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Original Research

Factors Influencing Student Parents' Acceptance of the COVID-19 Vaccine

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Abstract

The COVID-19 pandemic has caused widespread destruction, including in Indonesia. Various efforts have been undertaken to combat the pandemic caused by COVID-19. Among them is immunization. However, the general population's acceptance of the COVID-19 vaccination is questionable. Due to the availability of multiple vaccines against COVID-19, there is confusion regarding the efficacy and safety of individual vaccines, particularly among students. The primary objective of this study was to determine the reception of the COVID-19 vaccine among the parents of students. From March to August 2022, a cross-sectional survey was conducted at Padang Elementary School No. 11. Respondents for the technique of purposive sampling are the parents of 68 students. The survey data were analyzed using SPSS version 25.0. Using the Chi-square test, the relationship between socio-demographics and COVID-19 vaccine acceptance was analyzed. According to the findings of the study, approximately 51.5% of parents reject the COVID-19 vaccine for their children. There is a significant correlation between education level (p-value = 0.035), knowledge level (p-value = 0.000), and attitude (p-value = 0.000) and acceptance of the COVID-19 vaccine, as determined by a statistical test. The acceptance of the COVID-19 vaccine is significantly affected by parents' knowledge of vaccines. Government or authorized organizations must enhance and target the dissemination of accurate information about vaccines.

Keywords: COVID-19, Vaccine, Knowledge, Attitude, Student Parents

INTRODUCTION

COVID-19 is a new coronavirus strain referred to as severe acute respiratory syndrome coronavirus (SARS-CoV-2) (World Health Organization, 2020). Due to the global spread of SARS-CoV-2 and the thousands of deaths caused by coronavirus disease (COVID-19), the World Health Organization declared a pandemic on March 12, 2020. This pandemic has cost the global community dearly in terms of human lives lost, economic repercussions, and increased poverty (Ciotti et al., 2020). As of December 20, 2020, the number of COVID-19 cases exceeded 75 million, with more than 1.6 million deaths worldwide. Indonesia has the most cases in Southeast Asia, with 19,390 deaths, or a case fatality rate (CFR) of 3.0%, and a total of 650 thousand cases (Ophinni et al., 2020). On March 26, 2020, the first COVID-19 cases were reported in the province of West Sumatra; since then, the number of cases has increased and the distribution area has grown. COVID-19 cases were primarily documented in Padang City, Padang Panjang City, Bukittinggi City, and Pesisir Selatan Regency in the province's first few months of existence (Pradipta et al., 2023). Since then, the virus has spread to all districts and cities in West Sumatra Province.

Indonesia has declared a state of emergency due to the COVID-19 pandemic. In accordance with Presidential Regulation No. 11 of 2020, Indonesia has declared a health emergency. Various efforts have been undertaken to combat the pandemic caused by COVID-19. Vaccination efforts are one of them (Gandryani & Hadi, 2021). The creation and distribution of a COVID-19 vaccine may be an effective means of containing the pandemic and achieving herd immunity. It is believed that Pfizer-BioNTech's COVID-19 vaccine was approved and began use in the United States on December 11, 2020 (Liu et al., 2022). Vaccination is also necessary to halt the COVID-19 pandemic, and several safe and effective vaccines have been authorized for emergency use (Estrada et al., 2021).

To halt the COVID-19 pandemic, a high global vaccination rate may be necessary. However, vaccine demand in low- and middle-income countries (LMICs) is less thoroughly investigated, and the population may have different priorities than in high-income countries. Indonesia is a country of moderate income with low vaccination rates and high vaccine hesitancy (Arifin & Anas, 2021). As a barrier to vaccination among minors, vaccination apprehension has been studied, as has participation in vaccine trials. About 15% of respondents expressed skepticism, with the majority of skepticism pertaining to vaccine safety and efficacy (Yufika et al., 2020). The dissemination of false information regarding the benefits and risks of COVID-19 vaccines exacerbated the public's reluctance, which reached as high as 50 percent. Data from a small number of studies indicate that vaccine hesitancy against SARS-CoV-2 and the COVID-19 pandemic may contribute to a decline in the rates of established childhood vaccine programs (Derdemezis et al., 2022).

Vaccine decision-making is complicated, particularly for parents who make decisions for their children rather than for themselves. Multiple factors influence these decisions, including individual factors such as personal experiences, group-level influences such as social norms, vaccine product-specific characteristics such as the safety and efficacy profile of the vaccine, and attributes of the vaccination

program design (i.e., mass vaccination) that are influenced by contextual factors such as politics and policies (Shen et al., 2022).

