



Photovoice interactive media improves the personal hygiene of teenage students at pesantren school in Tangerang[☆]



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Abstract

Objective: Teenagers' personal hygiene behaviors at pesantren schools, which are Muslim schools in Indonesia operated by religious leaders, found to be low, putting them at risk for hygiene-related diseases, such as skin diseases. Teenagers are excited to learn new things, especially operational and technical things, about health education methods that reflect experience and are interactive and tangible as well. This research aimed to determine the effect of education using the photovoice method on the personal hygiene behavior of teenagers (10–19 years old).

Method: The study used quasi-experiments with a treatment group of 38 teenagers and a control group of 40 teenagers.

Results: Using *t*-tests, the results showed an increase in the mean value of the behavior in the treatment group that was higher than in the control group, with each *p*-value <0.05. Education using photovoice interactive media significantly increased the teenagers' personal hygiene behavior.

Conclusion: The photovoice technique is recommended for educating teenagers who have problems with personal hygiene.

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Introduction

According to the 2010 national census in Indonesia, around 43.5 million teenagers (10–19 years old) live in the country, representing 18% of the total national population. The teenage population has been estimated at 1.2 billion in the world, or 18% of the total global population.¹

With this considerably large population, the problems surrounding teenagers can also increase. The teenage population, whether it is large or small, can experience the impact of the same diseases because lack of awareness about personal hygiene, which is called a “risky population”.² People who lack information about how to maintain personal hygiene will be vulnerable to hygiene-related diseases due to their lack of awareness about personal hygiene.

Based on basic health research,³ only 32.3% of the Indonesian population can successfully meet the requirements of the program of *Perilaku Hidup Bersih Sehat* (PHBS) or guidance for hygiene and healthy life. Many hygiene-related diseases, such as pinworms, dental caries, skin diseases, and malnutrition can lower people’s health status and life quality.⁴

The pesantren schools are distinctive, religious-based boarding schools where the students live in dormitories.⁵ Some diseases that are caused by bad hygiene and health behavior, such as skin diseases, head lice, and diarrhea, are often observed at pesantren schools.⁶

The government created a program to improve health conditions at pesantren schools called Poskestren (Pos Kesehatan Pesantren) or Pesantren Health Posts. However, the hygiene and health behaviors of the students are extremely hard to change due to a lack of knowledge and a way to find health literacy.⁴

Preventing diseases and improving health conditions are the functions of community nurses. Community nurses are educators, counselors, and collaborators who work to improve the health conditions of their community. According to previous research, the health and hygiene behaviors of pesantren students are terrible, with only 10.7% consuming fruit and vegetables; 47.2% washing their hands correctly; and 52.8% routinely exercising.⁶

Comic-based learning media is one of the mediums that have been developed to improve personal health and hygiene behavior.⁷ PHBS learning was also developed by using the medium of Javanese songs.⁸ These projects were designed for elementary school students. For the future, suitable mediums need to be developed for teenagers.

One of the education techniques developed for public health education is called Photovoice. It promotes health education by using photographs of the surrounding environment. The photographs capture the real conditions of the environment.⁹ Photovoice can be an authentic proof of the improvement of teenager’s personal hygiene, giving a real picture of condition and can be done in a short time because it can be directly evaluated during a visit while observation evaluation takes longer to observe the activity of respondent.

Previous research has used photovoice as a medium of learning to evaluate the nutritional intake of children with obesity. Photovoice was used to document the family’s expenditures on food, the quality of the products, exposure

to fruit and vegetables, socialization with other parents, and strategies used by parents to make their children eat. The photovoice increased the children’s excitement about being involved in menu selection, improved awareness about food safety, and increased their healthy diet habits.¹⁰ Therefore the current study’s problem statement is: “Does the learning method using photovoice interactive media affect the personal hygiene behavior of teenagers?”

Method

Design

This research used a quasi-experimental design with a pretest and posttest with a control group. The control group is selected according to the characteristics of the respondents who have been determined based on the inclusion and exclusion criteria. Sampling was done in two schools. Both schools are located in the same sub-district, and the two are *pesantren* whose students live in the dormitory and traditional education patterns.

