

DETERMINANT FACTORS ON PERSONAL HYGIENE IN THE PREVENTION OF COVID-19 IN THE COMMUNITY OF BENGKALIS REGENCY, RIAU, IN 2021

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Abstract

Introduction: The prevalence of personal hygiene behavior in the Riau community in 2018 remains below 39.9%. Therefore, this study aims to identify the determinants of personal hygiene in preventing Covid19 among the residents of Bengkalis Regency, Riau. **Methods:** Data was collected online in March 2021 from 214 respondents regarding their age, gender, educational history, personal hygiene, infrastructure, accessibility, information exposure, family support, social support, and level of knowledge. The descriptive quantitative study was used with a cross-sectional design and the Chi-square test. **Results and Discussion:** The results showed that from 214 respondents, those with good and poor personal hygiene are 139 (65%) and 75 (35%) individuals, respectively. The factors that have a statistical relationship with personal hygiene ($p < 0.05$) are age, gender, infrastructure, accessibility, information exposure, family support, and social support, with p -values of 0.000, 0.005, 0.000, 0.000, 0.000, 0.000, and 0.000, respectively. Meanwhile, variables of knowledge and educational history with p values of 0.664 and 0.810, respectively, were not statistically related. **Conclusion:** Efforts to promote personal hygiene for the prevention of the pandemic include health worker education on Covid19 information, especially the risk factors and how to correctly use masks.

INTRODUCTION

Covid19 first emerged in Wuhan, China, on December 31, 2019, and was later reported to World Health Organization (WHO). On July 1, 2021, there were 181,930,736 confirmed cases of Covid19 infection worldwide, resulting in 3,945,736 fatalities (1). Furthermore, Riau, located in the Sumatra Region, had the highest confirmed case, about 70,916, with a death rate of 1,940. Bengkalis Regency ranked fifth with 4,451 confirmed cases and recorded the third highest death rate of 175 (2).

Protecting human health against infectious diseases, such as the Covid19 outbreak, is closely related to personal hygiene daily (3). According to UNICEF, the practices that reduce virus transmission are wearing masks, social distancing, washing hands, not touching the face, and using clean clothes (4). The pandemic is transmitted directly and indirectly through

coughing droplets (5). The virus is easily acquired when there is contact with an infected person without personal protective equipment (6). WHO recommends avoiding crowds, maintaining physical distance, and using masks to prevent the spread of the disease. It is indirect transmission to contact the surface of an infected object and then touch the face (eyes, nose, and mouth) before washing hands (7). Therefore, it is recommended to wash hands with soap and disinfect surfaces that are regularly touched (8). In Indonesia, hand-washing with soap is relatively uncommon, posing a danger of disease transmission through personal contact (9).

Data on the level of community compliance in Indonesia showed that the personal hygiene behaviors in preventing Covid19 that are rarely or not performed by the community include maintaining distance (20.98%), washing hands with soap for 20 seconds (19.25%), avoiding crowds (18.76%), as well as bringing and using hand sanitizer (16.97%) (10). It was discovered that

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43.16% of people in Riau rarely or often wash their hands for 20 seconds with soap, while 45.29% rarely or often use hand sanitizers (11). Furthermore, the prevalence of personal hygiene behavior in the community, as of 2018, was 39.9%. Personal hygiene behavior in Riau is still a public health problem. This is because its prevalence is lower than 49%, the level at which public health problems associated with poor hygiene become either triggers or restrictions. Bengkalis Regency ranks fourth in low personal hygiene behavior (34%) (12).

There is no treatment or vaccine available for this viral infection presently, but it is curable with the help of supportive therapy (13). Furthermore, billions of people will need to change their behavior to reduce the epidemic without viable therapy. The protection measures include social (physical) distancing, self-isolation, and adherence to personal hygiene rules such as regular and thorough hand washing (14).

The government imposed several protective measures, including limiting public gatherings, closing schools during the pandemic to reduce physical contact between people, and personal hygiene rules. These are achieved through active participation, individual commitment, and adjusting public information campaigns. Therefore, valid information is needed on how communities comply with the recommended protective measures (15). According to the explanation, a study on the Determinant Factors of Personal Hygiene in the Prevention of Covid19 in the Bengkalis Regency Community, Riau, in 2021 need to be conducted.

