Effective parental supervision and child proofing as accident prevention strategies for physical wellbeing of preschool children in Port Harcourt metropolis, Rivers state

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Abstract
Preschool children are usually vulnerable to accidents which may impair their physical wellbeing. The aim of this study was to assess the awareness of accident prevention strategies such as parental supervision and child proofing used by parents of preschool children for their physical wellbeing. A quantitative survey design was used for the study. A non-proportionate stratified random sampling technique was used to select 600 respondents (240 fathers and 360 mothers) who were parents with children between the ages of 1-6 years old in Port Harcourt local government area. A simple random sampling technique was also used to select 6 towns that participated in the study. Collected data were analyzed using Packages for Social Science (SPSS) and presented in tables and standard deviation. Two hypotheses were tested using t-test at 0.05 significant. Respondents from the study were aware to a high extent that supervising and monitoring preschoolers while he/she is eating and playing can help prevent avoidable injuries’. They also showed high extent of awareness that watching for small buttons, snaps or other clothing articles that could be swallowed by preschoolers, preventing preschoolers from engaging in harmful plays, carefully lock or stow away every potential poison or hazard including medicines, detergents, vitamins, perfumes etc away from the reach of preschoolers; pick up coins, marbles, papers clips, pins, etc away from preschoolers, and being watchful when you have visitors who may be careless are effective in preventing accident at home. This study therefore reveals a great role of parents in ensuring the safety of their children at home. Parents should be educated either formally or informally on the importance of effective child supervision for child safety needs in the home. Childproof techniques such as barricading, fencing, etc should also be adopted to prevent preschoolers from home accidents.

Keywords: Preschool children, prevention, childproofing, parents, supervision

Introduction
A child’s physical well-being is the cornerstone for all components of the child’s developmental success, especially essential for school readiness. Researchers agree that children’s physical well-being frames their learning opportunities, either expanding or limiting them. A child’s physical well-being can affect the ability to actively engage, physically and mentally, in the intended and unintended learning opportunities during the most formative years. Disruption in continuous or full engagement with learning, resulting from injury or from chronic or communicable disease, can have a negative impact on the attainment of the breadth and complexity of skills necessary for school readiness (Alper, 2003) [3].

The preschool stage of human development is a part of early childhood development stage which is sensitive, and also significant in the development processes of children. Preschool children are usually vulnerable to accidents which may impair their physical wellbeing. This vulnerability is the result of naivety, presumed innocence of actions and curiosity which characterize this stage of child development. Ensuring their safety and freedom from dangerous home accidents is a task many parents are not aware of. Children feel safe and secure in their home, unfortunately the home is where many injuries and deaths occur (Alper, 2003) [3]. According to Allender and Spradley, (2001) [2] accidents are unforeseen and unfortunate happening. It also refers to any injury that results from unintended exposure to physical agents including heat, mechanical energy, chemicals or electricity.
Home accidents differ from one country to another due to many factors such as economic and cultural factors. Majority of the accidents happen in the living room, however the most serious accidents happen in the kitchen (Hadd, 2004; Hogg, 2006) [8, 9].

The home is a place where people should feel very free and safe; but certain human errors and circumstances have made the home a place where several accidents occur to put its members, especially younger children at risk devastating injuries, and sometimes death. Accidents are unexpected occurrences that cause both physical and psychological harms to its victims. Accidents occur in the home in the forms of falls, fire outbreak, electrocution, and many other accidental occurrences due to unsafe human practices in the home environments. These unsafe practices may be as a result of the level of knowledge and education of the individual on safety measures, as well as the age. Certain variables such as parental supervision and childproofing can have enormous impact on preventing home accidents among preschool children. Ensuring a child remains safe from harm or injury during the long journey from infancy is a task that requires the participation of parents. Parents must maintain active supervision, which means focused attention and intentional observation of children at all times (Amato and Fowler, 2002) [4]. Parents’ supervision encompasses a spectrum of usual and listening strategies in combination with the proximity of the child to the parent should it be necessary for them to intervene (Morrongiello, 2005) [14]. Parents have an important role to play in keeping their children safe through maintaining open lines of communication, balancing strong support with clear limits and close monitoring (Hoskin, 2014) [10]. Parental supervision can impact on home accidents prevention (Morrongiello et al., 2004; Morrongiello et al., 1998; Morrongiello et al., 2006; Schwebel and Bounds, 2003) [15, 12, 16, 20]. Research over the past years suggests that the quality of the parent-child relationship significantly affects the development of risk behaviors among little children (Thomson, 2002) [23]. There is substantial influence of parental supervision on child development. Children raised in intact families for instance consistently experience better supervision than those in single-parent homes. There is also considerable evidence to show that parenting styles and behaviors related to warmth, communication and disciplinary practices predict important mediators, including academic achievement and psychosocial adjustment. Certain ways parents behave before their children can subject the children to several dangers (Sparks et al., 1994; Garling and Garling, 1995; Ablewhite et al., 2014) [21, 7, 1]. For instance, parents who smoke, drink alcohol, and use some gadgets, as well as harmful environmental activities displayed before kids may affect the occurrence of accidents in the home.

