

Loss versus Gain: Integrating Technology and Message Framing in Promoting Proper Hand Washing Among Grade 1 Pupils

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ABSTRACT

One of the major functions of nurses is to promote health and wellness of individuals both healthy and ill. Promoting proper hand washing is the most basic infection-control measure a nurse can assume to attain this goal. Individuals become more susceptible to diseases without proper practice and sufficient understanding of this skill. It is a challenge for nurses to encourage the people to be compliant in making hand washing a necessary part in the maintenance or improvement of their health. This is especially true for school-aged children, who are constantly exposed to the environment and thus to bacterial and infectious agents, are at a higher risk. Technology has widened the dissemination of knowledge. Audio-Visual Presentations (AVP) has made education and learning more easily facilitated. Education involves giving information to improve knowledge about a certain concept and Message Framing is one method. The study combined the two strategies in promoting hand washing.

The objective of this study is to determine which type of message framing through an AVP: positive (shows benefits and gains) or negative (shows risks and losses), is more effective in promoting proper hand washing among Grade 1 pupils. The researchers included 72 grade 1 pupils from a public elementary school to participate in the study through convenience and cluster sampling. The data was gathered through a pre-test and post-test method. In the analysis, the total average scores of the posttest of each group, positive message framing and negative message framing, was used to determine which type of message framing through an AVP is more effective in teaching and promoting proper hand washing. Further, the paired t-test method was used to determine if there is a significant increase in the average scores of all the students from pretest to posttest to see if there is an improvement in the knowledge and beliefs of students regarding proper hand washing. A 17-item Hand Hygiene Questionnaire served as a pretest and posttest to gather data.

The findings showed that positive message framing through an AVP is more effective in promoting proper hand washing among Grade 1 pupils. Positive message framing group showed a higher posttest average and indicates better

understanding and improved knowledge about proper hand washing. This result of this study will help nurses as well as teachers and other health care professionals in applying a new strategy in promoting health and wellness among their clients.

INTRODUCTION

Wellness, according to Anspaugh, Hamrick, & Rosata (as cited in Kozier & Erb, 2008), is a process that engages in activities and behaviors that enhance quality of life and maximize personal potential. The role of the nurse is vital in achieving wellness for their clients and health promotion is a major factor in attaining this goal. The World Health Organization defines health promotion as the process of enabling people to increase control over, and to improve, their health. This may involve individual and community activities to enhance healthy lifestyle such as proper hygiene (Kozier & Erb, 2008).

One of the basic components of good hygiene is proper hand washing. Hand washing is important in every setting because it is considered one of the most effective infection control measures (Kozier & Erb, 2008). Microorganisms that cause these infections can be easily transmitted from one person to another. A good example would be the A (H1N1) virus, which spread globally last 2009. One of the modes of transmission of the virus was through coming in contact with surfaces contaminated by it. Practicing proper hand washing would prevent such transmission.

According to Taylor, et al. (2010), although it is known that hand washing is the primary way of preventing common communicable diseases it is not as common as it should be in the general population. It shows that not all individuals value the importance of proper hand washing as a means to prevent diseases. Though they are aware of its benefits to health, they don't give much attention to its essentiality. It is a challenge for nurses to encourage the people to be compliant in making hand washing a necessary part in the maintenance or improvement of their health.

Several studies have shown that adults fail to wash their hands frequently and effectively. In a study by Scott, et al. (2007), women in Ghana were observed for their hand washing behaviors. The results showed that only 4% washed their hands post defecation and only 5% washed their hands

prior to feeding their children. Another study by Surgeoner, Chapman, & Powell (2009) on university student's hand hygiene practices during a gastrointestinal outbreak revealed that upon observation, only 17.4% complied with hand hygiene practices.

In the Philippine setting, actions have been made for infection control measures. There is the Implementation of the Essential Health Care Program (EHCP) under the DepEd Order No. 65, s. 2009 by the Department of Education (DepEd) together with the League of Provinces of the Philippines (LPP) and Fit for School, Inc. This memorandum includes the implementation of daily and proper hand washing with soap among school children. Another House Resolution implemented was the DepEd Memorandum 450, s.2009 otherwise known as the Implementation of an Annual Global Hand washing Day every 15th of October. These programs advocate school-based interventions of daily hand washing with soap and water with emphasis on the importance of such practice as the simplest, most cost-effective way of sanitation and hygiene and reduction of diseases.

