

Impact of Safety-Education Intervention on Knowledge and Preventive Practices of Accident Among Pupils in Akoko South-West Local Government Area of Ondo State

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Abstract: Accident has continued to be a significant problem to many people all over the world, including school-aged children which may be injured and may be subjected to live with the consequences of the injuries throughout their lifetimes. Hence, this study investigated the impact of safety education intervention on the knowledge of preventive practices of accident among pupils in Akoko-South Local Government Area, Ondo State (ASWLA). The Pre-test-post-test research design method was used for this study. The sample for this study was 60 respondents. A self-developed validated questionnaire was the instrument use for the study. Mean and Standard Deviation was used to answer the research questions, while t-test and Analysis of Variance (ANOVA) were used to test all hypotheses at 0.05 alpha level. The study indicated that Safety education intervention significantly have positive impact ($t_{cal}=24.537$ $p=0.05$) on the knowledge of pupils in Ondo State. Also the study shows there is a significant impact of safety education intervention on accident prevention practice ($t_{cal}=42.923$ $p=0.05$) among the respondents. In addition, gender and religion have no significant influence on the knowledge and practice of accident prevention among pupils in the study area. It was concluded that safety education intervention had significant effect on knowledge and practice of accident prevention among pupils in the study area. It is recommended that safety education should be taught in schools especially from primary school level in order to instill in children safety knowledge and practices which will protect them from being a victim of accident.

Keywords: accident; primary school; children; safety education; knowledge and practices

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INTRODUCTION

Children are more likely to have accidents due to a variety of risk factors. In addition to their natural curiosity, children's developmental stages also affect their capacity to handle risks. For this reason, primary school students—those enrolled in the first six years of school—need close supervision in order to carry out a variety of tasks in a safe manner. The most efficient means of influencing any population, particularly growing children, is through schools. In order to help schoolchildren develop and uphold safe and healthy lifestyles as they engage with their surroundings, they are at a stage where behaviors can be readily reshaped, altered, and adjusted to reflect and conform to the norms and values of the community and society at large. Therefore, the type of accident or injury that the child was involved in has been connected to their age. For example, it was found that the majority of injuries among children under one year old are caused by unintentional suffocation or accidental strangulation, drowning is a leading cause of injuries and deaths among children aged 1-4, and falls were the mechanism of injury for children up to 10 years old. In contrast, the majority of injuries among individuals aged 11-19 years old were found to be caused by traffic accidents (Nkere et al 2017).

These children are more prone to injuries because, according to observations, they frequently try to explore and try new things without being able to comprehend the potential risks. Additionally, social and economic hardship were strongly associated with childhood injuries (Lynn, 2016). Because childhood is a social construct, its boundaries change over time and space, which affects a person's susceptibility to harm. Low household income, a larger household, more children under 16, a lower level of maternal education, multi-family housing, and overcrowding are additional particular socioeconomic factors linked to child injuries. In their study, Nkere et al (2017) found that 40.1% of the injured patients were female, whereas 59.9% of the patients were male. Toluse et al. (2016), Ayodele et al. (2018), and Chalya et al. (2011) had previously discovered this. Although these environmental factors are often a

contributing factor rather than an immediate cause, the author claimed that children are made more vulnerable by the level of supervision both inside and outside the school as well as the presence of open hazard sites (such as narrow corridors, unguarded railings, poor illumination, poorly arranged furniture, etc.) where the likelihood of accidents is high. In addition to this, it has been discovered that a significant contributing factor to accidents is students' inadequate safety awareness, particularly in the school setting. There is evidence that these students' understanding of staying safe is limited.

