



COVID-19 Vaccine Acceptance in Padang City, West Sumatra, Indonesia

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Abstract

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BACKGROUND: Indonesia started the COVID-19 vaccination program in January 2021. West Sumatra, Indonesia, as one of the epicenters of the spread of COVID-19, has also begun the vaccination program. However, the Government has conducted no vaccine acceptance survey in this area in several other Indonesia regions.

AIM: This study describes the acceptance of COVID-19 vaccination in West Sumatra, Indonesia.

METHODS: A descriptive research with a survey method using a questionnaire instrument given directly to the people of Padang, West Sumatra, Indonesia.

RESULTS: This study has a total of respondents (390 people). It showed that 38.2% of respondents were willing to be vaccinated, 27.9% refused, and 33.8% had not decided yet. Most respondents refused the vaccine for fear of side effects 42.9% and safety 33.9%. More than half of the respondents (51.0%) wanted to vaccinate at the public health centers. As many as, 85.4% of respondents wanted to get more information about the COVID-19 vaccine being developed. Online platforms, print, and electronic media are sources of information with about 40.5%, followed by face-to-face communication with 36.0% and social media with 23.5%.

CONCLUSION: The people of Padang who stated that they were willing to undergo the COVID-19 vaccine program had not yet reached half of the number of respondents studied. However, this number has the opportunity to increase based on the enthusiastic trend of people who want to get more information about the COVID-19 vaccine. Providing correct and precise information should encourage them to participate in vaccination.

Introduction

Coronavirus is one of the primary pathogens that attack the human respiratory system. Epidemic Coronaviruses (CoV), including Severe Acute Respiratory Syndrome (SARS-CoV) and Middle East Respiratory Syndrome (MERS-CoV), have been characterized as agents that pose a significant threat to the health of the healthcare community [1]. The samples studied showed the etiology of the new coronavirus. Initially, this disease was temporarily named 2019 novel coronavirus (2019-nCoV), then World Health Organization (WHO) announced a new name on February 11, 2020, namely, Coronavirus Disease (COVID-19) caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) virus. This virus was declared a pandemic by the WHO on February 11, 2020. Various countries have taken precautions to prevent the transmission of the SARS-CoV-2 virus [2]. The WHO issued health protocols such as wearing masks while outside the house, maintaining contact or social distancing at a distance of 1.5 m, limiting meeting room capacity and using hand sanitizers outside the home [3]. This health protocol policy has been implemented in various

countries to cope with the spread of the coronavirus. Still, it has not been able to reduce the number of confirmed cases, so the WHO researched the manufacture of the SARS-CoV-2 vaccine. Vaccines are one of the methods in public health that is effective and efficient. Vaccines are proven to reduce mortality, prevent illness, and increase chances of recovery [4].

Vaccination prevents infectious diseases given to infants and adults, particularly by injecting attenuated or destroyed bacterial or viral antigens. After that, it will stimulate the immune system to recognize, kill, and memorize foreign objects so that the body can easily recognize and prevent foreign objects from entering and attacking the body. Vaccines have several benefits, such as eradicating disease, eliminating disease, controlling mortality, morbidity and complications, reducing the severity of illness, and preventing infection [5].

The Government will cover 70% of the COVID-19 vaccinations, which are intended to achieve herd immunity or what we know as herd immunity. Vaccination is an essential part of efforts to strengthen herd immunity. In addition, it is also crucial in reducing the transmission and death rates from COVID-19 and protecting and maintaining the health system as a whole [6].

The vaccination program has been running in Indonesia since January 13, 2021. Indonesia uses several vaccines such as Sinovac, Astra Zeneca, Sinopharm, Pfizer and Moderna [7]. Based on data, as of August 24, 2021, as many as 91.9 million Indonesians have received the vaccine, and as many as 32.6 million Indonesians have received the full dose of the vaccine. The public plays a key role in the vaccination program that the Government will carry out to achieve herd immunity. Public acceptance of the vaccine will form herd immunity in a group so that it can reduce the spread of COVID-19. West Sumatra Province is one of three regions with a low realization of COVID-19 vaccination in Indonesia. Based on data from the Ministry of Health as of October 2021, from 4,408,509 vaccination targets in West Sumatra, only 1,114,877 people or 25.29% were injected with the first dose of the vaccine. West Sumatra expands the target population who participates in the vaccination program from health workers, company employees, students, and special groups such as the elderly, pregnant women and pediatrics [8].

