Relationship beetween Knowledge with Attitudes qnd Behaviors of Mask use in Prevention of Covid-19 in Community in Kupang City

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ABSTRACT

Introduction: At the end of 2019, a new pneumonia case was found in Wuhan, Hubei Province, China. In less than 2 weeks there were 5 patients with Acute Respiratory Distress Syndrome (ARDS). COVID-19 is a highly contagious, yet preventable disease. One way to prevent it is to use a mask. Knowledge and attitudes and behavior about the benefits, types and ways of wearing masks are things that need to be considered by the community, the positive impact of using masks as an effort to break the chain of transmission of COVID-19 needs to be known by the public to increase awareness in the use of masks in the community. Study was done to determine the relationship between knowledge and attitudes and behavior of using masks in the prevention of COVID-19 in the community in Kupang City.

Material and methods: This type of research is an observational analytic study with a cross-sectional approach, carried out on the general public in the city of Kupang aged 17-45 years by filling in a validated online questionnaire, data collection was taken in September and October 2020. The sampling technique in this study using non-probability sampling that is the combination of consecutive and snowball sampling with a sample size of 210 respondents based on inclusion and exclusion criteria. The analysis used in this research is univariate analysis in the form of frequency distribution tables and bivariate analysis using the Spearman rank test.

Result: From the 210 respondents, 90.9% had high knowledge, 4.8% had sufficient knowledge, 4.3% had low knowledge. In attitudes there are 75.7% have a good attitude and 24.3% have a bad attitude. In behavior, there are 86.2% have good behavior, 10% have moderate behavior and 3.8% have poor behavior. The results of the bivariate test using the Spearman test resulted in $p = 0.000$ ($p < 0.05$).

Conclusion: There is a significant relationship between knowledge with attitudes and behavior of using masks in the prevention of COVID-19 in community in Kupang City.

Keywords: Masks, Prevention of COVID-19, Community of Kupang City

INTRODUCTION

At the end of 2019, a case of new pneumonia was found in Wuhan, Hubei Province, China. In less than 2 weeks, there was already 5 patients who suffered Acute Respiratory Distress Syndrome (ARDS), and it was spreading rapidly in several provinces in China.[1] It was known that the etiology of these ARDS was 2019 Novel Coronavirus (2019-nCoV). In 11th of February 2020, World Health Organization uses a new nomenclature for this disease, which was then known as coronavirus disease 2019 (COVID-19) which was caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2).[2]

Based on the data from WHO, up to the 5th of June 2020 there were 6,416,828 confirmed positive cases and 382,867 death. Based on the data from Indonesian Health Ministry, up to the 5th of June 2020, there was 28,233 confirmed positive cases and 1,698 death.[3] On the other hand, from the data obtained from COVID-19 Indonesia official website, in East Nusa Tenggara Province there was 97 cases of coronavirus infection, and 27 of these cases was from Kupang City.[4]

The data above showed that COVID-19 is a very infectious disease which spread easily, however it is preventable. One of the prevention strategies is by using a face mask. Proper use of mask at the right condition should decrease or even stop the virus transmission. Knowledge, prior to the benefits of using mask, types of mask, and the proper steps of using facial mask must be put into concern. The positive impact of using facial mask as one of the strategies used to reduce/ stop COVID-19 transmission should be understanded by the citizens in order to increase the awareness of the citizens in using mask.[5]

In a prior study conducted by Miftasari in 2012, it was known that using face mask can decrease exposure to dust in the sanding factory employments. The result of this study showed that after working for 8 hours a day, the employees who did not wear mask showed a lower vital capacity of their lungs compared to the employees who wear mask.[6] The study by Miftasari showed that mask is one of the personal protective equipment that functioned as a filter between respiratory tract and particles from the environments. This proved that using a mask can protect lungs from foreign objects.[6]

Another study was conducted by Rustika and Esny in 2016, the study was performed in 163 hajj pilgrims, there was 64 samples who opted to wear mask and 99 opted to not wear a mask. This study showed that there was a correlation

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between knowledge and the behavior of wearing mask, and that there were several factors that contributes to knowledge, such as a high level of education which enable the person to effectively accept information from the mass media and building a proper motivation in the person's mind to use a mask. The proportion of the samples that doesn't wear mask was higher (74%) compared to those who wear mask, the behavior of the samples were also 3 times higher in the group of samples who doesn't wear mask. The samples who opted to not use a facial mask said that it was not comfortable when using a mask. One of the reasons that might contribute to this is the insufficient awareness of the respondents in prior to prevention of upper respiratory tract infections. In the case of COVID-19, this study showed that there might be several reasons that were proposed by the community in prior to using a face mask, one of them is that they don't feel comfortable wen using face mask, even if they have had a sufficient knowledge in prior to the usage of face mask.[7]

