



## **Identification of the Risks of Giving the Covid 19 Vaccine on Other Health Workers at Dr Mohammad Hoesin Hospital Palembang**

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### **ABSTRACT**

Corona Virus Disease 2019 (COVID-19) is a disease caused by the SARS-CoV-2 virus, this disease spreads faster and in a short time becomes a worldwide pandemic. In the context of controlling and preventing the spread of the COVID-19 virus, the COVID-19 vaccination is carried out. The main priority in administering the COVID 19 vaccination is health workers because they are at high risk of being exposed to the COVID 19 virus. Other Health Workers who are included in the Committee for other Health Workers at Dr Mohammad Hoesin Hospital Palembang also receive the COVID-19 vaccination which is carried out in 2 doses or 2 injections. The COVID-19 vaccination may pose a risk of local or systemic side effects. This study aims to identify the risks that arise after administering the COVID-19 vaccine to other health workers at Dr Mohammad Hoesin Hospital Palembang. The design of this study was quantitative using an analytical survey method through a retrospective approach. The population is 534 people consisting of 20 other health professions. Based on the data analysis, it can be concluded that the risks that arise after the administration of the COVID -19 I Vaccination are in the form of systemic side effects, namely drowsiness (67%) and local side effects are pain (58.5%), while after the second Covid 19 vaccination, the most common side effects are pain. Common side effects are local side effects, namely pain (77.3%) and systemic side effects are drowsiness (62.1%). occurred after the administration of the first Covid 19 vaccination (86.2%). After giving the COVID 19 vaccination, there were still 5 other Health Workers who were exposed to the Covid 19 virus (4.6%).

### **1. Introduction**

Corona Virus Disease 2019 (COVID-19) was first reported in December 2019 in China, caused by the SARS-CoV-2 virus. The virus spreads faster in the human population and quickly becomes a worldwide pandemic. This case is a systemic disease with clinical manifestations ranging from asymptomatic conditions to severe pneumonia with respiratory distress syndrome (ARDS) and multiple organ dysfunction, with the worst complication being death.<sup>1</sup>

The World Health Organization (WHO) has declared COVID-19 as a Global Pandemic and the

Government has declared a public health emergency of Corona Virus Disease 2019 (COVID-19) in Indonesia through Presidential Decree Number 11 of 2020 concerning the Determination of the Public Health Emergency of Corona Virus Disease 2019 (COVID-19). -19) so that mitigation efforts must be carried out in accordance with the provisions of the legislation.<sup>2</sup>

Efforts to overcome COVID-19 must continue to be carried out massively with several strategies considering that the prolonged COVID-19 pandemic has had a major impact on the economy and social

life. The level of community vulnerability is also increasing due to the lack of public awareness of the implementation of health protocols. Therefore, intervention is needed not only in terms of implementing health protocols but also other effective interventions to break the chain of disease transmission through vaccination efforts.<sup>3</sup>

Vaccination is the most effective and efficient public health effort in preventing several dangerous infectious diseases. History has recorded the large role of vaccination in saving the world community from illness, disability and even death due to Vaccination-Preventable Diseases (PD3I). In an effort to overcome the COVID-19 pandemic, COVID-19 vaccination aims to reduce the transmission/transmission of COVID-19, reduce morbidity and mortality due to COVID-19, achieve herd immunity and protect the community from COVID-19 in order to stay healthy. socially and economically productive.<sup>4</sup>

In the context of overcoming the COVID-19 outbreak/pandemic and maintaining public health, the COVID-19 vaccination is carried out in accordance with the availability and needs set by the Government (Presidential Decree No. 9 of 2020). This vaccine is given in two doses or two injections. Health workers are a priority in giving COVID 19 vaccinations because they are at high risk of being exposed to the COVID 19 virus. In addition, Indonesia is the highest country in Asia and the top 3 worldwide in terms of deaths of medical and health workers which have reached a total of 647 people. The total of 647 health workers who died due to being infected with Covid-19 consisted of 289 doctors (16 professors), 27 dentists (3 professors), 221 nurses, 84 midwives, 11 pharmacists, 15 medical laboratory personnel.<sup>3</sup>

In accordance with Health Law NO 36 of 2014 which includes other health workers at Dr Mohammad Hoesin Hospital Palembang are: Clinical Psychology, Midwives, Pharmacists, Pharmaceutical Technical Personnel, Health Promotion Workers,

Environmental Sanitation Workers, Nutritionists, Dietitians, Physiotherapists, Occupational Therapy , Speech Therapist, Prosthetic Orthotic, Medical Recorder and Health Information, Optician, Refractionist, Anesthetist, Dental and Oral Therapist, Radiographer, Radiotherapist, Electromedical Personnel, Medical Laboratory Technologist, And Medical Physicist. Other Health Workers also have the opportunity to be vaccinated against covid 19. Currently, there are 534 other health workers at RSUP Dr Mohammad Hoesin Palembang.