Health workers can directly deliver information about vaccines to the public, such as vaccines' effectiveness and side effects. The public's knowledge about vaccines can convince the public to receive the vaccine. The ratio of health workers and population of West Sumatra in 2019 was recorded at 1: 2200 [9]. West Sumatra, Indonesia, is one of the epicenters of the spread of COVID-19. However, the Government has conducted no vaccine acceptance survey in this area in several other Indonesia regions. This study aims to describe the level of acceptance of COVID-19 vaccination in West Sumatra, Indonesia.

Materials and Methods

Study design

This research was conducted using a survey method that was carried out in Padang City, West Sumatra, Indonesia. The survey was carried out from April to June 2021 at several health centers in all districts in Padang (11 districts). The sampling method used was Accidental Sampling with a sampling technique, namely, Quota Sampling. The inclusion criteria are the people of Padang City who have not received the COVID-19 vaccine, are willing to fill out the questionnaire completely and have filled out the consent form as a respondent. This survey was not conducted on respondents who work in the health sector, such as hospitals, clinics, and pharmacies.

Instrument

In this study, the data collection method

was a questionnaire adapted from the COVID-19 Vaccine Acceptance Survey in Indonesia [10]. The questionnaire was conducted in a secure manner where the confidentiality of the filler was only known by the researcher and was only used for research. Questionnaires containing questions were distributed to the people of Padang City as direct respondents. This study did not use all the questions on the original instrument. Some questions are not used, such as province, city, marital status, health sector occupation, religion, health insurance, monthly expenses, environmental conditions exposed to COVID, nominal payment of vaccines if needed and if the respondent has not decided to accept COVID, who will be consulted.

Statistical methods

Data were analyzed descriptively. The results are only presented in the form of frequency and percentage of data on sociodemographic characteristics and the distribution of respondents based on the questionnaire.

Ethical approval

This study obtained ethical approval from the Research Ethics Committee, Faculty of Medicine, Universitas Andalas, Indonesia (No. 328/UN.16.2/KEP-FK/2021). In addition, this research has also obtained a research permit from the Padang City Government Health Office with No. 891/1135/DKK/2021. Respondents were asked to fill in informed consent as evidence of willingness.

Results

A total of 390 respondents were obtained, with the most respondents distributed according to Table 1 being female (57.4%), age range 46–55 years (24.6%), last education is Senior High School (40.8%), unemployed (33.8%), and middle class for the economic status (62.8%).

Based on Table 2, almost all respondents (93.8%) are aware of the COVID-19 vaccination program that will be implemented by the Government nationally.

The acceptance of vaccines by respondents was obtained by 38.2% stated that they were willing to accept the COVID-19 vaccine provided by the Government. In comparison, 27.9% refused the vaccination program, and the remaining 33.8% stated that they had not decided to accept or reject the vaccine. In contrast, some reasons for the rejection of the COVID-19 vaccine included vaccine safety (33.9%),

Table 1: Sociodemographic characteristics of respondents (n = 390)

Demographic characteristics	Frequency (%)
Gender	
Male	166 (42.6)
Female	224 (57.4)
Age (years)	
Mean±SD (40±14 years)	
<18	11 (2.8)
19–25	66 (16.9)
26–35	85 (21.8)
36–45	74 (19.0)
46–55	96 (24.6)
56–65	51 (13.1)
> 65	7 (1.8)
Last education	
Junior high school	21 (5.4)
Senior high school	159 (40.8)
Diploma	39 (10.0)
Bachelor (S1)	150 (38.5)
Postgraduate (S2)	21 (5.4)
Profession	
Unemployed	132 (33.8)
Student	65 (16.7)
Private employees	59 (15.1)
Civil servants	24 (6.2)
Business	66 (16.9)
Driver	13 (3.3)
Farmer	3 (0.8)
Labourer	26 (6.7)
Cleaner	2 (0.5)
Economic status	
Very low	15 (3.8)
Low	81 (20.8)
Middle	245 (62.8)
High to very high	49 (12.6)

SD: Standard deviation.

vaccine effectiveness (17.0%), concerns about vaccine side effects (42.9%), distrust of vaccines (5.3%), and others (0.9%).

