

Correlation Knowledge with Attitudes and Behaviors about the Benefits of Bath in Prevention of Covid-19 in Communities in Kupang City

Ayu Merisca Fanggalda¹, Christina Olly Lada², Rr. Listyawati Nurina³, Idawati Trisno⁴

ABSTRACT

Introduction: Vitamin D can be obtained from sunbathing activities, where one of the effects of vitamin D is to reduce the risk of viral infections, especially COVID-19. East Nusa Tenggara (NTT), including the city of Kupang, is one of the areas that has a hot season ranging from 6 months in a year. Research on the relationship between knowledge and attitudes and behavior regarding the benefits of sunbathing in preventing COVID-19 has not been widely carried out, especially in East Nusa Tenggara (NTT) which has quite high sun exposure. Study purpose was to find out the relationship between knowledge and attitudes and to know the relationship between knowledge and behavior about the benefits of sunbathing in preventing COVID-19 in the community in Kupang City.

Material and methods: Observational analytic with cross sectional design for people in Kupang City who are 17-45 years old, have a smartphone and can access the internet, are able to use the google form application and who live in Kupang City. The method of measurement is by filling in 10 knowledge statements, 9 attitude statements and 4 behavioral questions on the questionnaire. The sampling technique used a combination of consecutive and snowball sampling with a total sample of 290 people who met the inclusion and exclusion criteria. This research was analyzed by univariate including age, gender, occupation, latest education, marital status and sub-district and analyzed by bivariate including knowledge of attitudes and knowledge of behavior using the Spearman test.

Result: Of the 290 respondents, 208 people had high knowledge (71.7%), 63 people had moderate knowledge (21.7%) and 19 people had low knowledge (6.6%), 203 people had good attitudes (70.0%), enough attitude 83 people (28.6%) and lack of attitude 4 people (1.4%), respondents who have good behavior are 119 people (41.0%), sufficient behavior 66 people (22.8%) less 105 people (36.0%). The results of the bivariate analysis test between knowledge and attitudes and the bivariate analysis test between knowledge and behavior in this study were obtained $p = 0.000$ ($p < 0.05$).

Conclusion: There is a relationship between knowledge and attitude and there is a relationship between knowledge and behavior about the benefits of sunbathing in preventing COVID-19 in the community in Kupang City.

Keywords: Sunbathing Knowledge, Attitudes and Behavior.

COVID-19 has caused 376,320 deaths worldwide and confirmed positive as many as 6,194,533 cases.² Data from the Ministry of Health (Kemenkes) dated June 2, 2020, total COVID-19 cases -19 in Indonesia, 27,549 cases and 1,663 people died.³ Data released by the Provincial Health Office (Dinkes) on June 2, 2020 shows that in East Nusa Tenggara (NTT) 97 cases were confirmed positive and 1 person died with the second highest prevalence 27 cases were positive in Kupang City.⁴

Based on this data, it can be said that the virus spreads very quickly, it was recorded that within 6 months there were approximately 210 countries in the world that were reported to be positive for COVID-19.² According to WHO, the spread is through droplets when sneezing and coughing.¹ Coronavirus disease is a self-limiting disease and has not found a vaccine or drug that can cure this disease, but can be prevented by maintaining and increasing body immunity.⁵ Low immunity will cause viruses or other microorganisms that cause disease to more easily replicate in the body.⁶

This is in accordance with research conducted by Nelli (2007) which states that one of the factors that causes decreased immunity is nutritional status. If a person's nutritional status is decreased or less, it will be more susceptible to viral or viral infections replicating more easily because the immune response and immunological memory are not working properly. Low immunity can lead to a reduced number of T-helper cells and disruption of phagocytosis so that the body's immune response center is T lymphocytes cannot produce cytokines and mediators as body defense.⁶ Another thing that needs to be considered is the adequacy of vitamin D levels in the body. One of the vitamins that has an important role in the immune system is vitamin D.

