers. Wood had been used instead of metal which is strong and cannot easily break. In the same ECD centres, the rotating points at the centre of merry go round were not securely fixed.

Half of twenty centres had climbing frames. The climbing frames were adequate in two ECD centres and inadequate in eight ECD centres. Climbing frames were sturdy and firmly fixed on the ground in all the centers that had the frames. However, four centers had the frames fixed on an irregular unlevelled ground thus posing danger for the children because they could easily fall and sustain injuries.

There was only one monkey bar in one of the ECD center and also it was the only outdoor large equipment available in the center. The monkey bar was very high for ECD children to reach it. The other nineteen ECD centers did not have a monkey bar in the playground. Likewise, a bouncing castle was available in one of the twenty ECD centres that were under study. Bouncing castles were absent in all the ECD centers except one.

Skipping ropes were found in sixteen centres and missing in four. In the thirteen ECD centres, the ropes were adequate in number since each ECD center had more than 10 skipping ropes which were largely improvised with a few centres having purchased them. In three centres, the available ropes were less than five. In all the sixteen ECD centres the ropes were light and appropriate for children use but in ten of the sixteen ECD centres, the ropes were quite long and could create difficulty in children to use.

There were tyres in ten centres and none in twelve ECD centres. In five centres the tyres were adequate. In three centres the tyres were light and could be pushed by children but in one center the tyres were too big and heavy to be pushed by the children. Fourteen ECD centres had balls and six did not have. In eleven centres the balls were adequate and in three centres the balls were few in relation to the children in the ECD centre. In seven of the eleven centres the balls were large and did not match the developmental level of the children.

Two ECD centres had hoops and missing in eighteen ECD centres. In the two ECD centres the hoops were small and could fit the children's small bodies. A small bicycle was noted in only one centre. The other nineteen ECD centres did not have any bicycles. The improvised toy cars that had wires to aid in pulling were seen only in two ECD centres. Wooden blocks were available in three centres and not available in seventeen ECD centres. However, the blocks were very few in all the three ECD centers.

3.3. Results of Children's Outdoor Play Event Schedule

The observation schedule data was used to ascertain how children used the environment for holistic development during outdoor play. The data showed the different types of play children engaged in the outdoors. It provided information on whether children involved themselves in physical gross motor, physical fine motor, social and cognitive play.

A total of eighty children were observed in twenty ECD centers. In all the centers, four children in Pre- Primary II were observed. Each child was observed for fifteen minutes and the kind of play they engaged in that duration was recorded. This provided information on how the children interacted with the play environment and whether it provided affordances for children to take

part in different types of play that lead to their holistic development. In ECD center 1, Child A, pushed a tyre and swung for a short time and stopped. B, rocked on a see-saw, and skipped. C kicked a ball and ran. D filled containers with water and joined others in pretending to cook. The activities were categorized as mainly physical gross motor and a few cognitive and social plays. In ECD center 2, child A, climbed a slide, slid and waited for another chance to slide. Child B, swung for some time before joining other children to play football. C, was involved in throwing and catching a bean bag and picking flowers, pushing during the period of observation. D, pushed a tyre as he ran and repeated the activity when it was his turn. All the activities that the children participated in were gross motor except the picking of flowers which was cognitive play and throwing and catching that was fine motor play.

Children A and B in ECD centre 3, stood doing nothing, child B was involved in singing and clapping with other children while the child D waited for her turn to swing. Their activities observed were therefore social and physical gross motor play. Child A, in ECD 4 was involved in chasing butterflies, B twisted using a hoop, C was engaged in running, climbing and sliding, and D joined other children in a clapping and singing. Child A, in ECD centre 5, waited for his turn to use the merry-go round for the entire 15 minutes that he was under observation. B and other children dug the ground using sticks. C joined other children in constructing castles and tunnels in a sand heap. The last child climbed the frame and came down to wait for a second chance.

In the ECD center 6, child A, spent the fifteen minutes organizing other children in a tyre pushing competition, child B played football thus involving himself in kicking and running. Child C carried blocks together with other children and stacked them to form a rectangular wall. The types of play the children depicted were largely physical gross motor, fine motor, social and cognitive. In ECD center 7, child A swung throughout and declined to give the other children the chance to swing since that was the only swing that was available. Child B attempted several times to reach the monkey bar, but gave up on realizing that he could not succeed. Child C walked and collected sticks which she used to form different shapes on the ground. Child D skipped a rope then gave another child the rope. The children under observation in this center participated in physical gross motor play and cognitive play.