According to the Center for Disease Control (2010), middle childhood or school-aged children experience development of skills rapidly and the school environment brings them in regular contact to the larger world. At this stage, they use more frequently their hands such as in tying their shoes, dressing themselves, and catching a ball. These activities make them more vulnerable to diseases. It has shown that children under 15 years old who practiced proper hand washing had 50% less incidence of colds or difficulty breathing and children under 5 years also had 50% less incidence of pneumonia. Impetigo was also reduced to 36% (Agboatwalla as cited in Rosen, et al. 2009). It is better to teach children at a younger age about basic hand washing techniques and let them practice it as a daily routine so that eventually it will be integrated in their lifestyle. Making it a habit reduces the chances of transmitting microorganisms to others and lessens their vulnerability to diseases thus leading to a healthier life.

The advent of technology provided a new means of disseminating information among people. The use of TV, radio and newspaper provided much more information in an easier way. Audio-Visual Presentations or AVP's have also been greatly used today as media for education and communication. The Center for Communicable Disease together with the Association of Professionals in Infection Control and Epidemiology (as cited in The American Nurse, 2008) developed a DVD about hand hygiene wherein newly admitted patients watched a video promoting infection control. Video presentations have also been used in teaching hand washing in

autistic children. In a study by Rosenberg, Schwartz, & Davis (2010), 2 out of the 3 children acquired some of the skill while the other one learned and performed almost 80% of the skill.

Message framing is one method that can be used in providing information to various groups of people. Rothman and Salovey (as cited in Szklo&Freire, 2010) defined message framing as a method of message tailoring that involves manipulating how information is framed in order to affect people's behavioral changes. This method of providing information to affect the beliefs and perceptions of people can be very significant especially if it can help in improving the quality of their life. There are two common methods by which message can be framed. According to Rothman and Salovey (as cited in Szklo&Freire, 2010), messages can be framed in terms of gains and losses. Gain-framed messages, otherwise known as Positive framing, typically present benefits achieved by adopting a target behavior whereas loss-framed messages, also known as Negative framing, usually convey costs of not adopting a target behavior.

With the studies showing that message framing is an effective means of improving the knowledge and attitudes of individuals, and the use of technology is an effective means of providing information, integrating these two could contribute in enhancing health promotion measures of health care professionals specifically nurses. Nurses will be able to upgrade their health promotion measures among their clients using the latest advancements of technology and information dissemination thus improving the lives of their clients.

METHODS

Research Design

The research is a quantitative study with a quasi experimental design. There was no control group used in the study. Each section was under a treatment which was either a positive message framing AVP or negative message framing AVP. In the quasi experimental design, the researchers used the non-equivalent experimental design, which involves an experimental treatment and two groups of subjects are observed before and after its implementation. The study also used the pre-test – post-test design wherein data was collected before and after the intervention. In this study the two (2) sections all took a pretest then underwent the intervention and finally took the post-test. This design is done to show if there will be a difference because of the intervention.

Sample and Sampling Technique

The researchers used a combination of convenience and cluster sampling for this study. The sample comprised of two classes in the 1st grade level of Moises Salvador Elementary School, a public

school in the City of Metro Manila. Both classes consisted of thirty-six (36) pupils each, totaling to a number of seventy-two (72) pupils. The sample was divided according to their responding sections: the one section watched the AVP of the effects of hand washing through the positive framing method and the other section watched the AVP of the effects of hand washing through the negative message framing method. All respondents of the study answered the pre-test and post-test questionnaires.

Data Collection Instrument

The instrument used in the study was a questionnaire patterned and based from Hand Hygiene Questionnaire developed by Thea van de Mortel of Southern Cross University, Australia. Originally this questionnaire was designed to measure the hand hygiene knowledge of health professionals. The questionnaire was then modified and translated in the Filipino language and was adapted to the understanding of grade one pupils. The modified questionnaire is now referred to as the Student Hand Hygiene Questionnaire in this study. The questionnaire was used as a pre-test and post-test tool and it measures how satisfactory the

knowledge and beliefs of students regarding proper hand washing is. It is an alternate response or true/false type test. The researchers selected 17 questions that would be applicable to 1st grade students and translated into the Filipino language in order for the students to better understand the said questionnaire. During the administration of the tests, the researchers read the questions out loud one by one as the students followed through.

Validation of the Data Gathering Instrument

The Hand Hygiene Questionnaire, in its pilot study, proved to be a reliable and valid tool. It had the following Cronbach's Alpha values = 0.80, 0.74 and 0.77. The revised and translated Student Hand Hygiene Questionnaire used in the study was subjected to validation to ensure a substantial data collection. The content and face validation of the said tool was made by experts in elementary education. Comments and suggestions given by the evaluators were considered and integrated for the improvement of the data gathering instrument.

