THE RELATIONSHIP BETWEEN KNOWLEDGE WITH COVID-19 VACCINE DECISIONS

Joice Cathryne[1*], Adventina Delima Hutapea[2], Fiorentina Nova[3]

[1-3]Universitas Pelita Harapan

Email Korespondensi: joice.cathryne@uph.edu

Disubmit: 11 Juli 2023 Diterima: 28 Juli 2023 Diterbitkan: 06 Agustus 2023
Doi: https://doi.org/10.33024/mahesa.v3i9.10929

ABSTRACT

On January 20, 2021, Covid-19 transmission reached 1.012.350 cases in 224 countries, with a Case Fatality Rate in Indonesia of 33.2%. Indonesia has ranked first in Asia due to a very large increase in Covid-19 cases. The spread of Covid-19 can be prevented by implementing health protocols and vaccination programs. Although vaccination is very important many people doubt it. Based on data, the first dose of vaccine in West Kalimantan only reached 14.5%. This study aims to determine the relationship between knowledge with Covid-19 vaccine decisions. This study used a quantitative descriptive method with univariate and bivariate data analysis techniques. The sample in this study was composed of 383 residents who live in Pontianak and were selected by purposive sampling methods. The instrument in this study used the Covid-19 knowledge questionnaire. The result of the study was that 70.5% of respondents had good knowledge, and 86.7% received the Covid-19 vaccine. 22.5% of respondents had fair knowledge, where 3.5% of respondents decided not to vaccinate, 27% of respondents had poor knowledge, and 7% of respondents decided not to vaccinate. There was a relationship between knowledge with Covid-19 vaccination decisions, as evidenced by the Chi-square test (p=0.001). Good knowledge will produce the right decision for someone to act.

Keywords *: Covid-19, Covid-19 Vaccines, Vaccination*

INTRODUCTION

At the beginning of 2020, the world was shocked by the Corona Virus Disease (Covid-19) caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2), which has become a major health problem worldwide. Covid-19 disease is transmitted from human to human through droplets and aerosols (Susilo et al., 2020a). On March 11, 2020, the World Health Organization declared Covid-19 as a global pandemic, and after the first case of Covid-19 was discovered in Indonesia in March 2020, the Indonesian government immediately declared this a national disaster (Tim COVID-19 IDAI, 2020). Covid-19 disease is still a global health problem. Based on data from WHO and the Ministry of Health's PHEOC, there are 204 infected countries and 151 included in community transition. The three countries with the highest number of Covid-19 cases in the world are the United States, India, Brazil, and Indonesia, which occupies the first position in Asia as the country with the most

cases in the Covid-19 region. Indonesia is a community transmission country, which means that Indonesia cannot determine the source of the transmission chain because the number of cases reported is very large (Kementerian Kesehatan Republik Indonesia, 2021).

The Covid-19 disease spreads very quickly and infects anyone regardless of age (Purnamasari & Raharyani, 2020), which ultimately made the government take preventive steps through the implementation of the 5M health protocol, namely by wearing masks, maintaining distance, washing hands, staying away from crowds, and reducing mobility (Aulia et al., 2021) which then the government also developed to prevent the spread of Covid-19 by implementing large-scale social restrictions (PSBB) in early January 2021, but the increase in infected cases continued to increase, which was due to a lack of knowledge about Covid-19. The study by Lestiowati et al. (2019) found that out of 253 respondents, 35.3% had sufficient knowledge and 30.6% had insufficient knowledge. Research also found that only 42% of respondents had good knowledge, 40% had sufficient knowledge, 60% were at a sufficient level in implementing health protocol, and 52% did not implement health protocols (Rahmi et al., 2021).

The government has also added to the policy of imposing community activity restrictions (PPKM) from level one to level four to deal with Covid-19, but the Covid-19 virus continues to mutate and infect more and more people, so the role of the Covid-19 vaccine is indispensable as the next step for the handling of Covid-19 (Marwan, 2020). By the Presidential Decree dated March 6, 2020, the government created a vaccination program to deal with the Covid-19 pandemic (Kementerian Kesehatan RI et al., 2020). Covid-19 vaccination aims to increase body immunity and reduce the risk of complications due to Covid-19, and especially vaccination can form herd immunity (Kesehatan, 2021). Russia, Jordan, Kuwait, Europeans, and African countries have the lowest number of Covid-19 vaccinations among the general population. Studies have revealed that Saudi Arabia, Jordan, and other countries have an overall vaccine uptake rate of only 29.4% (Aldossari et al., 2021), and the highest numbers are in Ecuador, Malaysia, China, and Indonesia (Karlsson et al., 2021), although vaccines are very important, to many Indonesians who reject vaccines, such as the UK, New York, and Canada, which reject the Covid-19 vaccine because it is new, and raising doubts (Ho, 2020). There are many reasons people refuse to get vaccinated, such as lack of knowledge about the Covid-19 vaccine, fear of side effects (Astuti et al., 2021); 30% are not sure about the safety of the vaccine, 22% are not sure about the effectiveness of the vaccine; 13% don't believe in vaccines (Kementerian Kesehatan RI et al., 2020). The study by Azim et al. (2021) found that 74.6% of the people in Kendari had poor knowledge and did not receive the vaccine. The lack of knowledge about Covid-19 will result in people not wanting to be vaccinated. Knowledge is a very important domain for forming someone to act (Notoatmodjo, 2014). Knowledge is one of the factors that facilitate changes in people's behavior, especially in carrying out the Covid-19 vaccination.