Population and study setting

The population of this research was teenagers living in Tangerang. The minimum sample size was calculated based on an average-difference-pairwise hypothesis test calculation.¹¹ The study used quasi-experiments and added by design sample effect multiplied by two groups, in total there were 80 teenagers in the intervention and control groups.

Based on the techniques of total sampling, it was decided that the research would take place in Kelurahan Petir, Kecamatan Cipondoh. Based on the medical records of the client visit at nurse and midwife clinics (Praktek Perawat dan Bidan) about diseases causing of lack personal hygiene, it was decided that the intervention group would be at Pesantren Ummul Falah and the control group at Pesantren Attahiyah.

Variables

The research was conducted in pesantren because based on data found still high health problem related to personal hygiene and pesantren become the target of a government program in improving healthy behavior. Community health nursing is a nursing service that implies promotive and preventive services, integrated involving support and community participation addressed to individuals, families, groups, and communities in enhancing life function and independence. Photovoice intervention is one of the promotive and preventive interventions in the poskestren program for teenagers.

Data collection

This research used a questionnaire on personal hygiene from the national health department^{12,13} and Potter and Perry¹⁴ that had been modified in terms of questionnaire design, instructions on how to respond to the questionnaire, and

options within the questions. New questions that focused on personal hygiene were also added. The questionnaire used a Goodman scale of 0–1 and a 5-point Likert scale.

Nursing intervention by using photovoice interactive media is a package of nursing interventions that consist of five sessions within two weeks or 14 days with 60 minutes per session. Session 1 day 1 was training for the participant's respondents on how to take pictures, discussion of ethical principles, and suggestions for creating topics about photographs that could be discussed with the participants. Session 2 day 2 provided one hour for the participants to take pictures related to the topic discussed in the previous session, focusing on pictures related to personal hygiene. During session 3 days 3, the participants were asked to talk about what was in the photographs, what was happening in the neighborhood, how this condition related to their condition, what the problem was, and what could be done to solve the problem. In session 4 days 13, the participants were given one hour to take pictures related to the changes they made in their hygiene after the third session. During session 5 days 14, the participants were asked to talk about the pictures they had taken during session 4, relate them to the pictures they took in session 2, and then describe the differences between those two groups of pictures. Intervention by using photovoice interactive media was provided by the nurses to the intervention group.

The participants of photovoice intervention were the intervention group and became exclusion when they failed to attend two or more training. For the control group, the researchers provided health education based on the competence of a generalist nurse and a question and answer session after the pretest. Education on how to use photovoice interactive media was conducted after the posttest.

Data analysis

Before analyzing the data, several steps had to be performed, starting with data editing. Data editing was done to ensure that the data collected were complete. The data were reviewed for the completeness of respondents' answers on the review sheets. The next step was coding, in which codes were attached to each variable to make it easier for the researcher to analyze and tabulate the data, by giving a number for each respondent's name and group. After coding was completed, then the next stage was tabulating where the data were grouped based on categories that had been determined previously, and then the data were tabulated using a statistics program on a computer.

Univariate analysis is presented in the forms of the frequency and proportion of each variable, including means and standard deviations. Since this research used scales in parametric forms, confidence intervals and the mean margin tests of two groups before and after intervention were applied using a paired *t*-test. Next, to analyze the impact of the photovoice interactive media, an independent *t*-test was applied to both the intervention and control groups.

Ethical aspects

Every study has to protect its participants' rights, so it is necessary to implement research ethics. All

Table 1 Frequency distribution of the teenagers' characteristics based on education level, counseling, and pocket money at Pesantren Kelurahan Petir in June 2017 (*n* = 78).