METHODS

This study was conducted between February and June 2021, and the sample was the Bengkalis Regency, Riau community. It is a descriptive quantitative study that uses a cross-sectional design. There were 214 participants in the study's sample, which was selected using the non-probability Convenience Sampling method. According to inclusion criteria, persons who had a direct or indirect meeting with the study analyst were used as respondents. The inclusion criteria for this study were age ≥ 17 and residence in the Bengkalis Regency with an ID card. The questionnaire was tested for validity and reliability with 30 respondents in February 2021.

Data was collected in the first week of March 2021 using Google forms distributed in person and through social media (Instagram, WhatsApp, and Facebook). It was edited, and the contents of the google form were re-checked to ensure filled responses were consistent and complete. The questionnaire, delivered in Indonesian, consisted of 48 questions, divided into

8 sections. The first part collects information related to the characteristics of the respondents (age, gender, and educational history). Furthermore, the second part of Personal hygiene consists of 14 questions related to using masks, washing hands with soap, keeping a distance, touching someone, changing clothes, and touching the face area. The third part is related to accessibility which consists of 5 questions. Meanwhile, the fourth related to family support includes 5 questions. The fifth part is related to social support, which consists of 5 questions. Infrastructure, which is the sixth section, consists of 5 questions. The seventh part is exposed to information, comprising 5 questions. Additionally, the eighth part is knowledge, which has 9 questions related to general information about Covid19 (Symptoms, transmission, risk factors, and prevention of the pandemic). Personal hygiene was categorized (coding) based on the mean/median limit. A score $> \text{mean}$ was awarded to the good category, while $\leq \text{mean}$ was assigned to the less good. Furthermore, the variables of accessibility, family support, social support and infrastructure also use the mean/median limit. The supporting category obtained a score $> \text{mean}$, while $\leq \text{mean}$ is awarded to the less supportive. The influential category obtained a score $> \text{mean}$, while $\leq \text{mean}$ was assigned to less influential. According to the number of correct and incorrect questions answered by the respondent, the knowledge variable was assessed, with a score of one for each correct answer. The knowledge category is good when it obtained a score $> \text{mean}$ and was believed not to be good when the value is $\leq \text{mean}$. This study uses univariate and bivariate analysis to analyze the data. It was conducted using statistical software, namely SPSS. The information entered into the data processing program is re-checked in this phase for coding and other problems.

The study instrument was tested to reach a Cronbach alpha value above 0.6, indicating an acceptable internal consistency. Permission was obtained from the respondents, and the data's confidentiality was guaranteed. The Ethics Commission of the Faculty of Health Sciences UIN Syarif Hidayatullah Jakarta approved this study with the letter number Un.01/F.10/KP.01.1/KE.SP/04.08.036/2021.

RESULTS

Distribution of Personal Hygiene

The results of the study with 214 respondents showed that the distribution of personal hygiene in the people of Bengkalis Regency was not good, as they always touched the face area with their hands (42.1%), often visited meetings or social events involving 5 or more

people in one place (40.2%), and rarely wash hands with soap or use antiseptic liquid before touching the eyes, nose, and mouth (30.8%), as shown in Tabel 1.

Table 1. Distribution of Personal Hygiene in the Community of Bengkalis Regency, Riau, in 2021

Personal Hygiene	Personal Hygiene			
	Never (%)	Seldom (%)	Often (%)	Always (%)
Use a mask when you go out of the house	6.5	15.4	28	50
Change the mask once a day	5.6	8.9	31.3	54.2
Washing hands with soap using antiseptic liquid or hand sanitizer after sneezing or coughing	3.7	14	30.8	51.4
Use antiseptic liquid or hand sanitizer before touching the eyes, nose and mouth	3.7	30.8	34.6	30.8
Using antiseptic liquid or hand sanitizer before and after visiting friends, family, or relatives	0.9	11.2	32.7	55.1
Guard a minimum distance of 1 meter from other people	4.7	18.7	43.9	32.7
Visiting social gatherings or events involving 5 or more people in one place	2.8	41.6	40.2	15.4
Hugging or touching someone who does not live in the same house	47.2	36.9	10.3	5.6
Changing clothes when you are out of the house	8.4	13.1	34.6	43.9
Washing clothes with soap or detergent	1.9	4.7	9.3	84.1
Take off your shoes when you enter the house	-	1.9	8.4	89.7
Touching the face area with hands	2.8	30.4	24.8	42.1

