

Exploring COVID-19 Vaccines Hesitancy Among the Muslim Community of The East Coast Region in Malaysia

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ABSTRACT

Introduction: An important step in the fight against the current COVID-19 pandemic has been taken with the development of vaccines against SARS-COV-2 infections. It is possible that the COVID-19 vaccines will be used to stop the pandemic. Despite widespread support, vaccination rates remain lowest in Malaysia's easternmost states of Pahang, Terengganu, and Kelantan. However, there has been no research into why Muslims make up such a disproportionate share of the low COVID-19 uptake population on Malaysia's eastern coast.

Objective: The purpose of this research is to learn why Muslims in Malaysia's eastern coast region display hesitancy about getting the COVID-19 vaccine.

Methodology: This study used a qualitative research design. Thirteen participants from the east coast region of Malaysia were recruited between February and June 2022. The recruitment techniques used purposive sampling methods. In-depth interviews with participants were used via virtual platforms. Data was analysed using thematic analysis. Findings: Three themes were identified 1) rumours; they believe rumours spread by the anti-vaccine movement or their close family 2) safety issues concern; they fear potential side effects of the COVID-19 vaccine, 3) self-belief; they believe self-isolation and proper diet better than vaccine intervention.

Conclusion: Although 95.7% of the population has received all recommended doses of the COVID-19 vaccine, some people in Malaysia still refuse to be vaccinated. This research has the potential to yield useful information that can be used to overcome public opposition to the COVID-19 vaccine and increase vaccination uptake.

Keywords: Understanding; Misconception; Hesitancy; COVID-19 vaccination

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INTRODUCTION

Patients in Wuhan, China, contracted pneumonia from a mystery infection in December 2019 after visiting a seafood wholesale market. After sequencing the complete genomes of patient samples, a previously unknown coronavirus was found. The Coronavirus Study Group of the International Committee on Taxonomy of Viruses termed it severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and the condition induced by it was named coronavirus disease 2019 (COVID-19) by the World Health Organization (WHO) (1).

As of November 3, 2021, there have been 29,155 deaths from COVID-19 in Malaysia (2). Three Chinese nationals were the first people in Malaysia to test positive for Covid-19 on January 25, 2020. They had come into close contact with an infected person while in Singapore. On January 4, 2020, the first infected Malaysian with a history of travel to Singapore was reported.

Infection with COVID-19 is currently incurable. There will be serious medical, economic, and social repercussions if the pandemic is not contained, so a safe and effective preventive vaccination is urgently needed. Several emergency immunization vaccines have been developed and licensed for use. In the fight against the spread of COVID-19, this immunization offers a glimmer of hope. Billions of dollars have been spent by governments to immunize their citizens. Malaysia's government announced an RM 3 billion purchase of vaccines as a first step (3).

The only clinical preventative intervention is the administration of effective COVID-19 vaccinations because the pandemic is expected to continue to impose enormous illness and mortality burdens and severely disrupt communities and economies. As of 4 November 2021, 95.7% of Malaysians have received all recommended vaccinations, 97.8% have received at least one dose, and 2.2% have not been vaccinated at all. The WHO says that vaccination is the best way to boost immunity in a population.

The WHO defines vaccine hesitancy as a behaviour influenced by several factors, such as lack of confidence, (do not trust the vaccine

or provider), lack of perception of a need for a vaccine, and lack of value placed on the vaccine, (do not perceive a need for a vaccine, do not value the vaccine access). Vaccine-hesitant individuals are a diverse group with various levels of uncertainty regarding specific vaccines or vaccinations in general. Vaccine-hesitant individuals may accept all vaccines but still be apprehensive about them; others may refuse or postpone some doses but accept others, and yet others may refuse all vaccines (4).

The next challenge will be overcoming vaccine hesitancy as more safe and effective vaccines become available. As new, deadly variants of COVID-19 emerge, vaccine hesitancy and refusal are becoming a global concern. According to the WHO, vaccine hesitancy is one of the top ten global health threats for 2019, and it has been a problem with COVID-19 immunization (4).

