

Understanding Islamic law in the context of vaccination: Reducing the doubt cast on COVID-19 vaccines

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One solution to prevent the spread of coronavirus disease 2019 (COVID-19) is getting vaccinated. The promotion of vaccines through religion helps to control the pandemic. One of the causes of doubts about vaccination in society is religious understanding. Vaccination has an important correlation with Islamic law or Islamic jurisprudence. This research aims to analyse the effect of understanding Islamic law on doubts about vaccination. This research used quantitative pre-experimental designs. The research sample consisted of 160 people who were not vaccinated. The sampling technique involved a non-random sampling method. The data analysis is descriptive and inferential. The results of this research showed the following: (1) the understanding of Islamic law related to the status of *halal* and *haram* has a positive influence on the Muslim community's willingness to vaccinate, (2) the understanding of the emergency concept can increase confidence in vaccines and (3) the education related to understanding Islamic law can effectively reduce doubts about vaccination.

Contribution: This research provides knowledge about the COVID-19 vaccine from the perspective of Islamic law. This research provides a new strategy to reduce public doubts about vaccination.

Keywords: understanding; Islamic law; COVID-19; pandemic; vaccine; vaccination; doubt.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic is a concern for all people in the world. All countries make efforts to confront and prevent its spread (Darko 2021). One solution to prevent the spread of COVID-19 is getting vaccinated, because it is considered successful in protecting one's health (Sultana et al. 2020). Several countries have proven that vaccines positively impact reducing the spread of COVID-19. For example, in the United Arab Emirates, the spread of COVID-19 is reduced through the BCG booster vaccine (Amirlak et al. 2021). In India, AZD1222 vaccine is able to reduce the spread of COVID-19 (Ghosh et al. 2021). In fact, almost all countries encourage their citizens to get vaccinated.

Christie et al. (2021) stated that vaccines are effective in preventing COVID-19 infection that causes death. Miller et al. (2020) found that COVID-19 vaccination has the potential to reduce a country's mortality rate. Mohapatra, Mishra and Behera (2021) said that in countries with high population density, vaccination provided protection from severe COVID-19.

Vaccines trigger an immune response against COVID-19 (Islam, Zahan & Al-Bari 2021). Glück et al. (2021) found that vaccination could significantly increase the production of antibodies against COVID-19, even at a higher rate than in people who have recovered from COVID-19. Silveira, Moreira and Mendonça (2021) said that DNA-based vaccines are one of the most promising alternatives to stop the spread of COVID-19. Vaccination is very important to prevent the spread of COVID-19 (Dinleyici et al. 2021).

One of the phenomena of vaccines in society is the emergence of doubts about vaccine acceptance caused by psychological factors and health communication (Caserotti et al. 2021). People have positive and negative attitudes towards vaccination (Vergara et al. 2021). Lack of understanding of vaccines gives rise to doubts and negative perspectives (Cooper, Van Rooyen & Wiysonge 2021). The public's distrust of vaccines hinders human efforts to stop the spread of disease.

Astuti et al. (2021) stated that, based on a literature review analysis of PubMed and Google Scholar articles for 2020–2021, Indonesian people have misconceptions about the effectiveness and benefits of the COVID-19 vaccine. One of the reasons is the lack of understanding about

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vaccines. Su et al. (2020) stated that communication to the public, especially creating awareness on vaccination, has an important role in eliminating misconceptions about vaccination. In Indonesia, the awareness on vaccination to the public is still being promoted both through online media and counselling (Ifdil et al. 2020). Kartikasari, Nurlaela and Mustikawati's (2021) research illustrated that doubts about the safety of vaccination can be dispelled by increasing public awareness on vaccines. Efforts to dispel myths and conspiracy theories about COVID-19 vaccines need to improve understanding of vaccines in multi-sectoral elements (Ullah et al. 2021).

