

## Analysis of Post-Immunization Incidence of Covid-19 Vaccine in Health Personnel in Mataram City

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**Abstract:** This study aims to analyze the post-immunization co-occurrence or side effects of the Covid-19 vaccine on health personnel in Mataram City. This study is qualitative descriptive research. The informants in this study were 39 health personnel in the city of Mataram. The number of samples was determined using Snowball sampling, which stopped when the data were completed. The inclusion criteria included health personnel who had received the Covid-19 vaccination. Primary data were obtained from direct interviews and questionnaires using Google Forms. The results of this study indicated that not all health personnel experienced side effects after vaccination. In the 1<sup>st</sup> vaccine, 26 (56.41%) people experienced side effects, while 13 (43.59%) did not. The side effects experienced included drowsiness in 19 (37.25%) people, aches in 12 (23.53%) people, dizziness in 4 (7.84%) people, and mild fever in 7 (13.73%) people. In the 2<sup>nd</sup> vaccine, only 18 (50%) people experienced side effects. 11 (44.00%) felt drowsy, 4 (16.00%) had aches, and 5 (20.00%) had dizziness. The side effects experienced were classified as mild, so they did not require intensive and self-limited treatment.

**Keywords:** adverse incidence; covid-19; health personnel; post-Immunization, vaccines

### INTRODUCTION

The World Health Organization (WHO) has declared the Covid-19 outbreak a pandemic<sup>1</sup>. Until February 28, 2021, there were 1,334,634 cases recorded in Indonesia, 36,166 of which died, 1,142,703 cases were declared cured, and 155,765 were active or still being treated.<sup>2</sup> Since it was declared a pandemic, various steps and efforts have been taken to control the spread of this outbreak, one of which is the discovery of Covid-19 drugs and vaccines that various countries have intensified.<sup>3</sup> There are at least 12 types of Covid-19 vaccines currently conducting phase three clinical trials worldwide.<sup>4</sup> The latest technology has been prepared to accelerate vaccine production.<sup>5</sup> Clinical trials of vaccine effectiveness and safety involve thousands of volunteers. As a result, several vaccine seeds have received Emergency Use Authorization.

The Indonesian government has taken various steps to tackle and prevent the further spread of Covid-19 cases.<sup>6</sup> The government's concrete steps include forming a Task Force (Satgas), limiting community social activities, limiting community activities, socializing Health Protocols (Prokes), spraying disinfectants and various other efforts, including the latest one is to carry out vaccinations in stages by bringing in the Covid-19 vaccine from abroad as a measure to protect the public. The vaccination process must be accelerated because the virus has infected many respondents, including children.<sup>7</sup>

The government plans to have four stages of giving vaccines to priority groups. At least the four stages will be completed in fifteen months. In the first stage, the main targets are health personnel.<sup>8</sup> This group is a top priority because they are considered the most vulnerable to contracting Covid-19. The second priority in the vaccination program is public servants and the elderly. In the third and fourth stages, the targets are respondents with a high risk of infection or vulnerability to Covid-19 transmission regarding geospatial and socio-economic aspects. At this stage, the availability of vaccines and the cluster approach become one of the main considerations.<sup>9</sup>

Based on the Mataram City Health Office records, 7,053 health personnel are the priority targets of Phase I vaccination activities starting on January 14, 2021. This number also includes supporting staff working

in Health Facilities. However, amidst the government's incessant efforts to carry out Covid-19 vaccination as a step to protect the community from the Covid-19 pandemic, not a few respondents are still hesitant and even raise anti-vaccination respondents.<sup>10</sup> It includes health personnel themselves. Moreover, the public has more doubts about several positive confirmed cases after receiving the vaccine.<sup>11</sup> One of the causes of the emergence of the rejection of vaccination is the number of inaccurate news or hoaxes about Covid-19.<sup>12</sup> The emergence of this rejection cannot be separated from the role of the media in disseminating information related to the Covid-19 vaccine.<sup>13</sup> It needs serious attention because most of them are hoax information.<sup>14</sup> Of course, this information cannot be accounted for and cannot be trusted.<sup>15</sup> Moreover, the Corona Virus is still new, and the vaccine that will be given is also new, making it easier for the public to be led through the incorrect information.<sup>16</sup>

Undeniably, most immunization actions have side effects, or Post-Immunization Adverse Events (AEFI).<sup>17</sup> This includes follow-up events after the Covid-19 vaccination. According to one study, each individual has different side effects after vaccination.<sup>18</sup> Some experience severe, moderate or mild side effects, and others even experience no side effects.