Data Collection Procedure

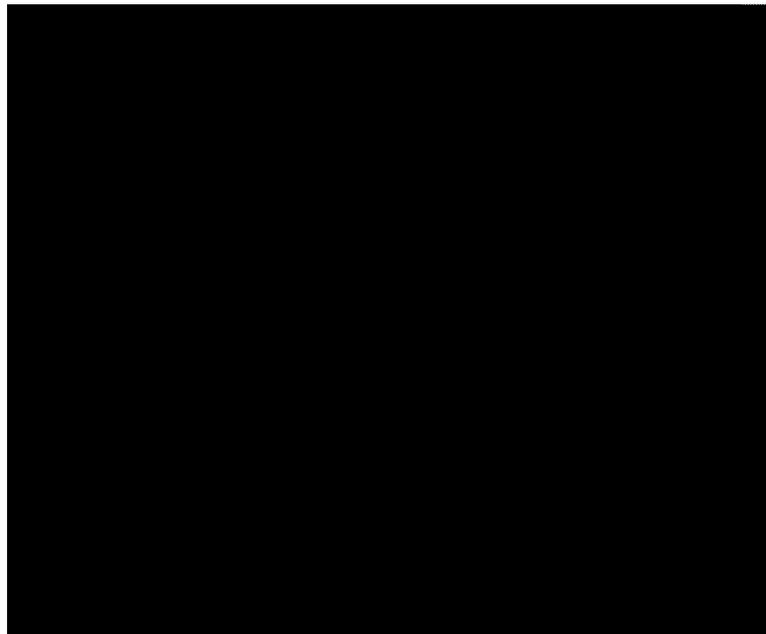


Figure 1 Data Collection Procedure

Figure 1 shows the flowchart of the data gathering procedure. The study was conducted in a public elementary school in Metro Manila. Data collection started with a pre-test questionnaire that assessed the knowledge and beliefs of grade 1 pupils regarding hand washing. The two sections were each assigned to an intervention. One class of grade 1 pupils (Garnet) was subjected to the positive framing method while the other class (Emerald) of the same level was shown the negative framing method. The teaching

methodology made use of an Audio-Visual Presentation (AVP). Post test was given right after the pupils have watched the AVP. The data was then collected, organized, analyzed and interpreted by the researchers.

Statistical Treatment of Data

The following statistical tools were used in the analysis and interpretation of data:

Frequency Distribution and Measures of Central Tendency (Mean).

This statistical treatment was used in interpreting and evaluating the performance of the students prior to the intervention and in determining if there was an improvement in the scores from the pre-test to the post-test of the two groups.

Paired t-test

Paired t-test was used when researchers obtained the two measures, the pretreatment and post treatment scores. Researchers used a 0.05 level of significance.

proper hand washing among grade 1 pupils. It also would like to determine the knowledge and beliefs of grade 1 pupils about hand washing prior to the intervention and if message framing through the use of an Audio-Visual Presentation be effective in improving the knowledge and beliefs of Grade 1 pupils regarding proper hand washing.

The result of the pretest is shown in Table 1. It shows the tally of all students/pupils who made incorrect and correct answers for the pre-test showing the initial knowledge and beliefs of the pupils prior to the intervention.

RESULTS AND DISCUSSION

Generally, the study aims to answer the type of message framing that is more effective in teaching

Table 1 Tally of all students who made incorrect and correct answers for the pre-test

