

Assessment of Preschool Playgrounds in Ife Central Local Government Area of Osun State, Nigeria

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Abstract

The study identified the playground facilities available in preschools in Ife Central Local Government Area (LGA) of Osun State. It also assessed the adequacy in terms of quantity and quality of available playground facilities in the LGA and examined the safety and security of the playground facilities in the study area. These were with a view to providing information on the status of playground facilities in preschools to enhance policy formulation on pupils' psycho-physical well-being in Ife Central Local Government Area of Osun State. The study employed descriptive survey research design. The population consisted of 149 registered nursery schools in Ife Central LGA of Osun State out of which 30 schools were selected using simple random sampling technique. An instrument titled Playground Observation Checklist (POC) was designed and used for data collection. Data collected were analysed using simple percentages and t-test statistics. Results showed that the commonest playground facilities available in preschools in Ife Central LGA of Osun State were swings (53.3%), slides (50%) and merry-go-round (40%) with a varying mixture of other facilities. Results also showed that the quantity of playground facilities in most schools was inadequate considering the facilities to pupil ratio (F: P) of one facility to 19 pupils. However, 70% of the surveyed schools had facilities that were in very good condition while 68%, 27% and 5% of the available playground facilities were of very good, good and poor quality respectively. The results further showed that most of the playground facilities were not safe and secure. Only 23% of the preschools had highly safe and secure playground facilities; 47% of schools had fairly safe and secure playground facilities, while 30% had playground facilities that were neither safe nor secure. The study concluded that although the playground facilities in Ife Central Local Government Area preschools were limited in variety and were inadequate in quantity, most of the available ones were of good quality.

Keywords: Play Ground, Preschooler, Assessment, Ife Central, Osun State

Introduction

It is a common knowledge that children love to play and that through play, children can actually learn a lot (Bee, 1992). Scholars in the field of Early Childhood Education (ECE) had great ideas about this and by extension children need good playgrounds. Probably

most prominent of these ideas are those credited to Friedrich Froebel - a student of Pestalozzi (Mann 1887, Weston, 2008). Pestalozzi strongly believed that play is a natural gift, propensity, or inclination of children. Being strongly influenced by the ideas of his teacher, Friedrich Froebel established an early childhood centre called "Play and activity institute" in 1837 and changed the name to the popular "garden of children" (kindergarten) in 1840 (Hailmann 2015). This was in line with Froebel's theory of early childhood education which was based on four basic ideas namely: free self-expression, creativity, social participation, and motor expression.

The role of Froebel in play and playgrounds is very important. Froebel first used the word "playground" in his classic work "Education of man" (Froebel, 1826) in which he emphasized the benefits of activity or learning and thinking through play. Learning through play is connected to Froebel's holistic approach to child development (Weston, 2008) which was a radical departure from the rather mechanical approach of his teacher-Pestalozzi (Mann, 1887).

The original children garden (kindergarten) idea was not just a theory; it was the actual practice of Froebel who taught the three children of Baron Von Holzhausen in a garden dedicated to the playing of his children (Weston, 2000). Froebel invented many games and toys for children to play with including collaborative play. This was one of the earliest references to the use of bricks as building blocks, among children at play. Froebel established a system of educational toys which he called "gifts" (Weston, 2008). The gifts or toys were to make children participate in activities that would stimulate insight and learning.

Rudolf of the Waldorf school of thought also believed in play as an important part of learning in ECE. He believed in educating the whole child, which he called a balance between the development of the hands, the heart and the head (Petrash, 2010). Erikson believed that ages three to five is the period that children assert themselves more frequently. During this period, children are particularly lively, interactive, and exploratory (Heffner, 2014). Erickson also believed that play is very important during this stage of a child's development while Bee (1992) refers to this period as a "time of vigour of action and of behaviour that the parents may see as aggressive." Probably the strongest defense of the playground came from the submissions of Rousseau in his theory of naturalism in which he said "negative education is self-education, it is the education of sense organs and body" this he said "may be more possible in the playground than in the classroom." He submitted that whatever a child learns on the playground is four times more useful than what he learns in the classroom" (Bee, 1992).

Playgrounds and play are therefore very important in the learning process in those early formative years. For this learning to be effective, it needs to be holistic. Holistic learning is that which stimulates all the domains of learning namely; the cognitive, affective and

psychomotor domains. The development of any one domain is not superior to the other. Most of what is learned in schools involves the stimulation of the cognitive domain. Unfortunately, this appears to be the focus for most schools. Parents do not appear to help the matter because they would rather complain about inadequate lessons than about inadequate exercise and play.

Interestingly, many parents feel that playgrounds only affect the psychomotor domain. On the contrary, however, group and interactive play on the playgrounds help in developing social skills which are important for the holistic development of the child. Apart from this, when ECE centres have well-equipped playgrounds, children learn to show empathy when another child cries, falls or is unhappy. Through this the affective domain is also being developed through playgrounds. Surprisingly, children learn to take turns in play, learn to count for instance, when told to jump seven times and learn shapes and colours from activities/facilities in the playground. As a result, even the cognitive domain is better developed with well-organized and supervised playground activities.