The Indonesian community has carried out routine vaccinations, such as the Measles-Rubella vaccine and the influenza vaccine. These vaccinations have been carried out for a long time; most people are used to it. The arrival of the COVID-19 vaccine has decreased the roll-out of other vaccines during the pandemic. Mass vaccine campaigns must be carried out continuously, both the COVID-19 vaccine and others (Dinleyici et al. 2021). All types of vaccines have the function of preventing the spread of disease. The COVID-19 vaccine is different from other vaccines that have formed the public's trust. Because the COVID-19 vaccine is new, doubts arise for various reasons (Alpito et al. 2021).

Grochowska et al. (2021) compared the vaccination doubts between the COVID-19 and influenza vaccines. The result is that out of 419 respondents, 62.5% stated that they had more confidence in the influenza vaccine. Harapan et al. (2021) researched 10 countries in South America, Africa, and Asia. The doubts about the COVID-19 vaccine among the Muslim community are relatively high because they are worried about the risk of the COVID-19 vaccine. Iliyasu et al. (2021) explored in Nigeria that there are doubts about the COVID-19 vaccine because of the lack of public confidence in its efficacy. Sallam (2021) suggested that addressing the doubts about COVID-19 vaccination needs to build trust in the community.

One sector that needs to be studied is the religious factor regarding the understanding of vaccines (Fitriah et al. 2021). Lahav et al. (2021) said that a person's acceptance of the vaccine depends on religious belief. The better the level of religious belief, the better receiving the vaccine. Dharma et al. (2001) said that one of the efforts to increase public trust in receiving vaccines is through a religious approach. Galang (2021) explained the need for collaboration between religion and science to promote vaccines. Ahmed et al. (2018) argued that promoting vaccines through religious leaders could motivate people to get vaccinated.

One strategy to increase the public's vaccine awareness is through its promotion by religious leaders (Barmania & Reiss 2021). Rocha (2021) has researched religion through influential prayer to convince vaccinations. In Islam, doubt about vaccines is still a polemic among Muslims (Harapan et al. 2021a). In an effort to develop a vaccine promotion

strategy that is linked to religion, this research aims to formulate a strategy to convince the public to get vaccinated through a deeper understanding of religion, namely Islamic law.

The purpose of this research is to analyse the effect of understanding of Islamic law on public doubts about vaccination. This research contributes to increase knowledge regarding the understanding of vaccination from the perspective of Islamic law. In addition, it provides a new strategy in an effort to reduce public doubts about vaccination.

Method and design

This research used quantitative pre-experimental designs with one group of residents who have not vaccinated. Figure 1 is a modified research design from Thyer (2010).

The research sample consisted of 160 people who were not vaccinated. The research site is Ujungsemi village, Cirebon district, West Java, Indonesia. The results of the preliminary survey show that Ujungsemi residents are devout Muslims, who work as farmers in paddy fields and that they lack adequate knowledge about vaccines. The sampling method used was a nonrandom sampling technique based on the characteristics of residents who had not vaccinated. The activity was carried out according to the health protocol, and treatment was carried out one by one for two months (June–July 2021).

The type of instrument is a 5-point Likert scale questionnaire, which was modified from Maeda (2015). The research instrument indicators related to the understanding of vaccines based on Islamic law and doubts about vaccination were adopted from Rosman et al. (2020). The questionnaire consists of the following four statements:

- Statement 1: I have no doubts about getting vaccinated against COVID-19.
- Statement 2: I believe that vaccines are allowed in Islamic law.
- Statement 3: I believe that vaccines are *halal* and holy according to Islamic law.
- Statement 4: The COVID-19 vaccine is *haram*, but it is allowed because of an emergency.

Data analysis was descriptive and inferential. Descriptive analysis was used to determine the percentage of answers before and after carrying out the treatment of Islamic law-



Source: Adapted from Thyer, B.A., 2010, 'Pre-experimental and Quasi-experimental research designs', in *The handbook of social work research methods*, pp. 183–204, Sage, London

O1: Understanding of vaccines based on Islamic law and doubts about vaccination before treatment. X: Provide an understanding of vaccines based on Islamic law to non-vaccinated people. O2: Understanding of vaccines based on Islamic law and doubts about vaccination after treatment.