Questions	No. of pupils with correct answers	%	No. of pupils with incorrect answers	%
1. I have a duty to act as a role model for my classmates. (Tungkulin ng isang bata ang maging halimbawa sa kanyang mga kaklase.)	52	72	20	28
2. I can't always perform hand hygiene when I'm busy or there are tasks to be completed. (Hindi makapaghuhugas ng kamay kapag maraming ginagawa.)	20	28	52	72
3. I can't always perform hand hygiene when I'm studying or playing. (Hindi ako makapaghuhugas ng kamay kung naglalaro o nag-aaral.)	27	38	45	62
4. It is important that I follow my teacher in doing proper handwashing. (Isang mabuting gawain ang pagsunod sa guro sa tamang paraan sa paghuhugas ng kamay.)	46	64	26	36
5. I believe poor practices and beliefs regarding hand hygiene can be changed in school or at home. (Kayang baguhin ang maling nakasanayan at kaugalian sa paghuhugas ng kamay sa paaralan o bahay)	56	78	16	22
6. Failure to perform hand hygiene can be considered negligence. (Isang kapabayaan ang hindi paghuhugas ng kamay.)	50	69	22	31
7. Hand hygiene is a practice I child should do everyday. (Ang paghuhugas ng kamay ay isang kaugalian ng mga bata sa araw-araw.)	51	71	21	29
8. I am confident I can effectively teach my knowledge of hand hygiene to others. (Isang mabuting gawain ang pagtuturo ng tamang paghuhugas ng kamay sa iba.)	47	65	25	35
9. Hand hygiene should be a habit. (Ang paghuhugas ng kamay ay dapat makasanayan.)	57	79	15	21
10. Dirty sinks can be a reason for not washing hands (Ang maduming lababodahilan para hindi maghugas ng kamay.)	22	31	50	69
11. It is important to use soap when doing hand hygiene practice. (Mahalaga ang paggamit ng malinis na sabon sa paghuhugas ng kamay.)	47	65	25	35
12. Hand hygiene can help prevent sickness. (Ang	57	79	15	21

paghuhugas ng kamay ay nakatutulong para maiwasan ang sakit.)				
13. Proper hand hygiene practices prevent acquiring of infections.(Ang tamangpaghuhugas ng kamay ay makaiwas sa pagkakaroon ng impeksyon.)	57	79	15	21
14. The spread of contagious diseases can be prevent through proper hand hygiene.(Maiiwasan ang pagkalat ng nakahahawangsakit sa pamamagitan ng paghuhugas ng kamay.)	54	75	18	25
15. It is a good practice to wash hands after going to the toilet. (Isang mabutinggawain ang paghuhugas ng kamay pagkagaling sa banyo.)	60	83	12	17
16. Wash hands when it is already dirty.(Huhugasan ang kamay kapagito'ymadumina.)	60	83	12	17
17. Hand washing should be done after touching dirty objects. (Pagkatapos humawak ng madudumingbagay, nararapat na maghugas ng kamay.)	67	93	5	7

Based on the results of the pre-test, the top 3 questions where the grade 1 pupils answered incorrectly are the following:

- Question 2: I can't always perform hand hygiene when I'm busy or there are tasks to be completed.
- Question 3: I can't always perform hand hygiene when I'm studying or playing.
- Question 10: Dirty sinks can be a reason for not washing hands.

Out of the seventy two (72) pupils who took the pretest, 52 (72%) got an incorrect answer for questions number 2; 45 (62%) got an incorrect answer for number 3 and 50 (69%) got an incorrect answer for number 10.

The result of the posttest is shown in Table 2. It shows the tally of all students/pupils who made incorrect and correct answers for the pre-test showing the initial knowledge and beliefs of the pupils after the intervention.

Table 2 Tally of all students who made incorrect and correct answers for the post-test

Questions	No. of pupils with correct answers	%	No. of pupils with incorrect answers	%
1. I have a duty to act as a role model for my classmates.(Tungkulin ng isang bata ang maging halimbawa sa kanyang mga kaklase.)	56	78	16	22
2. I can't always perform hand hygiene when I'm busy or there are tasks to be completed. (Hindi makapaghuhugas ng kamay kapagmaramingginagawa.)	32	44	40	56
3. I can't always perform hand hygiene when I'm studying or playing. (Hindi ako makapaghuhugas ng kamay kung naglalaro o nag-aaral.)	42	58	30	42
4. It is important that I follow my teacher in doing proper hand washing. (Isang mabutinggawain ang pagsunod sa guro sa tamangparaan sa paghuhugas ng kamay.)	50	69	22	31
5. I believe poor practices and beliefs regarding hand hygiene can be changed in school or at home. (Kayangbaguhin ang malingnakasanayan at kaugalian sa paghuhugas ng kamay sa paaralan o bahay)	56	78	16	22
6. Failure to perform hand hygiene can be considered negligence. (Isang kapabayaan ang hindi paghuhugas ng kamay.)	55	76	17	24
7. Hand hygiene is a practice I child should do everyday.(Ang paghuhugas ng kamay ay isang kaugalian ng mga bata sa araw-araw.)	57	79	15	21