In Nigeria, many ECE centres with available playgrounds present another challenge - inadequate variety. Many of the centres operate playground facilities with extremely limited variety. Most centres appear to have just a few rusty swings, slides and merry-go-rounds. The colours of most of the available facilities are not being maintained and become very unattractive to the children. The ECE centers do not seem to consider that a great variety of playground facilities would ensure better stimulation and development of different aspects of learning. The presence of this limited variety makes playing on playgrounds rather uninteresting with limited stimulation of the various domains. Many of the playground environments in Nigerian ECE centres are unsafe because the flooring is not according to international standards. Playground floors should have protective surfacing materials that will minimize impact injuries from falls during active play. Landing areas around slides and other facilities are often not cushioned enough to absorb shock. To save costs, most of the playground facilities in our environment are locally constructed which is a good thing. The problem, however, is that the metal workers often fail to round-off sharp points on these facilities with resultant serious injuries.

The presence of the adequate variety and safe playground facilities does not however guaranty the full benefits. Surprisingly, some teachers carry children into playground swings and slides simply because those facilities are beyond the age of those children. The children are therefore denied the development of their psychomotor skills which is on the benefits of playground facilities. For playground facilities to be age-appropriate, they are expected to be accessible to the children who use them. The current practice of one size fits all is therefore not acceptable. The height of such facilities is not expected to be beyond the reach of children in the ECE age bracket.

Worst of all, there are centres where playground facilities are completely absent! It is unclear if such centres are aware of the benefits of play and playgrounds in development. The question that immediately arises is whether or not play and playgrounds have been given the attention they deserve in Nigeria. Unfortunately, the obvious answer is no. The state of many ECE centers in Nigeria shows that Nigerian ECE center operators have not given the needed attention to playgrounds in our schools, especially the ECE centers. It is common practice to find schools where the facilities consist of a single block of flats or a story building with no provision for a playground. Surprisingly, many of such centres boldly display advertisements that read “ABC nursery and primary school, Government Approved!” Were these schools really approved by government? Were the approving authorities not aware of the requirements for a playground in such facilities? This practice has become so common that it has attracted the attention of the mass media as clearly shown by a 2014 newspaper article titled “What Happened to Our Playgrounds?” (ONIORISAN, 2014). The writer alluded to several dangers of this practice including physical, social and emotional harm. This means that the country is busy raising children with limited psychomotor skills, children with limited social interaction and children who stand the risk of obesity from inadequate exercise.

In Osun state where this study was conducted, the situation is not better. The Daily Independent newspaper reported an interview with the Osun State Infrastructure Development Committee in 2014 in which an official of the committee lamented that “some structures will have to be removed to bring back sanity that used to pervade such schools where the standard distribution of structures conforms to layout plans unlike what we have in the past, where blocks of three classrooms are constructed on playgrounds without regard to the aesthetic of the schools” (Apata, 2014). Beyond esthetics, however, such schools demonstrate an open disregard for international standards. This underscores the importance of the present study to assess preschool playgrounds in Ife central local government area of Osun State.

Statement of the Problem

The Nigerian Educational Research and Development Council (NERDC, 2007) gives minimum standards for playgrounds. The standards, however, seem not to be followed as clearly evidenced by the various media reports complaining about the current standards. One of the issues is that many schools get approval with a single block of flats without consideration for playground space requirements. This is obviously not the fault of the ECE centre operators eager to start a school, but of the regulatory authorities. Consequently, most preschool centres either have no playgrounds at all or have unsafe, ill-equipped playgrounds. Play is essential for the holistic development of the child especially at the preschool stage. There is therefore an urgent need to assess the availability, safety and adequacy of playground facilities in preschools in Ife Central Local Government Area of Osun State. Ultimately, there is an urgent need to identify available

facilities, assess their quantity, quality and variety and determine how safe they are; hence this study.

Objectives of the Study

The specific objectives of this study were to:

1. identify playground facilities available in preschools in Ife Central Local Government Area of Osun State;
2. assess the adequacy in terms of quantity and quality of available playground facilities in the study area; and
3. examine the safety and security of playground facilities in the study area.

Research Questions

The research questions raised for this study were:

1. What are the playground facilities available in preschools in Ife Central Local Government Area?
2. How adequate are available playground facilities in terms of quantity and quality in the study area?
3. How safe and secure are playground facilities in the study area?

Methodology

The study was conducted using a descriptive survey research design. As a descriptive survey, the study used information collected from the research environment comprised of preschools in Ife Central local government without altering or intervening in the environment. The study used obtained information on the current status of playgrounds in preschools in Ife Central Local Government Area (LGA) of Osun State. The study therefore described what was existing in the playgrounds in relation to the stated aim and objectives. The study population was made up of 149 registered nursery schools in Ife Central Local Government Area (LGA) of Osun State. This number was limited to the estimated number of registered nursery schools in Ife Central LGA. They included private-owned nursery schools, mission/religion-based nursery schools and all such schools which were owned and registered by private owners.