Based on this description, researchers as health personnel working at the Mataram NTB City Health Office are interested in researching Post-Immunization Adverse Events or the side effects of the Covid-19 vaccine that may arise in health personnel and supporting staff working in health care facilities (Fasyankes) which is a priority target for Phase I vaccination in Mataram City. The research results are expected to be positive information for the community and can be used as a reference in future research. In particular, this study aims to discover how and what side effects are felt by health personnel in Mataram City after receiving the Covid-19 vaccine.

## **MATERIAL AND METHOD**

This research is descriptive and qualitative. It is included in the qualitative type because it seeks to explore the phenomena that occur in a society. The phenomenon explored in this study was a side effect on health personnel in the city of Mataram. The research design used a descriptive survey method. Through descriptive surveys, the picture of phenomena that occur in a society can be described clearly. This research was conducted in February-March 2021 in Mataram City, West Nusa Tenggara. This research has been approved by the research and community service institution number: 25/LPPM/UNIQHBA/II/2021.

The number of samples was determined using Snowball Sampling stopped when the data had reached the saturation point (repeated data). The inclusion criteria in this study were health personnel who had received the Covid-19 vaccination. In this study, there were no categories that differentiated gender. Men and women have equal opportunities to become research respondents. Initially, 10 health personnel were interviewed, then expanded to other health personnel until comprehensive information was found on the studied problems. There were 39 participants in this study.

The research procedure began with problem identification, determining research samples, compiling instruments, collecting data, processing data, presenting data, and drawing conclusions. The data obtained in the form of descriptive data were then grouped according to predetermined criteria. Data analysis was carried out interactively and continuously until complete so that the data were saturated. This analysis consisted of 3 main aspects: data reduction, data presentation, and conclusion/verification.

## **RESULT**

The informants in this study were 39 health personnel who had received the Covid-19 vaccine. Each health agency personnel was randomly selected to be a respondent. These health agencies included Health Office (16 people), Puskesmas (16 people), UPTD Health Pharmacy Installation (5 people), and UPTD Health Laboratory (2 people). Based on gender, the informants consisted of 16 males and 23 females.

There were two types of data used in this study. The first data was primary, and the second data was supporting data. Primary data were obtained from direct interviews at the vaccination site and a questionnaire with an open-ended question format using Google Form. Supporting data or secondary data were obtained from the Mataram City Health Office. Supporting data were obtained from the health office in the form of data on health personnel who had received vaccinations. This data was crucial because it determined the credibility of health personnel as research respondents. Health personnel who had not been vaccinated could not be selected as research respondents.

The first stage of this research was to collect data from informants who had received both complete vaccines (vaccine I and II) and incomplete vaccines (only vaccine I). In the following, the informant's vaccination status can be presented.

Table 1. Informant vaccination status

Category	Total	%
Complete Vaccine*	36	92.31
Incomplete Vaccine	3	7.69
Total	39	100.00

\* Have received 2 vaccinations

Table 1 shows that the number of informants who have not received the complete vaccine is 3 participants, while the number of informants who have received the complete vaccine is 36. The consequence is that as many as 3 informants did not take their vaccination experience data because they had not participated in the second vaccine. Therefore, data on vaccination II was only taken from 36 health personnel/informants. The experience of vaccines from health personnel was obtained through the surveys and interviews presented in Figure 1.