Characteristics	Group			
	Intervention		Control	
	<i>N</i>	%	<i>N</i>	%
<i>Pocket money</i>				
Low	24	65	20	50
High	14	35	20	50
<i>Education</i>				
Junior high school	21	55.3	18	45
Senior high school	17	44.7	22	55
<i>Counseling</i>				
Never done	26	65	22	55
Done	12	32.5	18	45

Table 2 Frequency distribution of the teenagers' characteristics based on age at Pesantren Kelurahan Petir in June 2017 (*n* = 77).

Variable	Group	<i>n</i>	Median	95% CI
Age (y.o.)	Intervention	37	15	13.53–15.27
	Control	40	16	16.25–16.75

health-related studies that involve human beings as the subject or part of the research must be based on three general ethics principles. According to the National Committee of Ethics Research of the Indonesian Health Department (Komisi Nasional Etik Penelitian Kesehatan Departemen Kesehatan RI), those principles are respect for people, beneficence, and justice.¹² This study has been certified as passing the ethics review test as stated by the Ethics Research Committee of the Faculty of Nursing of the University of Indonesia with certificate number No. 217./UN2.F12.D/HKP.02.04/2017.

Results

The frequency distribution of the teenagers' characteristics based on education level, counseling, and amount of pocket money showed that the teenage respondents in both of the groups were not very different. The last level of education most widely achieved by the intervention group was junior high school. In terms of the pocket money characteristic, the highest percentage belonged to the intervention group (under 100,000 rupiahs) (Tables 1 and 2).

The frequency distribution of the teenagers' characteristics based on age showed that the teenage respondents in both of the groups were not very different. The average age of the intervention group (15 years old) was younger than the control group (16 years old) (Table 3).

Based on Table 4, it was determined that the respondents' average knowledge in the intervention group after the photovoice intervention was better than in the control group (*p*-value = 0.009). The average attitude in the intervention group after being exposed to photovoice was

Table 3 Analysis of the knowledge, attitude, and skill differences of the teenage respondents before and after the intervention in both groups with paired *t*-test on personal hygiene.

Variables	Intervention group						<i>p</i> value
	Before		After		Mean margin		
	Mean	SD	Mean	SD			
Knowledge	12.75	1.977	14.63	0.540	1.88	0.000	
Attitude	49.28	4.120	52.55	5.223	3.27	0.005	
Skill	48.93	7.707	54.83	4.031	5.9	0.000	

Variables	Control group						<i>p</i> value
	Before		After		Mean margin		
	Mean	SD	Mean	SD			
Knowledge	12.73	2.264	13.80	0.540	1.07	0.31	
Attitude	48.25	5.448	51.83	5.119	3.08	0.65	
Skill	48.65	7.513	52.73	4.961	4.08	0.05	

Table 4 Analysis of the knowledge, attitude, and skill differences of the teenage respondents before and after the intervention in both groups with independent *t*-test on personal hygiene.

Variables	Group	Mean	SD	<i>p</i> value*
Knowledge	Intervention	14.63	0.540	0.009
	Control	13.80	0.540	
Attitude	Intervention	52.55	5.223	0.048
	Control	51.83	5.119	
Skill	Intervention	54.83	4.031	0.041
	Control	52.73	4.961	

* *p* value < 0,05.

also better than in the control group (*p*-value = 0.0480). The respondents' average skill in the intervention group after photovoice intervention was higher than in the control group (*p*-value = 0.041).

Discussion

Description of the teenagers' knowledge of personal hygiene

Before the intervention using photovoice interactive media, the intervention group and control group had equal knowledge. After the intervention, the knowledge of the intervention group increased more than that of the control group. These results are similar to a study that stated that there was an improvement in terms of knowledge in Americans living in villages and rural areas (a 4 point increase in mean value) after an intervention that provided clean water, sanitation, and public health education.¹⁵ The

difference is small research results because the control group is also given self-hygiene education with lecture method 1 time for 60 minutes.

Another study reported that teenagers' knowledge about personal hygiene in both the intervention and control groups was initially equal.¹⁶ After an intervention using education, the knowledge of the teenagers in the intervention group increased compared to the control group; the mean value before the intervention was 12.95 and after the intervention was 16.76 (an increase of 3.81 points).

