THE RISK LEVEL OF COVID-19 TRANSMISSION THROUGH THE SELF-ASSESSMENT FEATURE OF THE INARISK PERSONAL APPLICATION IN GONDOHARUM VILLAGE, JEKULO, KUDUS

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Abstract - *The high positive rate of Covid-19 is related to the low public awareness about the importance of implementing the Covid-19 health protocol, so it is necessary to conduct an independent assessment of the correlation of individual behavior/habits towards the risk level of transmission and spread of Covid-19. This research uses quantitative descriptive research, with the sample population being the entire community of Gondoharum Village, Jekulo, Kudus. Sampling was done using Simple Random Sampling technique with 119 respondents in total. This research using Self-Assessment Feature in the Inarisk Personal Application developed by BNPB (Indonesian National Disaster Management Agency) as its measuring intrument. Data obtained were processed and concluded in the form of frequency distribution and percentage. The results of this study indicate that the percentage of moderate risk is 37.82%, and high risk is 64.71%. It shows that public needs to increase their self-awareness about the importance of implementing health protocols to reduce the risk of transmission and spread of Covid-19.*

Keywords**:** *Covid-19, Inarisk, Protocol, Self-Assesment*

1. INTRODUCTION

On Januari 30th, 2020, WHO (World Health Organization) declared nCov-2019 as a public health emergency that caused global restlessness around the world or PHEIC, characterized by symptoms such as: fever, dry cough, and headache, which are sometimes accompanied by digestive disorders (Huang, et al., 2020). The President of the Republic of Indonesia, Joko Widodo, declared Covid-19 as a national disaster on April 13th, 2020, through Decree of President of the Republic of Indonesia Number 12 of 2020 (President Decree, 2020) due to the spread of the epidemic which has covered 34 provinces in Indonesia. Positive confirmed cases of Covid-19 as of September 1st, 2021, at 12.11 WIB in Indonesia were 4,089,801 people, with a mortality percentage of 3.3% (Health, 2021).

Every person has an important role in breaking the chain of Covid-19 transmission. The high rate of Covid-19 positive cases requires each individual to have knowledge about the prevention and control of Covid-19 transmission, when they are at home, travelling, at work, worship place, tourist attractions, and other places that involve social interaction. The Indonesian Ministry of Health on July 2020 has issued the Guidelines for the Prevention and Control of Coronavirus Disease (Covid-19) as a guidance for public about how to prevent and control COVID-19 transmission, such as; washing hands, wearing masks, practice social distancing, to limit social interaction, to limit mobility, to staying away from crowds, to increase body immunity, etc. (Indonesia's Ministry of Health, 2020).

Various policies have been carried out by the Government of Indonesia to reduce the transmission and spread of the Covid-19 virus, such as implementing PSBB (Large-Scale Social Restriction), Lockdown, PPKM (Public Activity Restriction), etc. In addition, the government also trying to provide knowledge-sharing and educate the public, one of the methods is self-assessment based on personal behavior or habits to find out the risk of Covid-19 transmission. This method is implemented in a technology-based self-assessment tool through the Inarisk Personal application developed by the Indonesia's National Disaster Management Agency (BNPB) as the Coordinator of Policy Implementation for the Acceleration of COVID-19 Handling (National Disaster Management Agency, 2021). The results of this risk assessment are expected to be used as a database to know individuals with high/medium/low risk so it can be useful in formulating strategies and action plans to break the transmission chain of COVID-19.

The participation of educational institutions is highly expected in assisting the government, in this case especially BNPB, in handling and preventing the spread of Covid-19. Community service activities carried out by university student during their KKN (Student Study Service) in Gondoharum Village using the Inarisk Personal application based on several problems that occur in the community, including: 1) The need for community to understand about the importance of implementing health protocols to reduce the risk of Covid-19 transmission; 2) The importance of self-assessment for the community regarding the level of risk of Covid-19 transmission and what they can do as prevention; 3) The urgency of mapping the

community's risk status against the threat of transmission and spread of Coronavirus.

2. METHOD

Quantitative descriptive method is used in this research during KKN activity, with the entire community of Gondoharum Village as its population. Sampling was done by simple random sampling technique with a total number of 119 people as respondents. This research using the Self-Assesment feature built-in Inarisk Personal Application developed by BNPB.

3. RESULTS AND DISCUSSION

Inarisk is a disaster risk assessment portal that displays information on disaster threats, vulnerabilities (population, physical, economic, and environmental losses), capacities, and disaster risks. Inarisk can also display disaster risk index monitoring. BNPB as a government institution formed a team to handle Covid-19 by releasing an application namely the Inarisk Personal. Inarisk Personal is an android and iOS application that displays the level of disaster hazard at the user's location, as well as suggestions for mitigation. In its development, Inarisk Personal contains various features to support community resilience, one of which is a self-assessment tool that can provide information in identifying the risk of Covid-19 transmission through the habits and daily behavior of each individual (BNPB, 2020).