The 149 registered private nursery schools in Ife Central Local Government Area (LGA) of Osun State formed the sampling frame which is a list of the items or people forming a population from which a sample is taken. From the sampling frame, 30 schools were selected using simple random sampling technique. A decision was made to choose 20% of all the schools in the sampling frame. The decision on 20% was arbitrary and based on convenience. Based on this percentage and the estimated 149 registered private nursery schools in the LGA, a figure of 30 was arrived at. These 30 schools were then randomly selected. Randomization was performed using computer-generated table of random numbers. First, a fixed serial number was assigned to each school. After this,

the required sample size (30) was entered into an online random number generator (www.statrek.com/m/statistics). The random number generator was then activated and a table of random numbers was generated. The 30 schools were then selected based on their fixed assigned serial number which tallied with the computer-generated random number. After the first round of visits to the 30 randomly-selected schools, some schools were not found for several reasons. Some had folded up, changed addresses or moved to other local governments which were outside the sampling frame. For this reason, the remaining schools on the list which were not part of the initially-selected 20% were reassigned fixed serial numbers, and the selection process repeated as already described above.

The research instrument used in this study was a checklist titled: Playground Observation Checklist (POC). The POC was adapted from the Public Playground Safety Handbook of the United States Consumer Product Safety Commission (2010) (U.C.P.S Commission). The POC was adapted by using those parameters relevant to Nigeria and by applying scores to the observations. The adapted Playground Observation Checklist (POC) was divided into three parts. The first part consisted of 8 items while the second part consisted of 8 sections. The first part was a preamble consisting of eight items namely number of pupils, number of playground facilities, variety of facilities, break time, number of adult supervisors during play, facilities grouped by age appropriateness, facilities under shaded area and type of material used for the facilities. The second part was a scored checklist to assess the security and safety of available playground facilities also consisted of 8 sections namely surfacing (4 items), drainage (1 item), general hazards (6 items), security of hardware (2 items), durability of facilities (4 items), leaded paint (2 items), general upkeep of playground (2 items) and other safety/miscellaneous issues (3 items). There were therefore a total number of 24 items in the 8 sections of the second part of the POC. Each of the 24 items was weighted from absent/poor to very good. The scored ranged from 0 for absent, to 3 for very good. An item maximum of 3 marks and a cumulative maximum of 72 marks (3 x 24) were therefore obtainable. The third part of the POC was used to assess the adequacy of available playground facilities based on quantity (and variety) and quality. Since there is no universally-accepted number or list of playground facilities, this third part consisted of an expected list from several sources consisting of 25 different playground facilities. The quantity was assessed based on the number of children in the school while quality was assessed based on the general condition of the facilities. The condition of each facility was assessed based on the level of wear and tear, the material used and the state of the material like plastic, iron or galvanized steel and weather the material used was rusty or with faded paint. The facilities were rated from 1-3 (poor to very good) for adequacy based on an assessment of the parameters above.

The instrument was subject to expert review within and outside the Institute of Education and the Faculty Postgraduate Committee. Adjustments were made as recommended which included changing the sample size to 20% of the estimated school population that formed the sampling frame. Subsequently, further validation of the research instrument (POC) was done through a pilot pretest which was conducted using 10% of the sample size which came to 3 schools. The schools used for the pilot study were selected based on proximity, two of the schools formed part of the sample size since the study instrument was found to be satisfactory. The study was conducted by a single researcher thus eliminating any inter-examiner variability. The single researcher who conducted the study used the same set of parameters in the adapted checklist all the time thus ensuring reliability of the results. Findings from the pilot study showed that slides, swings and motion equipment were the commonest facilities. The lessons learnt from the pilot survey were that the schools were inadequate in terms of quantity with a Facility to Pupil ration (F:P) of 1:25. Regarding quality, most of the facilities were in good condition while only a few were either very good or poor. Only one of the three pilot preschools was highly safe and secure with a score of 70.8%.

The researchers visited all the schools used in the pilot study as well as all the randomly-sampled school. Approval was obtained from the Local Education District (LED) who also provided a list of the registered nursery schools in Ife Central Local Government. It was discovered that the actual list of registered private schools in Ife Central LGA was less than the previous estimate given at the Local Government Office. The actual list was found to be 67 schools which was less than the previous estimate of 149 probably because only 67 of the estimated 149 preschools were registered with the Local Education district. A total of 30 schools approved by the expert committee were randomly selected and surveyed since they met the minimum approved 20% of the sampling frame by the expert review committee. In essence therefore, the researcher actually surveyed almost half of the schools in the sampling frame. The school authorities were presented with the letter of introduction from the Local Education District (LED) and the purpose of the study was explained. All the visited schools cooperated and the data collected using the POC.

Data collected were analysed using frequency and percentage as well as one-sample t-test. Frequency tables and diagrams were employed in the presentation of the results. Comparisons were based on percentages of actual scores in relation to the maximum obtainable scores. SPSS version 17 was used for data collection and analysis. A mean Facility: Pupil (F: P) was determined to assess the adequacy of facilities based on quantity. A test of significant difference between the number of available facilities in the visited preschools and mean F: P ratio was performed. A 95% confidence level was adopted therefore P values of ≤ 0.05 was considered significant.