Childproofing can influence home accident prevention. Parental strategies to prevent home accidents among little children can include creating barricades and, or adopting measures that can keep children away from accident environment. Childproofing could have impact on accidents among children in the home (Emmy, 2011) [6]. Very young children are naturally curious. They learn about the world by physically interacting with the things around them. They like to touch, feel, and explore. They also learn about properties of things by putting them in their mouths.

Several studies had examined the causes of home accidents, as well as preventive and safety measures that can reduce the occurrences of home accidents (Tobi, 2009; Emmy, 2011) [24, 6]. Spradley (2001) [2] also focused on the impact of domestic accidents on the overall development of young children. It is important to note that there is yet a gap in research on young children and home accidents, especially in developing countries like Nigeria, and Port Harcourt metropolis in particular. There is paucity of data on how to effectively prevent home accidents especially among preschool children who are more vulnerable. Understanding the safe practices of parents in the home can help understand how best to prevent home accidents among preschoolers. Though much has been written on child safety and protection from hazards, but few studies have focused on parental supervision and child proofing as home accident prevention strategies among preschool children in Port Harcourt. The aim of this was to explore the perceptive of parents of preschool children in Port Harcourt metropolis, Rivers State with regards to parental supervision and child proofing as accident prevention strategies for the physical wellbeing of their children.

Materials and methods
Design of the study
This study adopted a quantitative survey design.

Area of the study
The area of the study was Port Harcourt metropolis. Port Harcourt is the capital city of Rivers and one of the fastest growing cities in Nigeria. The council area has an estimated population of over 500,000 (National Bureau of Statistics, 2009) [18]. Port Harcourt lies right in the Niger Delta region and thus its economy is primarily based on oil and the petroleum industry. The current state of urbanization and modernization in Port Harcourt are due to the associations it shares with the petroleum industry. Port Harcourt was the chief industrial city of the former eastern region. It also serves as the center of social and economic life in the Rivers State. It is a major industrial center with many multinational firms as well as other businesses from the petroleum industry operating from there. Port Harcourt is also the chief oil-refining city in Nigeria. The main export in the Rivers State is crude oil. Port Harcourt has two stadiums, two airports, two seaports and two refineries. The city is cosmopolitan in configuration, with several ethnic nationalities converging for greener pastures. Over 90 percent of the working population is engaged in the formal sector. Major institutions and corporations in the state are also located in the city. It lies along the Bonny River and is located in the Niger Delta. The reason for the choice of area of the study is that as an industrial setting, many parents are engaged in many occupations which may deny them the attention their homes require. As result, many may opt for house-helps, thereby leaving the safety of the children at risk.

Population of the study
The population of the study was all 2,003 parents who had children of 1-6 years old in the Port Harcourt local government area. According to the Port Harcourt Area Council Statistical Report (2016), there were 2,003 parents with children between the ages of 1-6 years old in Port Harcourt local government area.

Sample and sampling technique
The study sample was 600 (240 fathers and 360 mothers) respondents selected from the 2,003 parents in Port Harcourt local government area. A non-proportionate stratified random sampling technique was used to select the sample for this study. This technique accorded unequal sample sizes to the
selected towns. A simple random sampling technique was used to select 6 towns that participated in the study.

**Instrument for data collection**
A structured questionnaire sheet was developed by the researcher to collect data. The questionnaire is titled ‘Effective Parental supervision and child proofing as an accident prevention strategy for physical wellbeing of preschool children’ (EPSCPAPSPWPC). The EPSCPAPSPWPC has two (2) sections of A and B. The section ‘A’ contained information on the socio-demography of the respondents, while the section ‘B’ contained statements that addressed the research questions. The section ‘B’ contained 14 items which were designed on a 4 point scale of measurement of Very High Extent (VHE-4), High Extent (HE-3), Very Low Extent (VLE-2) and Low Extent (LE-1).