8. I am confident I can effectively teach my knowledge of hand hygiene to others. (Isang mabuting gawain ang pagtuturo ng tamang paghuhugas ng kamay sa iba.)	53	74	19	26
9. Hand hygiene should be a habit.(Ang paghuhugas ng kamay ay dapat makasanayan.)	54	75	18	25
10. Dirty sinks can be a reason for not washing hands (Ang maduminglabodahilan para hindi maghugas ng kamay.)	39	54	33	46
11. It is important to use soap when doing hand hygiene practice. (Mahalaga ang paggamit ng malinis na sabon sa paghuhugas ng kamay.)	52	72	20	28
12. Hand hygiene can help prevent sickness.(Ang paghuhugas ng kamay ay nakatutulong para maiwasan ang sakit.)	57	79	15	21
13. Proper hand hygiene practices prevent acquiring of infections. (Ang tamangpaghuhugas ng kamay ay makaiwas sa pagkakaroon ng impeksyon.)	61	85	11	15
14. The spread of contagious diseases can be prevent through proper hand hygiene. (Maiiwasan ang pagkalat ng nakahahawang sakit sa pamamagitan ng paghuhugas ng kamay.)	59	82	13	18
15. It is a good practice to wash hands after going to the toilet. (Isang mabutinggawain ang paghuhugas ng kamay pagkagaling sa banyo.)	60	83	12	17
16. Wash hands when it is already dirty.(Huhugasan ang kamay kapagito'ymadumina.)	58	81	14	19
17. Hand washing should be done after touching dirty objects. (Pagkatapos humawak ng madudumingbagay, nararapat na maghugas ng kamay.)	67	93	5	7

Table 2 showed that there was a decrease in the number of students with incorrect answers for questions 2, 3 and 10. For questions 2 there was a 16% decrease, 20% decrease for number 3 and 23% decrease for number 10. Table 2 also shows that there is a decrease in the percentage of almost all the incorrect answers per question as compared to the pre-test results.

The results of pretests and post tests were compared and shown in Table 3. This is to statistically prove if there is a significant difference in the overall results. The researchers had the following hypotheses:

Alternative Hypothesis: There will be a significant difference in the scores of the

Grade 1 pupils from pre-test to post-test upon showing an Audio-Visual Presentation about hand washing.

Null Hypothesis: There will be no significant difference in the scores of the Grade 1 pupils from pre-test to post-test upon showing an Audio-Visual Presentation about hand washing.

*Test at 0.05 level of significance

Table 3 presents the frequency, mean score and the interpretation of the results of the grade 1 pupils' pre and post the intervention of Message Framing through an Audio – Visual Presentation in promoting proper hand washing.

Table 3 Pre-test and Post-test Scores of the 72 Grade 1 Pupils

Garnet Student No. (POSITIVE)	Pre-test	Post-test
06	16	16
22	15	15
15	15	16
14	15	15
04	15	13
13	14	15
23	14	15
01	14	13

35	14	15
24	14	15
12	14	13
21	13	12
02	13	13
11	13	13
34	13	10
25	13	12
26	13	11
10	13	12
03	13	14
28	12	14
27	12	13
05	12	14
09	11	8
07	11	14
29	10	12
18	10	12
29	10	12
08	9	12
30	8	10
20	8	14
31	8	12
17	7	9
33	6	9
19	6	15
32	6	11
16	4	14
Emerald Student no. (NEGATIVE)	Pre-test	Post-test
26	16	16
07	16	17
22	15	15
15	15	16
30	15	15
27	15	16
02	15	15
23	15	14
10	15	16
29	14	14
01	14	11
28	14	15
11	14	16
16	13	14
05	13	14
17	13	15
24	13	11
06	13	11
25	13	14
19	13	14
03	12	8
18	12	10
31	11	8
09	9	14
12	9	11
04	9	11
32	9	14
36	9	9
13	7	11
33	7	10

21	7	12
08	7	10
34	6	5
14	6	7
35	6	7
20	6	9

The following results were obtained:

Hypothesis Testing

Computed t-test value: 3.45
Degree of Freedom: 71
Critical Value: 1.666
Decision: Accept Alternative, Reject Null

A significant difference of the results from the pre-test to post-test scores of most of the Grade 1 pupils upon showing the AVP implies that there

was an improvement in their knowledge and beliefs regarding proper hand washing.

Table 4 below shows the Department of Education (DepEd) grading system for public elementary schools in the Philippines as of the year 2003. This scale will be used as a basis for determining the difference in scores in positive messaging framing and negative message framing. This scale is used in interpreting 17-item examinations given to students.