¹College Student, Departement of Medical Faculty, Universitas Nusa Cendana, ²Doctor, Department of Nutrition. Medical Faculty, Universitas Nusa Cendana, ³Pharmacist, Department of Pharmacology and Therap. Medical Faculty, Universitas Nusa Cendana, ⁴Doctor, Department Community Medicine. Medical Faculty, Universitas Nusa Cendana

Corresponding author: Ayu Merisca Fanggalda, Oeklipi Street, Maulafa, Kupang City, East Nusa Tenggara, Indonesia

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To get vitamin D according to the body's needs, apart from food intake, it can also be obtained from sun or ultraviolet exposure. Thus the fulfillment of vitamin D needs can be obtained from sunbathing activities.⁶

Several studies have stated that sunbathing can increase the activation of vitamin D, one of which is done by Setiati (2008) which states that there is a relationship between the effect of ultraviolet light exposure on increasing the concentration of vitamin D, where one of the effects of vitamin D is to reduce the risk of viral infection.⁷ Viruses can enter and infect the body and make the body susceptible to infection by other microorganisms by destroying the integrity of the tight junctions, gap junctions, and adherent junctions. These bridges or connecting gaps, called junctions, are located in almost all cells in the body which function to prevent bacteria and viruses molecules or particles from entering the cells. Vitamin D functions to help maintain this junction.⁵ Vitamin D can be obtained from food, supplements and sunbathing. East Nusa Tenggara (NTT), including Kupang City, is one of the areas that has a relatively long summer with a high intensity of sunlight.⁸ Thus, the sunlight needed by the body to convert active vitamin D in the body is sufficient for the people of Kupang City. The sufficient intensity of sunlight in Kupang City does not guarantee that the fulfillment of vitamin D needs of the people of Kupang City is fulfilled. This also depends on the knowledge of the benefits of sunlight and also the attitudes and behavior of the people in sunbathing. Research on the relationship between knowledge and attitudes and behavior regarding the benefits of sunbathing in preventing COVID-19 has not been widely carried out, especially in East Nusa Tenggara (NTT) which has quite high sun exposure. Therefore, based on the description above, the researchers are interested in conducting research on the relationship of knowledge with attitudes and behavior about the benefits of sunbathing in the prevention of COVID-19 in the community in Kupang City.

MATERIAL AND METHODS

This research was conducted online in Kupang City. When the research was carried out in September 2020. This type of research is analytic observational with cross sectional design in all people of Kupang City who are adolescents and adults (17-45 years). The sampling technique used a combination of consumption and snowball sampling. The sample size was determined by using a correlative analytical sampling formula with 290 respondents who met the inclusion and exclusion criteria. The inclusion criteria in this study are willingness to be a participant in this study by clicking the "yes" button and the "continue" button on the instructions for filling in the Google Form application, from adolescents to adults (17-45 years), having a smartphone and having internet access able to use google form application dan who is domiciled in Kupang City. The exclusion criteria were not filling out the questionnaire completely. The results of this study were analyzed using the SPSS Statistic version 20 computer program, namely univariate by using the frequency of each single variable, namely age (in years), gender,

occupation, latest education, marital status and district and bivariate analysis using the Spearman correlation test.

RESULTS

Sample Characteristics

During the research process, 290 people were used as research samples. In this study, data on the characteristics of respondents were taken which will be described in the

No	Variabel	Frequency N=290	Percentage (%)
1.	Age(in years)		
	17-25	249	85,9
	26-35	25	8,6
2.	Gender		
	Male	99	34,1
	Female	191	65,9
3.	Work		
	Students	235	81,0
	Lecturers / Private Employees / Teachers / ASN / Medical Personnel	36	12,4
	Entrepreneur	11	3,8
	Housewife	4	1,4
	Not Working	4	1,4
4.	Last Education		
	High school	219	75,5
	D3	16	5,5
	S1	47	16,2
5.	Marital Status		
	Not married	265	91,4
6.	District		
	Kota Lama	24	8,3
	Kota Radja	26	9,0
	Oebobo	79	27,2
	Kelapa Lima	75	25,9
	Maulafa	69	23,8
	Alak	17	5,9

Table-4.2: Characteristics of Respondents Based on Demographics

No	Variable	Frequency N=290	Percentage (%)
1.	Knowledge		
	Height	208	71,7
	Moderate	63	21,7
2.	Attitude		
	Good	203	70,0
	Enough	83	28,6
3.	Behavior		
	Good	119	41,0
	Enough	66	22,8
	Less	105	36,2

Table-4.3: Levels of Knowledge, Attitudes and Behavior of Respondents

Knowledge	Attitude						Total (%)	R	P
	Good		Enough		Less				
	N	%	n	%	N	%			
High	159	54,8	48	16,6	1	0,3	71,7		
Medium	38	13,1	23	7,9	2	0,7	21,7	0,300	0,000
Low	6	2,1	12	4,1	1	0,3	6,6		

* Spearman test

Table-4.7: Analysis of the Relationship between Knowledge and Attitudes

Pengetahuan	Perilaku						Total (%)	R	P
	Good		Enough		Less				
	N	%	n	%	N	%			
High	98	33,8	47	16,2	63	21,7	71,7		
Moderate	17	5,9	18	6,2	28	9,7	21,7	0,302	0,000
Low	4	1,4	1	0,3	14	4,8	6,6		