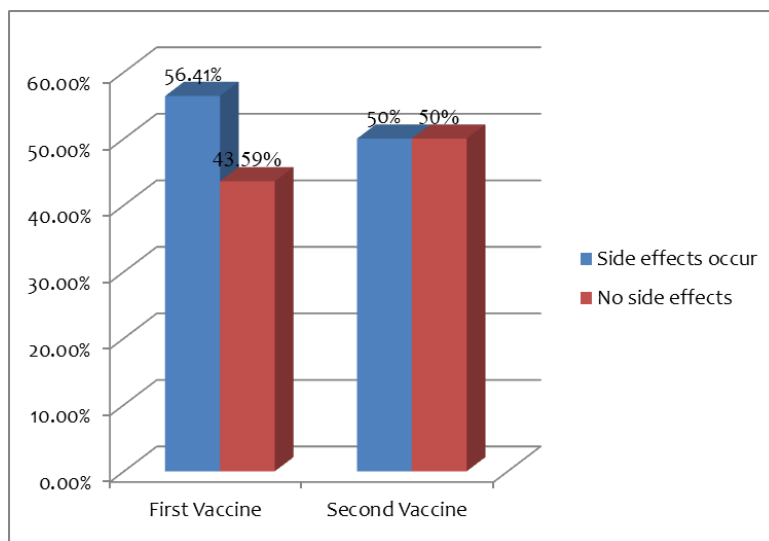


Figure 1. The percentage of respondents experiencing side effects of vaccination

Based on Figure 1, 56.41% or 26 health personnel experienced side effects after vaccination, while 43.59% or 13 respondents did not experience side effects. In the second vaccine, the number of health personnel who experienced side effects is the same as those who did not experience side effects. Each of them is 50% or 18 respondents. The figure shows that not all respondents experienced side effects after vaccination. Side effects are more common after the first vaccine. However, the number of respondents who experienced side effects was insignificant. Most respondents admitted that they were anxious before the vaccine, which impacted the emergence of post-vaccination side effects. In addition, some respondents claimed to be unwell before the vaccine, so they experienced the first post-vaccine reaction. After the vaccine, both respondents experienced fewer side effects. The decrease in respondents experiencing side effects after the second vaccine was caused by the increased immunity after the first vaccine and the decreased level of anxiety experienced by respondents.

Each informant experienced a different effect after vaccination. Figure 2 shows the types of side effects felt by the informants after vaccination I.

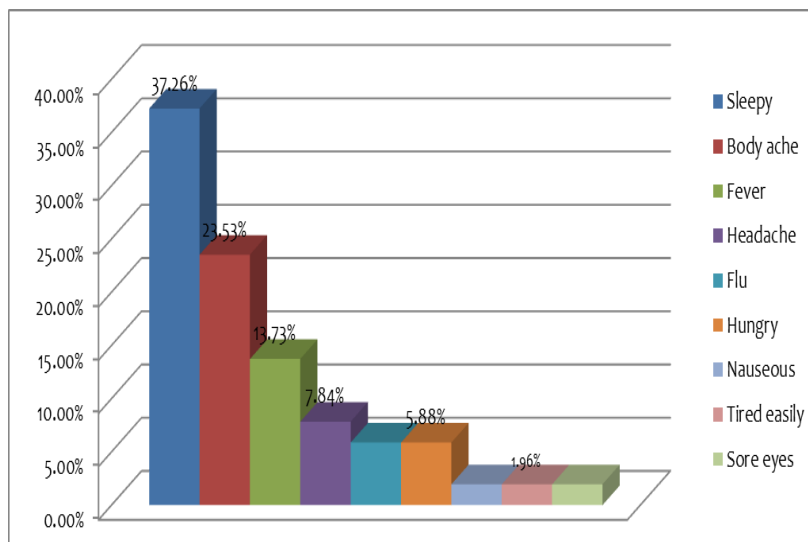


Figure 2: Types of side effects in vaccine I

Based on Figure 2, there are 9 types of side effects experienced by health personnel after the vaccination I. The most common side effects experienced were drowsiness (37.26%), aches (23.53%), mild fever (13.73%), dizziness (7.74%), flu and hunger 5.88% each, nausea, fatigue and eye pain 1.96% each.

The types of side effects experienced by health personnel in vaccine II were not as many as in vaccine I. Only 6 types of side effects were found in vaccine II. Figure 3 shows the percentage of side effects experienced by health personnel on vaccine II. Based on Figure 3, types of side effects experienced by health personnel include drowsiness (44%), dizziness (20%), aches (16%), nausea (12%), flu and fatigue 4% each.

