

## ORIGINAL ARTICLE

### Characteristics of Health Protocols and Incidence of COVID-19 in Young Doctors Complete Vaccinated

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#### ABSTRACT

COVID-19 is a respiratory disease that has currently become a pandemic in the world. West Java is one of the provinces with the most cases of COVID-19 in Indonesia. Health workers including young doctors are a group that has a very high risk of getting infected with COVID-19. The purpose of this study was to determine the characteristics of health protocols and COVID-19 cases in young doctors at Faculty of Medicine, General Achmad Yani University (FK UNJANI) who were fully vaccinated against COVID-19. This study was designed as a descriptive study with a cross-sectional approach. The characteristics assessed in this study were: age, gender, and a confirmed history of COVID-19. Data was collected in June 2021-September 2022 using google form to fill out a questionnaire. The questionnaire was filled out by 105 eligible respondents. Respondents have received at least 2 doses of the COVID-19 vaccine and are aged between 22-23 years. The characteristics of respondents were 71 females (68.57%) and 33 males (31.43%). A total of 78.1% had confirmed COVID-19 and 21.9% had never been infected. A total of 52.4% respondents had good health protocols and 47.6% had poor health protocols.

**Keyword:** characteristic, COVID-19, health protocol, vaccination, young doctors

## INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a respiratory disease caused by the SARS-CoV-2 Virus. This virus is a single-stranded RNA virus that can be isolated from several types of animals, the last one is suspected to have originated from bats and then transferred to humans. Initially the transmission of this virus could not be determined whether it could pass between humans. The number of cases continues to grow over time. It was finally confirmed that this pneumonia transmission can be transmitted from human to human. The first case report was reported on December 31, 2019 in Wuhan, China.<sup>1-3</sup> On March 11, 2020, WHO announced that COVID-19 had become a worldwide pandemic.<sup>1</sup> The first case of COVID-19 in Indonesia was announced on March 2, 2020 or about 4 months after the first case in China. The number of COVID-19 cases continues to increase. A total of more than 5.8 million cases were confirmed as of March 11, 2022. West Java is the second province with the most COVID-19 cases in Indonesia.<sup>4</sup> Common signs and symptoms of COVID-19 infection include symptoms of acute respiratory distress such as fever, cough, and difficulty to breathe. Other symptoms that appear are weakness, malaise, myalgia, sore throat, anosmia, and dysgeusia. The average incubation period is 5-6 days with the longest incubation period being 14 days.<sup>5</sup> The gold standard examination to determine COVID-19 infection requires Polymerase Chain Reaction (PCR) examination.<sup>2,4</sup> The currently recommended examination for screening for COVID-19 is the SARS CoV-2 Rapid Diagnostic Test (RDT-Ag), where results will be obtained in about 15 minutes with high sensitivity and specificity with cheaper price.<sup>5</sup>

Health workers are a group that has a very high risk of getting infected with COVID-19.<sup>6</sup> Likewise, young doctors who are carrying out education. Healthcare workers, particularly those who worked in the outbreak centers, have fought as the front lines against COVID-19, putting themselves at risk

of infection.<sup>7</sup> Young Doctors of the Faculty of Medicine, General Achmad Yani University (FK UNJANI) have started hands-on/offline registrars since August 2020 by implementing the health protocol. Health protocol guidelines for FK UNJANI Young Doctors have been made in a book form and socialized in pre-registrar training.<sup>8</sup>

In addition to improving health protocols, one of the prevention efforts to reduce the vulnerability of the human body to exposure to disease or the COVID-19 virus is vaccination. Vaccination for COVID-19 in Indonesia has been started since January 13, 2021. Medical personnel are the first community to receive the COVID-19 vaccination. Vaccination is the administration of a weakened virus that is specifically given to actively generate or increase a person's immunity against a disease. One day he is exposed to the disease he will not get sick or only experience mild illness and will not become a source of transmission.<sup>9</sup> Based on the Decree of the Minister of Health Number HK.01.07/Menkes/12758/2020, vaccines that have entered Indonesia are Sinovac, AstraZeneca, Sinopharm, Moderna, Pfizer, Novavax, and the Red and White Vaccine. The dosage and route of administration must match those recommended for each type of COVID-19 vaccine.<sup>10</sup> Research on the characteristics of health protocols and the incidence of COVID-19 in young doctors who have received a complete COVID-19 vaccination, so far there has been no report so the researchers intend to carry out this research by examining the Rapid Antigen of SARS-CoV-2 and providing a questionnaire regarding the implementation of the health protocol to all young doctors of Faculty of Medicine, General Achmad Yani University (FK UNJANI).