* Spearman test

Table-4.8: Analysis of the Relationship between Knowledge and Behavior

following table:

Based on Table 4.2 the characteristics of the respondents include age (in years), gender, occupation, latest education, marital status and district. Age of respondents ranged from 17-45 years with the largest age being 17-25 years. Of the 290 respondents, the majority of respondents were female, namely 191 people (65.9%). More than half of the respondents have jobs as students/students as many as 235 people (81.0%) and the least jobs are IRT (housewives) and 4 people who do not work respectively (1.4%). More than half of the respondents have the latest SMA/equivalent education as much as 219 (75.5%). On average, 265 respondents were not married (91.4%). Meanwhile, the average number of respondents who live in Oebobo sub-district is 79 people (27.2%) and the least number of them is 17 people (5.9%) domiciled in Alak sub-district.

Univariate analysis of the assessment of people's knowledge, attitudes and behavior based on Table 4.3 shows that 71.7% of respondents have high knowledge about the benefits of sunbathing in preventing COVID-19, 70.0% of respondents have a good attitude in sunbathing and 41.0% respondents have good sunbathing behavior in efforts to prevent COVID-19.

Bivariate analysis with the Spearman correlation analysis test was carried out to determine the relationship between knowledge and attitudes, obtained $p = 0.000$ indicating that $p < 0.05$, which means that H_0 is rejected and H_1 is accepted, so it can be concluded that there is a significant relationship between knowledge and attitudes about the benefits of sunbathing. prevention of COVID-19 in people in Kupang City. Based on Table 4.7, there is an R value or correlation value, which is the value used to see the strength level of the relationship between the independent and dependent variables in this case to see the strength of the relationship between knowledge and attitude. In addition, there is also a correlation direction, namely if the direction of the correlation is positive (+) then the relationship between the two variables is unidirectional, conversely if the direction

of correlation (-) then the relationship between the two variables is opposite.⁹

In Table 4.7, it is found that $R = 0.300$ and the direction of positive correlation (+), so it can be concluded that the relationship between knowledge and attitude states that the strength of the correlation is low, which means that even though in this study there is a significant relationship between the two variables, there are still many factors that influence knowledge and attitude so that the correlation between the two variables is low. The results of this study also show a positive correlation direction (+), which means that the relationship between knowledge and unidirectional attitude means that the higher one's knowledge, the better the attitude.

The results of the research on the analysis of the relationship between knowledge and behavior based on Table 4.8 showed that $p = 0.000$ indicates that $p < 0.05$, which means that H_0 is rejected and H_1 is accepted, so it can be concluded that there is a significant relationship between knowledge and behavior about the benefits of sunbathing in the prevention of COVID-19 in people in Kupang City.

As for the correlation value, it is obtained $R = 0.302$ and the direction of positive correlation (+), so it can be concluded that the relationship between knowledge and behavior also states that the strength of the correlation is low, which means that even though in this study there is a significant relationship between the two variables, there are still many factors that influence it. knowledge and behavior so that the correlation between the two variables is not strong. The results of this study also show a positive correlation direction (+), which means that the relationship between knowledge and unidirectional behavior means that the higher a person's knowledge, the better the resulting behavior.

DISCUSSION

Characteristics of Respondents

Characteristics of respondents include age (in years), based on Table 4.2, namely, of 290 respondents (85.9%) aged 17-25 years. This characteristic is in accordance with the

research data collection method carried out using an online questionnaire by the Indonesian Internet Service Providers Association (APJII) in 2017, stating that of the approximately 143.26 million internet users 49.52% of whom are dominated by the millennial generation, within the range of ages ranging from 19-34 years, so it is in line with this study which most of the respondents are 17-25 years old.¹⁰

Based on data from the Indonesian Internet Service Providers Association (APJII) in 2017, it was stated that the use of the internet also has gender differences, but this difference does not lie in the number of men and women, but in the behavior of using the internet. Men mostly use the internet to obtain information, such as reading news, sports and weather. Meanwhile, women mostly use it for e-mail and to obtain information about health and religion.¹⁰ This research is a research on health, which is a topic of greater interest to women. This can be one of the factors that respondents in this study were more female (65.9%) than male (34.1%).