The COVID-19 vaccine can cause side effects such as low-grade fever, pain or redness at the injection site. However, it is possible for more serious side effects such as severe allergic reactions, namely anaphylaxis. To prevent this from happening, the vaccine will continue to be monitored to detect any side effects that will appear.<sup>5</sup>

Based on the above background, the researchers are interested in conducting research on the identification of risks or side effects that may occur after the administration of the covid 19 vaccine with the title Risk Identification of giving the Covid 19 Vaccine to Other Health Workers at Dr Mohammad Hoesin Hospital Palembang.

## **2. Methods**

The design of this study was quantitative using an analytical survey method through a retrospective approach. The population of this study were all other health workers at Dr Mohammad Hoesin Hospital Palembang with a total population of 534 people from 20 other health professions. The sample of this research was taken by Cluster Random Sampling or Random Sampling Based on Area, totaling 128 people representing 20 other health professional professions. This research was conducted at Dr Mohammad Hoesin Hospital Palembang from April to July 2021 by taking vaccination data for other health workers that had been carried out from January to March 2021 at Dr Mohammad Hoesin Hospital Palembang. The data collected in this study from

primary data obtained directly from the results of filling out questionnaires in the form of closed questions and some questions are open questions because they require answers beyond the answer choices provided by the researcher through links and secondary data obtained from direct interviews with respondents were selected by the researcher. because it requires in-depth observation.

### 3. Results

The research was conducted at Dr. RSUP. Mohammad Hoesin Palembang in April to July 2021. The data are presented in the form of tables and text.

#### Giving the Covid 19 Vaccine

Distribution of the frequency of other health workers who received the COVID 19 vaccine and experienced side effects after vaccination at Dr. Mohammad Hoesin Palembang can be seen in table 1.

Table 1. Frequency distribution of other health workers who received the COVID 19 vaccine and experienced side effects after vaccination at Dr. RSUP. Mohammad Hoesin Palembang

| Covid 19 Vaccine | Yes | %    | No | %    | Side Effects |      |    |      |
|------------------|-----|------|----|------|--------------|------|----|------|
|                  |     |      |    |      | Yes          | %    | No | %    |
| Vaccination I    | 109 | 85,2 | 19 | 14,8 | 94           | 86,2 | 15 | 13,8 |
| Vaccination II   | 107 | 83,6 | 21 | 16,4 | 66           | 61,7 | 41 | 38,3 |

From table 1, it can be seen that other health workers who received the COVID-19 vaccine I were 109 people (85.2%) and 19 people did not receive the COVID-19 vaccine (14.8%). Meanwhile, 107 people (83.6%) received the COVID-19 vaccine II, compared to 21 people who didn't get the COVID-19 vaccine II (16.4%).

From table 1 it can also be seen that other health workers who experienced side effects after giving the Covid-19 vaccine I were more than 94 people (86.2%) than those who did not experience side effects after giving the vaccine I Covid 19, namely 15 people (13,

8%), while those who experienced side effects after giving the Covid 19 vaccine II were more, namely 66 people (61.7%) than those who did not experience side effects after giving the Covid 19 vaccine II, namely 41 people (38.3).

#### Health Workers who Did Not Get Covid-19 Vaccine

Frequency Distribution of Other Health Workers who did not receive the COVID 19 vaccine at Dr. RSUP. Mohammad Hoesin Palembang can be seen in table 2.

Table 2. Frequency Distribution of Other Health Workers who did not receive the COVID-19 vaccine at RSUP Dr. Mohammad Hoesin Palembang

| Reasons for not getting the COVID-19 Vaccination | Vaccination I |            | Vaccination II |            |
|--------------------------------------------------|---------------|------------|----------------|------------|
|                                                  | Frequency     | Percentage | Frequency      | Percentage |
| Comorbidities                                    | 2             | 10,5       | 2              | 10,5       |
| Survivors of covid                               | 3             | 15,8       | 3              | 15,8       |
| Pregnant                                         | 4             | 21         | 4              | 21         |
| Breastfeeding                                    | 6             | 31,6       | 6              | 31,6       |
| Allergies                                        | 1             | 11,1       | 1              | 11,1       |
| Others                                           | 3             | 15,8       | 5              | 15,8       |

From table 2, it can be seen that other health workers who did not get the COVID-19 vaccination due to comorbidities were 2 people (10.5%), 3 people had survived covid (15.8%), 4 people were pregnant (21%), breastfeeding as many as 6 people (31.6%), allergies as many as 1 person (11.1%) and 3 people who did not get the COVID-19 vaccine for other reasons (15.8%)

Meanwhile, other health workers who did not get the COVID-19 vaccine II due to comorbidities were 2 people (9.5%), COVID-19 survivors were 3 (14.3%), pregnant were 4 people (19%), breastfeeding as many

as 6 people (28.6%), allergies as many as 1 person (4.8%) and who did not get the covid 19 vaccine for other reasons as many as 5 people (23.9%).