Of the number of respondents willing to receive the COVID-19 vaccine, only 30.9% of respondents are willing to pay for the vaccine, and the rest refuse to pay for the vaccine. The lowest willingness to pay for the COVID-19 vaccine (0%) was among respondents with very low economic status, and the highest (69.1%) among respondents with the economic level of middle

Table 2: Distribution of respondents regarding the acceptance of COVID-19 vaccination

Category	Frequency (%)
Distribution of respondents: Ever heard of the COVID-19 vaccine (n = 390)	
Yes	366 (93.8)
No	24 (6.2)
Distribution of respondents based on acceptance of COVID-19 vaccine (n = 390)	
Yes	149 (38.2)
No	109 (27.9)
I haven't decided yet	132 (33.9)
Distribution of respondents based on reasons for vaccine refusal (n = 109)	
Safety	38 (34.9)
Effectiveness	16 (14.7)
Side effects	48 (44.0)
Distrust in vaccines	6 (5.5)
Others	1 (0.9)
Distribution of respondents based on willingness to pay for vaccines (n = 149)	
Yes	46 (30.9)
No	103 (69.1)
Distribution of respondents by location of vaccination choice (n = 390)	
Public health centre	199 (51.0)
Doctor/midwife/hospital	130 (33.3)
Office/workplace	33 (8.5)
Educational institutions	28 (7.2)
Distribution of respondents based on the desire to get information (n = 390)	
Yes	333 (85.4)
No	57 (14.6)
What is the preferred way to get information if you want to get information? (n = 333)	
Social media	78 (23.5)
Online/print/electronic media platforms	135 (40.5)
Face to face	120 (36.0)

class.

From the survey, it is known that the preferred locations for vaccination, more than half (51.0%) of respondents wanted to vaccinate at community health centers (Puskesmas). Doctors, midwives, and hospitals became the second choice (33.3%) for getting vaccines. Around 8.5% of respondents want to get vaccines in the office or workplace, and 7.2% want vaccines at educational institutions or universities.

As many as, 85.4% of respondents wanted to get more information about the COVID-19 vaccine being developed. Respondents have several choices of ways to obtain this information. Around 40.5% of respondents chose online, print and electronic platforms to get more details about the COVID-19 vaccine, while face-to-face communication (36.0%) was the second choice for getting information. About 23.5% of respondents want to receive information through social media such as WhatsApp, Facebook, Instagram, and Twitter. The 18–25 years age group chose social media as the first choice (60%) and electronic media as the second choice (15%). For respondents aged over 65 years, the figures are 48% and 29% for social media and print media, respectively.

Discussion

This survey was not conducted on respondents who work in the health sector, such as hospitals, clinics, and pharmacies. The health sector has implemented a vaccination program following applicable policies, so the group does not meet the requirements of the respondents' criteria. Based on the study results, respondents knew that there was a COVID-19 vaccination program. The Government is intensively socializing the vaccine program so that the public can find out information from various sources. However, around 6.2% do not know about the vaccination program in the elderly group due to their age group who do not understand the technology and the internet [11]. However, there is a slight difference between the knowledge of male and female respondents regarding the existence of the COVID-19 vaccination program and the Government's plan for its distribution. As in the Ministry of Health's survey, it is known that 9% of male respondents are not aware of the vaccination program, while 4% of female respondents are not aware of the vaccination program [10].