FIGURE 1: Pre-experimental designs.

based education on vaccination understanding. Inferential analysis was used to determine the effectiveness of the treatment against vaccine doubts significantly.

Results

Understanding vaccine in Islamic law

Vaccination has an important correlation with Islamic law or Islamic jurisprudence (*Maqasid al-Shariah*) (Zainudin et al. 2018). In the Islamic law perspective, Muslim life cannot be separated from *halal* and *haram* (Riaz & Chaudry 2018). Any production process, transportation, instrument, or facility that does not violate Islamic law is considered *halal*. Anything that is not safe for humans and that is not in accordance with the Islamic law is considered *haram* or unlawful (Premanandh & Bin Salem 2017).

The use of vaccines to prevent diseases is permitted according to Islamic law provided they satisfy the following conditions: *halal* products should be used, their *halal* status should be maintained, and basic ingredients that are prohibited in Islam should not be used (Khoo et al. 2020; Zulkarnain et al. 2021). Based on the rules of *Ushul Fiqh* about the materials used for vaccination, the following rules must be followed.

The concept of *Istihalah* (transformation)

The concept of *Istihalah* is a change in the material and properties of an unclean and non-*halal* object into another object (Bouzenita 2010; Pauzi et al. 2019). In other words, unclean and non-*halal* objects become holy after undergoing changes in their properties, either naturally or by human intervention, thus becoming new objects that are different from their previous state. In the context of vaccines, materials that are unclean and non-*halal* undergo chemical changes after being processed and mixed with other ingredients. Therefore, vaccines become holy and can be used.

The concept of *Istihlak* (assimilation or consumption)

The concept of *Istihlak* is the mixing of non-*halal* or unclean objects and other objects that are holy or *halal* in greater numbers so as to eliminate the unclean nature of objects that were previously unclean, in terms of taste, colour and smell (Abubakar & Abubakar 2021; Bouzenita 2010). In the context of vaccines, the amount of unclean and non-*halal* ingredients is less than other ingredients. Therefore, vaccines become holy and can be used.

The concept of emergency

Based on Islamic law, treatment with unclean and non-*halal* ingredients is permissible if other treatments are not effective (Halib et al. 2017; Mohezar, Zailani & Tieman 2016). Therefore, the use of unclean and non-*halal* materials in vaccines is permissible on the grounds that greater harm will occur if the vaccine is not used. The emergency use of the COVID-19

vaccine is a consideration to effectively control the pandemic (Singh & Upshur 2021).

Descriptive analysis

Table 1 shows the level of understanding of vaccines based on Islamic law and people's beliefs about vaccination.

The percentage of people with a 'very high' level of understanding about vaccines and vaccination awareness after treatment increased by 28.12%. The percentage of people with a 'high' level of understanding about vaccines and vaccination awareness after treatment increased by 41.88%. The percentage of people with a 'medium' level of understanding about vaccines and vaccination awareness after treatment decreased by 53.75%. The percentage of people with a 'low' level of understanding about vaccines and vaccination awareness after treatment decreased by 16.25% (Table 1). In general, the table shows that after treatment, there is an increase in understanding of Islamic law related to vaccines and an increase in confidence in vaccinating or reducing the level of doubt about vaccination.

Based on the percentage distribution in Table 2, a descriptive statistical analysis can describe the increase and decrease in response after treatment of Islamic law-based education on vaccination understanding was carried out.

Statement 1: I have no doubts about getting vaccinated against COVID-19. People who answered 'disagree' decreased by 15% after the treatment. People who answered 'neutral' decreased by 51.25% after the treatment. People who answered 'agree' increased by 61.25% after the treatment. People who answered 'strongly agree' increased by 5% after the treatment.

Statement 2: I believe that vaccines are allowed in Islamic law. People who answered 'disagree' decreased by 21.25% after the treatment. People who answered 'neutral' decreased by 44.37% after the treatment. People who

TABLE 1: Percentage of understanding based on Islamic law and beliefs about vaccination.