Table 4 Test Score Scale

MEAN SCORE	PERCENTAGE	MEANING/INTERPRETATION
17 – 15.98	100 – 95	Outstanding
15.81 – 14.96	94-89	Very Good
14.79 – 13.94	88-83	Good
13.77 – 12.75	82-75	Fair
Below 12.75	71-75	Poor

Based on the scale, a percentage of 100 – 94 or a mean score between 17 – 15.98 indicates an “Excellent” performance on the test, a percentage of 93 – 88 or a mean score between 15.81 – 14.96 indicates a “Very Good” performance, a percentage of 87 – 82 or a mean score of 14.79 – 13.94 indicates a “Good” performance, a percentage of 81 – 75 or a mean score of 13.77 – 12.75 indicates

“Fair” and a percentage of below 75 or a mean score below 12.75 indicates “Poor” performance.

Table 5 presents the frequency of scores and mean score of both positive and negative message framing groups after the intervention of message framing through an Audio-Visual Presentation.

Table 5 Frequency, Mean Score and Interpretation of Post-test Scores per Message Framing Group of Grade 1 Pupils

POSITIVE MESSAGE FRAMING GROUP (Garnet)			NEGATIVE MESSAGE FRAMING GROUP (Emerald)		
SCORE (x)	FREQUENCY (f)	fx	SCORE (x)	FREQUENCY (f)	fx
1	0	0	1	0	0
2	0	0	2	0	0
3	0	0	3	0	0
4	0	0	4	0	0
5	0	0	5	1	5
6	0	0	6	0	0
7	0	0	7	2	14
8	1	8	8	2	16
9	2	18	9	2	18
10	2	20	10	3	30
11	2	22	11	6	66
12	8	96	12	1	12
13	6	78	13	0	0
14	6	84	14	8	112

15	7	105	15	5	75
16	2	32	16	5	80
17	0	0	17	1	17
N = 36			N = 36		
Mean Score = 12.86			Mean Score = 12.36		
Interpretation of Mean Score: FAIR			Interpretation of Mean Score: POOR		

Grade 1 pupils under the Positive Message Framing Group showed a higher post-test average score, which is 12.86 and corresponded to a “Fair” performance than to the average post-test score of the Negative Message Framing Group, which 12.36. This shows that they learned more about hand washing through knowing the benefits and

gains they can acquire when they perform proper hand washing.

DISSCUSION

The results of the study can be based on this model:

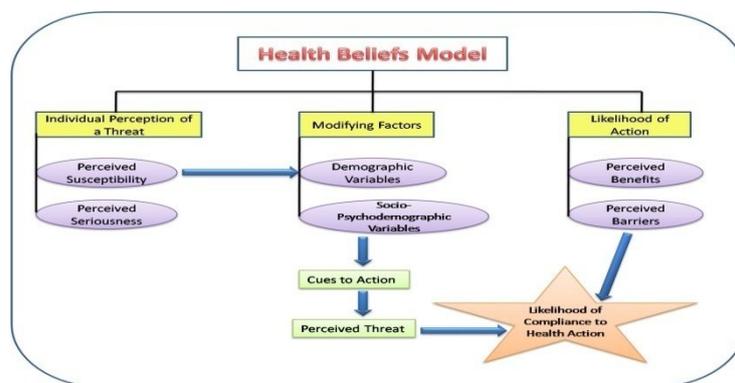


Figure 2 Health Belief Model

Figure 2 shows Health Belief model by Becker (1978). According to this model the likelihood of compliance to actions that will benefit one’s health is dependent upon many factors such as the individual perception of a health threat, modifying factors such as the demographic variables and socio-demographic variables and the likelihood to take action wherein one sees the benefits and barriers to taking action.

The health belief model represents the process by which the grade one pupils processed the information from the research intervention. Through the framing techniques the pupils saw the practice of hand washing either as benefiting them or helping them eliminate a threat therefore the intervention will be a cue to take action and

eventually improve their understanding of hand washing as a health practice.

The improvement in the scores can also be attributed to this model. Students learn about the benefits they can get from proper hand washing or the risks that may happen if they don’t perform proper hand washing, they better understand and realize the importance of this practice and will be a cue for them to take action. Their knowledge and beliefs improved because of learning and understanding better the significance of proper hand washing to their health and wellness.

The following diagram shows Bandura’s Social Learning Theory.