Based on the Indonesian Political Indicator Survey, whose respondents were randomly selected from all over Indonesia, the result was that 54.9% of the 22-25-year age group did not want to be vaccinated because the vaccine was not effective, they were worried about side effects and they felt that their bodies were healthy so they felt no need to be vaccinated. Based on the data, there are areas with the lowest vaccine coverage rate in the first dose such as Lampung with only 9.91%, North Maluku with only 12.4%, West Kalimantan with only 14.54%, Papua with only 14.6% and Central Sulawesi with only 14.68% (BBC News Indonesia, 2021).

Global efforts to overcome the pandemic depend on prevention efforts and the participation of the public in following the preventive measures taken by the government, but several things hinder the community from receiving vaccines, such as education that affects public knowledge, roles, and information provided by the government (Lazarus et al., 2021). Lack of knowledge, wrong information (Pertwee et al., 2022), misconceptions about Covid-19 vaccines, wrong perceptions, conspiratorial beliefs, and lower faith and trust in government (Pickles et al., 2022), all of that causes can pose a serious threat to global health that can affect many sectors of life. Therefore, to support the government's vaccination program, it is necessary to carry out further research regarding knowledge with Covid-19 vaccine decision which aims to see whether there is a relationship between knowledge with Covid-19 vaccine decisions.

LITERATURE REVIEW

Knowledge is obtained from the results of knowing and occurs after someone has gone through the process of sensing a particular object. Sensing involves the five human senses, which are related to sight, hearing, smell, taste, and touch. Knowledge is a term to say that someone who knows and understands something new is known. In essence, knowledge can be seen in a subject who has the awareness to know an object (Notoatmodjo, 2014b).

Vaccination is the administration of vaccines to actively induce or enhance a person's immunity to a disease so that if one day they are exposed to the disease, they will not get sick or only experience a mild illness and will not become a source of transmission (Covid-19 Hotline, 2022). Vaccines save millions of lives every year. The development of a safe and effective COVID-19 vaccine is an important step in the global effort to end the pandemic so that people can return to their normal activities and meet their beloved family and friends.

Decision-making is influenced by knowledge so that beneficial actions are formed for someone, including the willingness to be vaccinated against Covid-19. There is a relationship between knowledge and willingness to vaccinate against Covid-19 among residents in Dukuh Menanggal Village (Febriyanti et al., 2021). Good knowledge about Covid-19 is expected to result in a positive attitude after receiving the vaccine. However, doubt and rejection as a form of negative attitude can occur due to other factors, like personal experience and the influence of other people or cultures (Irwan, 2017). Therefore, researchers are interested in knowing whether there is a

relationship between knowledge with Covid-19 vaccine decisions.

METHODS

This research uses a descriptive study with a cross-sectional design. The independent variable was knowledge, and the dependent variable was Covid-19 vaccine decisions. The purpose of this study is to determine the relationship between knowledge with Covid-19 vaccines decision. This research has received ethical approval from the Internal Review Board of Pelita Harapan University with number 62-IRB/PN-FoN-UPH/II/2022. All participants agreed with the online informed consent form, in which they clicked on the option "I accept to participate in the study". The sample of this study was 383 respondents, selected using the purposive sampling technique. The respondents of this research were 383 Pontianak residents who live in Pontianak City, with inclusion criteria being respondents aged 18-35 years who have a smartphone to access the questionnaire link and are willing to be respondents in this study and the exclusion criteria in this study were respondents who had terminal illnesses.

The instrument was adopted from Hamdi's (2020) research, which obtained permission. The questionnaire was modified and tested for validity and reliability by 50 people. The instrument consists of fifteen valid questions whose r count is greater than the r table ($r \geq 0.279$) and the value of reliability is Cronbach's Alpha 0.75. These results indicate that the questionnaire used is valid and reliable. The research was conducted in West Kalimantan, in the city of Pontianak, and data collection took place between February and May 2022, exclusively online through internet access and using Google Forms. The authors created a Google form engagement page intending to disseminate scientific information about the instrument to obtain information regarding knowledge and Covid-19 vaccine decisions.

Data collection occurred through the application of one instrument: a questionnaire prepared by the researcher themselves and a questionnaire about knowledge of Covid-19 vaccine decisions. The first contemplated the characteristics of respondents, covering the variables: age, gender, education, occupation, belief in vaccines and diseases suffered.

Researchers use two types of data analysis, namely univariate and bivariate analysis. Univariate was used to determine the level of knowledge and vaccine decisions, the results of which were issued in the form of frequency and percentage and then grouped into three levels of knowledge, namely good, fair, and poor knowledge which were divided according to predetermined ranges. Analysis to determine the relationship between the two variables' level of knowledge and Covid-19 vaccine decisions in which research used bivariate analysis using the Spearman rank coefficient test.