Respondents gave varied responses to receiving the vaccine. A group of respondents willing to accept the government's vaccine program stated their reasons for protecting themselves from the COVID-19 virus and wanting a quick end to this pandemic. This is in line with the previous similar survey in Indonesia; about

43% of respondents said they were willing to receive the vaccine [12]. Based on the study, the highest vaccine acceptance rate (59.2%) came from respondents in the high to the very high category, while the lowest (22.2%) came from the low class. It can be seen that the higher the economic status of the respondents, the higher the level of acceptance. The high acceptance of the high to the very high category of vaccines is also accompanied by a willingness to pay for the COVID-19 vaccine.

On the other hand, respondents refused for several reasons, such as fear of side effects of the vaccine and were not sure that the vaccine given was safe, likewise for the group of respondents who were still hesitant to make a decision [10]. A similar study in other states showed that 74.3% of respondents ultimately rejected vaccination [13]. Several respondents in another survey stated that the COVID-19 pandemic was a product of propaganda, conspiracy, hoax, and a deliberate attempt to spread fear through the media for profit [11]. Respondents indicated the highest rejection in the low economic status (44.4%), and the lowest was in the high to very high category (12.2%). Then more than half (53.3%) of respondents in the very low category have not decided to accept or reject the vaccine. The level of the doubt tends to decrease as economic status increases. Doubts and rejection of this vaccine are due to fear of paying for the vaccine because it will affect the economy of the respondent's family [10].

Several factors can cause vaccine rejection. Predictors of vaccine acceptance that respondents consider in making decisions to receive vaccines require confidence in several aspects, including the effectiveness and safety of the vaccine, the system that provides it and the motivation of policymakers who decide on the importance of vaccination [14]. In addition, public perception of health and disease prevention is an essential factor. Respondents who actively follow the recommendations of the health protocol feel that they have felt the benefits and question the risks and benefits of using vaccines [10].

In this study, most of the respondents refuse to pay for the vaccine (if paid). This survey showed the high rate of refusal to pay for vaccines from respondents with very low economic status (100%) and low economic status (89.5%) because paying for vaccines is not a priority in their lives. In line with other studies, most respondents refuse to pay for the vaccine because the Government has to pay for the vaccine (44%) [15]. The willingness to pay for the vaccine is also influenced by economic status, and respondents who want to pay for the vaccine also limit their ability to pay for the COVID-19 vaccine [10]. It is hoped that the Government's efforts in this vaccination program are to intensify the free vaccination program for people with low economic categories so that people with low financial status can receive vaccines for their health [16].

Almost all age groups in this study showed a high demand for information above 75%. The high

number of requests for information indicates that the public wants to know more about vaccines, such as information on the development of vaccines, side effects, and effectiveness of the vaccines that will be given to the public [10]. Government, public health officials, and advocacy groups must be prepared to overcome doubts and build vaccine literacy so that people are willing to receive the vaccine after knowing the correct and correct information about the vaccine [17].

There are several ways for respondents to get information about vaccines. In this study, the choice reflects the preferred choice according to the age group. Social media are the most preferred information channel by respondents aged <18–25 years. This is due to the technological literacy of respondents at that age, so they are more interested in getting information through social media. Social media platforms could assist by renewing vaccine promoting organizations' organic reach, supporting the development of tailored listening and credibility tools, and strengthening collaborations to promote credible content [18]. The options for face-to-face communication increase with the age of the respondents. The respondent chose face-to-face communication because it made it easier for respondents to ask questions directly about the COVID-19 vaccine. Especially at the age above 56 years, more than half of the respondents choose face-to-face communication as a medium to get information [10].

Conclusion

The people of Padang who stated that they were willing to undergo the COVID-19 vaccine program had not yet reached half of the number of respondents studied. However, this number has the opportunity to increase based on the enthusiastic trend of people who want to get more information about the COVID-19 vaccine. Several efforts need to increase public participation in the COVID-19 vaccination program in Padang, West Sumatra, Indonesia. These efforts include providing intensive and continuous information services in primary health facilities about the importance of vaccination as self-protection to reduce morbidity and mortality due to COVID-19. This can also be done with a personal approach to the community. In addition, providing vaccination sites are easily accessible to the target community.

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