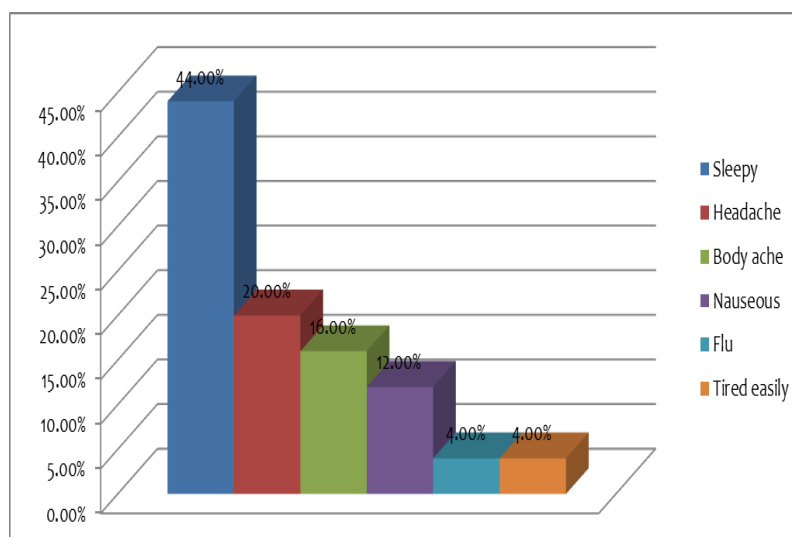


Figure 3. Types of side effects in vaccine II

Each informant takes a different time to feel the side effects after vaccination. Figure 4 shows the duration of the appearance of symptoms of side effects from the time of getting vaccinated.

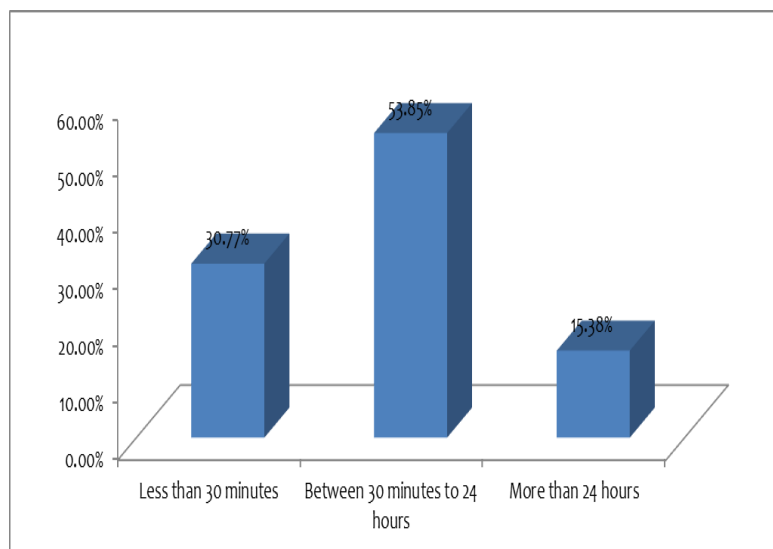


Figure 4. The duration between Vaccines and Symptoms of Side Effects

Based on the diagram in Figure 4, it can be seen that there are 30.77% of health personnel who have experienced side effects 30 minutes after the vaccine. 53.85% of health personnel only experienced side effects after 30 minutes in 24 hours after the vaccine, and there are 15.38 % who just felt the side effects after 24 hours. A follow-up interview was conducted to determine how long the respondents felt the side effects. The interviews showed variations in time related to how long the side effects lasted. The average side effects felt lasted between one to three days. However, in some sensitive people, these side effects can appear more severe, which was up to seven days. It depends on the type of vaccine given. However, if these side effects are treated properly, these side effects are not dangerous and can be cured in a short time unless other medical conditions make them worse. Respondents who experienced severe post-vaccination symptoms were health personnel whose health condition was not good when vaccinated, so they experienced reactions when vaccinated.

There are various ways to eliminate the side effects of vaccination. The informants did overcome the side effects by taking rest, taking medicine, and compressing. In addition, some informants only allowed side effects to heal by themselves. Table 3 presents a survey of informants' behavior to overcome post-vaccination side effects.

Table 2. The Way to Deal with Side Effects

Form of treatment	Total	Percentage
Rest	17	65.38
Take medicine	4	15.38
Compress	1	3.85
Sport	1	3.85
No treatment	3	11.54
	26	100

Table 3 shows that not all informants gave special treatment to eliminate the side effects of vaccination. At least 11.54% of informants only let these side effects. However, most informants gave special treatment to eliminate the perceived side effects, including taking rest (65.38%), taking medicine (15.38%), giving compresses and exercising each at 3.85%.