RESULT AND DISCUSSION

Table 1. Distribution of Respondents' Characteristics at Pontianak City (n=383)

Ages	**Frekuensi**	**Persentase (%)**
17-25 years	274	71,5
26-35 years	109	28,5
Gender	**Frekuensi**	**Persentase (%)**
Male	150	39,2
Female	233	60,8
Education	**Frekuensi**	**Persentase (%)**
No school	1	0,3
Elementary	0	0
Junior high school	6	1.6
Senior high school	226	59
University	150	39.2
Occupation		
Not work	36	9.4
Farmer	4	1
Laborer	3	0.8
Household assistant	3	0.8
Student	202	52.7
Businessman	27	7
Private employees	88	23
Government employees	20	5.2
Diasese suffered	**Frekuensi**	**Persentase(%)**
Diabetes	2	0.5
Hyperthyroidism	1	0.3
Migraine	2	0.5
Dyspepsia	5	1.2
Hypertension	2	0.5
Hypotension	1	0.3
Asthma	3	0.7
Cough	1	0.3
Gerd	1	0.3
Psoriasis	1	0.3
Haemmoroid	1	0.3
Pruritus	1	0.3
Don't have disease suffered	362	94.5
Have another belief about vaccines	**Frekuensi**	**Persentase (%)**
Yes	51	13.1
No	332	86.9

Table 1 shows that the majority of respondents were aged 17-25 years as many 274 (71.5%). Of which most were female, at 233 people (60.8%). Based on their education, most of them graduated from senior high school as many as 226 people (59%). Based on occupation, 202 people (52.7%) of respondents are students. Based on respondent's disease suffered, the majority, 362 people (94.5%) of respondents do not have disease suffered, only a few respondents had disease suffered such as diabetes (0.5%), hyperthyroidism (0.3%), migraine (0.5%), dyspepsia (1.2%), hypertension (0.5%), hypotension (0.3%), asthma (0.7%), cough (0.3%), GERD (0.3%), psoriasis (0.3%), hemorrhoid (0.3%), and pruritus (0.3%), and based on having another belief about vaccines, 51 people (13.1%) of the respondents have another belief about vaccines.

Table 2. Distribution of Respondents' Knowledge about Covid-19 Vaccines (n=383)

Level of Knowledge	Frekuensi	Persentase (%)
Good	270	70.5
Fair	86	22.5
Poor	27	7

Table 2 shows that 270 (70.5%) of respondents have a good level of knowledge, 86 (22.5%) of respondents have a fair level of knowledge and 27 (7%) of respondents have a poor level of knowledge about Covid-19 vaccines.

Table 3. Distribution of the respondents' Covid-19 vaccine decisions (n=383)

Covid-19 vaccines decisions	Frekuensi	Persentase (%)
Yes	378	86.7
No	5	13.3

Table Table 3 shows that 378 (86.7%) respondents had been vaccinated against Covid-19, and only 5 (13.3%) respondents did not want to be vaccinated against Covid-19.

Table 4. Analysis of The Relationship between Knowledge with Covid-19 vaccines decisions (n=383)

	Covid-19 vaccines decisions					
Knowledge	Yes		No		total	*p-value*
	F	%	F	%		
Good	270	100	0	0	270	*0.001*
Fair	83	96.5	3	3.5	86	
Poor	25	92.6	2	7.4	27	
Total	378		5		383	

Table 4 shows that 270 respondents have a good level of knowledge about Covid-19 and have received the Covid-19 vaccine, while 86 respondents have a fair level of knowledge, with 83

respondents having been vaccinated and 3 respondents not having been vaccinated. Out of 27 respondents with a poor level of knowledge, 25 respondents had been vaccinated, while 2 other respondents did not want to receive the vaccine. There is a relationship between knowledge with Covid-19 vaccine decisions with a p=0.001, which means the results are significant.

Table 5. Distribution of disease suffered by respondents with vaccine decisions (n=383)

		Vaccines decisions	
Disease suffered	**N**	**Yes**	**No**
Diabetes	2	√	
Hyperthyroid	1	√	
Migraine	2	√	
Dyspepsia	5	√	
Hypertension	2	√	
Hypotension	1	√	
Asthma, Rhinitis, Allergic, Tonsilitis	1		√
Asthma	2	√	
Cough	1	√	
Gerd	1	√	
Psoriasis	1	√	
Haemmoroid	1	√	
Pruritus	1	√	

Table 5 shows the diseases suffered by 21 respondents, and only 1 respondent with asthma, rhinitis, allergies, or tonsillitis refused to get the Covid-19 vaccine.

DISCUSSION

The majority age range of respondents was 17-25 (71.5%) years. This age range is included in the late adolescent stage. At this time, parents often assume that they have almost entered adulthood due to the maturity of the intellectual functions of adolescents (Dewi, 2021). This is supported by Alwi's research, where 52% of adolescents choose the decision to vaccine (Alwi, 2022), at which in the late adolescent they were able to understand social norms, think wisely, and make plans for their next life (Fatmawaty, 2017). This research is not in line with research conducted by Hutapea et al, where 59% of respondents aged 18-25 years have not had the Covid-19 vaccine because they have a low risk of being exposed to Covid-19 due to their immune system (Hutapea et al., 2022). Late adolescents (18-24 years) are more willing to receive vaccines than those aged 25-65 years and over (Lazarus et al., 2021). Age affects the way a person looks and thinks. With age, the behavior and thinking style of a person will increasingly develop, which will influence their decision to get the Covid-19 vaccine.

