

THE WAGNER REVIEW

*Opinion and analysis from the students of the
NYU Wagner Graduate School of Public Service*



Home >> 2023 >> May >> [The Public Health Epidemic of Childhood Injury: Why Classroom Instruction Offers a Path Forward](#)



The Public Health Epidemic of Childhood Injury: Why Classroom Instruction Offers a Path Forward

NYU Wagner Review 05/08/2023

By Ugochi Obidiegwu

Executive Summary

Unintentional injury is the leading cause of death in children below 14. This study aimed to demonstrate the effects of a regular safety education program on the knowledge levels of children in grades 4, 5, and 6 leveraging creative expressions. The study used a self-designed survey to collect data from a range of participants obtained through a convenience sampling method to derive results. The research showed that after a defined timeframe, the child's safety knowledge level

increased, and they were able to share new knowledge with others by leveraging different creative expressions. This research project was set in a summer camp project in Nigeria. Before the children were taught, knowledge levels were assessed through a pre-test. They were trained for four weeks and were assessed again through a post-training test. They also got a chance to make creative group presentations based on their new knowledge. This research demonstrates that when children are taught about safety in a creative and systematic manner, it increases their knowledge base, and they are able to pass on that knowledge to people within their spheres of influence. Based on these findings, we recommend that a wider range of injury prevention topics should be added to the existing education curriculum, creative instructional materials should be provided to each child for personal learning, and a regularly scheduled time for weekly safety education for learners in schools should be implemented.

Childhood Injuries: A Hidden Public Health Crisis

According to Margaret Chan, former Director General of the World Health Organization (WHO), and Ann Veneman, former Executive Director of the United Nations Children's Fund: "Once children reach the age of five years, unintentional injuries are the biggest threat to their survival." Unintentional injuries are also a major cause of disabilities, which can have a long-lasting impact on all facets of children's lives: relationships, learning and play. Among those children who live in poverty, the burden of injury is highest.^[1] Furthermore, the International Journal of Environmental Research and Public Health states that, "an estimated 644,855 children under the age of 15 were killed by an injury and between 10 million and 30 million more suffered a non-fatal injury."^[2]

Recognizing the severity of the problem, the Nigerian Education Research and Development Council (NERDC) added much-needed safety instruction during its overhaul of the national curriculum in 2014.^[3] However, our ability to measure the impact of this curricular change, to this point, has been limited. Safety lessons were one small component of a host of curricular changes during the 2014 overhaul, and the implementation of these safety lessons, additionally, is unlikely to be uniform across Nigeria's over 30 million school children.^[4]

Therefore, the Train Them Young Initiative (#2TYI) research project in Nigeria, aimed at demonstrating and measuring the increase in injury prevention knowledge among children when safety education training and instructional materials are provided within timed intervals.

Hypothesis: Childhood Classroom Instruction is an Effective Means of Reducing Injury

The prospect of improving child safety outcomes through deliberate classroom instruction remains underexplored among both academics and practitioners. This study reviews existing literature, and the aforementioned pilot program in Nigeria, and finds considerable promise for safety curricula as sound public health policy.

According to the Center for Disease Control (CDC), the leading cause of death in children aged 14 and below are accidents (unintentional injuries).^[5] According to the International Journal of Environmental Research and Public Health, a large proportion of these unintentional injuries (for example, burns, suffocation, poisoning, and falls) occurred in or around the home while others occurred in the community (for example transportation-related injuries, drowning, and sports injuries). These injuries represent a serious burden to the injured person and their family. It represents a tremendous economic and community burden, yet, most are predictable and preventable.^[6] According to the World Health Organization, up to 50% of young children with unintentional injuries who present to a hospital are left with some form of disability.^[7] Deaths from injuries are projected to increase from 5.1 million to 8.4 million (9.2% of all global deaths), and injuries are estimated to be the third leading cause of disability-adjusted life years (DALYs) by the year 2020.^[8]

While the initial thought might be that parents should be more intentional about protecting their children, research by Younesian et al. (2016) states some of the contributing factors to these rates of unintentional injuries. According to their research, the most important risk factors reported for home injury include living in unsafe homes, low socioeconomic status, and mothers' low knowledge and inappropriate attitudes. A study performed in 14 European countries has shown that the most important obstacle to adopting preventive measures is the inability of mothers to take continuous care of their children, followed by poor knowledge about factors involved in injuries.^[9]

An unsafe home includes both physical and emotional harm to children. An unsafe home, for instance, can result in a child getting injured from a sharp corner, or getting hurt by cooking oil in the kitchen. This could happen because some parents may not know their action or inaction can impact a child's safety and the gravity of unintentional injury that might occur.