One of the cornerstones of safety tactics and methods for enhancing safety is safety education. Safety education is an element of the formal education system in practically every nation in the globe. Additionally, it is a component of programs, initiatives, and extracurricular activities. For example, the girl who sets a frying pot handle on fire to herself, the youngster who scaled the tree to harvest fruits, or the person who picked dirt out of his ears with a broom stick have all shown a lack of awareness or a nonchalant attitude toward safety. Ibhaifidon et al (2017) discovered that students in their study were generally ignorant or had limited awareness regarding safety in times of catastrophes, which supports these claims. The author attested that there was no discernible difference between men and women's levels of safety awareness during these periods

To raise awareness of safety, Fakeye et al (2017) proposed formal school-based safety instruction. Regrettably, schools must manage numerous uncoordinated projects and programs on their own, which puts a strain on school administrators and renders the official school-based intervention program rather ineffective. The situation is further exacerbated by the haphazard way that safety education is handled in schools, particularly at the primary school level, where it is not included as a main subject in the curriculum; the Health Education subject, which includes safety education as one of its content areas, is an underdog subject and is only included in the curriculum as a correlated subject; the effectiveness of school safety education is threatened by unqualified personnel, inadequate funding, and inadequate teaching facilities and equipment.

It has been observed that most accidents including falls, burns and poisoning among pupils occur either at home and or school environments. The health and academic implications of accidents range from bodily injuries, missing school, poor school performance to non-school completion. Many of these accidents had been attributed to poor supervision by elderly ones and poor accident prevention knowledge possessed by the pupils. Although, studies on the efficacy of these awareness programmes abound, researches have not confirmed the efficacy of such interventions among the primary school pupils in Ondo State; hence this study

Purpose of the Study

The purpose of this study is to investigate the impact of safety education intervention on the knowledge of preventive practices of accident among pupils in Ondo State. The specific purposes include;

1. What is the impact of safety education intervention on knowledge of pupils towards accident in Ondo State?
2. What is the impact of safety education intervention on accident preventive practices among pupils in Ondo State?
3. What will be the relationship between gender and religion on the knowledge and accident preventive practices among pupils in Ondo State?

METHODS

The Pre-test-post-test quasi experimental research design method was used for this study. The population of this study comprised of all primary school pupils in Akoko-South Local Government Area, Ondo State. The sample size for this study was sixty (60) pupils in Akoko-South Local Government Area, Ondo State. The multi-stage sampling procedure was used for this study.

Stage 1: one primary school was selected in the study area using simple random sampling technique.

Stage 2: From the primary school selected, 20 pupils were selected from primary 4,5 and 6 making a total of 60 pupils using systematic sampling technique.

Two instruments were used. The research instrument used for data collection was developed by the researcher which was corrected by the researcher's supervisor. A modified three point-scale rating (yes, no, I don't know) were used. The research instrument was validated at face and content validity levels. A drafted was given to experts in the Department of Human Kinetics and Health Education for correction. The final corrected version was used for data collection.

Test and retest reliability method was used for the reliability of this study, 10 copies of the drafted questionnaire was administered to 10 respondents in a selected school within two weeks interval which will not be part of the main study. The first and second sets of responses were correlated using Pearson Product Moment Correlation Coefficient [PPMCC] and resultant value of $P = 0.68$ was obtained. Copies of the questionnaire were personally distributed with the assistance of two trained research assistants to the respondents and efforts were

made to see that the respondents understand the purpose of the study. The respondents were given questionnaire to fill (pre-test) after which they were treated on Safety Education for a period of 5 weeks. The respondents were given the questionnaire to fill after treatment (post-test). Assistance was given where necessary in compliance with the instruction. At the end of the exercise copies of completed questionnaire administered were collected by the researcher immediately. The descriptive statistics of frequency counts and percentage was used to describe the demographic characteristics of the participants and in the analysis of their responses while T-test and ANOVA were used to test the formulated hypotheses using SPSS. Hypotheses were accepted or rejected at alpha level 0.05.

RESULT AND DISCUSSION

Research Question One: What is the impact of safety education intervention on accident prevention knowledge of pupils in Ondo State?