In this research, 60.8% of respondents were female or women. It was found that women have a slightly better understanding of the clinical picture of Covid-19 (Souli & Dilucca, 2020) and women are more diligent in implementing health protocols than men. This

study is supported by Dardas et al. (2020) research which stated that women had higher scores of knowledge, attitudes, and Covid-19. This research also supported by Hutapea et al, that 63% of the respondents were women, because women are more concerned about their health (Hutapea et al., 2022). Research by Ciarambino et al. (2021) states that although women develop higher antibody responses to vaccines than men but women are more doubtful about vaccination and less willing to receive the Covid-19 vaccine (Karlsson et al., 2021), and several other studies have revealed better insights for women compared to men (Azlan et al., 2020). Male participate more frequently in risky activities which can increase the chances of contracting Covid-19 (Griffith et al., 2020) because male have lower preventive behaviors against Covid-19 (Pothisa et al., 2022).

The results of this study found that 59% of respondents had a senior high school education, and 39.2% of respondents came from universities. This research is in line with Hutapea's research that found that 54% of respondents came from senior high school. Education is related to knowledge, where a highly educated person easily understands information and exibits good behavior (Hutapea, 2022). Knowledge is the result of sensing or knowing about objects through the five senses (Notoatmodjo, 2014). Knowledge can be obtained through formal or informal education, it can be also be obtained through the environment, experience, and mass media (Moudy & Syakurah, 2020). Good knowledge can be supported by the acceptance of information in the community about vaccination (Arumsari et al., 2021).

In this study, it was found that 52.7% of respondent's occupation was student. In his research, Bakrie et al, state that there was no relationship between work and vaccine decisions, and 82.1% of people who were working had receive the vaccine compare to people who did not have a job (Bakri et al., 2022).

The result of the study based on their disease suffered showed that 94.5% of the respondents did not have disease suffering, this was in line with Yulyani's research where 95.4% of the respondents did not have comorbid disease (Yulyani et al., 2022). This research is not in line with research conducted by Karlsson et al. (2021), who found that 5.5% of respondents have suffered diseases such as diabetes, hyperthyroid, migraine, dyspepsia, hypertension, hypotension, asthma, cough, GERD, psoriasis, hemorrhoid, and pruritus (Karlsson et al., 2021). People with co-morbidities are a group that is very vulnerable to exposure to the Covid-19 virus (Susilo et al., 2020) and they feel afraid to be vaccinated because of their congenital disease (Sukmana et al., 2021). People who have congenital diseases are more unwilling to be vaccinated because they are worried about the side effects they will experience, this is because their bodies cannot withstand the pain from the side effects of the Covid-19 vaccine and will cause complications between congenital diseases and Covid vaccinations-19 (Ainun et al., 2021). In Aldossari's research, apart from suffering from diabetes, about half of the participants (49.6%) had chronic conditions such as hypertension, asthma, obesity and 34.7% of respondents had cardiovascular disease and only 36.2% had already received the Covid-19 vaccine (Aldossari et al.,

2021), and from this research in table 5, it is shown that out of 21 respondents who had the disease, only 1 of respondent was not willing to be vaccinated because the disease.

The result of the study based on their beliefs about having distrust of vaccines showed that 86.9% of respondents did not have a distrust of vaccines. This is in line with Febriyanti's research in Surabaya, found that 5.4% of respondents did not believe there was a Covid-19 vaccine (Febriyanti et al., 2021). Anti-vaccine conspiracy theories have a detrimental effect because they reduce a person's intention to vaccinate and cause excessive (Jolley & Douglas, 2014). Pickles et al. (2022) research found the misconceptions about the Covid-19 vaccines included the belief that vaccinated individuals can negatively impact the health of unvaccinated individuals (29.4%), vaccinated individuals can transmit the virus to others (22.4%), Covid-19 vaccines can harm the immune system (18.8%), and there was uncertainty among 35.2% of participants about whether the vaccine is associated with infertility. A portion of the participants had overall negative views towards vaccinations; 12.6% of the group affirmed that "vaccines result in autism" and 31.8% of respondents concurred with the assertion that "there is a misrepresentation regarding the efficacy of vaccines". Moreover, 29.6% agreed that there is deception regarding the safety of vaccines, and 27.9% agreed that pharmaceutical companies conceal the hazards of vaccines (Pickles et al., 2022). Beliefs, misperceptions, and conspiracies about the Covid-19 vaccine can influence a person's acceptance of the Covid-19 vaccine, but with the knowledge possessed by respondents about the vaccine, they still decide to vaccinate.