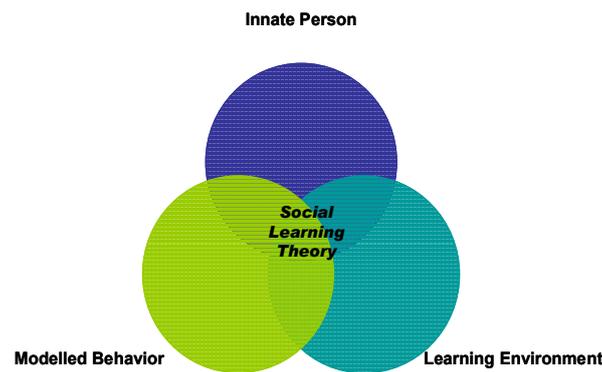


Figure 3 Social Learning Theory Model

According to Bandura's Social Learning Theory, learning happens through the interplay of the person, the environment, and the observed behavior (Jarrett, et al., 2002). This model of learning is significant in this research because it supports the fact that the hand washing behavior of the children comes from modeling the behavior of others and what they can observe in their environment. As the students watched the AVP about proper hand washing, its effects and procedure, they are able to observe skills and actions and acquire information that would facilitate learning, thus improving their knowledge and beliefs about the said practice. This is manifested with the improvement in the scores of the students.

The pupils answered incorrectly for questions 2 (I can't always perform hand hygiene when I'm busy or there are tasks to be completed.) and 3 (I can't always perform hand hygiene when I'm studying or playing), this can be associated with Erickson's Psychosocial Theory (as cited in Hockenberry & Wilson, 2007). The pupils currently belong to the stage of Industry versus Inferiority wherein they are often engaged in various activities such as school projects, competitive sports and exhibitions of their talents. These activities allow them to feel a sense of achievement and competence. However, because of their preoccupation with these activities, basic practices such as hand washing, tend to be neglected and is not a priority for them. Erickson's Theory can also explain why the students answered incorrectly for question number 10 (Dirty sinks can be a reason for not washing hands). Their desire to perfect their skills makes them idealistic; therefore, the pupils may believe that hand washing is not possible given a non-ideal setting.

As for the overall knowledge and beliefs of students about hand washing, the data shows that no question was unanimously answered correctly, indicating a gap in the knowledge and beliefs of the students regarding hand washing. Lastly, a factor

that can be attributed to the finding that positive message framing is more effective in promoting hand washing among Grade 1 pupils is that when they know what benefits, rewards, additional privileges and recognition they can get, it provides encouragement and stimulation in doing tasks (Hockenberry & Wilson, 2007).

CONCLUSION

Based on the results, the positive message framing group had a higher total average in their posttest scores than the negative message framing group. This shows that positive message framing was more effective than negative message framing in promoting and teaching proper hand washing among grade 1 pupils. There was also a significant increase from the pre-intervention test scores in comparison with the post-intervention test of all the students, showing that there was an improvement in their understanding about hand washing after watching the AVP integrated with the message framing strategy. Furthermore, in spite of the significant increase in the pre and post test scores of the students, the knowledge and beliefs of grade 1 pupils on hand washing using the test evaluation scale of the Department of Education is from poor to fair only.

The practice of hand washing should be promoted as early as the child goes to school, it is the stage where the child establishes skills and starts its habits and practices. Communicable diseases are usually prevented through hand hygiene. Hand hygiene by means of proper hand washing is a primary measure in health promotion and is a cost-effective and efficient way. Health promotion with the use of an Audio-Visual Presentation (AVP) helped the students learn and sustain knowledge better. This is because children actually see, hear and are animated by the actions. Integrated with a Message Framing strategy, it also brought about changes in the behaviors of the recipients of the message. Again, a framed message (Positive Message

Framing), in this study, proves to be more effective since it has presented the beneficial outcomes related to performing the behavior advocated in the message. Knowing the rewards the children became more encouraged and inspired in performing hand washing.

The findings of the study may influence nurses to employ other ways to promote proper hand washing that would be more effective to school-age children. The use of audio visual presentation may also serve as an addendum to the health promotion interventions of nursing students and professional nurses. In a larger scale, the study would also be a basis for further intervention for the Education and Health Department of the government as they create health promotion programs for school-aged children.