There wasn't any prior study regarding the correlation of knowledge and attitude and behavior in preventing COVID-19 transmission yet, especially in Kupang city. Based on the background explained above, the knowledge of the society in correlation to the attitude and behavior of using mask is crucial and most of the society is still doing an inappropriate procedure in the practice of using face mask in preventing the COVID-19 transmission, so the author of this study thought that it was important to conduct a study about "The Correlation of Knowledge with Attitude and Behavior of Using Face mask in Preventing COVID-19 Transmission in Kupang City".

MATERIAL AND METHODS

This study was conducted in the Faculty of Medicine in Nusa Cendana University. This study was conducted in September - October 2020.

This was an observational analytic study with cross sectional design, which is this study to find a relationship of variable in Kupang city with the range of age from 17 to 45 years old with a questionnaire. The questionnaire be diffused via online using google form application. The questionnaire consists of six (6) questions about the knowledge in COVID-19 prevention which has been validated, five (5) questions about the attitude in COVID-19 prevention which has been validated and five (5) questions about the behavior in COVID-19 prevention during the pandemic which has been validated before.

This study used non-probability sampling that is a combination of consecutive and snowball sampling with a sample size of 210 respondents based on inclusion and exclusion criteria. The analysis used was univariate analysis in the form of frequency distribution tables and bivariate analysis using the spearmen test.

The purpose of this study was to understand the relationship between knowledge, attitude and behavior about using a mask in prevention of COVID-19 in Kupang City.

The independent variable of this study was knowledge about using a mask in prevention of COVID-19 in community in Kupang City, and the dependent variable was attitude and behavior about using a mask in prevention of COVID-19 in community in Kupang City.

The number of samples was obtained through corelative analytic formula and 31 samples was determined, which was then added by 10% to minimalize dropout rate, 35 samples was determined, this number was then multiplied by the number of districts in Kupang city, the total number of samples was 210. The criteria of inclusion in this study were the citizens who wanted to participate in this study, ranged from 17 to 45 years old, owns an android smartphone and an access to internet, able to use google form application, and was a Kupang citizens. The criteria of exclusion were the citizens that doesn't stay in Kupang city, and those who fills the questionnaire with duplicate identity. The dropout criteria were the respondent that fill the questionnaire incompletely.

The result of this study was analyzed using SPSS Statistic program version 24 univariately using the frequency of each of the variables which were the emotional quotation and SDLR, and also bivariate analysis using the spearman test.

RESULT

Based on the table-1, the majority of the respondents were female, which was 134 respondents (63.8%), within a range of age of 17 to 25 years old which were 199 respondents

Characteristic	N	Percentage (%)
Sex		
Male	76	36.2
Female	134	63.8
Age		
17-25	199	94.8
26-45	11	5.2
Districts		
Kota Raja	32	15.2
Kota Lama	20	9.5
Maulafa	40	19.2
Oebobo	42	20
Kelapa Lima	23	10.9
Alak	23	10.9
Education		
Senior High School	157	74.8
Vocational High School	10	4.8
Diploma (D3)	5	2.4
Bachelor (S1)	36	17.2
Post Graduate (S2)	1	0.4
Doctoral (S3)	1	0.4
Employment		
Unemployment	28	13.3
Student	153	72.9
Civil Servant	10	4.8
Entrepreneur	15	7.2
Intern Doctor	2	0.9
Laborer	2	0.9
Marital Status		
Not Married	199	94.8
Married	11	5.2

Table-1: The characteristic of the respondents

(94.8%), was from Kelapa Lima Districts which were 53 respondents (25.2%), the last level of education was Senior High School which were 157 respondents (74.8%), most of the samples were students which were 153 respondents (72.9%) and most of the samples was not married which were 199 respondents (94.8%).

Based on the data obtained, the knowledge level of the respondents in prior to COVID-19 prevention can be seen in the table below.

Based on the table-2, the majority of the respondents has a high level of knowledge which were 191 of the samples (90.9%) and respondents with low level of knowledge were the least with 9 respondents (4.3%).

The attitude of the respondents in prior to COVID-19 prevention can be seen in the table below.

Based on the table-3, the majority of the respondents were having a good attitude which were 159 respondents (75.7%) and the respondents with inappropriate attitude were the least with 51 respondents (24.3%).