Table 2 shows that, based on the knowledge level variable, 70.5% of respondents have good knowledge about the Covid-19 vaccine. This is in line with Yanti's research, which found that 70% of respondents in Sumatra Kelod Village have good knowledge (Yanti et al., 2020). Abebe's study in Ethiopia found 74% of respondents also had good knowledge of the Covid-19 vaccine. Secondary education level and above influence respondents to participate in vaccinations up to three times (Abebe et al., 2021). The result of Dervish's research stated that 81% of respondents had good knowledge. Good knowledge is influenced by the level of maturity of a person's age (Darwis, 2021), and in Kartika's research, it was found that 54% of respondents had high knowledge (Kartika et al., 2021), because previous research shows vaccination acceptance among the general population aged 18 and over (Joshi et al., 2021). Knowledge of Covid-19 vaccination helps handle Covid-19 cases (Law et al., 2020). This research was not supported by research conducted by Alganesta, in which it was found that 81.8% of respondents had sufficient knowledge Covid-19 due to social media information that is negative and has a negative impact on Covid-19 vaccine (Alganesta et al., 2022). Social media that displays and spreads misinformation will cause increased anxiety and vaccine hesitancy (Wilson & Wiysonge, 2020). The most common reason for most vaccination refusals is a lack of awareness and knowledge, as well as religious beliefs (Karafillakis & Larson, 2017). By having good knowledge of something, a person will have the

ability to make the right decisions (Purnamasari & Raharyani, 2020).

In this study, as shown in table 3 shows 86.7% of respondents have good decisions for Covid-19 vaccination. This is in line with Alganesta's research, which found that 72.7% of respondents have good attitude in the implementation of the Covid-19 vaccine (Alganesta et al., 2022). This research is not in line with Saadah et al. (2023) research, where 58.7% of respondents have fair attitude toward Covid-19 vaccine because 79.3% of respondents have poor of knowledge about Covid-19 vaccine. People who have knowledge will influence someone to behave in a closed manner such as willingness to be vaccinated against Covid-19 (Hutapea et al., 2022).

The result in table 4 show there is a relationship between knowledge with Covid-19 vaccine decisions with a p-value of 0.001, which means the results are significant, this mean that there is a relationship between knowledge with Covid-19 vaccine decisions. This results supported by Saadah's research that shows there is a relationship between knowledge and participation in carrying out the Covid-19 vaccination (Yanti et al., 2020). Having good knowledge about the Covid-19 vaccine is one of the determinants of a person's willingness to be vaccinated (Abebe et al., 2021).

Factors of age, education, occupation, illness, and beliefs will affect someone's knowledge, and knowledge will influence a person to act and decide what is best for their health. Good knowledge will also produce good decisions.

CONCLUSION AND SUGGESTIONS

The results of this study indicate that there is a significant relationship between the knowledge possessed by Pontianak residents with Covid-19 vaccine decisions. Vaccination is very important for preventing Covid-19. Good knowledge will make people aware of the Covid-19 vaccination. Suggestion for futher research are that the future researcher can identify what factors are hindering the acceptance of the Covid-19 vaccinations.

Acknowledgment

We extend our highest respect and gratitude to the LPPM Universitas Pelita Harapan for supporting, facilitating, and funding this research with research number P-59-FoN/XII/2021

REFERENCES

Abebe, H., Shitu, S., & Mose, A. (2021). Understanding Of Covid-19 Vaccine Knowledge, Attitude, Acceptance, And Determinates Of Covid-19 Vaccine Acceptance Among Adult Population In Ethiopia. *Infection And Drug Resistance*, *14*, 2015–2025. Https://Doi.Org/10.2147/Idr.S312116

Ainun, N., Haniarti, H., & Hengky, H. K. (2021). Persepsi Masyarakat Terhadap Vaksin Covid-19 Di Wilayah Kecamatan Bacukiki Kota Parepare. *Tirtayasa Medical Journal*, *1*(1), 1. Https://Doi.Org/10.52742/Tmj.V1i1.12471

Aldossari, K. K., Alharbi, M. B., Alkahtani, S. M., Alrowaily, T. Z., Alshaikhi, A. M., & Twair, A. A. (2021). Covid-19 Vaccine Hesitancy Among Patients With Diabetes In Saudi Arabia. *Diabetes And Metabolic Syndrome: Clinical Research*

And Reviews, *15*(5), 102271. Https://Doi.Org/10.1016/J.Dsx.2021.102271

Alganesta, D., Usman, M., & Helen, M. (2022). Hubungan Tingkat Pengetahuan Dengan Sikap Dalam Pelaksanaan Vaksin Covid-19. *Nursing Inside Community*, *4*(2), 36–40. Https://Jurnal.Stikesnh.Ac.Id/Index.Php/Nic/Article/View/872

Alwi, N. . (2022). Hubungan Usia Dan Lingkungan Dengan Keputusan Masyarakat Untuk Mengikuti Vaksin Covid 19. *Jurnal Kesehatan*, *11*(1), 192–198. Https://Doi.Org/Https://Doi.Org/10.36763/Healthcare.V11i1.227

Arumsari, W., Desty, R. T., & Kusumo, W. E. G. (2021). Gambaran Penerimaan Vaksin Covid-19 Di Kota Semarang. *Indonesian Journal Of Health Community*, *2*(1), 35. Https://Doi.Org/10.31331/Ijheco.V2i1.1682

Astuti, N. P., Nugroho, E. G. Z., Lattu, J. C., Potempu, I. R., & Swandana, D. A. (2021). Persepsi Masyarakat Terhadap Penerimaan Vaksinasi Covid-19: Literature Review. *Jurnal Keperawatan*, *13*(3), 569–580. Https://Doi.Org/10.32583/Keperawatan.V13i3.1363

Aulia, G., Rahmah Fahriati, A., Okta Ratnaningtyas, T., Meitania Utami, S., Dwi Pratiwi, R., Adi Ismaya, N., Purnama Sari, F., Monja, T., Kania Rahsa Puji, L., & Ayu Sabrina, P. (2021). Covid-19 Prevention Education With The Health Protocol Of 5m And The Importance Of Multivitamins During Covid-19 Pandemic. *Jurnal Abdi Masyarakat*, *2*(1), 133–139.