West Sumatra Province is one of the provinces whose vaccination coverage is still less than 20%, far below the government's target of 70%. As of September 5, 2021, 17.13% of children in the province of West Sumatra had received their first dose of vaccination. This number represents 755,14 thousand participants vaccinated out of a target of 4.41 million individuals. While the second dose has attained 9.71% of the intended dosage level. Currently, approximately 225 residents of Padang City have been vaccinated, making Padang City one of the contributors to the low vaccination rate in West Sumatra Province. This represents 35 percent of the 726 thousand individuals targeted for the COVID-19 vaccine injection. Consequently, the Implementation of Restrictions on Community Activities (PPKM) Level 4 in the city of Padang has been extended until October 4, 2021 (Ilmaskal et al., 2022).

There is still a lot of confusing news circulating in the community about the COVID-19 vaccine. This may be one of the reasons why people do not want to be vaccinated. In addition, people's lack of understanding about the purpose, benefits, and impact of not being vaccinated may be another reason why they do not want to be vaccinated. At the same time, news organizations report serious side effects and adverse reactions after vaccination, which makes many parents hesitate whether to vaccinate their children. In addition, studies have found that many factors, such as religious beliefs, vaccination policies, and the safety and security capabilities of the entire vaccine industry chain, also affect vaccine hesitancy and drug resistance (Paterson et al., 2018).

A study conducted in Taizhou, China found that 52.2% of parents were hesitant to vaccinate their children against COVID-19. Lower knowledge scores about COVID-19 vaccination (Q1: OR = 1.92, 95%CI: 1.37–2.69; Q2: OR = 1.51, 95%CI: 1.10–2.08), lower awareness of the permission of vaccinating children (OR = 1.74, 95%CI: 1.36–2.23) and hesitancy to inoculate themselves (OR = 8.18, 95%CI: 6.48–10.33) were associated with parental hesitancy to inoculate their children (Zhang et al., 2021). In Turkey, 66.1% of parents were unwilling to receive foreign COVID-19 vaccines, whereas only 37.4% of parents were unwilling to receive domestic COVID-19 vaccines. Significantly more participants preferred the domestic vaccine for themselves and their offspring ($P = 0.05$). Women were significantly less likely than males to be willing to receive foreign vaccines ($P = 0.05$). Fewer parents preferred the domestic vaccine for themselves ($P = 0.046$) and their offspring ($P = 0.005$) as education levels increased. The acceptance of both domestic and foreign vaccines by parents and their offspring was greater among parents with high COVID-19-related anxiety ($P = 0.05$). The most prevalent reasons for refusal were fear of vaccine adverse effects, ignorance about the efficacy of vaccines, and mistrust of foreign-made vaccines (Yigit et al., 2021).

One possible reason why many children do not get vaccinated is that parents express various degrees of hesitancy towards vaccines. This study was conducted to investigate parents' acceptance towards COVID-19 vaccination.

METHODS

A cross sectional-based study was conducted from March to August 2022. Purposive sampling technique was used to invite student's parents in Elementary School No.11 in Padang as respondents. Data on demographic characteristics, knowledge, attitudes, and acceptance regarding the COVID-19 vaccine were collected using a self-administered survey. Frequency and percentage were used in the descriptive statistical analysis. A chi-square test was performed for correlation between independent variables (education, knowledge, and attitudes) and dependent variable (COVID-19 vaccine acceptance).

RESULTS

A total of 68 respondents were included in the study, of whom 25 (36.8%) were male and 43 (63.2%) were female. More than half (64.7%) had attained senior high school. About 51.5% of parents not accept the COVID-19 vaccine for their children. Detailed demographics are presented in Table 1.

Table 1. Socio-demographic of study respondents (N=68)

Variable	Frequency	Percentage (%)
Sex		
Male	25	36.8
Female	43	63.2
Education		
No School	5	7.4
Elementary	3	4.4
Junior High	4	5.9
Senior High School	44	64.7
Undergraduate	12	17.6
Knowledge		
Good	17	25.0
Fair	27	39.7
Less	24	35.3
Attitudes		
Positive	32	47.1
Negative	36	52.9
Acceptance of COVID-19 Vaccine		
Acceptance	33	48.5
Non-acceptance	35	51.5

In the present study, 48.5% of the student's parents were acceptable and 51.5% were not acceptable for the COVID-19 vaccine. As shown in Table 2, the result of the chi-square test identified the independent factors that predicted the level of acceptance. The result indicated that high education was less likely to accept for COVID-19 vaccines compared to low education ($p = 0.035$). In addition, good

knowledge ($p = 0.000$) and a positive attitude ($p=0.000$) were less likely to accept COVID-19 vaccines compared to less knowledge and a negative attitude.