In the implementation of this work program, respondents were asked to fill in a number of questions related to personal behavior and habits, including the potential for infection outside the home, the potential for infection at home, and body resistance or immunity through Google Form (Table 2). The total population of respondents is 119 people, with different age and sex distributions (Table 1).

Table 1. Frequency Distribution Based on Community Characteristics of Gondoharum Village (n=100)

Characteristics		f	%
Range of Age	6 – 12 years old	15	12,6
	13 – 18 years old	44	37,0
	19 – 30 years old	23	19,3
	30 – 60 years old	37	31,1
Sex	Male	32	26,9
	Female	87	73,1
Total		119	119

Table 2. Frequency distribution based on the statement of the potential for infection outside the home in the Gondoharum Village community

	Statement	f	
		Yes	No
	Potential for Infection Outside the Home		
A	I go outside my home	100	19
B	I use public transportation: gojek/grab, bus, taxi, train	99	20

C	I don't wear mask when I gather with other people	12	107
D	I do the handshake with other people	24	95
E	I don't clean my hand using hand sanitizer/wet tissue before holding the steering wheel	18	101
F	I touch the objects/money that other people also touched	77	42
G	I don't keep 1.5 meters distance from other people when: shopping, working, studying, and praying	34	85
H	I dine-in outside the house (food stall/restaurant)	21	98
I	I don't drink warm water and wash my hands with soap after I arrive at my destination	10	109
J	I live in the area where the infected patient reside at	29	90
	Potential for Infection Inside the Home		
K	I don't put hand sanitizer in front of the entrance to clean my hands before holding the door handle	55	64
L	I don't wash my hands with soap after arriving home	4	115
M	I don't provide: wet/antiseptic tissue, masks, antiseptic soap for the family at home	11	108
N	I don't immediately soak used clothes and pants that I wear to go outside in hot water/soap	40	79
O	I don't shower and wash my hair immediately after I get home	41	78
P	I don't share my knowledge about the personal risk assessment checklists to my family at home	31	88
	Body Immunity		
Q	I am not exposed to the sun for at least 15 minutes a day	18	101
R	I don't walk/exercise at least 30 minutes every day	48	71
S	I rarely take vitamins C and E, and lack of sleep	57	64
T	I am over 60 years old	2	117
U	I have: heart disease/diabetes/chronic respiratory problems	1	118

A. Respondents Risk Status

In the study using the Inarisk Personal application, the results of the risk status of Covid-19 transmission in the Gondoharum Village community with moderate risk were 42 people (35.29%) and high risk were 77 people (64.71%). The high percentage of people at high risk indicates the lack of seriousness and public awareness in implementing health protocols.

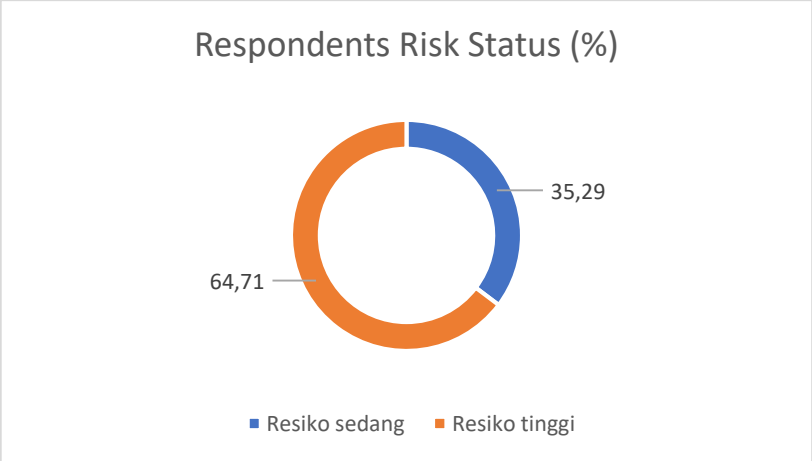

Figure 1. Chart. Risk Status of Covid-19 transmission in Gondoharum Village

B. Behavioral Patterns Based on Risk of Infection Outside the Home

Based on habits and behavior outside the home, the highest potential for Covid-19 transmission was caused by the behavior of: (a) going outside the house as many as 100 people (84.0%), and (f) touching objects/money that were also touched by other people as many as 77 people (64.7%). This result can be explained by the condition of respondents who have activities outside the home such as work and school, and also respondents who often make direct contact through intermediaries like objects/money with other people.