However, parents cannot supervise their children 24 hours a day and focusing only on parents is inadequate to address this problem. Reducing preventable injury requires a multi-stakeholder approach. Equipping the children themselves through a structured learning program over a timed duration can be an effective addition to the injury prevention approach. The children learn for themselves and can also teach others within their spheres of influence, like their peers and parents.^[10] This research project builds on the existing body of work by implementing one of the recurring recommendations on injury prevention – education programs for children.^[11]

Piloting Safety Instructions in the Classroom: The Train Them Young Initiative

Two hundred children from low-income backgrounds, spanning grades 4, 5, and 6, attended the summer camp in Nigeria. The organization that administered the summer camp works with children in low-income areas to provide them with education services. Due to limited funding, it was more cost-effective to work with a particular child education center than work with several child education centers. The study leveraged both qualitative and quantitative methods. The study used pre-training and post-training surveys to generate quantitative data. It assessed group presentations and used interviews to generate qualitative data. 200 children participated at the beginning of the program. They were taught for two hours each week over the duration of four weeks, beginning in the first week of August 2022 and ending in the last week of August 2022. In Nigeria, children in Grades 4, 5 and 6 are able to read a certain kind of book unassisted. Therefore, the safety curriculum was structured in that format using storytelling as a medium. The provided resource was a child safety storybook, [The Adventures of Muna](#). This book was chosen because based on personal experience of teaching children on safety, I discovered that safety topics felt complex and technical but when I shared a

real-world example of a safety scenario involving a child, it got the children's attention. This depicted the value of storifying safety concepts in a simple and memorable way for children.

Students were administered a pre-test evaluating their knowledge of safety practices.

Here are examples of two questions the majority of children got right:

1. Bobby just had an accident at home, what should he do?

- a. Keep it a secret
- b. Inform an adult immediately
- c. Try to sort it out by himself

2. At home you saw a spill, what should you do?

- a. Get a mop and clean it
- b. Pretend you didn't see it
- c. Use it to slide around the house

Here are two questions the majority of children got wrong:

1. Bayo woke up at night because he was thirsty but he saw so much smoke in his room. What should he do?

- a. Start shouting
- b. Hide under his bed
- c. Go down low and crawl out of his house

2. You can sit in the front seat of a car if you are under 12 years old?

- a. True
- b. False

Following the 4-week program, children were tasked with a group presentation using creative methods like drama sketches, poetry, speech and cardboard presentations, all to illustrate safety practices that they had learned. Following the presentations, they were then administered a post-test. Evaluators sought to use the **pre- and post-tests** to determine whether children demonstrated an improved knowledge of safety practices.

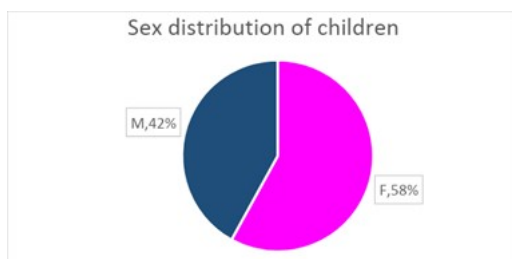
Before the initiative commenced, program evaluators set a benchmark score of 15 (out of 20 questions) for students taking the pre- and post-tests. For a student to qualify for "good knowledge of safety practices", he or she would have to at least answer 15 out of 20 questions correctly.

For the post-test, the minimum score to qualify for an increase in knowledge was 15 out of 20. For the group presentation, there were two major criteria to be considered: effective safety knowledge dissemination and creativity.

Results

Demographic Characteristics of Respondents: Of the 82 learners with complete test scores, the mean age was 11.08 ± 1.6 years with a range of 8 years. Females comprised 58% of participants. The mean age of females was 10.9 ± 1.5 years, and the mean age of males was 11.3 ± 1.7 years.

Figure 1: Sex distribution of children



Pre-test Scores: Pre-test scores ranged from 5 points to 20, giving a range of 15. The mean pre-test score was 14.49 ± 3.43 points. The mean score of females (14.95 points) was higher than males (13.85 points); however, this difference was not statistically significant ($p=0.1550$). 58% of students qualified as having good knowledge of safety practices on the pre-test, answering at least 15 of the 20 questions correctly.