Results

The commonest playground facilities found in preschools in Ife Central Local Government Area of Osun State were swings and slides. Some facilities like crawl tubes, tunnels, scaling walls and balancing facilities were completely missing. The adequacy of facilities in terms of number was poor with an average, facility to pupil ratio (F: P) of 1.97 or 1 playground facility to about 19 preschool pupils. Most of the facilities were however of good quality although a few were rusty and of poor quality. However, only about 23% of the schools were rated highly safe and secure and unsafe flooring materials were the main reason why many of the schools failed the safety test.

Research Question 1: What are the playground facilities available in preschools in Ife Central Local Government Area of Osun State? (This is in line with objective 1)

Table 1: Playground Facilities Available in Preschools in Ife Central LGA

	Playground Facilities	Available		Not Available	
		f	%	F	%
1	Turning and turnover bars	-	-	30	100.0
2	Swings	16	53.3	14	46.7
3	Access ladders and stairways	9	30.0	21	70.0
4	Scramble and scaling walls	-	-	30	100.0
5	Tunnels	-	-	30	100.0
6	Slides	15	50.0	15	50.0
7	Bridges and ramps	3	10.0	27	90.0
8	Climbing arches and hoop climber	8	26.7	22	73.3
9	Horizontal ladders and roman rings	1	3.3	29	96.7
10	Springs animals	2	6.7	28	93.3
11	Motion facilities	12	40.0	18	60.0
12	Crawl tubes	-	-	30	100.0
13	Play house	5	16.7	25	83.3
14	Sand and water games	2	6.7	28	93.3
15	Springs	1	3.3	29	96.7
16	Balancing facilities	-	-	30	100.0
	Others:				
17	Sea saw	7	23.3	23	76.7
18	Boat	4	13.3	26	86.7
19	Bicycle	1	3.3	29	96.7
20	Motion motor	1	3.3	29	96.7
21	Water play	1	3.3	29	96.7
22	Block house	1	3.3	29	96.7
23	Plastic car	2	6.7	28	93.3
24	Plastic horse	1	3.3	29	96.7
25	Ball house	1	3.3	29	96.7

Table 1 shows the playground facilities available in preschools in Ife Central Local Government Area (LGA) of Osun State. As shown in the above table, the commonest playground facilities found in preschools in Ife Central Local Government Area (LGA) of Osun State were swings and slides. The individual analysis of each of the facilities showed that 53.3% of the sampled preschools had swings while 50.0% of the preschools had slides. Motion facilities were also available in 40.0% of the preschools while access

ladders and stairways were available in 30.0% of the schools. Climbing arches and hoop climbers were available in 26.7% of the schools, sea saws in 23.3%, play houses in 16.7% and boats in 13.3% of the schools. Bridges and ramps were available in 10.0% of the schools while spring animals, sand and water games and plastic cars were only available in 6.7% of the sampled preschools. While playground facilities such as horizontal ladders and roman rings, springs, bicycles, motion motors, water play, brick houses, plastic horses and ball houses were available in only 3.3% of the preschools, none of the playground facilities such as turning/turnover bars, scramble/scaling walls, tunnels, crawl tubes and balancing facilities were found in all sampled preschools in Ife Central Local Government Area of Osun State.

Research Question 2: Are these playground facilities adequate in terms of quantity and quality? To determine the adequacy of playground facilities in terms of quantity, the ratio of playground facility to the number of preschool pupils were assessed. (F: P) The result is presented in Table II below:

Table 2: Adequacy of Preschools Playground Facilities in Terms of Quantity

School	No of Facilities	No of Pupils	Facility/Pupil Ratio	F:P (in decimal)	F: P (in %)
1	3	59	3/59	0.05	5.08
2	0	75	0/75	0.00	0.00
3	0	125	0/125	0.00	0.00
4	0	100	0/100	0.00	0.00
5	6	45	6/45	0.13	13.33
6	2	130	2/130	0.02	1.54
7	6	50	6/50	0.12	12.00
8	0	45	0/45	0.00	0.00
9	10	110	10/110	0.09	9.09
10	1	45	1/45	0.02	2.22
11	10	384	10/384	0.03	2.60
12	10	180	10/180	0.06	5.56
13	0	143	0/143	0.00	0.00
14	7	46	7/46	0.15	15.22
15	0	55	0/55	0.00	0.00
16	17	180	17/180	0.09	9.44
17	11	66	11/66	0.17	16.67
18	2	60	2/60	0.03	3.33
19	1	60	1/60	0.02	1.67
20	10	300	10/300	0.03	3.33
21	12	35	12/35	0.34	34.29
22	7	42	7/42	0.17	16.67
23	16	176	16/176	0.09	9.09
24	2	166	2/166	0.01	1.20

25	18	150	18/150	0.12	12.00
26	0	100	0/100	0.00	0.00
27	0	51	0/51	0.00	0.00
28	0	150	0/150	0.00	0.00
29	9	60	9/60	0.15	15.00
30	15	180	15/180	0.08	8.33
Total	175	3368		1.97	197.66