Quoting from the Task Force for the Acceleration of Handling Covid-19 in 2020, one of the means that can reduce the risk of transmission and spread of Covid-19 outside the home is to reduce contact with objects that are often touched or objects that are in public places. Transmission of this virus can occur either through direct contact or indirect contact, through the intermediary of inanimate objects. Respiratory tract secretions or droplets released by an infected person can contaminate surfaces and objects, resulting in the formation of fomites (contaminated surfaces). The SARS-CoV-2 virus can live and be found on the surface of objects for hours to days, depending on the surrounding environment (WHO, SARS-CoV-2 Transmission: Implications for Infection Prevention Precautions, 2020).

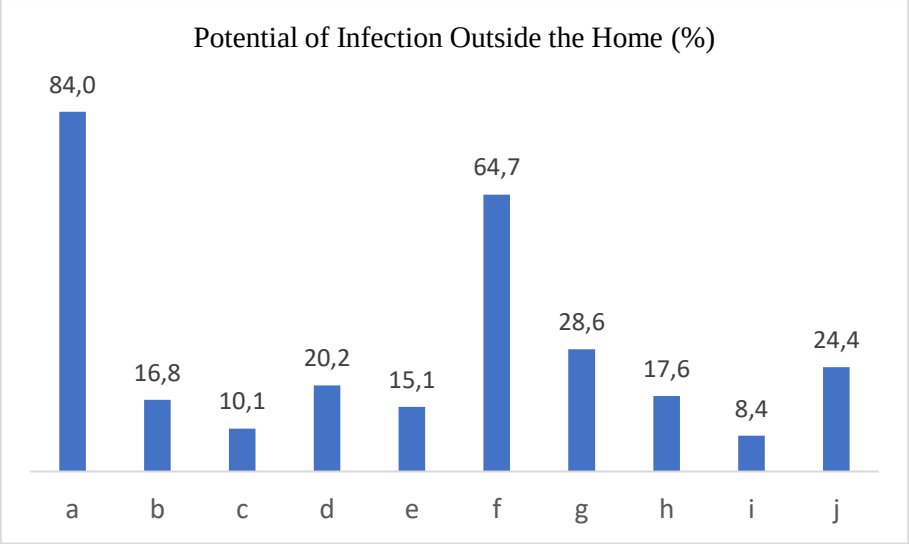

Figure 2.Potential of Infection Outside the Home

C. Behavioral Patterns Based on Risk of Contagion Inside the Home

The data in the graph below shows the percentage of the risk of being infected at home based on certain behavior or habit patterns. The increased risk of infection inside the home can be caused by the entry of the virus into the home environment, which is not prevented and handled properly. There are 93 respondents (78.2%) stated that they did not install hand sanitizer / washing soap at their doorstep, and 59 respondents (49.6%) stated that they did not immediately soak used clothes and pants with hot water or soap.

The results of the CDC study stated that the focus of transmission in the family sphere was from adults to children. As many as 50% of family members at home were infected from other family members who were positive Covid-19. According to a South Korean epidemiologist, Tashandra (2020), the level of risk of infection at home is higher than transmission from contacts outside the home, so this needs to be taken very seriously (Grijalva, 2020).

WHO and IPCN (Infection Prevention and Control Nurses) stated that hands are one of the entry points for disease-causing microbes into the body. Data from WHO shows that hands can contain as much as 39,000 – 460,000 CFU/cm2 of bacteria. The installation of hand sanitizers / washing soap in the house entrance is carried out to maintain hand hygiene as one of the first steps in the body's immune defense (Sususaningrum, Ujilestari, Ariani, Salsabila, & Hidayah, 2021).

Another factor that causes a high level of risk for the spread of Covid-19 is the behavior / habits of not soaking used clothes with hot water or soap. The effects of heat have been described by heat segregation on Sars-Cov membrane proteins (Lee, et al., 2005), and it has been suggested that the nucleocapsid proteins in this virus can be denatured at 55°C (Kampf, Voss, & Scheithauer, 2020). WHO also recommends washing clothes with warm/hot water at a temperature of 60 – 90^{0}C to eradicate viruses that stick to clothes (WHO, Water, sanitation, hygiene, your waste management for the COVID-19 virus, 2021).