## MATERIALS AND METHODS

This study was designed as a descriptive study with a cross-sectional approach. This

study was conducted to determine the characteristics of the health protocol and the incidence of COVID-19 in young doctors of FK UNJANI who had received a complete COVID-19 vaccination. All young doctors were confirmed through RT-PCR swab examination. Data collection was carried out in June 2021-September 2022 through interviews and filling out a questionnaire using google forms regarding the application of health protocols to young doctors. The number of respondents who filled out the questionnaire was 105 people.

The inclusion criteria in this study were a young doctor of FK UNJANI with active student status and had received at least 2 doses of COVID-19 vaccination. The exclusion criteria were FK UNJANI young

doctors who were taking academic leave and had received the first dose of COVID-19 vaccination.

The sample size in this study was the same as the existing population that met the inclusion and exclusion criteria. The sampling method used in this study is total sampling, which is a sampling technique where the number of samples is the same as the population.

## RESULTS AND DISCUSSION

Table 1 shows the characteristics of the respondents' genders and confirmed histories of COVID-19. Respondents have received at least 2 doses of the COVID-19 vaccine and are aged between 22-23 years.

Table 1. Distribution of respondent characteristics

No.	Characteristics	Amount	Percentage
1	Gender		
	Man	33	31.43%
	Woman	72	68.57%
2	Confirmed history of COVID-19		
	Once	82	78.1%
	Never	23	21.9%

Based on Table 1, the characteristics of respondents are 72 females (68.57%) and 33 males (31.43%). All respondents have got vaccinations against COVID-19 at least 2 doses. A total of 78.1% of respondents had confirmed COVID-19 and 21.9% had never been infected with COVID-19. Data as per 19 October 2022, 171,713,069 people in Indonesia have received the COVID-19 vaccination. Data on confirmed cases in Indonesia amounted to 6,460,267 cases with the addition of 2,164 cases as of October 19, 2022.<sup>4</sup>

### Description of Respondents' Behavior on the Implementation of Health Protocols

The health protocol assessment consisted of 12 questions including self-assessment, use of masks, consumption of vitamins C and D, washing hands, maintaining distances, avoiding crowds, and personal hygiene. In this research, the standard of compliance with the health protocols was taken from the average value of all the responses to the questionnaire. Figure 1-6 shows a description of the implementation of health protocols for young doctor respondents.

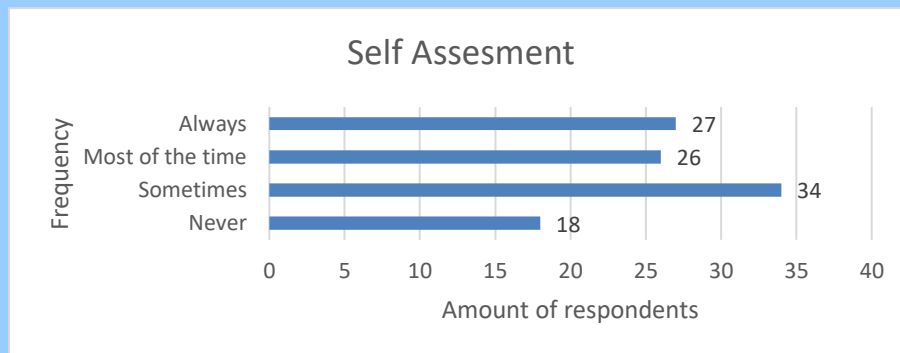


Figure 1. Filling in the Self-Assessment before service

Based on the Regulation of Minister of Health of the Republic of Indonesia No. HK 01.07/Menkes/328/2020 on guidelines for preventing and controlling COVID-19 in the workplace, before entering their offices, young doctors must apply the COVID-19 Risk Self-Assessment to ensure that they do not get infected from the offices or health facilities.<sup>11</sup>

A workplace where social interaction occurs could be a risk factor that needs to be anticipated for COVID-19 transmissions. By implementing this guideline, the risk and impact of the COVID-19 pandemic in the workplace due to the gathering of many people in that location could be minimized.