## DISCUSSION

Health and support personnel for health care facilities are the front lines in dealing with various health problems during the current Coronavirus (Covid-19) pandemic. The role of health personnel is crucial in overcoming health problems, especially problems that can potentially cause outbreaks. Health personnel plays an important role in preventing, controlling and eradicating infectious diseases, health promotion activities, case finding and risk factor control. The health and safety of health personnel in overcoming Covid-19 must be prioritized so that the response effort can run quickly and effectively.<sup>19</sup> It aligns with the statement by Ayunda *et al.* (2021) that health personnel is the main priority for Phase I Covid-19 vaccination.<sup>8</sup>

All targets must receive 2 doses in the vaccination process, namely vaccine I and vaccine II. The recommended distance between vaccines I and II is at least 14 days. Of the 39 informants, it was found that all of them had received the first dose of the vaccine, while 36 respondents (92.31%) received the second vaccine. A total of 3 respondents (7.69%) of health personnel have not received the second dose of the vaccine as it has not reached 14 days since receiving the first dose of vaccine. A Sinovac vaccine is injected 2 times after 14 days in the recipient's body to get the complete vaccine.<sup>20</sup> The officers who received the first and second doses of the vaccine were the same personnel. The difference in the number of respondents in the first and second vaccines is because some respondents have not received the second vaccine. One of the causes was having certain diseases that made it impossible to receive the vaccine, one of which was high blood pressure.

In terms of gender differences, female respondents experienced more side effects than men. The number of female respondents who experienced side effects reached 61%, while only 39% of male respondents received the side effects. The difference in reactions experienced by male and female respondents can be caused by several factors, including differences in hormones, a history of allergies, and anxiety. This study follows previous research which stated that there was a difference between side effects after the Covid-19 vaccination, in which women were more likely to experience side effects than men. It occurred because women have a higher antibody response than men. It is why women are more likely to experience side effects when vaccinated.<sup>20</sup>

Based on the data collected, information was obtained that in the first vaccine of 39 informants, 26 respondents (56.41%) experienced side effects, and 13 respondents (43.59%) did not experience side effects after vaccination. In vaccine II, of 36 respondents (92.31%) who received the complete vaccine, there were 18 respondents (50.00%) who experienced side effects, and 18 respondents (50.00%) did not experience side effects.

The Covid-19 vaccine has side effects and routine vaccines that have been implemented so far. The Ministry of Health calls this event the term Post-Immunization Follow-up Event. Adverse Event Following Immunization can be regarded as a medical event related to vaccination.<sup>21</sup> Events that arise are usually in the form of vaccine reactions, coincidences, anxiety reactions, procedural errors, or undetermined causal relationships. In general, vaccines do not cause a reaction in the body. If a reaction occurs, it is only a mild reaction.<sup>22</sup> Vaccines stimulate the formation of immunity because the immune system reacts to the antigens in the vaccine. Reactions can be local and systemic reactions, such as pain at the injection site or fever that can occur as part of the immune response.<sup>23</sup>

The types of side effects encountered by the informants were quite diverse. Of the 26 informants who experienced side effects from vaccine I, the types of side effects included drowsiness experienced by 19 respondents (37.25%), aches experienced by 12 respondents (23.53%), mild fever experienced by 7 respondents (13.73%), dizziness experienced by 4 respondents (7.84%) and other side effects. Of the 18 informants who experienced side effects from vaccine II, the types of side effects included: drowsiness experienced by 11 respondents (44.00%), dizziness experienced by 5 respondents (20.00%), aches experienced by 4 respondents (16.00%), nausea experienced by 3 respondents (12.00) and the side effects of flu and fatigue were experienced by 1 respondent (4.00%). However, it should be noted that some informants experienced more than one side effect, and all perceived side effects were still in the mild category.

The results of this study indicated that the side effects experienced by health personnel in Mataram City after receiving the Covid-19 vaccine are classified as mild Post Immunization Adverse Events (AEFI) and do not require serious treatment; just rest and take fever medicine (if needed) and the side effect will disappear by itself. It aligns with the statement of dr. Gde Bayu (doctor of the Vaccination Team at Karang Pule Public Health Center, Mataram City), during an interview on February 3, 2021, stating that AEFI is divided into three, namely mild, moderate and severe, which are monitored for 30 minutes after vaccination. If there is a mild AEFI, it will be included in the report only, while a moderate AEFI will be given medication, and a severe AEFI will be referred to the Emergency Department (IGD). Of the 100 respondents who have been vaccinated at the Karang Pule Health Center, there has been no AEFI incident. According to data from the Mataram City Health Office, as of February 28, 2021, the target for vaccination I (dose 1) has reached 7,122 respondents and vaccine II (dose 2) has reached 4,974 respondents with a mild AEFI report of 19 respondent.