Azim, L., Rahman, & Khalza, L. (2021). Penerimaan Masyarakat Terhadap Vaksin Covid-19 Berdasarkan Teori Health Belief Model Di Kecamatan Poasia Kota Kendari. *Hospital Majapahit*, *13*(2), 129–141.

Azlan, A. A., Hamzah, M. R., Sern, T. J., Ayub, S. H., & Mohamad, E. (2020). Public Knowledge, Attitudes And Practices Towards Covid-19: A Cross-Sectional Study In Malaysia. *Plos One*, *15*(5), 1–15. Https://Doi.Org/10.1371/Journal.Pone.0233668

Bakri, A., Novia, K., Tangadatu, H., & Pantas, K. C. (2022). Faktor – Faktor Yang Berhubungan Dengan Penerimaan Masyarakat Terhadap Vaksinasi Covid-19 Di Puskesmas Makkasau. *Jurnal Keperawatan Florence Nightingale*, *5*(1), 31–36. Https://Doi.Org/10.52774/Jkfn.V5i1.93

Bbc News Indonesia. (2021). *Covid-19: Dua Survei Menyebut Banyak Anak Muda Menolak Vaksin, Bagaimana Meyakinkan Mereka?*Https://Www.Bbc.Com/Indonesia/Indonesia-56150289

Ciarambino, T., Barbagelata, E., Corbi, G., Ambrosino, I., Politi, C., Lavalle, F., Ruggieri, A., & Moretti, A. M. (2021). Gender Differences In Vaccine Therapy: Where Are We In Covid-19 Pandemic? *Monaldi Archives For Chest Disease*, *91*(4).Https://Doi.Org/10.4081/Monaldi.2021.1669

Covid-19 Hotline. (2022). *Tentang Vaksinasi Covid-19*.

Dardas, L. A., Khalaf, I., Nabolsi, M., Nassar, O., & Halasa, S. (2020). Developing An Understanding Of Adolescents' Knowledge, Attitudes, And Practices Toward Covid-19. *Journal Of School Nursing*, *36*(6), 430–441. Https://Doi.Org/10.1177/1059840520957069

Darwis, S. A. (2021). Knowledge And Anxiety Levels Of Nursing Academy Student At Marthen Indey Hospital Against The Covid-19 Vaccine. *Healthy Papua*, *4*(2), 238–243.

Dewi, F. N. R. (2021). Konsep Diri Pada Masa Remaja Akhir Dalam Kematangan Karir Siswa. *Konseling Edukasi "Journal Of Guidance And Counseling,"* *5*(1), 46–62. Https://Doi.Org/10.21043/Konseling.V5i1.9746

Fatmawaty, R. (2017). Fase-Fase Masa Remaja. *Jurnal Reforma*, *Vi*(02), 55–65.

Febriyanti, N., Choliq, M. I., & Mukti, A. W. (2021). *Seminar Nasional Hasil Riset Dan Pengabdian Ke-Iii (Snhrp-Iii 2021) Hubungan Tingkat Pengetahuan Dan Kesediaan Vaksinasi Covid-19 Pada Warga Kelurahan Dukuh Menanggal Kota Surabaya*.

Griffith, D. M., Sharma, G., Holliday, C. S., Enyia, O. K., Valliere, M., Semlow, A. R., Stewart, E. C., & Blumenthal, R. S. (2020). Men And Covid-19: A Biopsychosocial Approach To Understanding Sex Differences In Mortality And Recommendations For Practice And Policy Interventions. *Preventing Chronic Disease*, *17*, 1–9. Https://Doi.Org/10.5888/Pcd17.200247

Hamdi, R. F. (2020). *Tingkat Pengetahuan Tentang Vaksinasi Covid-19 Pada Siswa Mts Negeri 1 Sumbawa Barat*. Universitas Ngudi Waluyo.

Ho, H. K. (2020). Covid-19 Pandemic Management Strategies And Outcomes In East Asia And The Western World: The Scientific State, Democratic Ideology, And Social Behavior. *Frontiers In Sociology*, *5*(November), 1–5. Https://Doi.Org/10.3389/Fsoc.2020.575588

Hutapea. (2022). Hutapea. *Inventaris Tanaman Obat Indonesia (I).*, *4*(Jilid I), 315–316.

Hutapea, M. A. ., Rizka, Y., & Lestari, W. (2022). Pengetahuan Dan Sikap Masyarakat Tentang Covid-19 Berhubungan Dengan Kesediaan Untuk Dilakukan Vaksinasi Covid-19. *Jurnal Penelitian Perawat Profesional*, *4*(3), 918–924.

