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EFFECT OF IEC INTERVENTIONS IN WASH TO PROMOTE HAND WASHING PRACTICES AMONG PRIMARY SCHOOL CHILDREN IN KASONGO MUNICIPALITY, DRC

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ABSTRACT

Poor personal hygiene and lack of knowledge about hand washing, leads to communicable diseases. Personal hygiene plays a major role to promote healthy life. The objective of this study is to promote hand washing and practices among primary school children in the Kasongo Municipality, Democratic Republic of the Congo. It is a cross sectional descriptive study conducted on 294 school children of Kasongo municipality. All the students were interviewed with a structured questionnaire (pretest). A visual display of good and bad personal hygiene was shown on projector and explained the benefits of good personal hygiene behavior that can be gained through the IEC interventions in WASH. Again, structured questionnaire was given (posttest). As results, most of the school children belonged to the 9 – 11 years age group (35.0%). The knowledge of the school children regarding the importance of hand washing was 92.9% in posttest as compared to 56.5% in pretest. The main reason for washing hands to prevent diseases is shown by 60.5% in posttest as compared to 37.8% in pretest. Being ever educated on hand washing was 71.8% in posttest compared to 46.3% in pretest. Washing hands with soap with someone pouring little clean water was considered as a part of personal hygiene by 43.2% in posttest as compared to 39.6% in pretest. Knowledge about using ash in critical times instead of soap was 73.1% as compared to 28.6% in pretest. Only 20.0% of school children had the habits to wash their hands when in school (pretest) while 73.8% (posttest) children were aware of this fact. Most of children washed their hands with soap after using toilet (75.9%) in posttest compared to 39.2% in pretest. Washing hands with soap when they are dirty was stated in 64.6% in posttest compared to 43.5% in pretest. Overall trend of knowledge and practice about personal hygiene was in poor conditions among school children at the time of pretest. Posttest results were highly satisfactory.

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INTRODUCTION

Hand washing is important and very effective in preventing communicable diseases. Hand washing is known very important for children because as they are considered more vulnerable to infections gained from unwashed hands and also due to their state of unhealthy behavior. Impact on diseases due to inadequate and unsafe water, lack of sanitation and poor hygiene behavior is a complex issue (Hyhiene). Many infections start when hands are contaminated with microorganisms. This can happen after using the toilet, coughing or blowing your nose, playing, handling garbage and touching other contaminated surfaces (Majorin, 2014). Most diseases such as diarrhea and pneumonia are transmitted mainly by contaminated hands, diarrhea and pneumonia alone kills an estimated 1.7 million children every year. Many of these deaths can be prevented by hand washing with soap (UNICEF, 2013).

However in many developing countries; there is low level of hand washing wish soap (WHO/UNICEF, 2022). Improvements in hygiene behaviour are the most important barrier to many infectious diseases; because with safe behaviour and appropriate facilities, people reduce their risk of becoming exposed to diseases (Nath, 2009; Van Wijk, 2003). As hands is an important mode of transmission of infectious disease among school-age children. Simple hand washing with soap helps to protect children from the two common global pediatric killers (diarrhea and respiratory infections) (Kinley Britt, 2011; Aiello, 2008), hand hygiene significantly reduce illness-related absences in elementary school students by 26% (Nandrup-Bus, 2009). Critical times for hand washing include after using the toilet, after cleaning a child, and before handling food (Scott, 2007; WHO, 20004). The mere provision of water supply and sanitation facilities is not enough to bring down morbidity and mortality rates (UNICEF, 2018). Water and sanitation facilities linked with hygiene behavior have proven to

be more effective in reducing diarrheal diseases (Van Wijk, 2003; Dube. 2012; Water Aid, 2003) and to support the improvements of sustained behavioral change (Kinley Britt, 2011; Water, 2003; Madeleen, 2000). Poor health hygiene practices can lead to communicable diseases basically within developing countries. In Africa and Southeast Asia, 62% and 31% of all deaths are caused by infectious disease (Curtis, 2009). In developing countries, primary causes of morbidity and mortality among young children are acute respiratory and intestinal infections (WHO, 2009). School is a place which not only provides education to children but also learning environment. Diarrheal diseases, skin diseases, worm infestations, and dental diseases are most commonly associated with poor personal hygiene. The present inadequate knowledge base hinders the development of improved strategies for enhancing the maintenance of personal hygiene, which is of great importance to decrease the burden of communicable diseases in the developing countries (Khatoon, 2017).