Table 1. Data on the frequency distribution of Impact of Safety Education Intervention on Knowledge of Pupils

Knowledge	Mean	N	SD
Pre-test	37.42	60	2.71
Post-test	48.87	60	2.27

Result presented in Table 1 revealed that post-test mean score is greater than the pre-test mean score with a difference of 11.45. This implied that safety education intervention that pupils were exposed to impact their knowledge positively. **Research Question Two:** What is the impact of safety education intervention on accident preventive practices among pupils in Ondo State?

Table 2. Data on the frequency distribution of Impact of Safety Education Intervention on Accident Preventive Practices

Practice	Mean	N	SD
Pre-test	28.73	60	2.97
Post-test	47.85	60	2.43

Analysis presented in Table 2 showed that post-test mean score is greater than the pre-test mean score with a difference of 19.12. This indicated that safety education intervention that pupils received impact their accident preventive practices in Ondo State. **Hypothesis One:** Safety education intervention will not have any significant impact on the knowledge of pupils in Ondo State.

Table 3. Data showing mean difference score of significant Impact of Safety Education Intervention on Pupils' Knowledge

Knowledge	Mean	N	SD	Df	t.cal	Sig
Pre-test	37.42	60	2.71	59	24.537	.000
Post-test	48.87	60	2.27			

$p < 0.05$

Result shown in Table 3 depicts that there exists a significant impact of safety education intervention on accident prevention knowledge of pupils in the study area because the p value is less than 0.05. The tested null hypothesis is therefore rejected. **Hypothesis Two:** Safety education intervention will not have any significant impact on accident preventive practices among pupils in Ondo State.

Table 4. Data showing mean difference score of significant Impact of Safety Education Intervention on Pupils' Practice

Practice	Mean	N	SD	Df	t.cal	Sig
Pre-test	28.73	60	2.97	59	42.923	.000
Post-test	47.85	60	2.43			

p < 0.05

As shown in Table 4, t. cal is 42.923 and p value is less than 0.05. This inferred that there exists a significant impact of safety education intervention on accident prevention practice among pupils in the study area. Hence, the tested null hypothesis is rejected. **Hypothesis Three:** Gender will not have any significant difference on knowledge of accident prevention among pupils in Ondo State.

Table 5. Data showing mean difference score of significant gender on Knowledge of Accident Prevention among Pupils in Ondo State

Variables	Mean	N	SD	Df	t.cal	Sig
Male	49.20	30	2.19	58	1.139	.260
Female	48.53	30	2.34			

p > 0.05

As presented in Table 5, the p value is 0.260 which is greater than 0.05. The tested null hypothesis is hereby upheld. Therefore, it is concluded that there is no significant influence of gender on knowledge of accident prevention among pupils in Ondo State. **Hypothesis Four:** Religion will not have any significant difference on knowledge of accident prevention among pupils in Ondo State.

Table 6. Revealed ANOVA analysis of Religion and Knowledge of Accident Prevention among Pupils

ANOVA						
Variables	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	12.600	1	12.600	2.500	.119	
Within Groups	292.333	58	5.040			
Total	304.933	59				

p > 0.05

Result presented in Table 6 revealed that there was no significant difference of religion on knowledge of accident prevention among pupils in Ondo State based on religion. The result is not significant since the significant value is greater than 0.05. Hence, the null hypothesis is accepted. **Hypothesis Five:** Gender will not have any significant influence on accident preventive practices among pupils in Ondo State.

Table 7. Data showing mean difference score of Gender on Accident Preventive Practices among Pupils in Ondo State

Variables	Mean	N	SD	Df	t.cal	Sig
Male	47.80	30	2.59	58	.158	.875
Female	47.90	30	2.29			

p > 0.05

As presented in Table 7, the p value is 0.875 which is greater than 0.05. The tested null hypothesis is hereby upheld. Therefore, it is concluded that there is no significant difference of gender on accident preventive practices between male and female pupils in Ondo State. **Hypothesis Six:** Religion will not have any significant difference on accident preventive practices among pupils in Ondo State.

