INTERVENTION STRATEGY IN HAND WASHING AMONG BOARDING STUDENTS IN SELECTED SENIOR HIGH SCHOOL, MAMPONG MUNICIPALITY

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Abstract

The purpose of the study was to investigate hand washing procedures among students in Senior High School. The study employed the use of descriptive and experimental research design to investigate the problem. Frequency, percentage and bar chart were used to analyse the data for the research questions. The results indicated that, students have prioritized the importance of hand washing and this was high among boarding schools in the municipality. Again, there was an improvement on how students wash their hand after playing games which used not be the case before the intervention. It is therefore, recommended that school management and government agencies in charge of health and education increase the education on hand washing among students in boarding schools in the municipality.

Keywords: Hand, washing, boarding, intervention, Mampong

1.0 Background to the Study

Although people around the world wash their hands with water, very few wash them with soap at critical moments (for example, after using the toilet, while cleaning a child, and before handling food). Hand washing with soap is among the most effective and inexpensive ways to prevent diarrhoeal diseases and pneumonia, which together are responsible for the majority of child deaths (UNICEF, 2008). According to UNICEF (2008), every year, more than 3.5 million children do not live to celebrate their birthday because of diarrhoea and pneumonia. Yet, despite its lifesaving potential, hand washing with soap is seldom practiced and not always easy to promote.

The challenge is to transform hand washing with soap from an abstract good idea into an automatic behaviour performed in homes, schools communities and worldwide. Hand washing with soap before and after eating, using the toilet are habits that when practised well could save more lives than any single vaccine or medical intervention (Lorna, Kaufmann, Kay, Enanoria, Haller & Colford, 2005).

Hand washing is a cornerstone of public health, and new hygienic behaviours and sanitary services were principal drivers of the sharp drop in deaths from infectious disease in affluent countries in the late 19th century (Brown, Cairncross & Ensink, 2013). Along with the isolation and safe disposal of faeces, the provision of adequate amounts of clean water, hand washing with soap is one of the most effective ways to prevent diarrhoeal diseases; it is also the cheapest way. In addition, hand washing with soap can limit the transmission of respiratory disease.

Micro-organisms accumulate on the hands during the day from variety of sources. Such infection may come as direct contact with people, contaminated surfaces and foods, even animal and wastes. If hands are not washed frequently, infection with micro-organisms may result in diseases by touching eyes, nose or mouth can result. Inadequate hand hygiene also contributes to food-related illness such as cholera typhoid amongst others (Brown, Cairncross & Ensink, 2013).

According to the Center for Disease Control U.S. (CDC, 2002), as many as 76 million people get food borne illnesses each year which can be prevented by simple hand washing. Good hand washing is the first line of defence against the spread of much illness from cold to more serious illnesses like meningitis, bronchitis, influenza, hepatitis A and other infectious diseases. Many people have the misconception that their immediate environment is germs free. This is only possible in true germ free chamber in a lab or in hospital settings. Because we live in a natural world that is full of micro-organisms, living things that cannot be seen with bare eyes can cause illness or disease. Though other micro-organisms are essential to our environment and wellbeing.

1.1 Research Questions

The research questions that guided the entire study were:

1. What is the importance of hand washing to students?
2. How can hand washing intervention strategies improve hand washing practices among students?

2.0 LITERATURE REVIEW

2.1 Importance of hand Washing

Food workers and food service personnel were taught to use correct hand washing before preparing food since it is the best way to assure removal of transient micro-organisms (Snyder, 1994). Not only is hand washing critical in foodservice and food production operations, it is also important in homes and day care operations. A study reported that there was a decline in diarrhoeal illnesses in day care centres when employees were taught to use good hand washing procedures (Ejemot-Nwadiaro, Ehiri, Arikpo, Meremikwu & Critchley, 2015). Effective hand washing is an contribute a lot to preventing disease and illness (Borgatta & Robbins, 1989).

Khan (1982) demonstrated that secondary infection rates within families in Bangladesh due to transfer of pathogenic bacteria (*Shigella*) decreased, when people were taught to wash their hands after defecation and before eating. The study sample was comprised of confirmed cases of shigellosis. Several pieces of soap and earthenware pitchers for storing water were provided to the study families. The sampled respondents were advised to wash their hands with soap and water after defecation and before meals. According to the study, the secondary infection rate was 10.1% in the study group and 32.4% in the control group. After the intervention, the secondary case rate became 2.2% in the study group while the control group became 14.2%. These results suggest that hand washing has a positive interrupting effect, even in insanitary environments (Khan, 1982).

A study done by the University of Westminster Trade Group revealed that after washing and drying hands with the warm air dryer, the total number of bacteria had increased on the average finger pads by 19.4% and on the palms by 25.4%. According to the study, drying with the jet air dryer resulted in an average increase of bacteria on the finger pads by 42% and on the palms by 15%. After washing and drying hands with a paper towel, the total number of bacteria had reduced on average on the finger pads by up to 76% and on the palms by up to 77% (Kretzer & Larson, 1998).