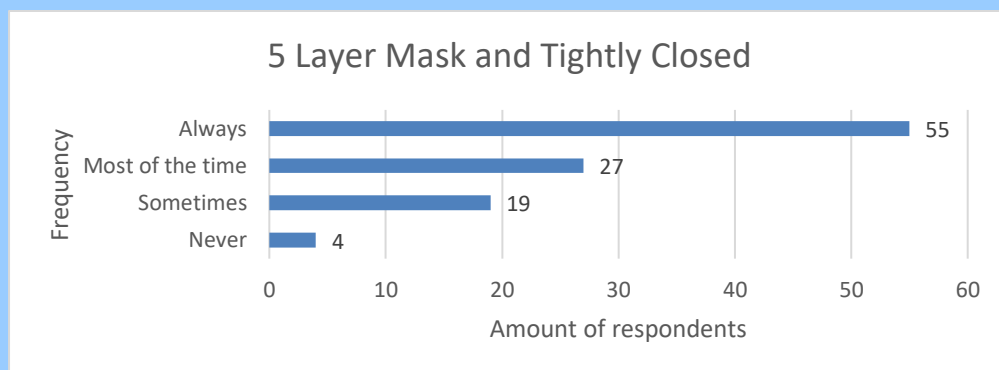
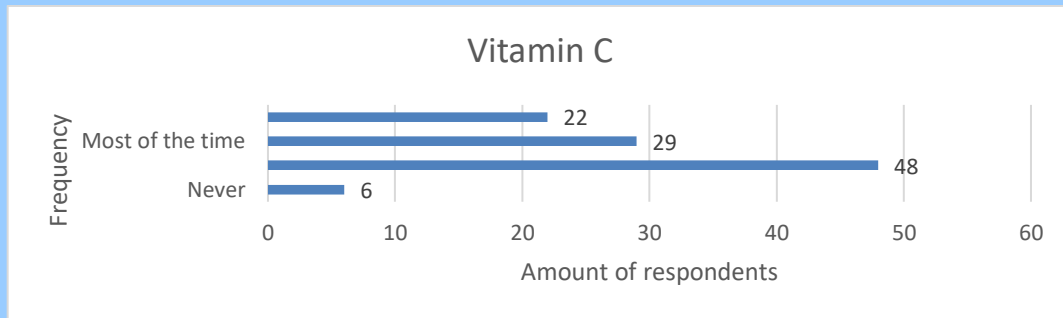


Figure 2. Mask at least 5 layers and tightly closed

The transmission of COVID-19 occurs through droplets that entering human body through the nose, mouth, and eyes. Human droplets could contain the virus or airflow (aerosol) is the main route that causes the virus to spread and has a high transmission power, when a pandemic occurs it is very important to control the source of infection.<sup>12</sup>

The principle of preventing the transmission of COVID-19 to individuals is carried out by avoiding the entry of the virus through the three entrances by using personal protective equipment in the form of a mask that covers the nose and mouth to the chin during interaction with other people whose health status is unknown.<sup>12-3</sup>

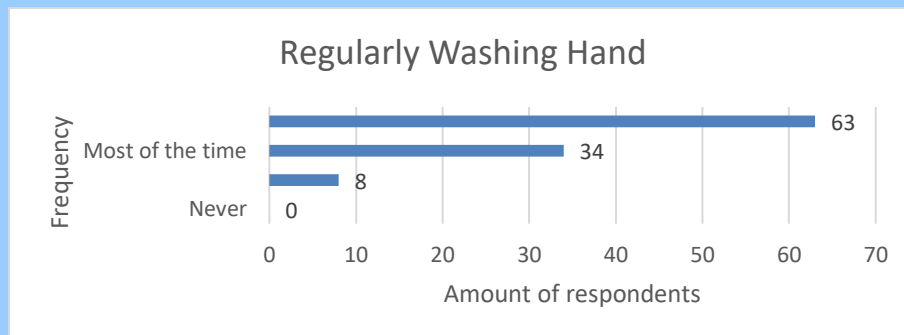


**Figure 3. Consumption of Vitamin C every day**

Vitamin C is an important nutrient that functions as an antioxidant and plays a major role as a cofactor and modulator of various immune system pathways. Consumption of vitamin C supplements during the COVID-19 pandemic is very important because the function of vitamin C can neutralize free radicals, thereby protecting immune cells from free radical damage.<sup>14</sup>