Attitudes, knowledge, and beliefs are some of the measures which are thought to be on the causal pathway to behaviour. Poor knowledge and practice of, and attitudes to personal hygiene has negative consequences for a child's long term overall development (Scott, 2007). A study conducted in Ethiopia found that 60% of children surveyed did not know about the possible transmission of diseases through human waste (Kumie, 2005). Awareness of health aspects of sanitation behaviour is important because it determines the degree of sustainability of an intervention in sanitation. Perception strongly influences one's hand washing beliefs and practices. The hygiene behaviour that learn at school made possible through sanitation and hygiene-enabling facilities (Oswald, 2008), and play a major role in ensuring good hand washing practices (Kinley Britt, 2011). A study conducted in Ghana indicates that lack of hygiene enabling facilities at schools and homes did not allow children's to practice the hand washing knowledge they had acquired (Aiello, 2008). Hand washing-facilities must be easily accessible and available at all times with the right materials necessary to make the process a success. A study conducted by Oswald and his colleagues revealed that lack of resources, namely soap and water, as well as inadequate sanitation facilities may be two of the main reasons why children do not wash their hands (Oswald, 2008). The location of hand washing led to some pupils forgetting to wash hands (Jason Cardosi, 2007). Literatures show that Poor hand washing knowledge and practices remains high risk behaviour increasingly responsible for high burden of these diseases. School children based research of hand washing knowledge and practices are required. The factors which may influencehand washing knowledge and practices among school children are complex, interlinked and some are difficult to measure. Previous studies conducted in Ethiopia, particularly in the study area, provide limited details about factors that influencehand washing knowledge and practices among school children. This study, therefore, had investigated factors influence hygiene behaviour among school children. The study bridges the information gap on school hand washing knowledge and practices and to set evidence based intervention at school setting.

METHODS

Study design: A school based cross sectional descriptive study was done on school children of 6 – 12 years age group studying in primary schools in Kasongo Municipality, DRC from December 2021 to May, 2022. Non probability purposive sampling technique was used. Total sample of the study consisted of 294 school children.

Sample size and sampling technique: The target participants for this study were school children in every selected primary school in Kasongo Municipality. Two hundred and ninety-four school children were estimated using a population proportion to participate on the study. A multi-stage probability sample procedure with three stages (Subdivision Education Office, four selected primary schools, and school children networking list) was to select four primary schools. They were selected randomly from the list of primary schools that was given by the Subdivision Education Officer. The reason for the choice of school children in this level (grade four to six) is because they are the more mature and most senior in primary schools. A total of 294 school children were randomly selected from children network list of selected schools, based on the proportional allocation.

Data collection: Structured questionnaire and observational checklist at school setting was used to collect data. The questionnaire was initially drafted in English, translated to French, and then back to English. Four teachers as data collection facilitators at school settings and two health extension workers as data collectors were recruited to facilitate and guide the data collection process. The study staff was given training for three days by the principal investigator on the objective of the study, techniques of assisting study participants whenever they come across difficulties in completing the questionnaire, in order to avoid incompleteness of the questionnaire. Then, the data collection tools were pre-tested on 45 school children in similar school in the study area which was not included in the study. The pre-test had conducted prior to the actual data collection time to assess the suitability of the questionnaire with regards to duration, language appropriateness, content, validity, and question comprehensibility. Some amendments were made after the pretest. WHO indicated that water handling, latrine utilization, and hand-washing are three key hygiene behaviour (Van Wijk, 2003). The questionnaire had consisted of: demographic information (age, gender, address, religion). Knowledge questions on the two key hygiene hand washing (knowledge and practices). The questionnaire includes awareness questions that were determining what can be the effect of IEC interventions in WASH to promote hand washing practices among primary school children in Kasongo Municipality.All questionnaires and records were checked for completeness by the data collectors and supervisors before leaving the area where data collection was done.

Data analysis: Data were analyzed using the statistical software SPSS for windows, version 22.0; Chi-square test was used to make categorical comparisons.

Ethical Consideration: Ethical approval was obtained from the Great Lakes University of Kisumu and Provincial Health Ethical Review Committee in DRC, and permission was obtained from Kasongo Sub-division Education Office. Informed consent was obtained from parents or guardians of the school children, stating clearly the objectives of the study. Verbal consent was obtained from the school children and they were assured of confidentiality.

STUDY FINDINGS

Table 1. Socio-demographic profile

Age group (years)	**n (%)**
6 - 8	75(25.5%)
9 - 11	114(38.8%)
12 years and over	105(35.7%)
Sex	
Boys (male)	164(55.8%)
Girls (female)	130(44.2%)
Religion	
Catholic	86(29.3%)
Muslim	79(29.9%)
Kimbangu	15(5.1%)
Protestant	92(31.3%)
Revival	22(7.5%)

Out of 294 school children, majority of the students were in age group of 9 – 11 years (38.8%) followed by 12 years and over (35.7%). Among 200 school children, male and female children were 55.8% and 44.2%, respectively.

Maximum children were Protestants (31.3%), followed by Catholics (29.3%) and Muslims (26.9%); and other religions such as Revival church (7.5%) and Kimbangu (5.1%) have the low proportions (Table1).