Knowledge in Prior to Mask Usage	N	(%)
High Level of Knowledge	191	90.9
Sufficient knowledge	10	4.8
Low Level of Knowledge	9	4.3
Total	210	100

Table-2: Knowledge of Mask Use

Attitude in Using Mask	N	(%)
Good Attitude	159	75.7%
Inappropriate Attitude	51	24.3
Total	210	100

Table-3: Attitude of Mask Use

Behavior of Using Mask	N	(%)
Good Behavior	181	86.2
Sufficient Behavior	21	10
Inappropriate Behavior	8	3.8
Total	210	100

Table-4: Behavior of Mask Use

The behavior of the respondents in prior to COVID-19 prevention can be seen in the table-4.

Based on the table-4, the majority of the respondents were having a good behavior in prior to COVID-19 prevention, which were 181 respondents (86.2%) and the respondents with Inappropriate behavior were the least, which were 8 respondents (3.8).

Based on the statistical analyses using the Spearman test, the result was significant p=0.000 (P < 0.05) which showed that there was a significant correlation between knowledge, attitude and behavior of using mask in prior to COVID-19 prevention in Kupang city.

DISCUSSION

Based on the questionnaire which consist of six questions in correlation to the knowledge in prior to COVID-19 prevention, five questions about the attitude in prior to COVID-19 prevention and five question about the behavior which should be implicated in preventing the transmission of corona virus, it was known that the citizens have had a good level of knowledge, good attitude in prior to mask usage, and the behavior of the citizens was also good in prior to mask usage. The result of this study was similar with previous study conducted by Zhong, Luo etc in China in 2020, from 12 questions about the knowledge, two questions about attitude and two questions about behavior it was found that more than 90% was answered correctly.[8] Another study conducted by Ferdous, Saiful Islam, etc in Bangladesh from March 29th to April 19th, 2020 which was performed in 2,068 respondents found that 87.2% of the respondents were using mask for COVID-19 prevention, their knowledge, attitude and behavior of the citizens were good in prior to COVID-19 prevention.[9]

The result of a survey on the behavior of the citizens during the COVID_19 pandemic which was performed by Statistical Center Institution in 90,967 respondents showed that the level of obedience of the respondents during the last week especially when doing activity outside of their house, in which the data showed that 91.98% of the respondents were obedient In using mask, these 91.8% of the respondents

Knowledge	Attitude				P
	Good	(%)	Inappropriate	(%)	
High	153	72.8	38	18.1	0.001
Sufficient	5	2.4	4	2.4	
Low	1	0.5	8	3.8	
*Spearman rank test					

Tabel-5: The Result of the Bivariate Analyzes

Knowledge	Behavior						P
	Good	(%)	Sufficient	(%)	Inappropriate	(%)	
High	172	81.9	16	7.6	3	1.4	0.001
Sufficient	7	3.3	2	0.9	1	0.5	
Low	2	0.9	3	1.4	4	1.9	
*Spearman rank test							

Table-5: The Result of the Bivariate Analyzes

thought that using mask is very effective in COVID-19 prevention, on the other hand, in the group of respondents that doesn't wear mask or other health protocol, 23% stated that the price of mask, face-shield, hand sanitizer or other personal protective equipment was expensive.

The result of this study showed that knowledge, attitude and behavior of the citizens were good in prior to mask usage for COVID-19 prevention. This result contradicts the actual condition, in which the COVID-19 cases was increasing, which was due to the fact that the citizens were not applying health protocol properly. Even when the percentage of knowledge, attitude and behavior was high, but there were still some respondents who have a poor knowledge, attitude and behavior, even if these were only a small percentage of the samples, but these small fractions could affect the transmission of COVID-19. Corona virus is a highly contagious virus which spread rapidly, even when there was only a small fraction of the respondents who has a poor knowledge, attitude and behavior, it would impact the transmission of corona virus heavily. The author of this study hoped that the government keeps on educating all layers of the society so that a small percentage of the society which has not applying the health protocol yet would be decreased.