The characteristics of respondents include the latest education based on Table 4.2, namely more than half of the respondents have the latest High School / Equivalent education (75.5%), this is in accordance with the results of a survey by the BPS COVID-19 Team in 2020 regarding community behavior during the COVID-19 pandemic, stated that in a situation like this, those who access the internet more are high school / equivalent graduates and bachelor's graduates, ranging from 30.21% to 43.88%.¹¹ So it is in line with this research that most of the respondents have high school / equivalent education.

Based on the latest education data, this can be one of the factors that the average current occupation of respondents is university student (81.0%). In addition, because the respondent's occupation is student / student, it can be concluded that on average the respondents have not finished college so most of the respondents are not married (91.4%).

Analysis of the Relationship between Knowledge and Attitudes

The relationship between the level of knowledge about the benefits of sunbathing and the attitude of basking in the prevention of COVID-19 in people aged 17-45 years in Kupang City, it is known that people in Kupang City who have high knowledge are 71.7%. From 71.7% who have high knowledge and good attitude in sunbathing as much as 54.8%. The results of this study also show that there are respondents who have moderate knowledge as much as 21.7%, and from 21.7% who have moderate knowledge and are good at sunbathing as much as 13.1%, there are also people with low knowledge as much as 6.6%, and from 6.6% who have low knowledge and have a moderate attitude, 4.1%. These results indicate a tendency that high knowledge will form a good attitude to make efforts to prevent COVID-19 in this case about sunbathing.

Some of the factors that influence the community's high sunbathing knowledge are education and employment. Education is one of the factors that influence a person to receive information. The higher a person's education, the

easier it is to receive the information conveyed so that the knowledge they have will increase. Likewise with work, in a work environment it will generate experience and increase knowledge.¹² One of the factors that influence the sunbathing attitude of the people of Kota Kupang is the mass media. Mass media is a component that influences attitudes through various forms, from newspapers, television, etc. This component also has a major influence on the formation of a person's opinion and beliefs. The mass media carries messages that contain suggestions that can direct a person's opinion or opinion, if the message is strong it will provide an affective basis in assessing something so that a certain direction of attitude is formed.¹² Based on the results of the Spearman correlation test, $p = 0.000$ shows that $p < 0.05$, which means that H_0 is rejected and H_1 is accepted, so it can be concluded that there is a significant relationship between knowledge and attitudes about the benefits of sunbathing in preventing COVID-19 in the community in Kupang City. The correlation value ($R = 0.300$) and the direction of positive correlation (+), so it can be concluded that the relationship between knowledge and attitude states the strength of the correlation is low, which means that even though in this study there is a significant relationship between the two variables, there are still many factors that influence knowledge and attitude so that the correlation between the two variables is low. The results of this study also show a positive correlation direction (+), which means that the relationship between knowledge and unidirectional attitude means that the higher one's knowledge, the better the attitude. The theory of social psychology states that attitudes are one of the factors that are closely related to a person's level of knowledge. Attitudes also cannot be formed without being preceded by obtaining information, or experiencing an object. A good level of knowledge will also encourage someone to have a good attitude.¹³ Zhong (2020) research on Chinese society, found that there is a significant relationship between knowledge and attitudes towards COVID-19 prevention. It was also said that the average public knowledge was high because one of the influencing factors was education, where the average respondent (44.0%) graduated with a bachelor's degree.¹⁴ Thus, high knowledge of the benefits of sunbathing becomes the basis for the formation of good sun attitudes in prevention of COVID-19 in people in Kupang City.

Analysis of the Relationship between Knowledge and Behavior

The relationship between the level of knowledge about the benefits of sunbathing and the behavior of sunbathing in preventing COVID-19 in people aged 17-45 years in Kupang City, it is known that people in Kupang City who have high knowledge are 71.7%. From 71.7% who have high knowledge and good behavior in sunbathing as much as 33.8%, and those who behave less, almost equal, namely as much as 21.7%. These results indicate a tendency that high knowledge will form good behavior to make efforts to prevent COVID-19 in this case about sunbathing. This is in accordance with the theory of Notoadmodjo (2013) which states that one of the factors that influence the formation

of good behavior is predisposing factors which consist of knowledge, attitudes and beliefs.¹² knowledge is high, but the sunbathing behavior is in the poor category (21.7%). This is because sometimes the knowledge obtained is only theoretical, so implementation is rarely applied.¹⁵ As a result, even though we already know the theory about the benefits of sunbathing in preventing COVID-19, they do not prevent it. Based on table 4.4, it can be seen that many people in Kupang City know that sunbathing in the sun is an activity that can increase body immunity, in this case vitamin D, but not a few of them also rarely do it (table 4.6). High knowledge is not always followed by good behavior and vice versa, which means that when people do a behavior it is not always based on an understanding of the reasons why and for what they do the behavior. This is supported by the results of a survey from the Central Bureau of Statistics (2020) on people's behavior during the pandemic which reported that on average (55%) the reason people did not comply with health protocols was due to a lack of self-awareness of the importance of complying with health protocols.¹¹

