RESEARCH ARTICLE

The Relationship of Knowledge and Attitude Towards Hand Washing Behavior in Baiturrahmah Dental Hospital During the Covid-19 Pandemic

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ABSTRACT

*Bacground: Dental practice is very susceptible to nosocomial infections. One of the infection control prevention efforts that can be done is by washing hands. Hand washing is a process that removes dirt on the hands by using a detergent containing an antiseptic agent and running water. **Objective:** To determine the relationship between knowledge and attitudes towards hand washing in professional students at Baiturrahmah Dental Hospital during the COVID-19 pandemic. **Method:** This research was a type of quantitative research using observational analytic method with a cross-sectional design. This research was conducted at Baiturrahmah Dental Hospital which was held in November–December 2021. The sampling technique in this study was consecutive sampling. The number of sampels in this study was 80 sampels. Research through the google form given by researchers to research respondents. **Result:** This study indicated that most of the respondents have good knowledge of hand washing (91.2%), good hand washing attitudes (99.0%), and good hand washing behavior (100.0%). The correlation analysis test was carried out using the Pearson correlation test for parametric analysis and the Spearman correlation test for non-parametric analysis. There was a significant relationship between knowledge of hand washing behavior (p<0.05) and attitudes towards hand washing behavior (p<0.05). **Conclusion:** There was a significant relationship between knowledge of handwashing behavior in professional students at Baiturrahmah Dental Hospital and there is a significant relationship between attitudes towards handwashing behavior in professional students at Baiturrahmah Dental Hospital.*

Keywords: Handwashing, Knowledge, Attitude, Behavior, COVID-19, COVID-19 Prevention

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INTRODUCTION

Based on data from the COVID19.go.id website on November 28, 2021, from 510 districts in 34 provinces the number of confirmed positive cases of COVID-19 in Indonesia was 4,255,672 cases, the number of deaths was 143,807 cases, the number of recovered cases was 4,103,639. The spike in COVID-19 cases continues in Indonesia with the highest daily increase in new confirmed cases.[4]

Prevention efforts to minimize the spread of COVID-19 transmission are by maintaining and implementing health protocols such as using masks, washing hands, keeping a distance and bringing the equipment needed when leaving the house such as hand sanitizer, bringing your own eating utensils, bringing your own prayer utensils and other necessities.[6]

Hand washing is a process that mechanically removes dirt on the hands by using a detergent containing an antiseptic agent and running water, starting from the fingertips to the elbows and arms in a certain way according to need. Cleaning hands with water and soap has different levels of efficacy in removing bacteria on hands; in this case, only a few bacteria will come out, whereas soap can remove a lot of bacteria because soap contains special ingredients that can control the bacteria present on the hands. In this scenario, hand soap contains various active components, including alcohol, emollients, triclocarban, triclosan, triclocarban, and others.[9]

According to control center data infection in the United States using hand sanitizer more than 5 times showed the ineffectiveness of alcohol-based ingredients and the accumulation of a number of germs that grows on the build-up of moisturizers and fragrances from cleaning fluids hands, so it is necessary to continue with washing hands with soap after five wash your hands frequently with hand sanitizer.[12]

Health students who work in hospitals are at high risk, so it is important for them to increase their self-awareness about health information that is important to themselves. Health issues, health problems, and best health solutions need to be understood and used as health information to improve and maintain their health. So that health students when they graduate and then work can immediately adapt to the work environment in breaking the chain of health problems that occur.[18]

The results of research conducted by Apriani (2020) with a significance value (0.000) which means that there is a relationship between the knowledge of health workers on hand washing behavior at the Raja Ahmad Tabib Hospital, Riau Islands Province in 2019. The results of research also conducted by Apriani (2020) with a significance value (0.000) which means that there is a relationship between the attitude of health workers to hand washing behavior at the Raja Ahmad Tabib Hospital, Riau Islands Province in 2019.[2]

Antibacterial handwashes are soaps or synthetic detergents with an antibacterial component. These antimicrobial compounds damage the viral membrane's integrity. Various antimicrobial compounds were assessed and rated based on their virucidal activity and probable allergenicity (Table I). The most efficient antiviral agents include alcohols, bleach, and iodophor-containing solutions. Alcohol's antiviral activity is linked to its propensity to denature proteins.[16] Povidone iodine's antiviral activity has been observed to swiftly infiltrate microorganism cells, inactivate cellular replication, and inhibit protein synthesis.[15]

Considering there is no licensed drug for COVID-19, it is best to prevent its spread by following WHO's basic guidelines: (a) Hand hygiene: Regularly wash your hands with soap and, if a washing facility is not available, clean your hands with alcohol-based hand rubs; (b) Social distancing: Maintain at least 3 feet distance from others and, if possible, avoid visiting crowded places; (c) Respiratory hygiene: Use a tissue or cover your mouth and nose with your bent elbow while sneezing or coughing, or

always wear a mask when going outside or visiting any public place.[5]