The result of the bivariate analyzes showed that there was a correlation between knowledge and attitude in prior to mask usage in COVID-19 prevention in Kupang city. The result of this study was similar with the result of prior study conducted by Kumar, Katto, Siddiqui, etc in 2020 in Dow University of Health Sciences, Karachi, Pakistan on 392 respondents, which consist of 66 consultants, 91 health officers, 117 medical interns, 30 laborer and 88 staff, it showed that there was a correlation between knowledge and attitude in the health officers in prior to the use of mask to limit the corona virus transmission. This was due to an inappropriate information regarding to the use of mask, which was spreading through the social media.[10] Another study conducted by Azlan, Hamsah, Sern, Ayub and Mohamad in 2020 in Malaysia showed that there was a correlation between knowledge and attitude in COVID-189 prevention, in which the citizens with low level of income did not have sufficient access to trustworthy information about the corona virus.[11]

Knowledge comes from the sense to an object. Knowledge is an important factor that contributes to a person in deciding to do something (Notoadmojo), on the other hand, attitude is an action performed which was a closed response from an external stimulus (Notoadmojo). Due to this, knowledge correlates strongly to a person's attitude. Proper knowledge will produce good attitude, and vice versa.

Knowledge could be affected by (1) level of educations. The higher someone's level of educations are, the knowledge will be higher. (2) Information. People could get information from a variety of source, due to the high flow of information, the knowledge about a particular subject will also increases. Not every people living in the city could gain an access to internet, this was based on the survey about the use of information and communication technology (2017) in Indonesia which showed that only 61.83% of the citizens living in the city have access to the internet. (3) Culture. The influence of the surrounding environment could also affect a person's knowledge. (4). Experience. An experience could become a lesson or knowledge to someone.

Attitude was influenced by 2 factors, the first is internal factors, a person who received an external stimuli, will process and select all of those external stimuli. In other words, that person is the on that determined his/her attitude. Internal factors consist of motivation factor, psychological factor and physiological factor. The second is external factors, external factor might be resulted from external stimuli such as experience, situation, norms, resistance and support which could change the attitude of a person.

There are various factors that could affect a good knowledge and attitude in a person. So, in order to achieve a good knowledge about COVID-19, factors that affect it must be developed, so that with a good knowledge, a proper attitude in prior to COVID-19 prevention might be achieved. There are various things that could be done, such as in information aspect by increasing the access to internet so that everybody can access internet and obtain various information regarding to health protocol in the prevention of COVID-19.

Based in the result of bivariate analysis, there was a correlation between knowledge and attitude of using mask in COVID-19 prevention among the citizens of Kupang city. The result of this study was similar with previous study conducted by Taddese, Tesyafe etc which was conducted in Police Health Facilities of Addis Ababa, Ethiopia in 2020in 408 respondents which showed that there was a correlation between knowledge and attitude in using face mask. There was 310 respondents (76.5%) who have a poor knowledge and 272 respondents (66.7%) who have a poor behavior in prior to the usage of face mask.[12] Another study conducted by Lau, Hung etc in 2020 in Philippine which studied 2090 respondents with low level of income showed that there was a correlation between knowledge and behavior in COVID-19 prevention, respondents with better knowledge also have a better behavior in prior to COVID-19 prevention.[13]

Behavior is an action or activity which can be directly seen or seen by other people (Notoadmojo). Some of the things which could affect behavior is (1) Predisposition factors, predisposition factors are factors which promotes someone to do something. For example, attitude, knowledge, believe and Faith. In order to have a good behavior, a good knowledge an attitude is crucial. (2) Possibility factors, possibility factors are factors which make a person able to do something. These also refers to the availability of everything needed such as all the infrastructures.for example, the availability of free mask for poor people, an access to information regarding to COVID-19 prevention. (3) Supporting factors, Supporting factors are also called strengthening factors. This factors will build a confidence which will encourage a person to do something. An example of this would be suggestions from parents or his/her surrounding. In this case, an accurate information regarding to COVID-19 prevention, in order to encourage and built confidence for the society to obey

current health protocol.

CONCLUSION

Based on the result of this study about The Correlation of Knowledge with Attitude and Behavior of Using Face mask in Preventing COVID-19 Transmission in Kupang City, we can conclude that:

There is a correlation between knowledge and attitude in using face mask in preventing COVID-19 in Kupang City.

There is no correlation between knowledge and behavior in using face mask in preventing COVID-19 in Kupang City.

There is already a sufficient knowledge in the citizens of Kupang city regarding to COVID-19 prevention (90.9%)

There is already a sufficient attitude in the citizens of Kupang city regarding to COVID-19 prevention (75.7%)

There is already a sufficient behavior in the citizens of Kupang city regarding to COVID-19 prevention (86.2%)

RECOMMENDATION

For author: It was suggested that the author could study another variables that could correlates to COVID-19 prevention and also to participate in prevention program in the society.

Public Health Office: Increasing risk communication with online media regarding COVID-19 prevention protocols and the possible outcome if these protocols were not properly obeyed.

For the citizens: So that the use of mask can be done voluntarily as a new normal in this pandemic, and not due to force.

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