In a similar study, jet air dryer, which blows air out of the unit at a speeds of 400 mph, was capable of blowing micro-organisms from the hands. The result revealed that warm air hand dryer spread micro-organisms up to 0.25 meters from the dryer and also, paper towels showed no significant spread of micro-organism and clostridium difficult spores from hands (Jabbar, Leischner, Kasper, Gerber, Susan, Sambol & Parada, 2010).

3.0 RESEARCH METHOD

The approach used in studying the problem under investigation is described under the headings, research design, population of the study, sampling method, instrumentation, data collection procedure, validity and reliability of the instruments.

3.1 Research Design

The design used for the study was a mixed type. Experimental and descriptive research designs were used to guide the study (Mitchell, 2015; Dulock, 1993). Experimental design was used to examine the strategy of hand washing among students and descriptive design was also employed to find out whether the students value hand washing practices at the school.

3.2 Sample and sampling Procedure

There were many strata to deal with so stratified random sampling method was used for the study. In all one hundred and twenty (120) students were sampled as respondents for the study. The respondents were selected from final year students in three boarding schools in the municipality. Stratified sampling method was used to sample the respondents from the population by dividing the stratum into three homogenous strata.

3.3 Research Instrument

The instrument for the study was a questionnaire to collect Pre-test and Post-test data. The pre-test questionnaire items were based on issues on general hand washing knowledge and practices of students before the intervention was carried out. The post-test questionnaire items were based on students' experience, knowledge and benefits after the experiment was conducted. Most of the items on the questionnaire were close ended items.

3.4 Intervention on Effective Hand washing

Students were assembled at a point and demonstrated to on how to do effective and proper hand washing. Running water and soap was used during the demonstration and student leaders were also asked to practice how it should be done. The students were given a guide line as how the hand washing ought to be done.

3.5 Hands must always be washed before:

1. Going to dinning
2. Eating
3. Treating wounds or giving medicine

4. Touching a sick or injured person
5. Inserting or removing contact lenses

3.6 Hands must always be washed after:

1. eating food, especially fruits
2. Using the toilet
3. Touching an animal or animal toys, leashes or waste
4. Blowing your nose, coughing or sneezing into your hands
5. Treating wounds
6. Touching a sick or injured person
7. Handling garbage or something that could be contaminated, such as a cleaning cloth or soiled shoes.

3.7 How to wash your hands

It's generally best to wash your hands with soap and water. Follow these simple steps:

1. Wet your hands with running water.
2. Apply liquid, bar or powder soap.
3. Lather well.
4. Rub your hands vigorously for at least 20 seconds. Remember to scrub all surfaces, including the backs of your hands, wrists, between your fingers and under your fingernails.
5. Rinse well.
6. Dry your hands with a clean or disposable towel or air dryer.
7. If possible, use your towel to turn off the faucet.

It must be kept in mind that antibacterial soap is no more effective at killing germs than regular soap. Using antibacterial soap may even lead to the development of bacteria that are resistant to the product's antimicrobial agents making it harder to kill these germs in the future.

3.8 Data Collection

The questionnaires were administered after seeking the necessary permission from the school authorities. This gave the researchers the opportunity to interact with the students, explain the rationale for the study to the students. Adequate time was given to the respondents to complete the questionnaire before and after the intervention on hand washing.

3.9 Data Analysis

The data collected was analysed with the use of frequency distribution and the result was put in tables and charts for discussion. Each question was analysed and generalizations made after each analysis. Responses with highest percentages were considered to be the general opinion with regards to that question.

4.0 RESULTS

4.1 Importance of Hand washing among Students

In addressing the research question, the field data has been analysed and presented in Figure 1.

Level of importance of hand washing among schools

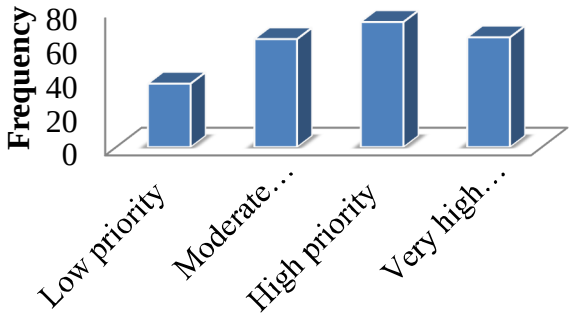

Figure 1- Level *of importance of hand washing among schools*

Figure 1 shows the level of importance of hand washing among schools. It indicated that 15.5% of the students perceived priority of importance of hand washing is very low, 26.9% perceived to be moderate, 30.7% perceived to be high and 26.9% perceived to be very high. This result indicated that majority of the students prioritized the importance of hand washing among schools to be high.

Table 1- Level of effectiveness and impact of hand washing in preventing diseases

Description	Very low		Low		High		Very high	
	No.	%	No.	%	No.	%	No.	%
Effectiveness of hand washing	39	16.0	18	7.4	63	25.8	124	50.8
Impact of hand washing	26	10.5	31	12.5	85	34.3	106	42.7
Poor hand washing effect	28	11.8	17	7.1	84	35.3	109	45.8

Table 1 shows the level of effectiveness and impact of hand washing in preventing diseases. It indicated that 16% of the students perceived the effectiveness of hand washing in preventing diseases is very low, 7.4% perceived to be low, 25.8% perceive to be high, and 50.8% perceived to be very high. This depicted that after the experiment majority of the students have recognized the effectiveness of hand washing practices in preventing diseases.