Figure 2: Table of pre-test scores

Group	Observations	Mean	Std dev
Female	47	14.96	2.88
Male	34	13.85	4.05

Post-test scores: Post-test scores had a similar range to pre-test scores, ranging from 5 points to 20. The mean post-test score was 16.09 ± 3.0 points. The mean score of females (16.36 points) was higher than males (15.74 points), however, this difference was not statistically significant ($p=0.3560$). 76% percent of students qualified as having a good knowledge of safety practices on the post-test. Put another way, almost half of the students who entered the program at below-optimal levels of safety knowledge left the program with a good knowledge of safety practices.

Figure 3: Distribution of post-test scores by gender

Group	Observations	Mean	Std dev
Female	47	16.36	2.59
Male	34	15.74	3.48

Effect of safety training

Overall, there was a 130-point difference between the total post-test score (1304), and the total pre-test scores (1174). About half of the participants (47, 58.02%) exhibited good knowledge of safety (greater than or equal to 15 points) on the pre-test, however, this number increased to 62 (76.5%) on the post-test.

Discussions

The focus of this research was to measure the increase in knowledge levels when children were provided with safety education resources in a consistent manner over a timed duration. According to data generated, safety knowledge levels moved from 58.02% at the beginning to 76.5% in the written tests at the end of the research. In addition, children were able to leverage creative methods like songs, drama, speeches, and cardboard presentations to share their new knowledge with peers in the last week of the project.^[12]

According to collected data, females were younger than their male colleagues, but they scored higher in knowledge of safety practices. This might mean that females are informed early on safety issues because of their susceptibility to these risks. It might also mean that they tend to be more safety-conscious than their male peers. Furthermore, these results were achieved within just one month. In a longer timeline like an academic term or academic year, the results have the potential to be even more profound.

However, there were limitations to this study in the form of attrition. At the beginning of the study, there were 200 participants at the free summer camp; only 82 completed the program. According to the implementing partner, many of the children could no longer attend the free summer camp due to family responsibilities and circumstances beyond their control. Many of these children, it is worth noting, live as domestic help in their communities, and these obligations can interfere with summer camp attendance. To build on this study, an educational intervention like the Train Them Young Initiative should be replicated with larger numbers and run over the course of an academic year.

Recommendations

In order to systematically train children to be safety conscious, especially in countries with high incidences of unintentional injuries, the results of the Train Them Young Initiative suggest that:

1. A wider variety of topics on injury prevention should be incorporated into class activities.
2. Classroom instruction should be regularly scheduled and integrated into school curricula. This is necessary because every week, children are learning an aspect of Mathematics and English, safety education has a potential to save their lives and should be treated as important too. A regularly scheduled time for weekly safety education for children should be implemented in schools.
3. There should be provision of relevant age-appropriate instructional materials to children to support personal learning. This is important because children are more responsive to interactive visuals and individual stories as opposed to bland statistics.
4. There should also be adequate teacher preparedness and provision of instructional materials so that the teachers have resources to work with.^[13]

These recommendations are effective as an increase in knowledge levels can be measured at the end of the academic year. It is also socially acceptable as stakeholders can clearly see how this improves outcomes for learners in schools. These courses of action are relevant because they will deliver more knowledgeable and safety-conscious children and by extension lead to a reduction in preventable accidents affecting children.

Disclosures

Consent was obtained from all participants and their caregivers in this project.

About the Author

Ugochi Obidiegwu is a Social Development Strategist with a specialty in developing products, programs and providing policy advisory on pressing development issues affecting African children and youths. Her major work pillars are ensuring child safety, reducing substance abuse in youths and providing strategic direction for founders of social impact initiatives. She is the founder of The Safety Chic — a child safety social enterprise. At The Safety Chic, she is the author of a child safety story book series self-published on Amazon which is available in English and French, co-creator of a COVID-19 online safety game for children and curator of safety education apps. Her child safety training and products have been experienced by children in 8 countries. Her work in child safety has been recommended as good practice for member countries of the European Network for Education and Training in Occupational Safety and Health (ENETOSH). Her work in safety education during the pandemic was featured by the UN OHCHR. She has shared her expertise with safety professionals at key industry events like the 2019 World Safety Organization Symposium in Las Vegas, 2021 World Congress Canada, 2021 West Africa IOSH conference, 2022 OIC-OSHNET training workshop organized by the Directorate General of Occupational Safety and Health, Turkey, and 2022 International Product Safety Week hosted by UNCTAD and the European Commission in Brussels. She convenes the annual School Safety Summit where teachers get trained and relevant stakeholders proffer solutions to safety challenges affecting school children. Ugochi is committed to ensuring that young people become better versions of themselves through her work in social development.