#### Side Effects After Giving the Covid 19 Vaccine

The frequency distribution of other health workers who experienced side effects after administering the Covid 19 vaccine at Dr Mohammad Hoesin Hospital Palembang can be seen in table 3.

Table 3. Frequency Distribution of Other Health Workers who experienced side effects after administering the Covid 19 vaccine at Dr. RSUP. Mohammad Hoesin Palembang

| Side Effects                 | Vaccination I |      | Vaccination II |      |
|------------------------------|---------------|------|----------------|------|
|                              | Frequency     | %    | Frequency      | %    |
| <b>Local Side Effects</b>    |               |      |                |      |
| Pain                         | 55            | 58,5 | 58,5           | 77,3 |
| Swelling                     | 3             | 3,2  | 3,2            | 7,6  |
| Redness                      | 4             | 4,3  | 4,3            | 7,6  |
| <b>Systemic Side Effects</b> |               |      |                |      |
| Sleepy                       | 63            | 67   | 41             | 62,1 |
| Headache                     | 24            | 25,5 | 15             | 22,7 |
| Tired                        | 30            | 31,9 | 18             | 27,3 |
| Achy                         | 42            | 44,7 | 30             | 45,4 |
| Muscle pain                  | 18            | 19,1 | 19             | 28,8 |
| Joint pain                   | 12            | 12,8 | 11             | 16,7 |
| Nausea                       | 8             | 8,5  | 4              | 6,1  |
| Changes in appetite          | 22            | 23,4 | 4              | 6,1  |
| Cheerful                     | 16            | 17   | 2              | 3    |
| Fever                        | 6             | 6,4  | 1              | 1,5  |
| Shortness of breath          | 2             | 2,1  | 0              | 0    |
| Anaphylactic reaction        | 0             | 0    | 7              | 10,7 |
| Other Reactions              | 5             | 5,3  | 3              | 4,5  |

From table 3, it can be seen that 55 people (58.5%), swelling of 3 people (3.2%) and redness of 4 people (4.3%) experienced local side effects in the form of pain. Meanwhile, 51 people (77.3%), swelling of 5 people (7.6%) and redness of 5 people (7.6%).

Meanwhile, for other health workers who experienced systemic side effects of drowsiness after administering the Covid 19 vaccine I were 63 people (67%), headaches were 24 people (25.5%), tired were 30 people (31.9%), aches were 42 people (44.7%),

muscle pain is 18 people (19.1%), joint pain is 12 people (12.8%), nausea is 8 people (8.5%), changes in appetite are 22 people (23.4%), fever was 16 people (17%), fever was 6 people (6.4%), shortness of breath was 2 people (2.1%), no anaphylactic reaction, and who had other reactions after the administration of the vaccine I covid 19 was 5 people (5.3%). Meanwhile, 41 people (62.1%), headaches 15 people (22.7%), tired 18 people (27.3%), achy 30 people (45.4%), muscle pain 19 people (28.8%), joint pain 11 people (16.7%), nausea 4 people (6.1%), changes in appetite 4 people (6.1%), fever 2 people (3%), fever 1

person (1.5%), shortness of breath did not exist, anaphylactic reaction 7 people (10.7%), and who experienced other reactions after giving the vaccine II covid 19 were 3 people (4.5%).

#### Exposure to Covid after the Covid 19 Vaccine

The frequency distribution of other health workers exposed to Covid 19 after the Covid 19 vaccination at Dr Mohammad Hoesin Hospital Palembang can be seen in table 4.

Table 4. Frequency Distribution of Other Health Workers who were exposed to Covid 19 after the Covid 19 vaccination at Dr Mohammad Hoesin Hospital Palembang

| <b>Those exposed to covid after the Covid 19</b> | <b>Frequency</b> | <b>Percentage</b> |
|--------------------------------------------------|------------------|-------------------|
| Yes (exposed)                                    | 5                | 4,6               |
| No (unexposed)                                   | 104              | 95,4              |

From table 4 it can be seen that of the 109 other health workers who received the covid 19 vaccine who were exposed to covid after getting the covid 19 vaccine, there were 5 people (4.6%) and those who were not exposed to covid after getting the covid 19 vaccine were 104 people (95.4%). The five other health workers were exposed to the covid vaccine after getting the second COVID-19 vaccine.