Indicator	Level	Percentage of people number	
		Before treatment	After treatment
Level of understanding of vaccines based on Islamic law and beliefs about vaccination	Very high	3.13	31.25
	High	23.75	65.63
	Medium	56.88	3.13
	Low	16.25	0.00
	Very low	0.00	0.00

TABLE 2: Percentage of answers number for each questionnaire indicator statement.

Answers	Statement 1		Statement 2		Statement 3		Statement 4	
	Before	After	Before	After	Before	After	Before	After
Strongly disagree	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00
Disagree	15.00	0.00	21.25	0.00	19.38	0.00	18.13	0.00
Neutral	62.50	11.25	56.25	11.88	60.00	9.38	57.50	10.00
Agree	18.75	80.00	20.63	81.25	13.75	75.00	23.13	66.25
Strongly agree	3.75	8.75	1.88	6.88	5.63	15.63	1.25	23.75

answered 'agree' increased by 60.62% after the treatment. People who answered 'strongly agree' increased by 5% after the treatment.

Statement 3: I believe that vaccines are *halal* and holy according to Islamic law. People who answered 'strongly disagree' decreased by 1.25% after the treatment. People who answered 'disagree' decreased by 19.38% after the treatment. Persons who answered 'neutral' decreased by 50.62% after the treatment. People who answered 'agree' increased by 61.25% after the treatment. People who answered 'strongly agree' increased by 10% after the treatment.

Statement 4: The COVID-19 vaccine is *haram*, but it is allowed because of an emergency. People who answered 'disagree' decreased by 18.13% after the treatment. People who answered 'agree' increased by 43.12% after the treatment. People who answered 'strongly agree' increased by 22.5% after the treatment.

Inferential analysis

Below shown is the statistical hypothesis on the inferential analysis of this research.

H0: There was no significant increase in vaccination confidence after carrying out treatment of Islamic law-based education on vaccination understanding.

H1: There was a significant increase in confidence to vaccinate after carrying out the treatment of Islamic law-based education on vaccination understanding.

Table 3 shows the results of the normality test for understanding vaccines based on Islamic law and beliefs about vaccination to determine the type of hypothesis test used.

According to Ho (2013), if the value of Sig. <0.05, the data before and after the treatment of Islamic law-based education on vaccination understanding is not normally distributed.

According to Ho (2013), if the value of Sig. <0.05, the data on the level of understanding of vaccines based on Islamic law and beliefs about vaccination is not homogeneous.

Based on the results in Tables 3 and 4, the hypothesis test was carried out using the Mann-Whitney *U* test. Table 5 shows the SPSS 25 output of the test results with a significant level of 0.05.

Based on Table 5, it is known that the null hypothesis was rejected. Statistically, it can be concluded that there was a

TABLE 3: Test of normality.

Group of data	Shapiro-Wilk		
	Statistic	df	Sig
Before treatment	0.958	160	0.000
After treatment	0.889	160	0.000

significant increase in confidence to vaccinate after carrying out the treatment of Islamic law-based education on vaccination understanding. In other words, an understanding of Islamic law can effectively reduce doubts about vaccination.

Religion as a tool to reduce doubts about vaccination

The issue of health related to religion has always been a topic of discussion among researchers around the world. Agbiji and Agbiji (2016) said that countries in Europe, North America and Australia are using one of the spirituality resources for nursing in their organisations. Religious belief contributes to maintaining the welfare and health of the community (Modell & Kardia 2020). Hebert, Dang and Schulz (2007) said that the presence of religion has a positive impact on patient care regarding mental health. During the COVID-19 era, religion can be used as a tool to beat stress in dealing with the pandemic (Petrov et al. 2021).