Table 2 shows the playground facility/pupils ratio (F: P) in preschools in Ife Central Local Government Area of Osun State. Most of the schools failed woefully in their F: P with values ranging from 0-34.29%. It can be observed from the table that on the average, the F: P ratio is about 1.97 translating into about 1 playground facility to about 19 preschools pupils. It was found that only 15 schools have less than 100 preschools pupils with about 65 playground facilities. The researchers further assessed to see if there was a significant difference in playground facility/pupil ratio using the mean as test value. In order to determine this, facility/pupil ratio value was subjected to a One-sample t-test using 1.97 as test value. The result is presented in Table 3

Table 3: Test of Significant Difference between the Number of Available Facilities in Preschools and Mean F/P Ratio of 1.97

			Test Value = 1.97					
			T	Df	P	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper	
N	Mean	SD						
30	5.833	5.907	3.58	29	.001	3.86333	1.6573	6.0693

Table 3 shows the test of difference to find out if there was a significant difference between the number of available playground facilities in the preschools and the mean F/P ratio of 1.97. It can be observed that the t-value obtained is 3.58, df= 29 at P-value = 0.001. Since p-value is less than 0.05, it can be concluded that the number of playground facilities available in each preschool is significantly different from the mean F/P ratio value of 1.97. This is an indication of inadequacy of the playground facilities in preschools in Ife Central Local Government Area of Osun State.

In order to assess the adequacy of the available preschool playground facilities in terms of quality, assessment was carried out on only the schools with such facilities. The result is presented in Table 4

Table 4: Adequacy of Preschool Playground Facilities in Terms of Quality

				Very Good		Good		Poor	
Playground Facilities				F	%	f	%	f	%
1	Swings			9	56.3	4	25.0	3	18.8
2	Access ladders and stairways			5	55.6	4	44.4	-	-

3	Slides	8	53.3	5	33.3	2	13.3
4	Bridges and ramps	2	50.0	2	50.0		
5	Climbing arches and hoop climber	4	57.1	2	28.6	1	14.3
6	Horizontal ladders and roman rings	1	100.0	-	-	-	-
7	Springs animals	1	100.0	-	-	-	-
8	Motion facilities	8	61.5	3	23.1	2	15.4
9	Play house	2	40.0	3	60.0	-	-
10	Sand and water games	1	50.0	1	50.0	-	-
11	Springs	-	-	1	100.0	-	-
12	Sea saw	2	28.6	4	57.1	1	14.3
13	Boat			3	75.0	1	25.0
14	Bicycle	1	100.0	-	-	-	-
15	Motion motor	1	100.0	-	-	-	-
16	Water play	1	100.0	-	-	-	-
17	Block house	1	100.0	-	-	-	-
18	Plastic car	2	100.0	-	-	-	-
19	Plastic horse	1	100.0	-	-	-	-
20	Ball house	1	100.0	-	-	-	-

Table 4 shows the adequacy of the available playground facilities in the preschools in terms of quality. It can be observed that out of the 16 preschools with swings, 9(56.3%) were of very good quality, 4(25.0%) were of good quality while 3(18.8%) were in poor condition. Access ladders and stairways were available in nine schools out of which 5(55.6%) were of very good quality while 4(44.4%) were in good condition. Slides were available in 15 preschools of which 8 (53.3%) were of very good quality while 5(33.3%) and 2 (13.3%) were in good and poor conditions respectively. Bridges and ramps were found in four preschools out of which 2 (50.0%) were of very good quality while 2 (50.0%) were in good condition. Of the 7 preschools with climbing arches and hoop climbers, 4(57.1%) were of very good quality while 2 (28.6%), and 1 (14.3%) were in good and poor conditions respectively. Horizontal ladders and spring animals available in only one preschool were of very good quality. Of the 13 preschools with motion facilities, 8(61.5%) were of very good quality, 3(23.1%) were of good quality while 2(15.4%) were of poor quality. Play house was found in five preschools of which 2(40.0%) were of very good quality and 3(60.0%) were of poor quality. Sand and water games were found in two preschools of which 1(50.0%) was of very good quality while the other was in good condition. Springs were found in only one preschool and it was of very good quality. Of the seven preschools with sea saws, 2(28.6%) were of very good quality, 4(57.1%) were of good quality while 1(14.3%) was in poor condition. Four preschools had boat of which 3(75.0%) were of very good quality while 1(25.0%) was of poor quality. Playground facilities such as bicycle, motion motor, water play, block house, plastic horse, and ball house which were available in one preschool were of very good quality while plastic cars found in two preschools were of very good quality.

Research Question 3: What is the safety and security status of playground facilities in Ife-Central LGA?

To answer this research question, two approaches were adopted. First, each parameter on the Playground Observation Checklist (POC) rated as “Absent” (0); “Poor” (1); “Good” (2); and “Very Good” (3) were subjected to descriptive analysis of frequency and percentage. In addition, individual preschool scores on each item constituting the parameter were computed in order to determine the status of the safety and security of their playground facilities. The highest obtainable score on this checklist is 72 while the least score is 0. Scores ranging from 0 through 24 were adjudged “Not Safe and Secure at all” α ; 25 through 50 were adjudged “Fairly safe and secure” β while scores of 51 Ω (70.8% of the obtainable total of 72) and above were adjudged “Highly Safe and secure”. The results are presented in Tables 5 and 6.