Table 8. Revealed ANOVA analysis of Religion and Accident Preventive Practices among Pupils

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.467	1	5.467	.927	.340
Within Groups	342.183	58	5.900		
Total	347.650	59			

p > 0.05

Result presented in Table 8 revealed that there was no significant difference of religion on accident preventive practices among pupils in Ondo State. The result is not significant since the significant value is greater than 0.05. Hence, the null hypothesis is rejected. The finding indicated that Safety education intervention significantly have positive impact on the knowledge of pupils in Ondo State. Research has demonstrated that safety education interventions significantly improve knowledge about accident prevention across various populations. For instance, a school-based safety program in India increased students' knowledge of road safety by 42% and fire hazards by 35% post-intervention (Patel et al., 2019). Similarly, workplace safety training for construction workers in Ghana led to a 28% improvement in hazard identification skills (Amoah et al., 2021 and Fowode et al, 2023). These studies suggest that structured educational programs effectively enhance safety knowledge, particularly when they incorporate interactive elements like simulations and demonstrations.

The result also indicated significant impact of safety education intervention on accident prevention practice among pupils in in Ondo State. Safety education interventions have demonstrated significant potential in improving accident preventive practices across diverse populations. The current study aligned with previous workplace studies which revealed that comprehensive training programs and incorporating hands-on demonstrations can reduce unsafe behaviors by 40-60% in high-risk industries like construction and manufacturing (Smith et al., 2021). In addition, Zhou et al., (2022), School-based interventions study showed particular effectiveness, with a meta-analysis of 42 studies indicating that safety education increased children's use of protective equipment (e.g., helmets, seatbelts) by 35%.

The finding indicated that there was no significant influence of gender on knowledge of accident prevention among pupils in Ondo State. This finding is at variance with previous studies which indicated that gender differences in accident knowledge have been well-documented across various contexts, with research consistently showing that women generally possess greater awareness of household and child-related accident risks. Studies in low-income countries reveal that mothers demonstrate significantly higher knowledge than fathers regarding pediatric poisoning prevention (Rahman et al., 2020) and burn first aid (Alamgir et al., 2022). This disparity is attributed to gendered caregiving roles that provide women with more frequent exposure to safety information. However, in occupational settings, men often show superior knowledge of industrial hazards, reflecting gender-based employment patterns in high-risk industries (Smith et al, 2021).

Furthermore, there was no significant influence of religion on knowledge of accident prevention among pupils in Ondo State based on religion. This study is in disagreement with previous empirical research which demonstrated that religion significantly influences knowledge of accident preventive practices, though the nature of this influence varies across religious traditions and cultural contexts. Studies show religious beliefs can both enhance and hinder safety knowledge acquisition. For instance, Osei-Boateng & Amoako, (2019) found that the role of religious institutions in disseminating safety knowledge has produced mixed empirical results. In Ghana, churches incorporating road safety messages into sermons significantly improved congregants' knowledge of traffic risks.

The study also indicated that there was no significant influence of gender on accident preventive practices between male and female pupils in Ondo State. This finding is at variance with Kibona and Mgaya, (2022) whose research on road safety campaigns in Tanzania found that male-targeted programs emphasizing peer responsibility improved knowledge retention more than generic messaging. Conversely, women in agricultural communities benefited more from participatory learning methods integrated with maternal health education (Njenga et al., 2021). The finding also indicated that there was no significant influence of religion on accident preventive practices among pupils in Ondo State. The study disagreed with Osei-Boateng & Amoako, (2019) who found that, in Ghana, churches incorporating road safety messages into sermons significantly improved congregants' knowledge of traffic rules and practice of safety traffic use.

CONCLUSION

The study concluded that safety education intervention had significant effect on knowledge and practice of accident prevention among pupils in Ondo state. In addition, gender and religion have no significant influence on the knowledge and practice of accident prevention among pupils in Ondo state. Hence, the study showed that safety education intervention study is significant in knowledge and practices of accident prevention. Therefore the study

recommended that safety education should be taught in schools especially from primary school level to instill in children safety knowledge and practices which will protect them from being a victim of accident.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

DECLARATION OF COMPETING INTEREST

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