Perceptions of other health workers regarding the administration of the Covid 19 vaccine at Dr Mohammad Hoesin Hospital Palembang

The distribution of perceptions of other health workers regarding the administration of the Covid 19 vaccine at Dr Mohammad Hoesin Hospital Palembang can be seen in table 5.

Table 5. Distribution of Perceptions of Other Health Workers regarding the administration of the Covid 19 vaccine in Dr. Mohammad Hoesin Hospital Palembang.

| <b>Which states that giving vaccines can prevent the spread of covid 19 virus infection</b> | <b>Frequency</b> | <b>Percentage</b> |
|---------------------------------------------------------------------------------------------|------------------|-------------------|
| Agree                                                                                       | 123              | 96,1              |
| Disagree                                                                                    | 5                | 3,9               |

From table 5, it can be seen that other health workers who stated that giving the Covid 19 vaccine could prevent the spread of Covid 19 virus infection and stated agreeing

to give the Covid 19 vaccine totaled 123 people (96.1%) and other health workers who stated that giving the vaccine could not prevent the spread of Covid 19 virus

infection because there are still those who are exposed even though they have been vaccinated so that 5 people do not agree to be vaccinated (3.9%).

#### 4. Discussion

In this study, side effects experienced by other health workers were in the form of local and systemic side effects, in the form of mild and moderate symptoms and no severe side effects such as anaphylactic shock were found. In this study, it was found that the most common side effects of giving the Covid 19 Vaccination I were systemic side effects, namely drowsiness (67%) and local side effects were pain (58.5%), while in the second Covid 19 vaccination, the most common side effects were local pain (77.3%) and systemic side effect is drowsiness (62.1%). The results of this finding are similar to those of Supangat et al, the most common side effect was pain at the injection site with the first dose (45%) and the second dose (67%), then followed by malaise with the first dose (36%) and the second dose (41%).<sup>6</sup> The research results are relevant to the research of Bati et al, the most common side effects were pain at the injection site and fatigue.<sup>7</sup> A study from Riad et al, shows that RNA based-vaccine can cause pain, fatigue, headache, muscle aches, and chills as the most shown side effects.<sup>8</sup> Pain at the injection site is the most common symptom of COVID-19 vaccine side effects found in many studies.<sup>6,7,8</sup>

Vaccines are designed to provide immunity without the danger of getting sick. Experiencing some mild to moderate side effects is common when receiving vaccinations. This is because the immune system instructs the body to react in a certain way by increasing blood flow so that more immune cells can circulate and increasing body temperature to kill the virus. A side effect is a sign that the immune system is responding to a vaccine, specifically an antigen (substance that triggers an immune response) and is preparing to fight the virus.<sup>9</sup>

Like all vaccines, the COVID-19 vaccine can cause side effects, most of which are mild or moderate and go away on their own within a few days. As clinical trial results show, more serious or long-lasting side effects may occur. Some of the reported side effects of the COVID-19 vaccine in the form of mild local are pain,

redness, and swelling at the injection site and other severe local reactions, namely cellulitis. Systemic side effects may include fever, nausea/vomiting, muscle pain or myalgia, fatigue, malaise, headache, dizziness, chills, drowsiness and changes in appetite.<sup>10</sup>

Local side effects in the form of pain, swelling and redness are symptoms that occur during the COVID-19 vaccination. The COVID-19 vaccine is an intramuscular injection which means it is injected into a muscle. The vaccine can trigger inflammation at the injection site, which indicates that the vaccine is starting to activate immunity. Pain can occur because there is a small injection site injury that occurs after experiencing a vaccine injection. When there is inflammation at which time our body will use several mechanisms to fight infection. This inflammation causes local side effects of redness and swelling.<sup>5</sup>

Drowsiness is one of the systemic side effects of the COVID-19 vaccine. According to Ines Atmosukarto, the body needs energy to stimulate antibodies with the Covid-19 vaccine. The amount of energy needed to respond to the vaccine is exhausted, which causes drowsiness.<sup>11</sup>

#### 5. Conclusion

The risks that arise after the administration of the Covid-19 I Vaccination are systemic side effects, namely drowsiness (67%) and local side effects are pain (58.5%), while after the second Covid 19 vaccination, the most common side effects are local side effects. namely pain (77.3%) and systemic side effect is drowsiness (62.1%). The risks that arise after giving the COVID-19 vaccination II are smaller than the risks / side effects that arise after the vaccination I COVID 19. Other Health Workers who were exposed to the COVID 19 virus after giving the Covid 19 Vaccine as many as 5 people (4.6%).

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