Footnote: α = Not Safe and Secure at all based on 24/72 being 33% which is a low score. β = Fairly safe and secure based on 25/72 to 50/72 being 34.7% to 69.4% being average to very good scores. Ω = Highly Safe and secure based on 51/72 being higher than 70% which is an excellent score.

Table 5: Descriptive Analysis of Parameters on the Playground Observation Checklist

Parameter Being Checked	Very Good		Good		Poor		Absent		
	f	%	F	%	f	%	f	%	
SURFACING									
1	Protective surfacing under and around the facilities	2	6.7	6	20.0	18	60.0	4	13.3
2	Foreign objects or debris in surfacing material	3	10.0	13	43.3	12	40.0	2	6.7
3	Surfacing materials compacted together	1	3.3	7	23.3	18	60.0	4	13.3
4	Surfacing materials displaced under heavy use areas	-	-	2	6.7	23	76.7	5	16.7
DRAINAGE									
5	Satisfactory drainage, especially in heavy use areas	5	16.7	17	56.7	5	16.7	3	10.0
GENERAL HAZARDS									
6	Sharp points, corners or edges on the facilities	3	10.0	12	40.0	6	20.0	9	30.0
7	Missing or damaged protective caps or plugs	5	16.7	10	33.3	6	20.0	9	30.0
8	Hazardous protrusions	5	16.7	11	36.7	4	13.3	10	33.3
9	Potential clothing entanglement hazard	5	16.7	10	33.3	7	23.3	8	26.7
10	No crush and shearing points on exposed moving parts	4	13.3	10	33.3	7	23.3	9	30.0
11	Trip hazards, such as rocks, roots, other obstacles	5	16.7	12	40.0	7	23.3	6	20.0
SECURITY OF HARDWARE									
12	Loose fastening devices or worn connections	6	20.0	10	33.3	5	16.7	9	30.0
13	Worn-out moving parts of swing hangers and bearings	5	16.7	9	30.0	7	23.3	9	30.0
DURABILITY OF FACILITIES									
14	Rust, rot, cracks, or splinters on any facilities	4	13.3	10	33.3	8	26.7	8	26.7
15	Broken or missing components on the facilities	8	26.7	5	16.7	8	26.7	9	30.0
16	Damaged fences, benches, or signs on the playground	13	43.3	2	6.7	7	23.3	8	26.6
17	Facilities are securely anchored	5	16.7	8	26.7	7	23.3	10	33.3
LEADED PAINT (Anti-rust)									
18	Paint is peeling, cracking, chipping, or chalking	4	13.3	9	30.0	8	26.7	9	30.0
19	Visible leaded paint chips or accumulation of lead dust.	6	20.0	7	23.3	8	26.7	9	30.0
GENERAL UPKEEP OF PLAYGROUND									
20	Strings and ropes tied to facilities	3	10.0	11	36.7	4	13.3	12	40.0

21	Playground is free from debris or litter	7	23.3	15	50.0	7	23.3	1	3.3
OTHER SAFETY/MISCELLANEOUS ISSUES									
22	Facilities exposed the sun	-	-	4	13.3	17	56.7	9	30.0
23	Nearby traffic, road, stream, lake	17	56.7	6	20.0	6	20.0	1	3.3
24	Disability access	-	-	-	-	20	66.7	10	33.3

Table 6: Safety and Security Status of Playground Facilities in Preschools

Status of Safety and Security	Frequency (f)	Percent (%)
Not Safe and Secure at all	9	30.0
Fairly Safe and Secure	14	46.7
Highly Safe and Secure	7	23.3
Total	30	100.0