Nonetheless, despite the widespread approval, residents of Peninsular Malaysia's East Coast Zone (Kelantan, Terengganu, and Pahang) showed the highest percentage of hesitance (3). In addition, the former Deputy Science, Technology and Innovation Minister, Datuk Amzad Hashim also raised the same concern. According to him, the eastern states have the lowest registration percentage for the National COVID-19 Immunisation Programme in the peninsula. One in eighteen of Kelantan's population registered for the vaccination exercise through the MySejahtera app, the lowest percentage of any state (6). According to the MOH website, in Terengganu, 89.8 percent of the population is wholly vaccinated, 97.8 percent in Pahang, and 81.3 percent in Kelantan as of 4 November 2021. According to the Population and Housing Census 2010 figures, approximately 74.9% of the population in Pahang practice Islam, 95.2% Muslim in Kelantan and 96.9% in Terengganu. These statistics show that most of Malaysia's population in the east coast region is Muslim.

As the world grapples with the COVID-19 pandemic, vaccine hesitancy has emerged as a pressing concern within the Muslim community residing on the East Coast. Despite the urgency to promote vaccination, a comprehensive study addressing the root causes of this hesitancy is conspicuously absent from the region's research landscape. Hence, this pioneering research aims to bridge this knowledge gap and shed light on the unique factors that contribute to vaccine resistance among the East Coast Muslim population. The purpose of this research is to learn why Muslims in Malaysia's eastern coast region display hesitancy about getting

the COVID-19 vaccine. The findings will aid in the development of strategies to increase public awareness and uptake of the COVID-19 vaccine.

METHODS

Study design and participants

The research was qualitative in nature. The area of Malaysia's east coast was where the research was conducted (Kelantan, Terengganu & Pahang). Due to the COVID-19 outbreak, an in-depth interview was conducted via a virtual platform such as Google Meet or phone calls, and permission to record the entire interview was first requested. Purposeful and snowball sampling were used to find and recruit participants. This procedure of selection and identification is subject to certain inclusion and exclusion criteria. Participants had to be at least 18 years old and Muslims, as well as residing in the east coast region (Kelantan, Terengganu, or Pahang), not vaccinated, and willing to take part in the study. Those who had previously received the COVID-19 vaccine were not permitted to participate. Before interviewing anyone, their verbal permission was first acquired. Everyone involved in the study gave their verbal consent to participate.

This research was approved by the International Islamic University Malaysia Research Ethics Committee (IREC) (IREC 2022-KON/20). By not revealing actual identities, the discussions were kept confidential. The computer containing the transcripts and audio recordings was robustly password protected (7).

Procedures

Virtual platforms like Google Meet and regular phone calls were used to conduct semi-structured, in-depth interviews with participants when it was most convenient for them. All interviews were recorded with the prior consent of the participants. Given that there were two interviewers, we took steps to promote consistency by following a set procedure: a) Develop a standardized interview protocol that includes a set of predetermined questions and prompts. Provide clear instructions to the interviewers on how to ask the questions and document participant responses. This helped maintain consistency across interviews and ensure that both interviewers collected comparable data. b) Training and calibration:

Conduct training sessions with both interviewers to familiarize them with the interview protocol, ethical guidelines, and the importance of consistency. Emphasize the significance of impartiality, unbiased questioning, and active listening skills during interviews. Encourage open communication between the interviewers to address any questions or concerns.

To get deeper explanations from the participants, we used and asked them open-ended and probing questions. For example, the researcher's sample questions: a) Can you share with me if you have any personal experiences of COVID-19? b) What is your health belief in not taking the vaccine? c) Do you know about health information and the spread of misinformation about the COVID-19 vaccine and from where? d) Do you have any alternative plan to prevent yourself from getting COVID-19 besides vaccination?

During the interviews, people spoke in Malay. Every interview was recorded. Transcripts of the interviews were verbatim, and participants were given a copy to verify accuracy. The interviews continued until data saturation was reached, at which point no new information was extracted from the participants (8).

Data analysis

Deductive thematic analysis was used to examine the data. The first step in data analysis is to use the collected information to determine which aspects of the data are most important in achieving the study's goals and objectives. Then, using the meaning paragraphs as guides, the researcher sorted the data and information into categories and recognized the connections between the various themes. The development of a thorough analysis and the titling of themes occurred during this stage. Finally, the interpreted data was documented and placed in context using prior research.

The criteria by Lincoln and Guba were applied to ensure the rigour and trustworthiness of the study (9). The participants were provided with the coded transcripts so that they could reflect on their experience and verify the researcher's understanding of their words. The field notes outlined the methodology followed throughout the study, providing a verifiable audit trail. The researcher took careful notes of the interview and then always analysed and discussed the emerging codes and themes with the supervising team. This ensured the reliability of the study results.