Besides Vitamin C, another vitamin

that has function as an antioxidant is Vitamin D. An observational study reported an association between low serum 25-hydroxy vitamin D concentrations and susceptibility to acute respiratory infections.<sup>33</sup> Supplementation of vitamin D 10-25 g daily has a modest protective effect against acute respiratory infections. Vitamin D has been shown to protect against acute respiratory infections and has been shown to be safe.<sup>15</sup>



**Figure 4. Washing hands with soap and running water**

Hand washing is a procedure/action to clean hands using soap and running water or with an alcohol-based antiseptic.<sup>12</sup> Washing your hands frequently and properly (for at least 40 seconds) is one of the most important steps to prevent COVID-19 infection. Handwashing with soap (CTPS) is much more effective in killing germs, bacteria, and viruses than washing hands with water alone. Soap can easily destroy the lipid membrane of COVID-19, rendering the COVID-19 virus

inactive. Washing hands with soap is proven to be effective in preventing transmission of the coronavirus because clean hands after washing with soap can reduce the risk of the virus entering the body.<sup>16</sup>

Washing hands properly must be done with soap and clean running water. If there is no tap, we can use a bucket or other container to drain the water. The steps for washing hands with soap are:<sup>16</sup>

- a. Spread the soap with both hands

- b. Rub the back of the hand and between the fingers alternately
- c. Rub the inner fingers
- d. Rub the palms with the fingers interlocked or locked
- e. Rub the thumb in a circular motion in the palm of the hand and do it on both hands
- f. Rub the fingertips on the palms in a circular motion and do it on both hands

It is best to wash your hands when:<sup>16-7</sup>

- a. Before and after eating
- b. Before holding face
- c. After using the toilet
- d. After sneezing and coughing
- e. Before and after traveling

- f. After touching frequently touched surfaces (elevator buttons, trolleys or shopping carts, doorknobs, and banisters)

COVID-19 can live for hours or days on surfaces, depending on factors such as sunlight, humidity, and type of surface. There is a possibility that a person can catch COVID-19 by touching a surface or object that has the virus in it and then touching his or her own mouth, nose, or eyes. However, this is not considered the main way the virus spreads. Keeping a distance helps limit the opportunity to come into contact with contaminated surfaces and infected people outside the home.<sup>18</sup>

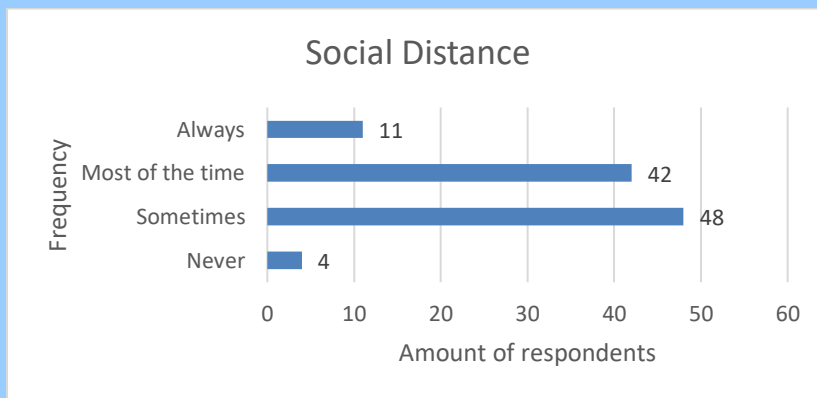


Figure 5. Keeping a minimum distance of 1 meter

Maintain a distance of at least 1 meter from other people to avoid getting droplets from people who are talking, coughing, or sneezing, as well as avoiding crowds, crowds, and crowds. If it is not possible to maintain a distance, various other administrative and

technical engineering can be carried out. Administrative engineering can be in the form of limiting the number of people, setting schedules, and so on, while technical engineering can include making partitions, setting entry and exit routes, and so