Figure 1: Safety and Security Status of Playground Facilities in Preschools

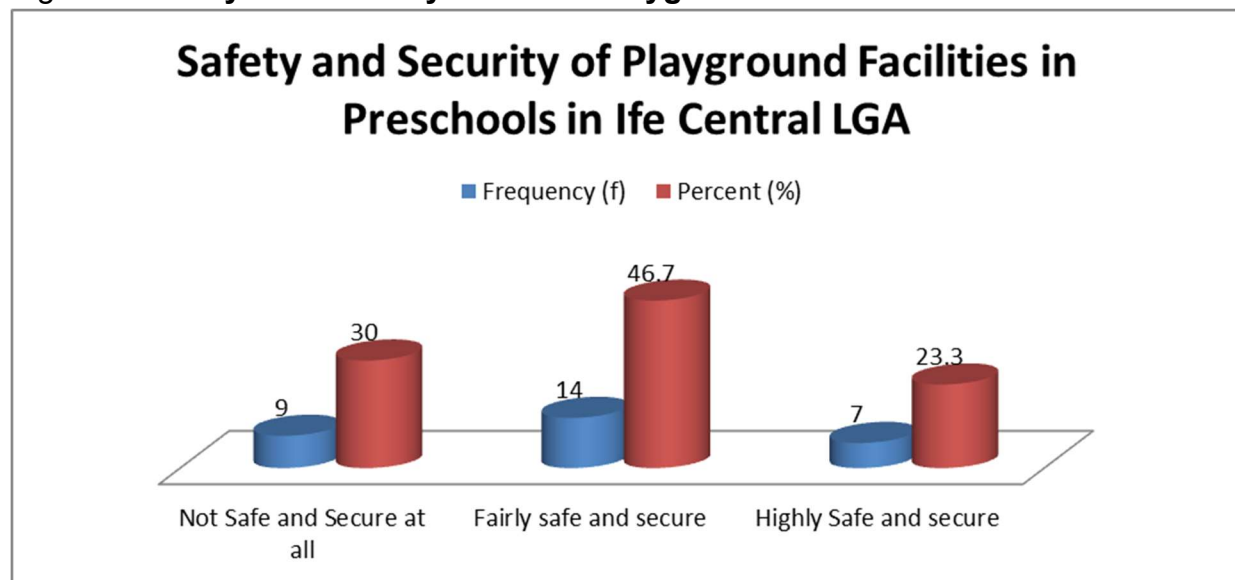


Table 6 and Figure 1 show the safety and security status of playground facilities in preschools in Ife Central Local Government Area of Osun State. As shown in the table and figure, playground facilities of 30.0% of the preschools were not safe and secure at all. Also, 46.7% of the preschools had playground facilities which were fairly safe and secure while only 23.3% of the preschools had playground facilities which were highly safe and secure.

Discussion of Findings

Playgrounds play an important role in the holistic development of children. In our environment, playgrounds are often an afterthought and many playgrounds are not equipped enough or safe enough for children to play in. In this study, it was found that some schools did not attach any importance to playgrounds. To some ECE center operators, a playground is simply an open field without any playground facilities.

This study found disturbingly that none of the schools of a particular faith had any playground facilities. It is not clear whether this had anything to do with religious beliefs though only three of such schools were found and visited from the list of computer-generated randomly selected schools. In the rest of the schools who had playgrounds, the findings were mixed. One consistent finding, however, was that swings and slides were the commonest facilities in use in the preschool centres operating in Ife-Central LGA (53.3% and 50.0% respectively). This finding is not surprising tracing the history of the popularity that swings have enjoyed over time.

The popularity of swings is not restricted to Nigeria, as clearly indicated by a recent analysis by Connor which stated categorically that “Playgrounds without swings just aren’t playgrounds”(O’Connor, 2012). The reason for the popularity of swings is not far-fetched as opined by O’ Connor that “the swings were kings, the purest symbol of playground freedom. They were the closest a kid could get to flying” which prompted the author of the analysis to lament that, “And now they are gone, or going, and have been for years, disappearing two-by-two from North American parks and schoolyards” (O’Connor, 2012)

Apart from swings and slides, however, this study found that the availability of playground facilities in the LGA was rather disappointing, as nine (30%) of the thirty visited schools had no single playground facilities. The researcher was concerned about many missing playground facilities like scramble/scaling walls, tunnels, balancing facilities, crawl tubes and turning/ turnover bars. This calls for great concern as it seems to point to the limited understanding of ECE operators about the reason for playground facilities as just structures for physical exercise. Playgrounds, however, do much more than this as they contribute to the development of emotional skills, social skills and the ability to face real life challenges. This view is supported by J. J. Rousseau who opined that, “whatever a child learns on the playground is four times more useful than what he learns in the classroom” (Bee, 1992).

Having facilities is not enough; playground facilities are expected to be adequate in terms of number and quality. This study accessed the adequacy of the playground in terms of quantity and quality. There was a serious difficulty in drawing up criteria for adequacy in quantity since such guidelines are non-existent both in the minimum standards of the National Educational Research & Development Council of Nigeria (NERDC) or any other document available in the literature. The recommendation in the national minimum standards document as published by the NERDC only refers to space requirements as alluded to by Umeano —“enough space for children to plan (play) (enough to take 20-25 children and two adults at a given time.” (Umeano, 2015) The requirement made no reference to the number of facilities since the space could be an open space without a

single playground facility as found in few schools. Based on this defect in the guideline, the researcher therefore used the number of children in each school to calculate a facility to Pupil ratio (F: P); the adequacy in terms of number was therefore based on the facility to pupil ratio.

This study found that nine schools had no playground facilities in all while those with facilities had F: P converted to percentages ranging from 1.2%- about 34.3%. It should be noted that 34.3% does not necessarily represent an inadequacy in number since no school is expected to have 100% as this will mean that a school with 200 children for instance should have 100 playground facilities, which is not practicable. It is the duty of the NERDC to determine an acceptable F: P ratio for ECE centres in Nigeria, but the researcher would suggest that a minimum of one playground facilities to five children would be a good starting point. This would amount to a minimum F: P of 1:5 or 20%.