RESULTS

The study contained a total of 13 participants, with an age range between 33-54 years old. Out of the 13 participants, 5 were female and the remaining 8 were male. Geographically, 3 participants were from Kelantan, 5 were from Terengganu and the other 5 were from Pahang. The data of the participants are shown in **Table 1**.

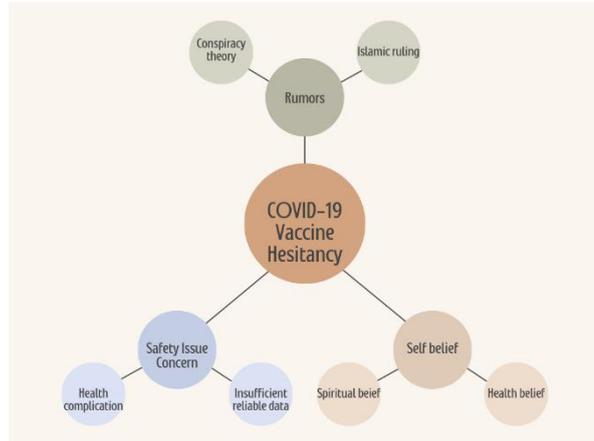
Table 1: Description of the participants

Participants	Age	Gender	Hometown
P1	54	Female	Kelantan
P2	37	Male	Terengganu
P3	35	Female	Pahang
P4	33	Male	Kelantan
P5	48	Male	Terengganu
P6	42	Female	Kelantan
P7	40	Male	Pahang
P8	35	Female	Pahang
P9	38	Male	Pahang
P10	33	Female	Terengganu
P11	38	Male	Terengganu
P12	35	Male	Terengganu
P13	35	Male	Terengganu
P14	40	Male	Pahang

Three themes emerged from the interview session: a) Rumours, b) Safety issue concerns and c) Self-belief. The themes are illustrated in **Figure 1**.

Rumours

Figure 1: Summary of COVID-19 vaccine hesitancy



The participants revealed that they mostly rely on social media sites like Facebook, Telegram, and WhatsApp for their information. They tend to believe inaccurate and fake reports from the anti-vaccine movement.

“I did get much information from that Telegram group. Indeed, this group is active. My relative also told me to join the group. It’s always death news, and side effects of vaccines are discussed these days.” (P1)

“According to the New World Order, the vaccine consists of microchip, if we scan it, the microchip will appear. We can’t see it with our naked eyes, but that thing is real..” (P8)

Concerns that the vaccine might contain impure materials or be used to further an agenda instigated by Jews were voiced by a few participants. In order to protect their Islamic faith, they decided to reject vaccination as a precaution.

“I do hear people saying that vaccine consisted of porcine, I can just hear it but I cannot believe it since I am not sure of the truthfulness. I am not interested to take such things, one of the reasons is because I don’t know it’s ingredients....” (P7)

“...our prophet already said that they (Jews) will never be happy with the Muslims, so there’s possibility it is Jewish agenda.” (P10)

Safety issues concern

Most participants in the study said they did not want to take the COVID-19 vaccine because of the potential for serious side effects like blood clots and strokes, as well as other risk factors related to comorbidities, advanced age, serious illness, and fertility.

"Never, because I'm trying to get pregnant, so I'm afraid to accept the vaccine, especially the COVID vaccine. How can I believe in this vaccine? We also think it has a long-term effect if the blood clots in the brain and becomes a stroke or a coma." (P3)

"My sister also got this vaccine. She also has the same disease as I did. I also had diabetes with high blood pressure. 2 months after she took the vaccine, she fell ill and was paralyzed and could not walk." (P5)

A few participants were hesitant to get vaccinated because they were afraid they would die soon after.

"I'm afraid of COVID-19 because there are always messages on my WhatsApp group that this vaccine can be fatal, especially for people who are old like me. There are all kinds of illnesses." (P1)

"If we get into the topic of side effects, we hear the story of the patient with a blood clot that had a stroke and died of shock." (P2)

"People also understand that I have severe allergies that's why I didn't take the vaccine. That's why old people who get sick after the vaccine continue to die after taking the vaccine. I have allergies, so I'm afraid if anything happens to me if I take the vaccine." (P4)

Some participants expressed feelings of insecurity about their future health if they were to take the vaccine. This sentiment may have been driven by a perceived lack of sufficient data to support the vaccine's development and success, including information on the number of successful healings.