Irwan. (2017). *Etika Dan Perilaku Kesehatan*. Absolute Media.

Jolley, D., & Douglas, K. M. (2014). The Effects Of Anti-Vaccine Conspiracy Theories On Vaccination Intentions. *Plos One*, *9*(2), 89177. Https://Doi.Org/10.1371/Journal.Pone.0089177

Joshi, A., Kaur, M., Kaur, R., Grover, A., Nash, D., & El-Mohandes, A. (2021). Predictors Of Covid-19 Vaccine Acceptance, Intention, And Hesitancy: A Scoping Review. *Front Public Health*, *13*(9). Https://Doi.Org/10.3389/Fpubh.2021.698111

Karafillakis, E., & Larson, H. J. (2017). The Benefit Of The Doubt Or Doubts Over Benefits? A Systematic Literature Review Of Perceived Risks Of Vaccines In European Populations. *Vaccine*, *35*(37), 4840–4850. Https://Doi.Org/10.1016/J.Vaccine.2017.07.061

Karlsson, L. C., Soveri, A., Lewandowsky, S., Karlsson, L., Karlsson, H., Nolvi, S., Karukivi, M., Lindfelt, M., & Antfolk, J. (2021). Fearing The Disease Or The Vaccine: The Case Of Covid-19. *Personality And Individual Differences*, *172*, 110590.

Https://Doi.Org/10.1016/J.Paid.2020.110590

Kartika, K., Suryati, I., & Lisa Paradisa. (2021). Hubungan Pengetahuan Dengan Kesiapan Masyarakat Menerima Vaksin Covid 19 Di Puskesmas Padang Laweh Kabupaten Sijunjung. *Pelaksanaan Vaksinasi Covid-19 Di Indonesia: Hak Atau Kewajiban Warga Negara*, *10*, 323–328.

Kementerian Kesehatan Republik Indonesia. (2021). *Info Infeksi Emerging: Situasi Terkini Perkembangan Coronavirus Disease (Covid-19)*. *November*, 14.Https://Infeksiemerging.Kemkes.Go.Id

Kementerian Kesehatan Ri, Unicef, & Who. (2020). *Survei Penerimaan Vaksin Covid-19 Di Indonesia*. *November*. Https://Www.Unicef.Org/Indonesia/Id/Coronavirus/Laporan/Survei-Penerimaan-Vaksin-Covid-19-Di-Indonesia

Kesehatan, D. (2021). Efektivitas Vaksinasi Dalam Pemutusan Rantai Penularan Covid-19. *Pemerintah Kabupaten Buleleng*.Https://Dinkes.Bulelengkab.Go.Id/Informasi/Detail/Artikel/49-Efektivitas-Vaksinasi-Dalam-Pemutusan-Rantai-Penularan-Covid-19

Law, S., Leung, A. W., & Xu, C. (2020). Severe Acute Respiratory Syndrome (Sars) And Coronavirus Disease-2019 (Covid-19): From Causes To Preventions In Hong Kong. *International Journal Of Infectious Diseases*, *94*, 156–163.Https://Doi.Org/10.1016/J.Ijid.2020.03.059

Lazarus, J. V., Ratzan, S. C., Palayew, A., Gostin, L. O., Larson, H. J., Rabin, K., Kimball, S., & El-Mohandes, A. (2021). A Global Survey Of Potential Acceptance Of A Covid-19 Vaccine. *Nature Medicine*, *27*(2), 225–228. Https://Doi.Org/10.1038/S41591-020-1124-9

Lestiowati, H., Munir, Z., & Agustin, Y. (2019). Hubungan Antara Pengetahuan Tentang Covid-19 Dan Kepatuhan Terhadap Penerapan Protokol Kesehatan Pengunjung. *Jurnal Penelitian Perawat Profesional*, *1*(1), 61–70.Http://Jurnal.Globalhealthsciencegroup.Com/Index.Php/Jppp/Article/Download/83/65

Marwan. (2020). *Peran Vaksin Dalam Penanganan Pandemi C19*.

Moudy, J., & Syakurah, R. A. (2020). Pengetahuan Terkait Usaha Pencegahan Coronavirus Disease (Covid-19) Di Indonesia. *Higeia Journal Of Public Health Research And Development*, *4*(3), 333–346.

Notoatmodjo, S. (2014a). *Promosi Kesehatan Dan Perilaku Kesehatan (Edisi Revisi)*. Rineke Cipta.

Notoatmodjo, S. (2014b). *Promosi Kesehatan Dan Perilaku Kesehatan (Edisi Revisi)*. Rineka Cipta.

Pertwee, E., Simas, C., & Larson, H. J. (2022). An Epidemic Of Uncertainty: Rumors, Conspiracy Theories And Vaccine Hesitancy. *Nature Medicine*, *28*(3), 456–459. Https://Doi.Org/10.1038/S41591-022-01728-Z

Pickles, K., Copp, T., Meyerowitz-Katz, G., Dodd, R. H., Bonner, C., Nickel, B., Steffens, M. S., Seale, H., Cvejic, E., Taba, M., Chau, B., & Mccaffery, K. J. (2022). Covid-19 Vaccine Misperceptions In A Community Sample Of Adults Aged 18–49 Years In Australia. *International Journal Of Environmental Research And Public Health*, *19*(11).