The study further assessed the quality of playground facilities in preschools where they were available. It was encouraging to find that most of the 21 of 30 visited schools had facilities that were in very good condition. The rating of poor, good or very good was based on the material used, the level of wear and tear, the quality of the paint and other items judging from criteria in the approved POC. There were about twenty types of facilities present in the visited preschools with various numbers under each type. On the average, 68%, 27% and 5% of the available playground facilities were of very good, good and poor quality respectively meaning that despite the limited numbers of facilities and the limited variety; most of the available facilities were in very good condition. This finding largely meets the maintenance criteria of the United States Consumer Safety Handbook, from where the POC criteria in this study were adapted (U. C. P. Commission, 2010). Interestingly, all (100%) of the bigger more expensive facilities were in very good condition. These included facilities like the bicycle, motion motor, water play, block house, plastic car, plastic horse, ball house, horizontal ladders and roman rings and spring animals. The fact that most of these were made from plastic seems to support the idea of a greater quality of plastic facilities over metal. The United States Consumer Safety Commission recommends plastic for surface temperature reduction which might be a great advantage for hot climates like Nigeria (U. C. P. Commission, 2010). It is unclear, however, if this advantage is real or imagined considering the report by Koeppen that plastic facilities were found to rise in temperature to as high as 160⁰C (Koeppen, 2010).

Probably the most important finding from this study is the safety and security status of playground facilities in Ife Central LGA. Unfortunately, this was the most disappointing result. Having adapted the POC by rating the parameters on from 0 (Absent) to 3 (Very Good) for 24 parameters, only 23% of the preschools had “highly safe and secure” playground facilities based on scoring at least 70% of the maximum obtainable mark of

72. About 47% of schools had “fairly safe and secure” playground facilities. Almost, one of every three schools (30%) had playground facilities that were neither safe nor secure. The findings are very disturbing considering current global concerns on safety and security. This also means that many of the playgrounds in preschools in Ife central LGA are hazard prone. When playgrounds fail on basic safety and security criteria, it becomes very worrisome considering the various accidents that have been reported in the literature. Sadly, the commonest instruments available in the visited preschools (swings and slides) are among the most notorious for playground-related accidents and injuries.(Naeini, Lindqvist, Jafari, Mirlohi and Dalal, 2011) In fact, the commonest playground facilities found in the study (the swing) is particularly known to be the commonest cause of traumatic brain injuries in children (Loder, 2008).

The greatest cause of failure among the visited schools was from poor surfacing. About 77% of the visited had surfacing materials which could be displaced under heavy use areas. Some of the schools even had cemented floors on the playground where their children play. This finding calls for serious concern especially since it is documented in the literature that 86% of slide injuries (the second commonest facilities) result from fall accidents (Mayrx, Russe, Spitzer, Mayr-Koci, and Hollwarth, 1995). Despite these fears, there are increasing concerns that the emphasis of injury prevention is eliminating the fun and challenge historically associated with playgrounds (Hansen Sandseter, 2007) while some authors even opine that not all risk is bad (Mitchell, Cavnagh and Eager, 2006). The absence of strict, detailed legislation and guidelines concerning playgrounds in Nigerian ECE centres is surely having an effect on the system. The NERDC must therefore urgently formulate more detailed guidelines for the internal supervision, external regulation and regular maintenance of playgrounds in all ECE centres in Nigeria.

Conclusion

Playgrounds in Ife Central LGA are of limited variety, only one or two schools have an acceptable range of variety of facilities. Considering the facility to pupil ratio (F: P) of the schools, many of the playgrounds suffer from inadequate quantity of facilities. On a good note, most of the available facilities are presently of very good quality when considered alone. Unfortunately, when the facilities are considered holistically along with the playground environment, 77% of the preschools are currently not highly safe and secure based with surfacing being the greatest safety/security flaw. There is a highly noticeable weakness in regulation which is probably due to the weakness of the current guidelines which underscores the need for ECE practitioners to push for an urgent review at the local and national levels.

Recommendations

1. Considering the high variability in the current facility to pupil ratio (F: P) in the visited preschool centers and the fact that there are no guidelines about a desirable F: P, a minimum F: P needs to be stipulated by the NERDC and included in the minimum standards for ECE centres in Nigeria.
2. The state of most of the playgrounds in terms of availability and variety of facilities shows a serious lack of awareness among ECE centre operators. The ECE centre operators therefore need to be educated on the role of playgrounds in learning with a view to increasing the current number and variety of facilities.
3. The use of concrete and other unsafe surfacing materials noticed in this study justifies an urgent appraisal of the surfacing and other safety/security issues. This appraisal needs to be performed in Ife Central LGA and Nigeria as a whole.
4. There is currently little or no statistics of playground injuries and no standard stipulated risk assessment protocols for ECE playgrounds in Ile-Ife and Nigeria as a whole. Standard risk assessment and incident book for recording playground-related injuries need to be introduced by the NERDC. This will serve as a source of data for the current level and pattern of playground-related injuries in Nigeria.
5. The government should consider a scheme for subsidizing expensive playground facilities or encouraging the local manufacture of such facilities. This will ensure that these expensive but highly stimulating facilities will no longer be the exclusive right of children attending “high-class” preschools.

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