Soaps' active ingredients are detergents generated from petrochemicals, although suggested hand sanitizers contain high quantities of alcohol. Detergents and alcohol irritate and dry the skin and are harmful to the environment. As a result, eco-friendly soaps and hand sanitizers are required for both human and environmental safety. [5]

Several natural substances, including microbial biosurfactants and plant secondary metabolites, have been shown to exhibit antibacterial and virucidal properties. Natural substances are often non-toxic and biodegradable. As a result, the purpose of this brief review is to highlight the health and environmental concerns associated with the use of soaps and alcohol-based hand sanitizers during COVID-19, as well as to discuss the potential of some natural detergents and sanitizing agents as eco-friendly alternatives to petrochemical-based soaps and alcohol-based hand rubs for hand hygiene.[5]

The health care system must ensure the availability of appropriate PPE adequately and develop additional strategies to protect officers' health from COVID-19. Use of masks by healthcare workers recommended by WHO, namely surgical masks and N95 masks. Based on the results of research on N95 masks compared to surgical masks found that masks N95 has better capability in good laboratory testing used in inpatient or outpatient care. [3]

The following factors, according to Budiman and Riyanto (2013), might affect a person's knowledge: education, information, socio-economic culture, environment, experience, and age. attitude is evaluation or emotional reaction. A person's attitude towards an object is a feeling support or take sides or feelings do not support or do not take sides on object.[1] Behavior is everything activities or activities carried out by someone, as a reaction or response to external stimuli, which reflect their knowledge and attitudes.[8]

Dental profession students study at Baiturrahmah Dental Hospital. Baiturrahmah Dental and Oral Hospital (FKG Unbrah Hospital) is one of the health services in the field of dental and oral health located in the city of Padang, West Sumatra. The Hospital is a three-story building: The first floor consists of an academic room and several other rooms and there is one department, namely Pediatric Dentistry. The second floor consists of seven departments, namely Oral Surgery, Public Dental Health, Dental Conservation, Periodontics, Oral Diseases, Prosthodontics, and Orthodontics. The third floor has a lecture room.[20]

MATERIALS AND METHODS

This research is a type of quantitative research using observational analytic method with a cross-sectional design. This research was conducted at the Baiturrahmah Dental Hospital Padang which was held in December 2021. The population for this study were professional students at the Baiturrahmah Dental Hospital. The number of professional students at Baiturrahmah Dental Hospital on October 19, 2021 was 349 students.[11]

The minimal number of samples used in this investigation was 78, as determined using the Slovin formula. Consecutive sampling was used as the sample method in this investigation. The dependent variable in this study is hand washing behavior, while the independent variables are knowledge and attitudes towards hand washing.[16]

Knowledge is interpreted as the respondent's understanding of correct hand washing with a quantitative scale, namely knowledge in good categories must answer questions correctly > 6 questions out of 10 questions given, knowledge is said to be sufficient when respondents answer questions correctly 4-6 questions out of 10 questions, and poor category knowledge is obtained when the correct answer is <4 questions out of 10 questions given. Attitudes were measured using

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a Likert scale and then interpreted quantitatively with a good attitude category with a score of 27-36 points from 9 questions, attitudes were said to be sufficient when they had a score of 9-27 points out of 9 questions, and the poor category scored <9 points out of 10 questions. Behavior is measured using a Likert scale and then interpreted quantitatively with the category of good behavior.[10]

Score of 19-20 points out of 10 questions, behavior is said to be sufficient when it has a score of 11-19 points out of 10 questions, and the poor category scores <11 points out of 10 questions.[10]

Data collection in this study consisted of informed consent, smartphones, and online questionnaires via a google form given to researchers for research, the population for this study were professional students at Baiturrahmah Dental Hospital Padang.

The Kolmogrov-Smirnov normality test with SPSS version 20.0 was utilized as the normality test in this investigation. Following the Kolmogrov-Smirnov normality test, the Pearson correlation test was used to determine the relationship between professional students at Baiturrahmah Dental Hospital's knowledge and handwashing behavior, while the Spearman correlation test was used to determine the relationship between their attitudes toward handwashing behavior, with a significance level of p<0,05.[17]

RESULTS

The results of research conducted on 80 respondents, obtained data on the characteristics of respondents including generation and gender. Respondent characteristics data can be seen below.