Children A, B, C and D in ECD centre 8, rocked and balanced on a see-saw, played hide seek behind a tree, chased butterflies and skipped a rope a rope respectively. The dominant play was physical play and only one child engaged in social play. Child A and B from ECD center 9 were totally engrossed in throwing and catching bean bags for the 15 minutes they were being observed. Child C kicked a ball and stepped aside to watch the other children who were running after a ball. Child D waited for a chance to slide until the 15 minutes elapsed. Children in this center involved themselves in physical fine motor activities, though there was one who did not play at all. The four children under observation in ECD center 10 used the 15 minutes chasing butterflies that were all over the school compound. In ECD center 11, child A joined a group of children that was involved in a singing game. Child B floated seed pods on some stagnant water and pretended that he was riding a boat. Child C took part in throwing stones into some still water as he excitedly watched the formation of waves. Child D stood and talked with other children. In the center the activities of the children were only cognitive and social. Child A in ECD center 12 slid and waited for her next turn, child B waited for turn while child C sat down and watched others play. Child D got onto the swing, swung and gave the others the opportunity to swing. All the activities the children took part in were physical gross motor. The four children in ECD center 13 stood until the 15 minutes allocated for observation were over. There was no equipment, material nor space to support these children's outdoor play in the center. This supports results from the head teachers' questionnaire where one of them shared that he did not make any plans for outdoor play.

The only barrel available in the center provided an opportunity for child A and others to push in ECD center 14. Child B pulled a stick along that symbolized a car. Child C joined others in running around while child D just stood as he watched whatever was going on. The types of play seen were cognitive and physical gross motor. Child A and B in ECD center 15 were involved in chasing each other around the ECD center classes. Child C stood and did not move at all while child D performed singing games with other children. Here children engaged in physical gross and social play. Children A, C and D in center 16 stood doing nothing as child B got onto the climbing frame before being urged by other children to give room for those who were waiting to climb. In ECD center 17, child A performed a singing game with the others while children B, C and D sat and talked. Only social play was observed in this case. In center 18, child A played football, child B skipped a few times and passed the rope to another child who had been waiting. Children C and D were among children who role played buying and selling using leaves, seeds and stones as money. Physical gross motor skill and cognitive play were the only types of play the two children involved themselves in. One child in center 19, that is child D, joined other children in a frog jumping competition. The rest of the children A, B, and C gathered round a centipede and followed it for sometimes. All the activities were physical gross motor and cognitive play. Lastly in ECD center 20, children A and B were among children who jumped and bounced in the bouncing castle. Child C pushed a tricycle and D climbed on a big tree that was next to the staff room before the teacher asked him to come down. Children in this center engaged in physical play only.

4. Discussion

It is evident from the bulk of literature on young children's play that the outdoors has an extremely important role in facilitating active play (Stephenson, 2002). In recognizing this role Cole – Hamilton et al, suggests that the outdoor play environment should provide opportunities for movement (running, jumping, climbing) as well as challenge in relation to the physical environment. However scrutiny of the results emanating from teachers' and head teachers' interviews, observation checklist for opportunities for physical development and children's event schedule clearly show that most ECD centers' outdoor environment supported children's physical development. However the opportunities that enhanced physical development were limited.

Climbing frames, swings, slides and tyres were common in most ECD centers while monkey bars, bouncing castles, see-saws, hoops and ladders were available in a few centers. These equipment encouraged, climbing, swinging, sliding, bouncing, pushing rocking,

twisting, rocking and balancing. The event schedule also provided information to the effect that during free play the activities that children engaged in were mostly those that involved physical gross motor skills, that is, swinging, climbing, sliding, running and pushing in a large number of ECD centers. This scenario reveals that most teachers and head teachers seem to believe that outdoor play is about physical activities and exercise. Malone and Tranfer (2003) notes that the desire to run, jump, crawl, climb and swing is the natural way through which children's bodies develop. These activities lead to improvement in coordination, bone and muscle growth, strength, agility and are essential to a healthy childhood and later life.

Play materials were available in most ECD centers though they were few and not varied. Bean bags, balls, ropes and blocks were common in most ECD centers. This means that materials had to be shared between many children. Inadequate play materials deny children sufficient time to enjoy and play effectively. These materials promote the development of fine motor muscles as children grasp, throw and catch, skip and carry materials such as bricks.

In summary, the present study results show that children had limited opportunities for physical development in the outdoors. In the majority of the ECD centers, children mainly had opportunities for physical development, though in a small scale. Very few opportunities were available for activities that would develop children's fine motor skills. Physical play is beneficial for the child's body and health and can reduce the risk of obesity among young children. This is only possible when children are accorded opportunities to develop and refine their gross and fine motor skills as they play with equipment and objects.

5. Conclusions

Based on the study findings, the following conclusions were made:

- a) ECD teachers view outdoor play environment as a place for children's physical development and exercise. Despite this, they do not provide enough varied opportunities and equipment for children's physical development.
- b) ECD teachers do not plan well for children's physical development during outdoor play.
- c) Children engage in the sampled centres engage in very diverse types of outdoor play. However, most of their outdoor play does not involve physical activities.

6. Recommendations

The findings and conclusions of this study have necessitated some recommendations to be made. These recommendations will be useful in enhancing the role of outdoor play in the physical development of children in ECD centres. The following are the recommendations that were proposed:

- i. Teachers and head teachers should plan for enough space, equipment and materials and design outdoor environment to enable children to engage fully in play for their physical development.
- ii. Children's physical development in outdoor play should be enhanced by varying equipment and materials to encourage gross and fine motor development.
- iii. In-service courses should be facilitated through the District Center for Early Childhood Education to refresh teachers on the role of outdoor play environment in children's development.

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