Factors on Personal Hygiene in the Prevention of Covid19

The majority of 214 respondents (65%) have good personal hygiene. Their knowledge regarding practices of preventing Covid19 is good at 57.5%. Most of the respondents have supporting infrastructure (79%), supporting accessibility (55.6%), influential information exposure (70.6%), family support (61.7%), and good social support (65.4%).

Good personal hygiene is more experienced in elderly respondents (77.7%), female gender (70.6%), and those with a history of college education (63.6%). The proportion of individuals with good knowledge but bad personal hygiene was (36.5%). The proportion of good personal hygiene, which is more in the persons with supporting infrastructure, was 71.6%. Meanwhile, in the accessibility variable, the proportion of poor personal hygiene in respondents with supportive accessibility was 20.2%. The proportion of respondents with good personal hygiene is higher at 80.3% among those with a supportive family. It is greatest among those with supportive social support and access to influential information at 78.6% and 59.6%.

Table 2. Results of Bivariate Analysis in the Community of Bengkalis Regency, Riau, in 2021

Variable	Personal Hygiene				Total		p-value
	Well		Not Good		n	%	
	n	%	n	%	n	%	
Age							
Teenager	41	48.8	43	51.2	84	100	0.000
Mature	18	66.7	9	33.3	27	100	
Seniors	80	77.7	23	23.3	103	100	
Gender							
Female	113	70.6	47	29.4	160	100	0.005
Male	26	48.1	28	51.9	54	100	
Educational Background							
Primary School	0	0	0	0	0	0	0.810
Junior High School	2	66.7	1	33.3	3	100	
Senior High School	39	68.4	18	31.6	57	100	
College Education	98	63.6	56	36.4	154	100	
Knowledge							
Well	78	63.4	45	36.6	123	100	0.664
Not good	61	67	30	33	91	100	
Infrastructure							
Support	121	71.6	48	28.4	169	100	0.000
Not enough support	18	40	27	60	45	100	
Accessibility							
Support	95	79.8	24	20.2	119	100	0.000
Not supportive	44	46.3	51	53.7	95	100	
Family Support							
Support	106	80.3	26	19.7	132	100	0.000
Not supportive	33	40.2	49	59.8	82	100	
Social Support							
Support	110	78.6	30	21.4	140	100	0.000
Not supportive	29	39.2	45	60.8	74	100	
Information Exposure							
Take effect	90	59.6	61	40.4	151	100	0.12
Less influential	49	77.8	14	22.2	63	100	

Bivariate analysis determined the relationship between the dependent and the independent variable. The analysis showed that the variables related to personal hygiene (p<0.05) were age, gender, infrastructure, accessibility, information availability, family support, and support. Education history and knowledge have no relation to it, as shown in Table 2.

DISCUSSION

The spread of Covid19 is facilitated by touching surfaces contaminated with SARS-CoV-2 using the hands and subsequently touching the eyes, nose, and mouth (9). The face is often touched with the hands when on the move. A person can become infected with the virus by the saliva (droplets) from the mouth or nose when coughing or sneezing. Furthermore, an individual is infected by the droplets falling on objects (5). The average face touch is approximately 17.8 times in an hour. 42-44% are in touch with the mucus membrane upon impact with the face (16).

The Indonesians wash their hands improperly, approximately 50.2% (9). According to a study in Indonesia, it was discovered that persons' propensity to wash their hands is influenced by the desire to smell good, the distance and availability of washing hands facilities, the perception of dirtiness, and interpersonal influence (17). This behavior is closely related to efforts to control Covid19. Furthermore, hand washing is a means of killing germs. WHO suggests washing hands with soap and running water to prevent Covid19 and other infections such as pneumonia and diarrhea (18). Hand washing with soap is one of the strategies to reduce the global disease burden (17).