Table 1. Distribution of Respondents Characteristics

		Frequency	%
Generation	2019	42	52.5
	2020	24	30.0
	2021	14	17.5
	Total	80	100.0
Gender	Male	30	37.5
	Female	50	62.5
	Total	80	100.0

Based on generation and Gender in Professional Students at Baiturrahmah Dental Hospital From table 1, it can be seen that the most respondents were the 2019 generation, which was 42 people (52.5%), followed by the 2020 generation as many as 24 people (30.0%) and the 2021 generation as many as 14 people (17.5%). From table 1 it can also be seen that the respondents of this study were dominated by female as many as 50 respondents (62.5%) while male respondents were (37.5%).

Table 2. Levels of Handwashing Behavior Based on Gender and year in Professional Students at Baiturrahmah Dental Hospital.

	Handwashing Behavior					
Gender	Good		Sufficient		Poor	
	N	%	n	%	n	%
Male	30	37.5	0	0.0	0	0.0
Female	50	62.5	0	0.0	0	0.0
Total	80	100	0	0.0	0	0.0
Generation	N	%	n	%	n	%
2019	42	52.5	0	0.0	0	0.0
2020	24	30.0	0	0.0	0	0.0
2021	14	17.5	0	0.0	0	0.0
Total	80	100	0	0.0	0	0.0

From table 2 it can be shown that female respondents and male respondents have good behavior towards hand washing. 50 female respondents had good behavior towards hand washing (62.5%) while male respondents with a total of 30 respondents also had good behavior towards hand washing (37.5%). From table 2, it can be shown that all respondents have good behavior towards hand washing. The 2019 generation of 42 respondents had good behavior (52.5%), the 2020 generation of 24 respondents had good handwashing behavior (30.0%), and the 2021 generation of 14 respondents had good handwashing behavior (17.5 %).

Table 3. Distribution of Respondents by Knowledge, Attitudes, and Behaviors About Handwashing in Professional Students at Baiturrahmah Dental Hospital

		Frequency	%
Knowledge	Good	73	91.2
	Sufficient	7	8.8
	Less	0	0.0
	Total	80	100.0
Attitudes	Good	79	98,8
	Sufficient	1	1.2
	Less	0	0.0
	Total	80	100.0
Behaviors	Good	80	100
	Sufficient	0	0.0
	Less	0	0.0
	Total	80	100.0

Table 3 described the distribution of respondents according to knowledge about hand washing. In the distribution of respondents according to general knowledge, respondents had good knowledge of hand washing, namely 73 respondents (91.2%) had good knowledge. The distribution of respondents with sufficient knowledge was 7 respondents (8.8%) while the distribution of poor knowledge was not found in this study.

Table 3 described the distribution of respondents according to attitudes towards hand washing. The distribution of respondents according to the attitude of 79 respondents (99.0%) was good, 1 respondent (1.0%) was sufficient, while the distribution was not good, not found in this study. Based on the results of research that has been carried out, it showed that the attitudes of professional students about hand washing were mostly in the good category, namely as many as 79 respondents (99.0%), the attitudes of professional students towards hand washing were in good enough category as many as 1 respondent (1.0%), and there were not respondents with less good category.

Table 3 explained that the behavior of professional students regarding hand washing with a good category distribution of 80 respondents (100.0%), sufficient and poor distribution were not found in this study. The

results of the study showed that professional students had good behavior towards hand washing. This was obtained from the results of research where all respondents had a score of 19-30 which is categorized into good behavior.

Table 4. The Relationship of Knowledge and Handwashing Attitudes to Handwashing Behavior in Professional Students at Baiturrahmah Dental Hospital

	Correlation coefficient	p-value
The relationship between hand washing knowledge and hand washing behavior	0.504	0.000
The relationship between hand washing attitudes and hand washing behavior	0.388	0.000

The results of Pearson's analysis using SPSS version 20.0, a p-value of 0.000 (p<0.05) showed that there was a significant relationship between knowledge and behavior of professional students about hand washing at Baiturrahmah Dental Hospital. The results of data processing in table 4, the correlation coefficient number was 0.504, meaning that the level of strength of the relationship (correlation) between knowledge and behavior variables was 0.504 or strong enough (correlation coefficient> 0.05). Figures in table 4 the correlation coefficient was positive, namely 0.504 so that the relationship between the two variables was unidirectional (type of unidirectional relationship) thus it can be interpreted that the better the knowledge, the better the behavior.

The results of the Spearman test analysis using SPSS version 20.0, a p-value of 0.000 (p<0.05) was obtained, meaning that there was a significant relationship between attitudes towards professional student behavior about hand washing at Baiturrahmah Dental Hospital. The results of data processing in table 4, the correlation coefficient number was 0.388, meaning that the level of strength of the

relationship (correlation) between the attitude and behavior variables was 0.388 or a sufficient correlation (0.26-0.50). The number of correlation coefficients in table 4 was positive, namely 0.388 so that the relationship between the two variables was unidirectional (type of unidirectional relationship), thus it can be interpreted that the better the attitude, the better the behavior.