Based on Table 4.8, there were respondents who had moderate knowledge as much as 21.7%, and from 21.7% who had moderate knowledge and had good behavior in sunbathing only 5.9%, the most dominant was lack of behavior as much as 9.7%. These results indicate that a moderate level of knowledge does not always lead to good behavior. There are several processes that occur before the behavior occurs, one of which is awareness. Lack of self-awareness (awareness) of the community about the importance of behaving correctly according to the knowledge they already have is a factor in the behavior of the people of Kupang City in lack of sunbathing, even though their knowledge is categorized as moderate.

The results of this study also contained people with low knowledge as much as 6.6%, and from 6.6% who had low knowledge and had good behavior 1.4%. This is due to the environment or a healthy lifestyle that is always applied in life, so even though in theory they do not know well, an understanding of these healthy living behaviors makes respondents have good sunbathing behavior towards COVID-19 prevention. In addition, habitual factors have an important role to play in influencing behavior. This is because the habit is permanent, automatic and unplanned. Habits in general are already attached to a person or are often associated with hereditary customs (culture).¹² Based on the results of the Spearman correlation test, it was obtained that $p = 0.000$ showed that $p < 0.05$, which means that H_0 was rejected and H_1 was accepted, so it can be concluded that there is a significant relationship between knowledge and behavior about the benefits of sunbathing in the prevention of COVID-19 in the community in Kupang City. The correlation value ($R = 0.302$) and the direction of positive correlation (+), so it can be concluded that the relationship between knowledge and behavior states that the strength of the correlation is low, which means that although in this study there is a significant relationship between the two variables, there are still many factors that influence knowledge and

behavior. behavior so that the correlation between the two variables is low. The results of this study also show a positive correlation direction (+), which means that the relationship between knowledge and unidirectional behavior means that the higher a person's knowledge, the better the resulting behavior. The results of this study are in accordance with research conducted by Rajaratenam et al. (2014) regarding the relationship between knowledge level and osteoporosis prevention in this case about sunbathing in elderly women, the results of statistical analysis show that there is a significant relationship between the level of knowledge of osteoporosis and the osteoporosis prevention carried out in Kelurahan Jati $p = 0,000$ ($p < 0.05$).¹⁶ This is also in line with the theory that acceptance of new behavior will be more lasting if it is based on knowledge, whereas the behavior will not last long without being based on it. knowledge.

CONCLUSION

From the research results it can be concluded:

1. Based on the respondent's knowledge level, it can be seen that the distribution of respondents with high knowledge is 208 people (71.7%), moderate knowledge is 63 people (21.7%) and low knowledge is 19 people (6.6%).
2. Based on the level of respondent's attitude, it can be seen that the distribution of respondents who have a good attitude is 203 people (70.0%), a sufficient attitude is 83 people (28.6%) and a lack of attitude is 4 people (1.4%).
3. Based on the level of respondent behavior, it can be seen that the total distribution of respondents who have good behavior is 119 people (41.0%), 66 people (22.8%) sufficient behavior and 105 people (36,%) inadequate behavior.
4. There is a significant relationship between knowledge and attitudes about the benefits of sunbathing in preventing COVID-19 in people in Kupang City.
5. There is a significant relationship between knowledge and behavior about the benefits of sunbathing in preventing COVID-19 in people in Kupang City.

SUGGESTION

Further Researchers

- a Researchers can then examine factors that can influence people's attitudes and behavior, such as personal experiences or habits and traditions.
- b The next researcher can use the role variable of community leaders who are tested for their relationship with the emergence of community attitudes and behavior.

Government

- a For the government to be able to increase the knowledge of the people of Kupang City about the benefits of sunbathing in preventing COVID-19, especially about the UV Index, UV levels that are right for the body, and the working mechanism of vitamin D against viruses.

b For the government to be able to use social media (google, facebook, instagram, whatsapp and youtube) as a means to increase public knowledge, this is because social media (google, facebook, instagram, whatsapp and youtube) are the media most frequently used by community to seek health information.

E. Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia. *PLoS One*. 2020;15:1-15.

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Public

For the community to carry out proper and correct health protocols and to maintain body immunity, one of the ways is by sunbathing.

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