Religion can affect medicine and health for the better (Baetz & Toews 2009). All religions do not conflict with health issues in the community, especially those related to vaccination. Good communication from a religious perspective will help in making people aware about health (Pelčić et al. 2016). Research by Eriksson and Vartanova (2021) found that in 147 countries, there was a relationship between the level of religiosity and awareness of vaccination to overcome the spread of disease. Muravsky, Betesh & McCoy (2021) said that the doctrines of religions make a strong contribution and support for the smooth running of the vaccination programmes.

One of the doubts about vaccination is because of religious beliefs (Perveen et al. 2021). Religion can be a tool to overcome the public's doubts about vaccines and can increase vaccination awareness (Abd Manaf, Omar & Suib 2021). The results in Table 1 describe the percentage of people who have an understanding of Islamic law and belief in vaccination. These results show that an increase in understanding of Islamic law can reduce the level of doubt about vaccination. These results are supported by Ahmed et al. (2018) that promoting vaccines is linked to religion and people's motivation for vaccination.

The use of *haram* ingredients in the production of vaccines creates doubts among the Muslim community for vaccination

TABLE 4: Test of homogeneity.

Data	Variance	Levene Statistic	df1	df2	Sig
Understanding of vaccines based on Islamic law and beliefs about vaccination	Based on Mean	38.771	1	318	0.000
	Based on Median	36.755	1	318	0.000

TABLE 5: Hypothesis test results.

Null hypothesis	Test	Sig	Decision
There was no significant increase in vaccination confidence after carrying out treatment of Islamic law-based education on vaccination understanding	Independent Samples Mann-Whitney <i>U</i> Test	0.000	Reject the Null hypothesis

(Zulkarnain et al. 2021). This opinion is supported by Khoo et al. (2020) that the status of *halal* based on Islamic law on vaccines is very necessary. Research by Elkalmi, Jamshed and Suhaimi (2021) stated that the *haram* factor according to religion was the most reason to refuse vaccination. The results of this research prove that the understanding of Islamic law related to *halal* and *haram* status provides a positive response to the Muslim community. This can be seen from Table 2 that there is an increase in the number of positive public responses to statements 1–4 in the questionnaire.

The Al-Qur'an supports and explains the concept of *halal* and *haram*. The understanding of verses in the Al-Qur'an contributed to the Muslim community's belief in vaccination. The Al-Qur'an in Al-Baqarah verse 168 recommends Muslims to stay away from *haram* substances. However, in Al-Baqarah verse 173, it is explained that during an emergency, it is allowed to consume *haram* substances in moderate quantities (Lowry, 2017). Supported by Fauroni (2008) states in An-Nahl verses 114–115 in the study of jurisprudence or Muslim law that it is not allowed to consume substances that are dangerous and contain disease except in an emergency.

Understanding the concept of emergency related to vaccines greatly influences the Muslim community's vaccination beliefs. It is supported by Halib et al. (2017) and Mohezar et al. (2016) that in an emergency, the use of unclean and non-*halal* ingredients is allowed. This research, as shown in Table 2 about the responses to statement 4, provides evidence that understanding the concept of emergency can reduce doubts about vaccination.

Promotion of vaccines through religion helps to control the pandemic (Ruijs et al. 2013). According to Perveen et al. (2021), religious beliefs motivate people to eliminate their reluctance to carry out routine vaccinations. According to Oyo-Ita et al. (2021), empowering religious leaders and religious knowledge about vaccines can improve the community's vaccination routine. Based on Table 5, empirical evidence that was tested through inferential statistics shows that understanding Islamic law can effectively and significantly reduce doubts about vaccination.

Conclusion

The understanding of Islamic law related to the status of *halal* and *haram* has a positive influence on the Muslim community to receive vaccination. The understanding of the emergency concept can increase confidence about vaccination.

Based on the results of the research, it can be concluded that the understanding of Islamic law has an effect on public doubts about vaccines. The higher the understanding of Islamic law, the more confident about vaccination. Through a strategy to increase the understanding of Islamic law, it is effective to reduce public doubts about vaccines. This research provides new strategies in an effort to reduce public doubts about vaccination.

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Author's contributions

K.K. is the sole author of this research article.

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Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

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