**Validation of the instrument**
The instrument of the study was taken to lecturers in Home Economics Department of the Ignatius Ajuru University of Education, Rumuolumeni, who assessed the content in relation to the purpose and objectives of the study for validation. The validates were required to go through the purpose of the study, as well as the research questions and appraise the questionnaire items based on clarity of purpose, appropriateness of statements and made inputs where necessary. Corrections were made based on the inputs of the validators, and they reflected in the final draft of the questionnaire before it was administered.

**Reliability of the instrument**
The questionnaire items were subjected to trial testing using some parents outside the study area who had similar characteristics. The subjects used for the trial testing were not allowed to take part in the main study. The responses were analyzed to determine the degree of internal consistency of the questionnaire items using Cronbach co-efficient alpha. The reason for the use of this method is because it requires single administration of the instrument to establish internal consistency estimate of the items. The reliability test was positive at 0.82, 0.90, 0.83, 0.68, 0.83 and 0.93 respectively.

**Method of data collection**
The researcher used the direct contact approach in collecting the data from the parents. She trained three research assistant on the administration of the questionnaire, and research ethics.

**Method of data analysis**
Collected data were tabulated and analyzed using Statistical Packages for Social Scientists (SPSS). The obtained data were analyzed using mean tables and standard deviation. The 5 hypotheses were tested using t-test at 0.05 significant.

**Decision rule**
In the analysis of the research questions, any item below the mean score of 2.50 was of low extent, while any item with mean score of 2.5 and above was of high extent.

**Results**

**Research Question 1:** What is the extent of awareness of parents that effective parental supervision is a strategy for home accident prevention for physical wellbeing of preschool children?
Table 1 shows the mean ratings and standard deviation of fathers and mothers’ responses on effective parental supervision as a strategy for home accident prevention for physical wellbeing of preschool children. The data showed that items 1, 2, 3, 4, 6 and 7 were at high extent because they had grand mean scores of 2.5 and above. Meanwhile, item 5 which dwelt on ‘I know that ensuring that preschoolers are not left alone for too long’ was at low extent because it had mean scores of less than 2.50. Also, the standard deviation ranged between 0.66 and 0.92 indicating that the respondents were not far from their opinions. The table also showed that the highest mean score was 3.92 which dwelt on ‘Make sure that playground equipment is in good working order for preschoolers (item 7). The lowest mean score was 1.74 which dwelt on ‘I know that ensuring that preschoolers are not left alone for too long (item 5).

**Table 1: Mean and Standard Deviation of Parents’ Responses on Effective Parental Supervision as a Strategy for Home Accident Prevention for Physical Wellbeing of Preschool Children**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Fathers</th>
<th></th>
<th></th>
<th>Mothers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am aware that supervising preschoolers while he/she is eating can prevent choking.</td>
<td>2.82</td>
<td>0.65</td>
<td>High extent</td>
<td>2.81</td>
<td>0.68</td>
<td>High extent</td>
</tr>
<tr>
<td>2. I am aware that monitoring preschoolers when they are playing alone at pools can prevent the risk of drowning.</td>
<td>2.74</td>
<td>0.67</td>
<td>High extent</td>
<td>2.71</td>
<td>0.66</td>
<td>High extent</td>
</tr>
<tr>
<td>3. I am aware that monitoring preschoolers when he/she plays around electrical appliances can prevent electric shocks/electrocution.</td>
<td>3.63</td>
<td>0.72</td>
<td>High extent</td>
<td>2.67</td>
<td>0.84</td>
<td>High extent</td>
</tr>
<tr>
<td>4. I am aware that monitoring preschoolers’ play patterns and objects can prevent avoidable injuries.</td>
<td>3.54</td>
<td>0.69</td>
<td>High extent</td>
<td>3.53</td>
<td>0.72</td>
<td>High extent</td>
</tr>
<tr>
<td>5. I know that preschoolers should not be left alone for too long.</td>
<td>1.74</td>
<td>0.68</td>
<td>Low extent</td>
<td>2.02</td>
<td>0.77</td>
<td>Low extent</td>
</tr>
<tr>
<td>6. I know that devoting more time to the preschoolers can enable parents know when they are exposed to dangers.</td>
<td>3.54</td>
<td>0.73</td>
<td>High extent</td>
<td>3.42</td>
<td>0.75</td>
<td>High extent</td>
</tr>
<tr>
<td>7. Make sure that playground equipment is in good working order for preschoolers.</td>
<td>3.92</td>
<td>0.91</td>
<td>High extent</td>
<td>3.32</td>
<td>0.92</td>
<td>High extent</td>
</tr>
</tbody>
</table>