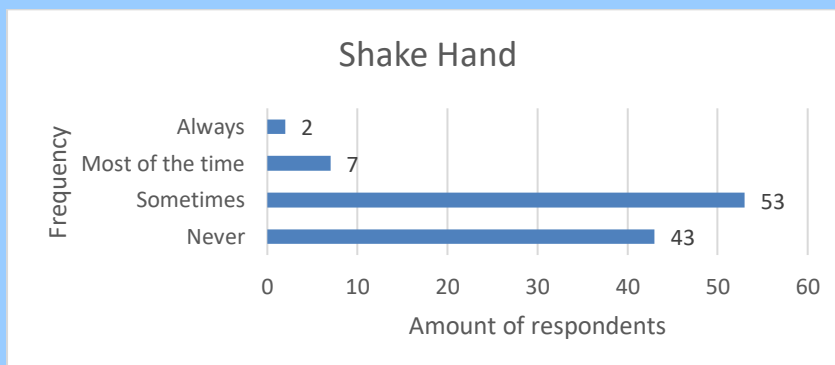


Figure 6. Shake hand

COVID-19 spreads mainly between people who have been in contact (within about 6 feet or 1 meter) for a long time. Droplets can also be inhaled into the lungs. Recent studies have shown that people who are infected but have no symptoms may also play a role in the spread of COVID-19. Because people can spread the virus before they know they are sick, it is important to maintain a distance of at least 6 feet or 1 meter from other people if possible, even if they don't have any symptoms. Social distancing is especially important for people who are at higher risk of contracting illness from COVID-19.<sup>18</sup>

The potential for transmission of COVID-19 in public places and facilities is caused by the movement, crowd, or interaction of people that can cause physical contact. Public places and facilities are areas where people carry out social life activities and carry out activities to fulfill their needs. The risk of people's movement and community gathering in public places and facilities has a fairly large potential for COVID-19 transmission.<sup>12</sup>

To stay away from crowded places that may be difficult to avoid, at least keep a distance of 6 feet or 1 meter from other people, always wear a mask, and no more than 5 people. The intensity and number of people greatly affect the level of risk that can occur.<sup>19</sup>

Global cases of COVID-19 have been shown to be mostly human-to-human. This virus is easily isolated from droplets, feces, and objects. It is known that transmission of the virus occurs most often through close contact with an infected person or from contaminated surfaces. Droplets are water-filled particles with a diameter of >5-10 m. Droplet transmission can occur in a person who is at a distance of about 1 meter or less with a person who has respiratory symptoms such as coughing or sneezing so that there is a risk of droplets hitting the mucosa of the nose, mouth, or conjunctiva of the eyes. Transmission can also be through surfaces on objects that have been contaminated, such as surfaces or objects that have been used on infected people, such as the use of a stethoscope and thermometer.<sup>2</sup>

### Overview of the Distribution of Health Protocols for Young Doctors

The distribution of the implementation of health protocols by respondents can be seen in the table below. In Table 2, 52.4% of respondents have good health protocols. This is not significantly different from the percentage of poor health protocols, which is 47.6%.

Table 2. Distribution of health protocol implementation

Category	Health Protocol	
	Frequency (n)	Percentage (%)
Not good	50	47.6%
Well	55	52.4%
	105	100%

The health protocol aims to increase efforts to prevent and control COVID-19 for the community in public places and facilities to prevent the occurrence of new epicenters/clusters during the pandemic.<sup>20</sup> Although with more professional

knowledge and equipment about protection from being infected, the medical and hospital staffs are also susceptible groups of the COVID-19 infection. Occupational exposure is a very important factor. As the pandemic accelerates, access to personal protective

equipment for healthcare workers when they treat patients, is of paramount importance. Furthermore, provision of needed break away from intensive work and a psychological support are also essential.<sup>21</sup>

## CONCLUSION

The conclusions in this study are the characteristics of health protocols and the incidence of COVID-19 in young doctors of Faculty of Medicine UNJANI who have received complete COVID-19 vaccinations, namely between 22-23 years of age, most women, most of whom have confirmed COVID-19, and health protocols. The good ones are not significantly different from the bad ones.

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## DECLARATION OF INTERESTS

We have neither financial disclosure nor conflict of interest.

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