Table 2. Predictors of acceptance for COVID-19 vaccines.

Variables	Acceptance of the COVID-19 Vaccine			Total	p-value
	Acceptance	Non-Acceptance			
Education	High	26 (21.35)	18 (22.65)	44	0.035
	Low	7 (11.65)	17 (12.35)	24	
Knowledge	Good	2 (8.25)	15 (8.75)	17	0,000
	Fair	22 (13.10)	5 (13.90)	27	
	Less	9 (11.65)	15 (12.35)	24	
Attitudes	Positive	2 (15.53)	30 (16.47)	32	0,000
	Negative	31 (17.47)	5 (18.53)	36	

DISCUSSIONS

The low level of acceptance of COVID-19 vaccines among student parents can be attributed to a number of factors, some of which are shared by the global community as a whole. Vaccines against COVID-19 are evidently surrounded by doubt. The results of this study indicate that the likelihood of participation in the COVID-19 vaccination increases with the respondent's level of education. According to (El-Elimat et al., 2021a), the higher a person's level of education, the simpler it is for him to receive information, so that he has a great deal of knowledge. In contrast, a lack of education will hinder the formation of a person's attitude toward the introduced values. According to previous research (Al-Mohaithef & Padhi, 2020) there is a correlation between education and interest in implementing the complete five-basic immunization programs. These findings are consistent with this finding. According to the findings of the study, the majority of respondents with limited knowledge were not interested in receiving the COVID-19 vaccination. This was due to the lack of information obtained and the relatively low desire to pursue information about the COVID-19 vaccination; therefore, knowledge about the COVID-19 vaccination remains in the sufficient category, resulting in low public interest in receiving the COVID-19 vaccination.

The results of the distribution of parental knowledge about the COVID-19 vaccine were grouped into 3 categories: namely good, fair, and less. The results based on this study showed that 35.3% of respondents fell into the category of having a poor knowledge level, 39.7% had a fair level of knowledge, and 25% of respondents used a good level of knowledge. These results indicate that the number of respondents who have good knowledge of the COVID-19 vaccine is higher than the number who have poor knowledge. Similarly in (El-Elimat et al., 2021b) (Yufika et al., 2020) which mention the relationship between knowledge, behavior, and willingness to accept COVID-19 vaccination in adolescents (<18 years), most respondents have good knowledge.

Based on the results of this study, it can be concluded that the better the respondent's knowledge, the higher the respondent's interest in participating in COVID-19 vaccination, and vice versa, the less knowledge, the lower the interest in participating in COVID-19 vaccination. If someone has good knowledge about health, then that person will understand the importance of maintaining health. With better individual knowledge of the importance of health, individuals are aware of the importance of participating in the COVID-19 vaccination. The results of this study are in line with research conducted by (Liu et al., 2022) that there is a relationship between knowledge and interest in HPV vaccination in women of childbearing age. The results of the distribution of answers to the attitude of public acceptance of the COVID-19 vaccine are then divided into two categories, namely positive and negative. Judging from the respondents who had a negative attitude, there were only 31 respondents who were interested in participating in the COVID-19 vaccination. Meanwhile, two respondents who had a positive attitude were interested in participating in the COVID-19 vaccination. This is because many respondents still do not realize the dangers of the Corona virus and the importance of vaccinating against COVID-19 to break the chain of spreading the virus.

However, after the author finished conducting the research, public interest in participating in the COVID-19 vaccination greatly increased due to government policies that require people to have vaccine certificates for various activities in public spaces.

CONCLUSIONS

We identified parents of students in Padang City, 51.5% of whom refused the COVID-19 vaccine. Education, knowledge, and attitude were contributing factors to this refusal. Therefore, the health authorities, via health care providers, who were identified as the most trusted source of information regarding the COVID-19 vaccines, should design interventions in the form of awareness campaigns utilizing all forms of multimedia to disseminate more transparent information regarding the safety and efficacy of the vaccines. To increase COVID-19 vaccine acceptance, awareness campaigns should also cast light on the new technology used in the production of some of them. Government provision of the vaccine for free or at subsidized prices could also increase vaccine acceptance among the population.

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