The prevalence of respondents between the age of 31-45, 45-60, and >61 to leaving the house are 25.2%, 20%, and 9.7%, respectively. This means that the higher the age, the less often to leave the house (10). Older people are more likely to perform MERS-CoV prevention behavior than teenagers or adults. The low awareness of respondents may influence this at the teenage or adult age (19). Age is not a contributing factor in the source of public information to gain knowledge about Covid19 prevention. This is because each person can have a similar opportunity to obtain information at a different age. Those between the ages of 36 and 45 have a mature mental pattern with more catch and a good mind, thereby improving their understanding and knowledge (20).

The perception of female respondents towards Covid19 being contagious was 62.37% compared to the males, which was 47.23%, hence, they were more disciplined in using masks and maintaining clean hands (11). Males have lesser concerned about existing social norms on health than females (21). WHO reported that around 63% of pandemic-related deaths in Europe were male. Approximately 5,700 (63%) male Covid19 patients in New York were treated at the hospital. Furthermore, in Wuhan, 75% of deaths due to the virus are male (22). This gender had a greater risk of developing severe conditions when infected. It is due to the immune system's response, where the female immune system can detect pathogens faster than the male (23).

The immune-associated proteins expressed by the genes in women are twice that expressed by men. Women are more likely to produce more immune-related proteins to protect against infection. Therefore, their higher immune response can increase resistance to infection, including fighting against Covid19 (22). The MERS-CoV prevention was applied more by female respondents because males have more worries in life than females (24).

People in Indonesia do not apply personal hygiene to prevent Covid19 due to the high cost of masks, face shields, hand sanitizers, or other PPE (10). The provision of infrastructure to prevent disease can impact or affect certain things (25). Furthermore, the existence of hand washing facilities in public places, namely markets, terminals, places of worship, schools, and others, is one of the efforts to increase people's habit of cleaning their hands. This facility is used to prevent the transmission of Covid19 in the community (17). Hand-washing stations with flowing water and soap needed to be made available at all major entrances and exits to promote personal cleanliness. The protective element of the community has been designated as a sub-indicator for a place, or hand washing and hand sanitizer should be present in over 50% of public placements (26).

Accessibility is essential when a pandemic can affect personal hygiene applications. It is the ease and one's access to something (27). The limited availability of masks and hand sanitizers can cause an increase in prices and purchasing difficulty, hence, it is related to a person's financial condition. Individuals who perform information technology work from home and have a higher income. However, those that work as service providers or in factories experience a sudden large reduction in income (28). Due to the Covid19 pandemic, 5 out of 10 respondents had a decreased income. The income of the males decreased by 54.37%, while the female was 46.72%. Approximately 78.06% of respondents with income < rp.3 million experienced a decrease (11).

Exposure to information is an essential aspect of changing public health behavior. Understanding a positive or negative matter can influence a person's behavior depending on accurate information. Exposure to information from different sources can affect the admission of personal hygiene behaviors (29). The main sources were social media, family, and television, with 76.2%, 44.4%, and 42.1%, respectively. The results of this study proved Lawrence Green's theory which stated that exposure to information is one factor that enables a person to seek and obtain data related to a disease.

Good health communication through social media and mass media, especially the role of providing the public with proper information and urging them to take preventative steps against the disease impacts attitude perception (30). Health communication is a powerful and important tool to combat the Covid19 pandemic crisis. Mass media and social media play an essential role in disseminating information and raising awareness of public health solutions, including masks, social distancing, washing hands, and social media

distancing (31). The media also covered extensively the hygienic measures recommended by the Centers for Disease Control and featured highlights, emphasizing the importance of not touching the face, washing hands regularly, social distancing, and the need to stay home during the pandemic (32).