Table 2. Knowledge about hand washing

Variables	Pretest	Posttest
Know importance wash hands	53.0%	92.9%
Main reasons to wash hands		
Prevent diseases	37.8%	60.5%
To removedirt	21.4%	19.7%
To remove germs	21.8%	10.9%
Personal hygiene	19.4%	8.8%
Not to eat with dirty hands	31.3%	57.8%
Critical times or moments		
Before and after to eat	31.3%	57.8%
After visiting toilet	43.5%	2.0%
After playing with friends	2.4%	11.2%
Others	22.8%	29.0%

Knowledge about importance of hand washing was found in 53.0% of school children in pretest while 92.9% agreed this in posttest. Only 37.8% of children knew that the main reasons of washing hands with soap are to prevent diseases, to remove dirt (21.8%), to remove germs (21.4%), and personal hygiene (19.4%) in pretest; while 60.5%, 19.7%, 10.9% and 8.8% recognized respectively those reasons, in posttest.

Table 3: Hand Washing Practice

Variables	Pretest	Posttest
Demonstration how to wash hands with soap		
Wash correctly	37.8%	60.5%
No washing hands before		
To eat and after toilet	60.6%	25.9%

In pretest, 31.3% of school children agreed that they do not need to eat withdirty hands while in posttest, 57.8% agreed this in posttest. School children recognized to wash their hands at different critical times as following: before and after eating (31.3%), after using the toilet (43.5%), after playing with friends (2.4%), and other critical moments (22.8%) in pretest. While in posttest, the results revealed respectively 57.8%, 2.0%, 11.2%, and 29.0% in posttest (Table2). In our study, it was found that 37.8% students washed their hands correctly in pretest while 60.5% washed correctly in posttest (Table3).

Improvement as per reviewer comments: The children are the most important segment of our population and intend to receive attention from family, school, society, and government. Children are truly the foundation of a society because healthy children grow to become healthy and strong adults who can actively participate in the developmental activities of the nation (22). National health policy appealed that promotion child health in voluntary basis found that the children access to hygienic practices widely differ between regions. Overall 60% of children in developing countries had changed to good hygienic practices and self-care measures by best health education by teachers and health-care professional (Kishore, 2007). In our study, it was found that in pretest, 53.0% hand knowledge about hand washing. But, after the IEC interventions, the knowledge was 60.5% in posttest (Oyibo, 2012) in their study argued that this knowledge was 97.4%. In our study, it was found that only 31.3% school children did not eat with dirty hands (Warbhe, 2014) in their study observed that almost 81% students were informed to take bath regularly, whereas it was also found only 3% students were informed to take bath in every alternate days and 16% students were informed to take bath twice a day. In the present study, 57.8% were informed to wash hands before and after eating (Warbhe, 2014) found 31% of the students were informed to brush twice the teeth a day, which is regarded as a standard practice. Two percent school children retained that it was important to wash hands after visiting toilet. Only 11.2% argued to wash hands after playing with friends. In our study, it was found that 57.8% school children were washing their hands before and after eating but only 2.0% were washing after using toilet. In a study conducted by(26), in Angolela, Ethiopia, the majority of students reported washing hands before meals. The percentages of children who reported the importance of and the preference for hand washing before eating were 99.7% and 98.8% respectively. These high proportions are consistent with not only the high proportions of children who reported actually washing their hands before meals, but also after having been trained on where, when and how to wash correctly hands (Oyibo, 2012) reported that 76.1% students wash their hands before meal. A cross-sectional survey was conducted in six rural areas of Bangladesh, to explore knowledge and practices of the school children regarding personal hygiene. Thirty cluster sampling technique was applied coving 180 schools and 1800 students. Data collection took place between March and April, 2011. Data reveal that about 75% children were aware about washing hands within soap after defecation. More than 80% children mentioned about washing hands with soap before meal intake. Although, the children possess good knowledge on few indicators of personal hygiene, their practice was inadequate. It was found that 25.9% did not wash hands with soap before eating and after using toilet.

CONCLUSION

The study was carried out to assess the effect of IEC interventions in WASH to promote hand washing practice among primary school children in Kasongo Municipality, DRC.School based hygiene education is very crucial to decrease the communicable disease rates. Children are more receptive to learning and are very likely to adopt healthy behaviors at a younger age. They can also be agents of change by spreading what they have learned in school to their family and community members. The Many recent researches revealed that investments in infrastructure for safe water and sanitation provision do not significantly reduce the incidence of communicable diseases in the developing world unless they are accompanied by education in hand washing and practices. Ignorant conditions are one of the major causes of diseases due to dirty hands. Then, there is the need for effective hand washing education in the schools to help improve hand washing knowledge and practices. DRC Education service should also consider including hand washing education in the school curriculum which will use teachers as agents in offering the essential knowledge to the children. Hand washing facilities should be made available in all the schools to enable the school children translate knowledge into practice. This can be done by using economic means such as tippy taps which can locally be made.

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