Table 1 also shows that 26% of the students perceived the impact of hand washing in preventing diseases is very low, 12.5% perceived to be low, 34.3% perceived to be high, and 42.7% perceived to be very high. This also suggested that after the experiment most students have seen the impact of hand washing practices in preventing diseases.

Again, Table 1 shows that 11.8% of the students perceived poor hand washing practices affect the health of students is very low, 7.1% perceived to be low, 35.3% perceived to be high, and 45.8% perceived to be very high.

4.2 Hand washing practice before and after activities in school

In addressing how hand washing is done before and after activities, the results are presented in two folds. The first part of the result is presented as Pre-Test and the second part for the Post-Test as in Tables 1 and 2 respectively.

4.3 Pre-Test result on effective Hand Washing

The Pre-test result on how effective hand washing among students is presented in Table 1 for discussion.

Table 2 –Pre-Test result on state of hand washing practices

Activity	Yes		No	
	No.	%	No.	%
Visiting toilet	32	64.0	18	36.0
Eating food	38	76.0	12	24.0
Touching raw materials	23	46.0	27	54.0
Touching rubbish	29	58.0	21	42.0
Playing game	11	22.0	39	78.0

Table 2 shows the state of hand washing practices in St. Monica's senior high school. It indicated that 64% of the students washed their hands after visiting toilet while 36% of the opposite opinion. Seventy-six per cent (76%) of the students washed their hands before eating while 24% of them do not. Again, while 46% of the respondents washed their hands before/after touching raw materials, 54% of the students did not. Fifty-eight per cent (58%) of the students washed their hands after touching rubbish while 42% of them did not. Finally, 78% of the students did not wash their hands after playing games whiles 22% of the students wash their hands after playing games.

4.4 Post-Test Result on Effectiveness of Hand Washing

The result for the Post-Test on effectiveness of hand washing is presented in Table 3 for discussion.

Table 3- Post –test result on state of hand washing practices

Activity	Yes		No	
	No.	%	No.	%
Visiting toilet	223	90.3	24	9.7
Eating food	244	99.6	1	0.4
Touching raw materials	180	74.4	62	25.6
Touching rubbish	208	85.2	36	14.8
Playing game	174	71.3	70	28.7

Table 3 shows the state of hand washing practices in selected senior high schools of the Mampong Municipal Assembly area. It indicated that 90.3% of the students washed their hands after visiting toilet while 9.3% were of the opposite opinion. About 100 % (99.6%) of the students washed their hands before eating while 0.4% of them did not. Again, while 74.4% of the respondents washed their hands before/after touching raw materials, 25.6% of the students did not. Also, 85.2% of the students washed their hands after touching rubbish while 14.8% of them did not.

Finally, 28.7% of the students did not wash their hands after playing games whiles 71.3% of the students washed their hands after playing games. These results showed a complete shift as compared with the pre-test result in Table 2.

5. 0 DISCUSSIONS

5.1 Effectiveness and importance of Hand washing

The experiment on effective hand washing had shown that majority of the students have prioritized the importance of hand washing. This was due to the fact that the students have seen the importance and benefits of washing their hands before and after engaging in any activity that could attract germs on their bodies. The finding in this study was similar to what was found earlier in the work of Khan (1982) that children are not likely to suffer from diarrhoea and other related diseases that could be gotten out of improper hand washing. The finding in this study thus suggests that students were not likely to be infested with diseases that have something to do with improper washing of hands at school.

The Pre-Test result indicated that majority of the students have recognized effective way of hand washing so as to prevent diseases. This result has indicated that the students know the importance of hand washing. The intervention on effective hand washing therefore had yielded a positive result. Making available the needed hand washing materials in school suggests that students could be washing their hands regularly to prevent diseases. This finding was affirmed in an earlier finding of Borgatta and Robbins (1989) that hand washing and disinfection helps to prevent the spread of disease and illness among students.

5.3 Conclusion

Hand washing when practised among students could be an effective way of preventing diseases that should have been the case among students. Students' play a lot and the intervention result had shown that hand washing can prevent micro-organisms that can easily affect them when their hands are not washed. Hand washing behaviour is a factor that could be encouraged when the necessary items or materials such as soap and running water are provided. The students after developing hand washing attitude could influence their siblings and friends to follow suit. This could help develop the positive attitude towards hand washing among the youth.

Students accepting the fact that poor hand washing could affect their health would make them to take hand washing as an important practice. This would then help to prevent common illnesses that usually affect boarding students or could be reduced. Since, students were not with their parents or guardians, few of them may be washing their hands at the boarding schools. Acceptance of hand washing concept among students could help in addressing the phenomenon where students would only wash their hands when there is supervision.

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