"There are many side effects. This vaccine is made in China. How can I believe in this vaccine? The vaccine is made from overseas. How can you believe that the ingredients made are halal to inject into us?" (P3)

"The vaccine was also made in a foreign country. After that, it is still in the experimental phase. That's why I didn't take it as a test material. I always think this COVID disease is deceiving the community. Why did it happen suddenly? How fast is it spreading? Vaccines also available so soon." (P5)

"Why is it that there is a vaccine, and the case numbers go up as well? I'm afraid to inject this vaccine while it is still in the trial phase." (P6)

"The development of this vaccine is too fast because according to research the development of vaccine should take a long time, but we can see that within just 8 months to 1 year of COVID, the vaccine has already been produced. Hence, we can see that it seems this vaccine has lack of research." (P10)

Self-belief

Some people just put their faith in God and prayed for whatever Qada' and Qadar came their way.

"We can pray to God if we want to be sick or healthy." ... "Believe in God if you want to be healthy or sick" (P2)

"The rest pray to God to be healthy always." (P6)

The study revealed that some participants were hesitant to receive the COVID-19 vaccine due to their personal health beliefs. In particular, these individuals indicated a preference for alternative options even after being convinced by influencers or health experts who themselves had not received the vaccine.

"You can search for Professor X in YouTube, he explained the mechanism of spike protein, this spike protein is non-stop and it can confuse our immune system to recognize which one is the enemy." (P10)
"Have you heard about Ivermectin? I just got some information about it from a doctor in Kuantan. Apparently, it can fight against COVID-19." (P13)

Participants in this study rejected available vaccines for protection against COVID-19 because they felt that their own health-related beliefs, such as prioritising preventative care, were more effective.

"I always exercise, walk a lot to stay healthy, eat a lot of vitamin C." ... "Drink lemon water with cloves." (P1)

"I exercise diligently every evening, take care to eat and avoid greasy fast food. I take supplements because I am also trying to conceive." (P3)

"I rarely go out of the house. I always follow the advice to drink lemon water every morning." (P6)

DISCUSSION

The next challenge will be getting people to trust in vaccines as more of them become available. As new, deadly variants of COVID-19 emerge, vaccine hesitancy and refusal are becoming a global concern. One of the top ten global health threats for 2019 is vaccine hesitancy, which has been an issue with COVID-19 immunization (5).

News and articles about vaccinations have received widespread distribution on social media and in the mainstream media since Pfizer and Moderna announced the success of the two rapidly manufactured vaccines. According to the research, the website and the electronic and social media platforms of the Malaysian Ministry of Health were the most frequently used to learn about the COVID-19 vaccine (MOH).

However, with the advent of cutting-edge technology, social media has been rapidly expanding and is now more influential than conventional mass media. Traditional news organisations are not the only ones modifying their practices to accommodate the rise of social media. Click or tap here to enter text. (10–12). The rapid and wide dissemination of knowledge is facilitated by social media platforms that publish only medically verified content. On the other hand, too much data can lead to information overload, misinterpretation, and the proliferation of so called 'fake' news. The ability to understand health information is also crucial.

According to the responses, the anti-vaccine movement and family members were the main sources of the respondents' knowledge about the vaccination. The veracity of some claims made about vaccines on social media is questionable. In addition, some study participants said they were influenced by the opinions of their immediate family members who had first-hand knowledge about the vaccine's potential dangers or who spread rumours about them via the family's private WhatsApp group. The importance of family members cannot be overstated. In addition, Alshurman and his group found that the likelihood of vaccination increased in proportion to the proportion of one's acquaintances, including friends and family, who had also been vaccinated (13).

Nonetheless, some of the most influential social forces encouraging vaccination are members of the immediate and extended social networks as

well as medical professionals. When it comes to convincing people to get vaccinated against COVID-19, studies consistently find that personal recommendations from loved ones are the most effective (13).

In addition, study participants voiced concern over chronic health conditions like diabetes, hypertension, and severe allergic reactions, as well as potential severe side effects of the COVID-19 vaccination or post-vaccination complications like blood clots and stroke.