Https://Doi.Org/10.3390/Ijerph19116883

Pothisa, T., Ong-Artborirak, P., Seangpraw, K., Tonchoy, P., Kantow, S., Auttama, N., Boonyathee, S., Choowanthanapakorn, M., Bootsikeaw, S., Panta, P., & Dokpuang, D. (2022). Knowledge Of Covid-19 And Its Relationship With Preventive Behaviors And Vaccination Among Adults In Northern Thailand's Community. *International Journal Of Environmental Research And Public Health*, *19*(3), 1–14. Https://Doi.Org/10.3390/Ijerph19031521

Purnamasari, I., & Raharyani, A. E. (2020). Tingkat Pengetahuan Dan Perilaku Masyarakat Kabupaten Wonosobo Tentang Covid -19. *Jurnal Ilmiah Kesehatan*, 33–42. File:///C:/Users/Brenda Angelica/Downloads/1311-Article Text-2703-1-10-20200703.Pdf

Rahmi, A., Ilmi, M. B., & Rizal, A. (2021). *Hubungan Pengetahuan Dan Tindakan Masyarakat Terhadap 5m Pada Masa Pandemi Di Kelurahan Kuin Utara Banjarmasin Utara Tahun 2021*. 1–10. Http://Eprints.Uniska-Bjm.Ac.Id/7372/1/Artikel Amalia Rahmi 17070067 Pdf.Pdf

Saadah, S., Maywati, S., & Neni, N. (2023). Hubungan Pengetahuan Dan Sikap Dengan Partisipasi Masyarakat Dalam Melaksanakan Vaksinasi Covid-19 Di Desa Cintanagara Kecematan Ciledug Kabupaten Garut. *Jurnal Kesehatan Komunitas Indonesia*, *19*(1), 1727.Http://103.123.236.7/Index.Php/Jkki/Article/View/6862/2649

Souli, D., & Dilucca, M. (2020). Knowledge, Attitude And Practice Of Secondary School Students Toward Covid-19 Epidemic In Italy: A Cross Selectional. *Biorxiv*, *2019*, 1–11.Https://Doi.Org/Https://Doi.Org/10.1101/2020.05.08.084236

Sukmana, R. A., Iyansyah, M. I., Wijaya, B. A., & Kurniawati, M. F. (2021). Implementasi Strategi Komunikasi Kesehatan Dalam Meyakinkan Masyarakat Untuk Pelaksanaan Vaksinasi Covid-19 Di Kabupaten Barito Kuala. *Jurnal Sains Sosio Humaniora*, *5*(1), 409–419. Https://Doi.Org/10.22437/Jssh.V5i1.14153

Susilo, A., Rumende, C. M., Pitoyo, C. W., Santoso, W. D., Yulianti, M., Herikurniawan, H., Sinto, R., Singh, G., Nainggolan, L., Nelwan, E. J., Chen, L. K., Widhani, A., Wijaya, E., Wicaksana, B., Maksum, M., Annisa, F., Jasirwan, C. O. M., & Yunihastuti, E. (2020a). Coronavirus Disease 2019: Tinjauan Literatur Terkini. *Jurnal Penyakit Dalam Indonesia*, *7*(1), 45. Https://Doi.Org/10.7454/Jpdi.V7i1.415

Susilo, A., Rumende, C. M., Pitoyo, C. W., Santoso, W. D., Yulianti, M., Herikurniawan, H., Sinto, R., Singh, G., Nainggolan, L., Nelwan, E. J., Chen, L. K., Widhani, A., Wijaya, E., Wicaksana, B., Maksum, M., Annisa, F., Jasirwan, C. O. M., & Yunihastuti, E. (2020b). Coronavirus Disease 2019: Tinjauan Literatur Terkini. *Jurnal Penyakit Dalam Indonesia*, *7*(1), 45. Https://Doi.Org/10.7454/Jpdi.V7i1.415

Tim Covid-19 Idai. (2020). *Protokol Tatalaksana Covid-19* (Vol. 1).

Wilson, S. L., & Wiysonge, C. (2020). Social Media And Vaccine Hesitancy. *Bmj Global Health*, *5*(10), 1–7. Https://Doi.Org/10.1136/Bmjgh-2020-004206

Yanti, N. P. E. D., Nugraha, I. M. A. D. P., Wisnawa, G. A., Agustina, N. P. D., & Diantari, N. P. A. (2020). Pengetahuan Publik Tentang Covid-19 Dan Perilaku Publik. *Jurnal Keperawatan Jiwa*, *8*(4), 491.

Yulyani, V., Hasbie, N. F., Putri, D. F., & Ramadhan, M. Y. (2022). Gambaran Status Demografi, Penyakit Komorbid Dan Kejadian Ikutan Pasca Imunisasi (Kipi) Pada Tenaga Kesehatan Setelah Vaksin Covid-19 Di Rsud Abdul Moeloek. *Malahayati Nursing Journal*, *4*(6), 1387–1398. Https://Doi.Org/10.33024/Mnj.V4i6.6424