DISCUSSION

Characteristics of respondents in this study include generation and gender. The results of the study showed that the majority of respondents were female and the generation of 2019 was the oldest generation in this study. The results also showed that the respondents of this study were dominated by women, namely 50 respondents (62.5%) while male respondents were (37.5%). There were more female respondents than male respondents, in line with research conducted by Priyanto (2014) which states that women's interest in entering the faculty of dentistry is higher than men. The results of the study showed that the research respondents were dominated by the 2019 generation, this was because the 2019 generation was the senior generation with the largest population. [13]

The results of the analysis of the Pearson parametric relationship test obtained a p-value of 0.000 (p <0.05) meaning that there was a significant relationship between knowledge and behavior of professional students about hand washing at Baiturrahmah Dental Hospital. The level of strength of the relationship (correlation) between the knowledge and behavior variables is 0.504 or the correlation was quite strong. From the results of data analysis, it was found that the number on the correlation coefficient was positive, namely 0.504 so that the relationship between the two variables was unidirectional (type of unidirectional relationship), thus it can be interpreted that the better the knowledge, the better the behavior. This is because respondents

with sufficient knowledge have sufficient actions, and respondents with good knowledge have good actions, so that when the correlation test using Pearson was carried out, the p-value <0.05, which means that there was a relationship between knowledge and washing action.

The results of this study were in line with research conducted by Apriani (2020) with a significance value (0.000) which means that there is a relationship between the knowledge of health workers on hand washing behavior at the Raja Ahmad Tabib Hospital, Riau Islands Province in 2019. This is in accordance with L. Green's theory which stated that the three main factors that influence health behavior one of which is knowledge. It is expected that the better the respondent's knowledge about hand hygiene, the better their compliance behavior to do hand hygiene. [2]

The same research results were obtained by Harlinisari (2018) with a significance value (0.0001), which means that knowledge has a significant and positive influence on the behavior of midwives in carrying out the Standard Operating Procedures for hand washing. The higher the level of knowledge of the midwife, the higher the compliance of the midwife in carrying out the Standard Operating Procedure for hand washing. The results of this study were also in line with research conducted by Thirayo (2021) with a significance value (0.002), which means that there is a significant relationship between nurses' knowledge and hand washing behavior. [7]

The results of this study were not in line with research conducted by Rabbani S (2013) with a significance value of (0.160) which means that there is no (positive) relationship between knowledge and hand washing behavior of health workers in the Child Health Sciences Section of BLU RSUP Prof dr. RD Kndou Manado. Poor hand washing behavior can be influenced by the lack of good and functioning hand washing facilities, such as sinks, water faucets, hand soap, and dry towels or tissues. [14]

The Relationship between Handwashing Attitudes and Handwashing Behavior

The results of the Spearman test analysis, a p-value of 0.000 (p <0.05) was obtained, meaning that there was a significant relationship between attitudes towards hand washing behavior of professional students at Baiturrahmah Dental Hospital. From the results of data processing obtained a correlation coefficient of 0.388, meaning that the level of strength of the relationship (correlation) between the attitude and behavior variables is 0.388 or sufficient correlation. The results of data analysis obtained a positive correlation coefficient of 0.388 so that the relationship between the two variables is unidirectional (type of unidirectional relationship), thus it can be interpreted that the better the attitude, the better the behavior.

The results of this study are in line with research conducted by Apriani (2020) with a significance value (0.000) which means that there is a relationship between the attitude of health workers towards hand washing behavior at the Raja Ahmad Tabib Hospital, Riau Islands Province in 2019. Attitude is a factor contained in individuals who can influence individuals to comply with standard operating procedures in the workplace. [2]

The same research results were obtained by Harlinisari (2018) with a significance value (0.0001), which means that attitudes have a significant and positive influence on the behavior of midwives in carrying out the Standard Operating Procedures for hand washing. The better the attitude of the midwife, the higher the level of compliance of the midwife in carrying out the Standard Operating Procedure for hand washing. [7]

The results of this study are not in line with the research conducted by Thirayo (2021) with a significance value (0.072) which means that there is no significant relationship between the attitudes and behavior of nurses on hand washing behavior. These results also show that the majority of nurses say that there are no rewards and punishments for nurses when complying with the implementation of hand hygiene so that in practice nurses have motivation to practice hand hygiene due to lack of supervision. [19]

CONCLUSION

Based on research conducted on professional students at Baiturrahmah Dental Hospital, the conclusion that can be drawn by researchers is that there is a significant relationship between knowledge of handwashing behavior in professional students at Baiturrahmah Dental Hospital and there is a significant relationship between attitudes towards handwashing behavior in professional students at Baiturrahmah Dental Hospital. suggestions for future researchers to carry out further research among professional students on an ongoing basis as an effort to monitor infection prevention and prevention programs at RSGM Baiturrahmah.

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