The increase in the mean value of the knowledge characteristic before and after intervention occurred because of the intervention, which was education. In applying photovoice interactive media to the intervention group in the current study, one of the sessions 4 and 5 was to provide education to the teenagers. In the control group, the teenagers were given only health education based on the competence of a generalist nurse. Control group is given nursing intervention in the form of health education related to personal hygiene with lecture method. Health education is given a one-time meeting for 60 minutes. Health education materials include hair hygiene, mouth, ear, hands, feet and skin hygiene.

The health education given by counseling using the group process was the stimulus to influence the teenagers' logical functions so that health education can be perceived in the form of knowledge. Teenagers who previously had little knowledge about personal hygiene became more aware after being given this education, so their mean value of knowledge increased. Knowledge comes from someone's sensing process or is the result of knowing by an individual toward an object through senses he or she possesses (eyes, nose, and ears), and it is affected by the intensity of attention and perception toward the object.¹⁷ By using photovoice intervention, teenagers can see a picture about personal hygiene with eyes and discussing it in the group make knowledge can deliver through their senses. The sequence of the intervention activity provided is the stimulus to teenagers' senses, causing an increase of knowledge.

The analysis of the results showed that there was an improvement in terms of the attitude variable in the intervention group, as compared with the control group, after the photovoice intervention was conducted. This result is similar to earlier research that found increasing in personal hygiene in the intervention group after the intervention.¹⁸ Referring to the study, there is also proved that there was an increase in terms of positive attitude before and after the counseling intervention (30% increment), and there was also a decrease in terms of negative attitude before and after the intervention (30% decrease).¹⁹

The increase in the respondents' mean value of attitude in this research is due to the effect of knowledge. Respondents, who previously did not know about hygiene, became aware of personal hygiene, then understood, and eventually changed their attitudes. The respondents changed their attitudes after realizing the risks of bad personal hygiene, and then they understood the benefits of practicing good hygiene. Better knowledge results in better attitude scores. This is in line with Green's theory, which states that attitude is a predisposition such as knowledge, value, and individual

perceptions related to someone's or a group's motivation to act, is reflected in their attitudes. This notion is also supported by the statement that the attitude domain is a vital concept used to understand and predict someone's behavior toward objects or changes, including how someone's behavior is affected.²⁰ As an evaluation result, attitude is a whole that can be concluded from many observations toward objects that are expressed in the form of cognitive responses, affect, or behavior. In brief, an increase in knowledge value will be followed by an increase in the respondent's attitude value.

The analysis of the results of the skill variable in the two groups showed that the variables were at the same level before the intervention, and then there was an increase in the intervention group compared with the control group after the intervention. This result is in line with a study that reported that there was an increase in personal hygiene in the intervention group compared to the control group after the intervention.²¹ Another study reported that there was an increase in the skill of hand washing in the intervention group compared to the control group of teenagers after they were given intervention in the form of Snake, Cards, and Ladders (SCL) play therapy.²²

This result condition shows that an increase in knowledge can affect attitude, and the shift in attitude is then implemented in the teenager's behavior. Green argued that behavior is a response action or the act of an individual that can be observed, studied and divided into passive and active. A passive response is a response that happens inside a human being and is indirectly seen by others, usually in the forms of knowledge, attitude, and perception last. A active response is a response that happens outside a human being and is directly seen by others, usually in the forms of attitude. The increase of skill strengthens the notion of believing that having skill about health as an implementation of the attitude possessed by an individual and is reflected in daily life.²⁰

The knowledge, attitudes, and skills of the members of the intervention group increased more than those of the control group. The handling phase in the photovoice interactive media, which consisted of education and demonstration, was a trigger that improved the teenagers' knowledge, which was followed by improvement in their attitudes toward and skills of personal hygiene.

Hopefully, the results of this research can be the basis of and guidance for nurses at pesantren schools to provide intervention using photovoice interactive media in order to solve problems with the personal hygiene of teenage students.

Conflict of interests

The authors declare no conflict of interest.

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