The side effects experienced by the informants were classified as mild AEFIs, not much different from the findings from 287 reports of AEFIs that existed until February 2021; 283 cases (98.6%) were classified as AEFIs that were not serious.<sup>24</sup> The results of this study are also in line with the report the National Commission for Post-Immunization Adverse Events received. The reports received until January 20, 2021, were 30 AEFI reports, all of which were classified as mild (no serious reactions), so they did not require intensive care. According to dr. Muhammad Fajri Adda'i as the doctor and the Covid-19 handling team, after receiving the first vaccine, he did not feel an excessive reaction and felt biased. It is slightly different from what other

health personnel felt. There are those who experience fever, pain, weakness, feel hungry all the time, and are sleepy. The various types of reactions above are still quite reasonable and are included in the mild category.<sup>25</sup> According to Komnas KIPi Chairman Hindra Irawan Satari, he conveyed through the Ministry of Health's Youtube channel (23/02/2021) that the Covid-19 vaccine used in Indonesia is certain to be safe. Based on reports from 22 provinces, 5 out of 10,000 AEFIs are in the moderate category, while 42 out of 1,000,000 AEFI reports are in the serious category. Based on the analysis of incoming data, the symptoms are generally mild, and the AEFI symptoms can recover without and using treatment. In addition, 64 percent of respondents who took vaccinations experienced an immunization-related response or self-anxiety due to the immunization process, not because of the content of the Covid-19 vaccine.<sup>26</sup>

The benefits of the Covid-19 vaccine are far greater than the side effects or AEFIs it causes. In addition, vaccines can protect the public from the spread of the virus compared to side effects. Research by Lidiana et al. (2021) did not find any AEFIs that were categorized as serious<sup>22</sup>. AEFIs were only felt by 10.5% of respondents and were mild, such as fever 10.5%, diarrhea 2.1%, coughing 2.1% and shortness of breath 2.1%. It shows that the side effects received are only mild and do not cause serious reactions. In other words, this vaccine is safe, and there is no need for doubt by the public.

Some of these side effects were experienced by the informants for some time which the authors divided into 3 categories such as 30 minutes after the vaccine was experienced by 8 respondents (30.77%), 30 minutes in 24 hours after 14 respondents experienced the vaccine (53.85%) and 4 respondent (15.38%) experienced side effects within 24 hours. Although side effects can be experienced more than 30 minutes after the vaccine or even more than 24 hours, they can be categorized as mild side effects.

Furthermore, the informants used several ways to deal with various side effects, including resting (65.38%), taking medicine (15.38%), compressing around the injection site and doing exercise (3.85% each) and no treatment (11.54%). It indicates that the post-vaccination side effects/AEFIs felt by health personnel in the city of Mataram, which are included in the mild category, do not require serious treatment. It is enough to rest and take medicine or continue to do activities as usual.

After vaccination, respondents are expected to remain vigilant. Vaccination does not attack a person's immune; it only forms antibodies that increase immunity and body resistance. The respondents who have been vaccinated are still potentially exposed to Covid-19, because the vaccine stimulates the body to form immunity, not kill the virus. The difference is that when vaccinated, the body forms antibodies so that the body's resistance increases, even though later, when people are exposed to Covid-19, the symptoms are not severe.<sup>27</sup>

Based on the description submitted, the government, various stakeholders, and the community must work hand in hand to disseminate the benefits of vaccination. It is an effort to succeed and accelerate the response to the Covid-19 pandemic.<sup>16</sup> Socialization about the benefits and side effects of the Covid-19 vaccine must continue to be carried out by providing the public with correct information to prevent hoax information currently circulating through various existing media, especially online media and social media as information references by the public. It must be consistent in implementing the programs and issuing policies<sup>28</sup>. Therefore, the attitude of doubt and rejection by the community can be replaced by a sense of optimism to accelerate the implementation of this pandemic prevention program. Having an optimistic attitude is important to mental health.<sup>29</sup> An optimistic attitude can affect a person's physical health, while positive thinking can improve the immune system.<sup>30</sup>

## CONCLUSION

The side effects felt in the first vaccine were drowsiness, aches, low fever, dizziness, flu and hunger, nausea, tiredness and sore eyes. The types of side effects experienced with the second vaccine included drowsiness, dizziness, pain, nausea, flu and fatigue. The side effects were classified as mild and would disappear in a few days.

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## CONFLICT OF INTEREST

Conflicts of interest may occur because parties feel uncomfortable with the publication of this research. Researchers will be responsible for all losses that this publication will cause.

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