Endnotes

^[1] Sleet, D. A. (2018). The Global Challenge of Child Injury Prevention. *International Journal of Environmental Research and Public Health*, 15(9): 1921. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163498/>.

^[2] Sleet, D. A. (2018). The Global Challenge of Child Injury Prevention. *International Journal of Environmental Research and Public Health*, 15(9): 1921. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163498/>.

^[3] Nigerian Educational Research and Development Council. (2015). eCurriculum. Nigerian Educational Research and Development Council. <https://nerdc.org.ng/eCurriculum/SubjectGroups.aspx?SubEducationLevelId=1&SubjectGroupId=5>.

^[4] Otaru, B. M. (2015). The Role of Teachers in the Implementation of the Revised 9-Year Basic Education Curriculum on Religion and National Values in Nigeria. *International Journal of Education and Evaluation*. Vol. 1 No.8 <https://iiedpub.org/get/IJEE/VOL%201/105-112.pdf>

^[5] CDC FastStats <https://www.cdc.gov/nchs/fastats/child-health.htm>.

^[6] Sleet, D. A. (2018). The Global Challenge of Child Injury Prevention. *International Journal of Environmental Research and Public Health*, 15(9): 1921. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163498/>.

^[7] Aruna Chandran, Adnan A. Hyder, Corinne Peek-Asa, The Global Burden of Unintentional Injuries and an Agenda for Progress, *Epidemiologic Reviews*, Volume 32, Issue 1, April 2010, Pages 110–120, <https://doi.org/10.1093/epirev/mxq009>.

^[8] Fatmi, Z., Hadden, W.C., Razzak, J.A. *et al.* Incidence, patterns and severity of reported unintentional injuries in Pakistan for persons five years and older: results of the National Health Survey of Pakistan 1990–94. *BMC Public Health* 7, 152 (2007). <https://doi.org/10.1186/1471-2458-7-152>.

^[9] Younesian S, Mahfoozpour S, Ghafari Shad E *et al.*: Unintentional Home Injury Prevention in Preschool Children; a Study of Contributing Factors. *Emergency* (2016); 4(2): 72-77 <https://journals.sbmu.ac.ir/index.php/emergency/article/view/9617/7408>.

^[10] Train Them Young Initiative (#2TYI), Magboro. 2022 [Train Them Young Initiative \(#2TYI\) in Magboro](#).

[11] Sleet, D. A. (2018). The Global Challenge of Child Injury Prevention. International Journal of Environmental Research and Public Health, 15(9): 1921. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163498/>.

[12] Train Them Young Initiative (#2TYI), Magboro. 2022 [Train Them Young Initiative \(#2TYI\) in Magboro](#).

[13] Gbadamosi, T. V. Ajayi, O. A (2018). Assessment of Social Studies Theme in Context of Secondary School Religion and National Values Curriculum in Ibadan Metropolis. Nigerian Journal of Social Work Vol 17: 149 -162 https://www.researchgate.net/publication/343190129_Assessment_of_Implementation_Of_Social_Studies_Theme_In_Context_Of_Secondary_School_Religion_and

◀ Floridians Deserve Fair Representation, Ending Gerrymandering is the First Step Foundations: Let's "Un-Stack" the Cards Against the Very Organizations Who Most Need Your Funding ▶

More from The Wagner Review



Foundations: Let's "Un-Stack" the Cards Against the Very Organizations Who Most Need Your Funding

05/11/2023 NYU Wagner Review



Floridians Deserve Fair Representation, Ending Gerrymandering is the First Step

04/08/2023 NYU Wagner Review



Unfogging the Green Mystery: Investors Are Waiting for More Transparency

04/06/2023 NYU Wagner Review

Copyright All Rights Reserved | Theme: BlockWP by Candid Themes.

Search ...	SEARCH
------------	--------