People over the age of 65 tend to be more concerned about contracting COVID-19 due to the belief that they will require more frequent hospitalization if they do. The rising risk of COVID-19 infection and mortality among the elderly also plays a role in shaping their vaccination decisions (13).

The current study found that people's protective behaviors, vaccine hesitancy, and actions were all affected by the presence of existing chronic diseases, prior personal or family history of COVID-19 infection, and risk perception. These findings align with the study conducted by Wang et al. (2021) & Hussein et al. (2021), who discovered a substantial relationship between risk perception and preventative activities such as vaccination uptake, and chronic diseases such as respiratory, cardiovascular, and renal disorders (14). Researchers in Turkey found that those who were more concerned about contracting COVID-19, were men, had higher levels of life satisfaction, had more than one infected relative, were older, had higher levels of perceived health and did not work in a skilled trade. They were more likely to have an unfavourable outlook on receiving the vaccine (15).

Furthermore, despite the availability of a vaccine against COVID-19, study participants said they do not believe the disease exists and that the vaccine is a joke. According to Sallam and his team, the belief in a conspiracy about the origin of COVID-19, the belief that SARS-CoV-2 was manufactured to force the public to get vaccinated, the willingness to get COVID-19 vaccines, the willingness to get the influenza vaccine, general opposition to vaccination, and the belief that COVID-19 vaccines will cause infertility all contribute to vaccine hesitancy (16). Surprisingly, some people also believe

that the doctors injected microchips inside the recipient of the COVID-19 vaccine. Twenty seven and 23% of respondents, respectively, believed that COVID-19 vaccines were linked to infertility or were designed to inject microchips into recipients (16). The said study distributed the survey among the general public in Jordan, Kuwait, and other Arab countries.

One Egyptian study corroborates these findings by claiming that students' misconceptions about the vaccine's genetic implications, the possibility of contracting COVID-19 from the vaccine, and the possibility of implanting nanochips all played a role in creating vaccination barriers and beliefs. These misunderstandings solidify into deeply held convictions that prevent the country from achieving herd immunity (17).

Some participants also mentioned self-isolation and diet as means by which they hoped to control the symptoms of COVID-19, rather than the recommended vaccination. In terms of health and disease prevention, the religious mandate would be on par with the use of vitamins, supplements, or medications. When there are illegal substances in the vaccine, this strategy becomes more common. Similar religious prohibitions apply to haram drugs. Therefore, if there are no halal medications available or they have not yet become halal, the use of pharmaceuticals containing haram substances is only permitted in the form of *rukhsah* and in cases of emergency (18–20).

LIMITATION

Due to the fact that the study environment was still under restricted movement controls, and participants preferred to have their interviews online, all participants were interviewed via phone and Google Meet, which is seen as a limitation of the study. Via phone, it was more challenging to establish rapport with participants and recognise non-verbal cues. There was no piloting of the semi-structured interview guide, but all the interviewers received prior training in interview techniques and each interview was followed by a peer debriefing session.

CONCLUSION

According to the World Health Organization, one of the top ten global health concerns for 2019 is vaccine hesitancy. This research has shed light on the issue of COVID-19 vaccine hesitancy within

the Muslim community of the East Coast region in Malaysia. The findings suggest that a significant number of participants expressed hesitancy towards taking the vaccine due to rumours, safety concern issues, and self-belief. These insights are valuable for policymakers and healthcare providers as they work to increase vaccine uptake and address vaccine hesitancy in the community. By educating the public, it can better meet its moral duty to the community (21). Further research is needed to better understand the underlying factors driving vaccine hesitancy and to develop effective strategies for addressing these concerns. Ultimately, overcoming vaccine hesitancy is critical to achieving widespread vaccination and bringing an end to the COVID-19 pandemic.

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CONFLICT OF INTEREST

The author acknowledges that publishing this paper does not present any conflicts of interest.

AUTHOR CONTRIBUTIONS

MFMI: drafted the manuscript and played a role in developing and designing the article by gathering, analysing, and interpreting data.
NNNS: revised the manuscript critically with intellectual contents and collected data.
SZS: revised the manuscript critically for important intellectual content.
NMAH: revised the manuscript critically with intellectual contents and collected data.
TSTM: revised the manuscript critically for important intellectual content.
FAY: revised the manuscript critically for important intellectual content.

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