Key: $\bar{X} =$ Mean score; SD = Standard Deviation

**Research Question 2:** What is the extent of awareness of parents that effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children in Port Harcourt metropolis?
Table 2 shows the mean ratings and standard deviation of fathers and mothers’ responses on effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children. The data showed that items 1, 2, 3, 5, 6 and 7 were at high extent because they had grand mean scores of 2.50 and above. Item 4 which dwelt on ‘use gates to limit preschooler’s access to areas of the home that might create harm’ was at low extent because it had mean score of less than 2.50. Also, the standard deviation ranged between 0.62 and 0.83 indicating that the respondents were not far from their opinions. The table also showed that the highest mean score was 4.00 which dwelt on ‘pick up coins, marbles,
papers clips, pins, etc away from preschoolers (item 5). The lowest mean score was 1.74 which dwelt on ‘use gates to limit preschoolers access to areas of the home that might create harm’ (item 4).

**Table 2:** Mean and Standard Deviation of Parents’ Responses on Effective Childproofing is a Strategy for Home Accident Prevention for Physical Wellbeing of Preschool Children

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Fathers Mean (SD)</th>
<th>Mothers Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Watch for small buttons, snaps or other clothing articles that could be swallowed by preschoolers.</td>
<td>3.31 (0.83) High extent</td>
<td>3.32 (0.80) High extent</td>
</tr>
<tr>
<td>2. Preventing preschoolers from engaging in harmful plays.</td>
<td>3.23 (0.81) High extent</td>
<td>3.21 (0.79) High extent</td>
</tr>
<tr>
<td>3. Carefully lock or stow away every potential poison or hazard including medicines, detergents, vitamins, perfumes etc away from the reach of preschoolers.</td>
<td>3.95 (0.88) High extent</td>
<td>3.41 (0.82) High extent</td>
</tr>
<tr>
<td>4. Use gates to limit preschoolers’ access to areas of the home that might create harm.</td>
<td>2.33 (0.66) Low extent</td>
<td>1.74 (0.62) Low extent</td>
</tr>
<tr>
<td>5. Pick up coins, marbles, papers clips, pins, etc away from preschoolers.</td>
<td>4.00 (0.78) High extent</td>
<td>3.31 (0.74) High extent</td>
</tr>
<tr>
<td>6. If you know that devoting more time to the preschoolers can enable parents know when they are exposed to dangers.</td>
<td>3.54 (0.73) High extent</td>
<td>3.42 (0.75) High extent</td>
</tr>
</tbody>
</table>

Key: X = Mean score; SD = Standard Deviation; LE = Low Extent; HE = High Extent

**Hypothesis testing**

The two null hypotheses were tested using t-test at 0.05 significance.

**Ho:** There is no significant difference in the mean responses of the fathers and mothers that effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children.

Table 3 shows the t-test analysis of the mean responses of fathers and mothers that effective parental supervision is a strategy for home accident prevention for physical wellbeing of preschool children. The result shows no significant difference in the mean responses of fathers and mothers on effective parental supervision is a strategy for home accident prevention for physical wellbeing of preschool children at 0.05 level of significance. The result also revealed that t-Crit value of 3.83≥t-Cal value of 2.35 at the same level of significance; thus Ho1 was accepted.

**Table 3:** T-test Analysis of the Mean Responses of Fathers and Mothers that Effective Parental Supervision is a Strategy for Home Accident Prevention for Physical Wellbeing of Preschool children

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>P-value</th>
<th>DF</th>
<th>t-Crit</th>
<th>t-Crit</th>
<th>RMK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fathers</td>
<td>236</td>
<td>3.42</td>
<td>0.64</td>
<td>0.04</td>
<td>579</td>
<td>2.35</td>
<td>3.83</td>
<td>HA</td>
</tr>
<tr>
<td>Mothers</td>
<td>345</td>
<td>3.22</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ho:** There is no significant difference in the mean responses of fathers and mothers that effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children in Port Harcourt metropolis. Table 4 shows the t-test analysis of the mean responses of fathers and mothers that effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children in Port Harcourt metropolis. The result in the table showed no significant difference in the mean responses of fathers and mothers on effective childproofing is a strategy for home accident prevention for physical wellbeing of preschool children in Port Harcourt metropolis at 0.05 level of significance. The result also revealed that t-Crit value of 3.51≥t-Cal value of 2.44 at the same level of significance; thus Ho2 was accepted.