Family support is an act, attitude, and acceptance of other members experiencing family pain. It aims to provide support with positive patterns in reinforcement and relief efforts. Furthermore, it impacts physical and mental health (33). The family is the closest person to provide help and care according to the circumstances. During the Covid19 pandemic, the family, as the primary individual, is expected to give comprehensive assistance for personal hygiene. They often reminded the respondents to apply personal hygiene when outside the house (60.3%), provided infrastructure (59.8%), and informed the impact or danger of not implementing the practices in preventing Covid19 (47.2%). A study stated that 76% of 33 respondents had family support. This was conducted directly through the interview approach with the respondent. It was stated that the family continued to provide the respondent with good support to constantly practice personal cleanliness (34).

Each family member has a role to play in the family's overall health. This is strengthened when everyone recognizes and takes responsibility for the direct and indirect changes that affect the family's health. It is also appropriate for the family to determine the best way to maintain an environment conducive to the health and development of the members, as well as how to seek suitable assistance with family circumstances (35).

Social support depicts influences and roles caused by others, such as friends and workmates. Supporting one another in the current Covid19 pandemic can help psychological relations and strengthen personal hygiene behaviors. Furthermore, personal hygiene behavior is affected by support from good friends. This correlates with the community in the social environment of friends or co-workers and family support (36).

One of the factors in implementing better personal hygiene was obtaining help from friends regarding genital hygiene information. Similarly, the information provided by friends or co-workers can positively influence the personal hygiene practices of respondents in reducing Covid19 (37). The positive relationship between social support and personal hygiene in preventing the pandemic, indicates a direct proportionality. These factor influence individuals in inappropriate behavior and to

make the desired behavior efforts (38). According to the theoretical explanation above, it was stated that social support for personal hygiene in preventing Covid19 is a condition that is beneficial for each respondent.

Public knowledge of Covid19 is an important aspect of current circumstances, including symptoms and signs of the pandemic, the characteristics, causes, and prevention of disease transmission. A person who understands and knows certain information can determine and make decisions in behavior. For example, when people have information related to Covid19, they could determine and make decisions on ways to avoid becoming infected (39).

The study does not indicate a correlation between knowledge and personal hygiene in Covid19 prevention. This study confirms Notoatmodjo's theory, which stated that human behavior is a change from various psychological symptoms such as knowledge, interests, desires, thinking, emotions, attitudes, will, motivation, and relaxation, hence, actions by a person are good or bad based on one of these factors (40). This follows Green's opinion that an increase in knowledge does not always lead to a change in behavior (41).

Despite that in this study, participants' knowledge about the importance of personal hygiene in reducing Covid19 was unrelated, it is still crucial. An important aspect of the pandemic is having good knowledge, which brings about a decline in the number of cases. This can shape a person's belief based on decision-making and behavioral determination (42). The less a person knows about the risks of not practicing personal hygiene to prevent Covid19 for the family and the surrounding community, the greater the likelihood of being a source of disease transmission at home or work. Education will increase knowledge about healthy living habits. Furthermore, individuals with a higher education comprehend what they read more easily than those with lower education, allowing them to comprehend health messages in social media and mass media. Low-educated people have more limitations, and one of those is practicing good personal hygiene, which can be hampered by factors such as the cost of masks, isolation from friends and family owing to financial stress, and fear of losing income (43).

CONCLUSIONS

The variables of gender, age, infrastructure, accessibility, information exposure, family support, and social support have a significant relationship with

personal hygiene in preventing Covid19. Meanwhile, education history and knowledge do not significantly relate to personal hygiene in preventing the pandemic.

It is essential to improve measures connected to personal hygiene to prevent Covid19 in the community, either through health professionals or cadres. Efforts can be made, including education on knowledge related to the pandemic, specifically the risk factors and correct mask use. There should be a reduction in social gatherings or events that involve 5 or more people in one place and avoid touching the face area with your hands. Always support one another in the family. This is because the family is the closest unit that can provide self-motivation for dealing with problems and promoting health degrees. It is only natural for fellow humans to support one another primarily in health, as social creatures in need of each other. This social support can be provided as a reminder to keep a minimum of one meter with people during Covid19 symptoms.

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