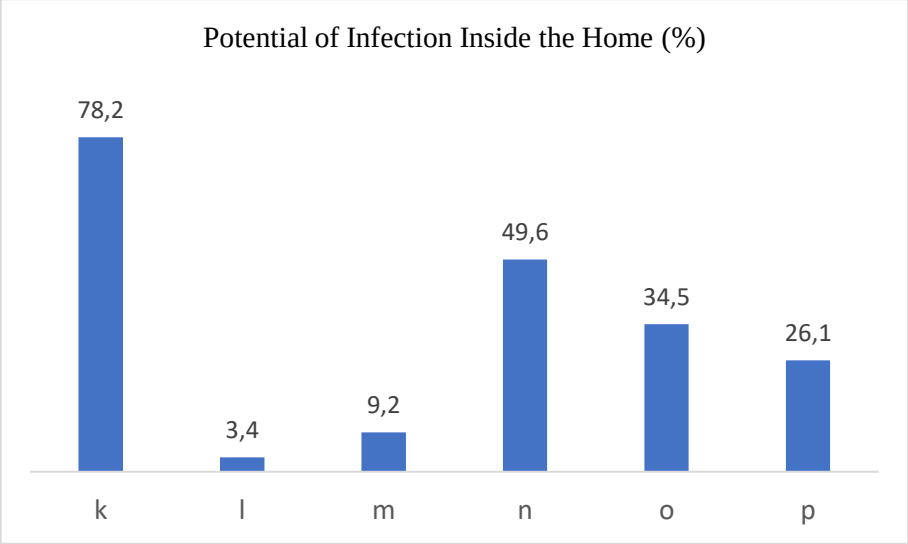

Figure 3. Potential of Infection Inside the Home

D. Body Immunity

The results of the study based on body immunity showed that only 1 respondent has a certain health condition (heart disease / diabetes / chronic respiratory disorders), and only 2 respondents were over 60 years old. Various studies have shown correlation between age and comorbid diseases with the level of risk of infection of Covid-19. The chance of people over the age of 60 years old being exposed to Covid-19 is 15.4 times higher than people with the age below

(Biswas, Rahaman, Biswas, Haque, & Ibrahim, 2021), this is also possible if the patient has a congenital disease such as heart disease, diabetes, or respiratory problems. Patients aged >60 who have Covid-19 are at higher risk of being hospitalized, need intensive care, or even a ventilator to assist their breathing, which can lead to death. This risk will increase in the 70s and 80s (CDC, 2020).

Another factors that can increase the risk of infection of COVID-19 are not doing the walk/exercise regularly for 30 minutes per day, rarely consuming vitamins C and E, and lack of sleep. Susilo, et al (2020) and Rahayu (2020) stated that there are several ways to improve the body's immune system: by not smoking and not consuming alcohol, exercising regularly, being exposed to sufficient sunlight, improving sleep quality, and taking enough supplements and vitamins. Individuals who have a healthy diet and lifestyle have a low risk of being infected or exposed to such diseases (Ministry of Health, 2020).

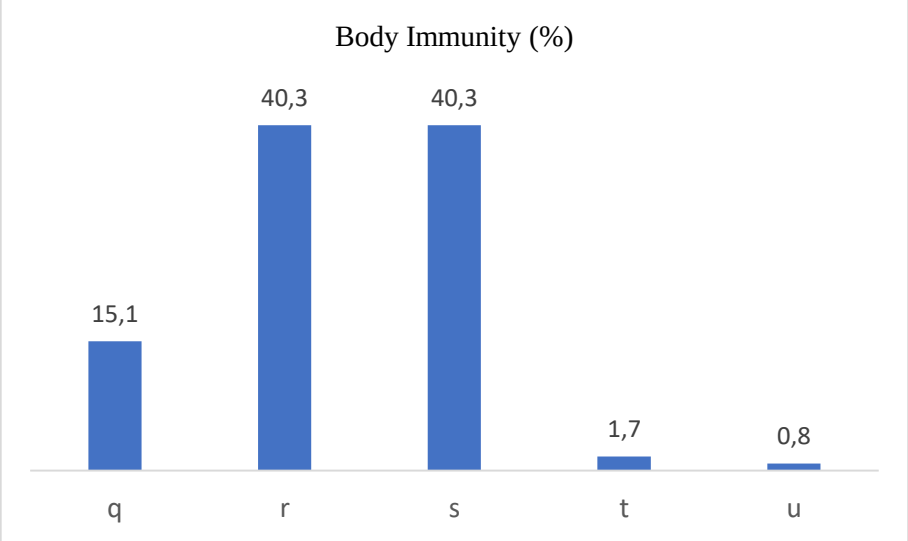

Figure 4. Body Immunity

4. CONCLUSION

Based on the results of an independent assessment of the risk of Covid-19 transmission on 119 respondents in Gondoharum Village, Jekulo, Kudus, it was found that 42 people (35.29%) had moderate risk status, and 77 people (64.71%) had high risk status. In this case, it is necessary to do more knowledge-sharing to educate the public and increase public awareness on daily basis regarding the importance of implementing health protocol rules in order to prevent the transmission and spread of the Covid-19 virus.

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