**Table 4:** T-test Analysis of the Mean Responses of Fathers and Mothers that Effective Childproofing is a Strategy for Home Accident Prevention for Physical Wellbeing of Preschool Children in Port Harcourt Metropolis

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>P-value</th>
<th>DF</th>
<th>t-Crit</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fathers</td>
<td>236</td>
<td>3.21</td>
<td>0.72</td>
<td>0.04</td>
<td>579</td>
<td>2.44</td>
<td>3.51</td>
</tr>
<tr>
<td>Mothers</td>
<td>345</td>
<td>3.44</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion of the findings**

The findings of this study revealed the extent of awareness of parents that effective parental supervision is a strategy for home accident prevention for physical wellbeing of preschool children. The data showed that items 1, 2, 3, 4, 6 and 7 were at high extent because they had grand mean scores of 2.5 and above. The items are as follows: I am aware that supervising preschoolers while he/she is eating can prevent choking; ‘I am aware that monitoring preschoolers when he/she plays around electrical appliances can prevent electric shocks/electrocution; I am aware that monitoring preschoolers’ play patterns and objects can prevent avoidable injuries’. Also, the standard deviation ranged between 0.66 and 0.92 indicating that the respondents were not far from their opinions. These findings could be as a result of the general knowledge of safety at home which could be available to most adults. These findings are in agreement with several studies on child safety and prevention of home accident. For example, Bradley (2007) noted that home accident is major cause of death and disability in little children, and parental supervisory approaches are very significant to preventing home accidents in little children. Also, many parents who are aware of the risks accidents in the home adopt supervisory techniques to curb the occurrences of accidents among children in the home.
with emphasis on age group from 3 to 5 years (Robinson and Roberton, 2003)\(^9\). However, item 5 which dwelt on ‘I know that ensuring that preschoolers are not left alone for too long’ was at low extent because it had mean score of less than 2.50. This could be as result of many parents not having holistic knowledge on prevention strategies of home accidents among preschool children. This finding is in agreement with Hogg (2006)\(^9\) who noted that avoidable home accidents occur among infants because some parents and caregivers do not have adequate knowledge of adequate safety measures against home accidents. Parental supervision can reduce young children’s risk of unintentional injury within the home (Munro, 2002)\(^{117}\). Parental perceptions that supervision is effective in reducing a child’s risk of injury at home are also significant (Ibrahim, 2001)\(^{111}\).

The study also revealed the extent of effective childproofing as strategy for home accident prevention for physical wellbeing of preschool children. The data showed that items 331, 2, 3, 5, 6 and 7 were at high extent because they had grand mean scores of 2.50 and above. These include: watch for small buttons, snaps or other clothing articles that could be swallowed by preschoolers; preventing preschoolers from engaging in harmful plays; carefully lock or stow away every potential poison or hazard including medicines, detergents, vitamins, perfumes etc away from the reach of preschoolers; pick up coins, marbles, papers clips, pins, etc away from preschoolers, and being watchful when you have visitors who may be careless. These findings are in agreement with Ibrahim (2001)\(^{111}\) who noted some parents understand minor childproofing techniques. Item 4 which dwelt on ‘use gates to limit preschoolers’ access to areas of the home that might create harm’ was at low extent because it had mean score of less than 2.50. Thompson (2002)\(^{22}\) noted that the act of childproofing reduces risks to a level considered acceptable by a society, an institution, or, for example, to specific parents. Hogg (2006)\(^9\) opined that safety gates are used to help prevent a child from accessing an area of a house, especially the stairway, or to allow an exterior door to be open for ventilation while restricting movement of a child.

**Conclusion**

This study has revealed that parents have a great role to play in ensuring the safety of their children at home. The study found that effective parental supervision and effective childproofing are significant strategies for home accident prevention among parents for the physical wellbeing of preschool children in Port Harcourt metropolis. The two hypotheses for the study were accepted at 0.05 significance.

**Recommendations**

Based on the findings of this study the following recommendations are made basically on home safety education for religious organizations, civil society organizations, women groups, and governments to be effectively involved in education and enlightenment programmes on the following

1. Parents should be educated either formally or informally on the importance of effective child supervision for child safety needs in the home.
2. Childproof techniques such as barricading, fencing, etc should be adopted to prevent preschoolers from home accidents.

**References**