REFERENCES

1. Agboatwalla, A., Altuf, A., Feikin, D., Hoekstra, R., Luby, S., et al. (2005). Effect of hand washing on child health: a randomized controlled trial. *The Lancet*, 366, 225-233.
2. Aidoo, N., Animashaun, R., Aunger, R., Scott, B., & Schimdt, W. (2007). Marketing hygiene behaviours: the impact of different communication channels on reported hand washing behaviour of women in Ghana. *Health Education Research*, 23(3), 392-401.
3. Arnold, D., Bileto, S., Castaneda, O., Fischer, E., Helland, W., et al. (2007). Evaluation of a hand washing program for 2nd graders. *The Journal of School Nursing*, 23(6), 342-348.
4. Bacareza, C., Figueroa, D., J.r., Franke, V., Belizario, V., et al. (2009). Manual for teachers for the implementation of essential health care package in schools. Fit for School Inc., 1-46. Retrieved from <http://fitforschool.ph/.../64-ehcp-manual-v3-public-elementary-schools.html>
5. Berman, A., Erb, G., Kozier, B., & Snyder, S. (2008). *Kozier & Erb's fundamentals of nursing* (8th ed.). Singapore: Pearson Education, Inc.
6. Child Development: Middle Childhood 6-88. Retrieved from <http://www.cdc.gov/ncbddd/child/middlechildhood.htm> (2010, July 26). Clean Hands Save Lives. Retrieved from <http://www.cdc.com/cleanhands/> (2010, July 27).
7. Cousens, S., Curtis, V., Diallo, I., Kanki, B., et al. (2001). Evidence of behaviour change following a hygiene promotion programme in Burkina Faso. *Bulletin of World Health Organization*, 79 (6), 518-527.
8. DeSilets, L.D., EdD, RN-BC & Dickerson, P.S., PhD, RN-BC. (2009). *Graphic Design Principles for Audiovisual Presentations*. *The Journal of Continuing Education in Nursing*, 40(1).
9. DOH: wash hands to avoid virus. *Philippine Daily Inquirer*. Retrieved September 19, 2010 from <http://newsinfo.inquirer.net/> (2009, May 5).
10. Hockenberry, M., & Wilson, D. (2007). *Wong's nursing care of infants and children volume 1* (8th ed.). Singapore: Elsevier.
11. Inge, N. (n.d). Mandatory handwashing in elementary schools Reduces absenteeism due to infectious illness among pupils: A pilot intervention study. *American Journal of Infection Control*, 37(10), 820-826.
12. Jarrett, N., Payne, S., Smith, P., & Walker, J. (2007). *Psychology for nurses and the caring professions* (3rd ed.). Philippines: McGraw-Hill Education.
13. Kim, H., Snow, M., & White, G. (2008). Inexpensive and time-efficient hand hygiene interventions increase elementary school children's hand hygiene rates. *Journal of School, Health*, 78(4), 230-233.
14. Lapus, J. (2009, June 22). Implementation of Essential Health Care Program (EHCP) for the school children. Retrieved from <http://www.deped.gov.ph/cpanel/uploads/issuance/Img/DO No 65, s. 2009.pdf>.
15. Lapus, J. (2009, October 13). Dissemination of house of representatives resolution no. 1436 (otherwise known as the implementation of an annual global handwashing day every 15th of October). Retrieved from <http://www.deped.gov.ph/cpanel/uploads/issuance/Img/DMNo.450,s.2009.pdf>.
16. Myers, R. E. (n.d). Promoting healthy behaviors: How do we get the message across? *International Journal of Nursing Studies*, 47(4), 500-512.
17. Rosen, L. et al. (2009). The effect of a hand washing intervention on preschool educator beliefs, attitudes, knowledge and self-efficacy. *Health Education Research*. 24(4), 686-698.
18. Szklo, A. S., & Freire, E. S. C. (2010). The influence of smokers' degree of dependence on the effectiveness of message framing for capturing smokers for a Quitline. *Addictive Behaviors*, 35(6), 620-624. The Ottawa charter for health promotion. Retrieved from <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/> (1986, November 21).

19. Tousman, S., et al. (2007). Evaluation of a Handwashing Program for 2nd Graders. *The Journal of School Nursing*, 23(6), 342-348.
20. Tubeza P. (2009, May 5). Washing, singing 2 b-day songs should do it. *Philippine Daily Inquirer*.
21. Retrieved from <http://newsinfo.inquirer.net/>.
22. Van de Mortel, T. (2009). Development of a questionnaire to assess health care students' hand hygiene knowledge, beliefs and practices. *Australian Journal of Advanced Nursing*, 26 (3), 9-16.
23. Valmero, A. (2009, June 2). DoH exec teaches pupils proper hand washing. *Philippine Daily Inquirer*. Retrieved from <http://newsinfo.inquirer.net/breakingnews/nation/view/20090602-208432/DoH-exec-teaches-pupils-proper-hand-washing>.