RMJ

Original Article

A Qualitative Study Exploring COVID-19 Vaccine Hesitancy and Refusal Among Unvaccinated Patients Visiting Family Physicians in Bangkok, Thailand

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Abstract

Background: Vaccine hesitancy and refusal are critical barriers to achieving herd immunity against COVID-19. Despite widespread vaccine availability nationwide, some people remain unvaccinated.

Objective: To explore reasons for COVID-19 vaccine hesitancy and refusal among unvaccinated patients visiting family physicians at the Department of Family Medicine, Faculty of Medicine Ramathibodi Hospital.

Methods: A qualitative study collected data using in-depth semi-structured telephone interviews between 24 March 2022 and 16 June 2022. All recruited participants had never received COVID-19 vaccination and were registered patients at the Family Medicine outpatient clinic, Ramathibodi Hospital. The interviews were conducted in Thai, digitally recorded, and transcribed verbatim. They were reviewed for accuracy and analyzed using thematic analysis.

Results: Thirteen participants, aged 55 to 83 years, were interviewed. Four themes were identified: 1) fear of vaccination, particularly concerns about side effects; 2) vaccine safety and effectiveness, safety and efficacy concerns, and perceptions of vaccines as "emergency vaccines"; 3) health information, especially negative vaccine/health content from social media and mainstream news; and 4) personal health beliefs, including reliance on self-care, hygiene, and Thai herbal medicine as alternatives. Most participants (92%) stated they would continue refusing vaccination despite availability.

Conclusions: Vaccine hesitancy and refusal were driven by fear of side effects, personal beliefs, and exposure to negative health information. Therefore, it is strongly recommended that health sectors develop a knowledge management platform to disseminate evidence-based health information that is widely accessible. This would enable patients to make well-informed and autonomous decisions.

Keywords: COVID-19 vaccine hesitancy and refusal, Infodemic, Qualitative methods, Primary care, Patient-centeredness

Citation: Sachdev V, Inpanya P, Petchlorlian E. A qualitative study exploring COVID-19 vaccine hesitancy and refusal among unvaccinated patients visiting family physicians in Bangkok, Thailand. *Res Med J.* 2026;49(4): e275646. doi:10.33165/rmj.2026.e275646

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Received: 26 May 2025
Revised: 10 October 2025
Accepted: 27 October 2025
Published Online: 26 January 2026

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Introduction

The COVID-19 pandemic was declared by the World Health Organization (WHO) on 11 March 2020.[1] Thailand experienced 5 distinct waves of COVID-19 between January 2020 and March 2022. The first wave began with clusters of cases at Bangkok nightlife venues, boxing stadiums, and returning travelers from overseas, resulting in widespread transmission throughout the country.[2, 3] By March 2022, there had been more than 3.2 million COVID-19 cases and over 23 000 deaths reported, which caused a strained healthcare system.[4-6]

At the time of this research, various types of COVID-19 vaccines were readily available nationwide. On 17 December 2021, the WHO Emergency Use Listing (EUL) approved 9 vaccines to combat increasing global infection rates.[7] Each functioned using messenger RNA (mRNA), adenovirus vector, whole inactivated coronavirus, or protein subunit mechanisms.[8] In Thailand, the National Vaccine Institute chose the AstraZeneca COVID-19 vaccine for people over 60, and CoronaVac, an inactivated vaccine, for individuals aged 18 to 60.[9, 10] The allocation of vaccines was done according to WHO guidelines, prioritizing the "608" groups, which include high-risk individuals defined as those aged 60 years or older and those with 1 of 8 preexisting health conditions, such as diabetes mellitus, chronic kidney disease, cardiovascular disease, chronic respiratory disease, obesity, cancer, or pregnancy.[11, 12] Following the COVID-19 vaccine rollout that began in March 2021, as of 28 January 2022, 72.97% of the Thai people had received at least one dose of the vaccine[13] while coverage of older adults aged 60 and above was 75.1%.[14] Vaccination has been hailed as the most significant public health achievement, contributing to the decline in mortality and morbidity rates from various infectious diseases.[15] In particular, during the COVID-19 pandemic, vaccination is the primary measure for controlling the outbreak. However, according to the WHO, vaccine hesitancy has remained one of the top 10 global health problems.[16] This hesitancy refers to the refusal or delay of vaccination despite the availability of vaccine services. It affects the achievement of herd immunity and increases the risk of disease transmission. In the case of COVID-19, the rapid development of vaccines and the political dimensions surrounding vaccination further intensified public reluctance. Vaccine hesitancy is a context-specific phenomenon that varies across time, place, and vaccine type.[17]

Data from previous studies have shown that factors affecting COVID-19 vaccine hesitancy included perceptions of vaccine importance, efficacy, safety, concerns about side effects, low confidence in the vaccine, mistrust in the government, vaccine accessibility, and personal or religious beliefs.[8, 14] Understanding why patients may opt out of COVID-19 vaccination despite the vaccine being readily available and highly effective in controlling the pandemic, providing protection from severe illness, and reducing the mortality rate if infected is essential. This study aimed to investigate the reasons behind vaccine hesitancy among patients visiting the Family Medicine outpatient clinic at the Faculty of Medicine Ramathibodi Hospital. To acknowledges and accept patients' rights and autonomy in decision making.

Methods

Study Design and Participants

The study used a qualitative approach, with in-depth semi-structured telephone interviews to explore vaccine hesitancy. The study was conducted among patients who visited family physicians at the Department of Family Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, a tertiary university hospital in Bangkok, Thailand. Participants who had opted against vaccination are considered a minority group, and this research study aimed to avoid any prejudice by taking a neutral stance to explore and understand their reasons for refusing COVID-19 vaccination.

The data collection period coincided with Thailand's fifth wave of the Omicron variant of COVID-19, during which the national vaccination rate was approximately 80%.[13]

All interviews were conducted between 24 March 2022 and 16 June 2022. Data saturation was the criterion used to determine when to conclude data gathering.

Participants were recruited if they were registered at the Department of Family Medicine, Faculty of Medicine Ramathibodi Hospital, and had not previously received a COVID-19 vaccine. Eligible participants were required to be at least 18 years of age and able to read and understand the Thai language.

Participants were excluded if they declined to participate in the study. Participants with diagnosed mental illness or cognitive impairment that substantially impaired informed consent were excluded. If a participant felt uncomfortable or did not wish to respond, they could decline to answer any questions or withdraw from the study at any time.

Data Collection

A purposive sampling method was used to select participants who met the criteria of being registered patients at the Department of Family Medicine, Faculty of Medicine Ramathibodi Hospital, and who had not received a COVID-19 vaccination. Participants' COVID-19 vaccination histories were verified at the nurse registration counter in the Family Medicine outpatient clinic. Once eligible participants had been identified, they were discreetly approached by the researcher to avoid potential stigma.

The researcher explained the study's objectives and obtained informed consent for participation in the qualitative research, including permission for audio recording of the interviews. The vaccine history interview and subsequent recruitment process were conducted exclusively for research purposes and were not part of routine vaccination screening or counseling. To ensure participant privacy, all recruitment discussions were conducted confidentially by research staff and were separate from the clinical workflow.

Participants were subsequently contacted by the researcher via telephone to provide detailed information about the scheduled date and time of the interview. Verbal consent was obtained from each participant before conducting the interviews, which were carried out in the Thai language and lasted between 30 and 60 minutes. Field notes were taken during the interviews. All interviews were conducted via telephone and audio-recorded in accordance with the guidelines of the Human Research Ethics Committee, Faculty of Medicine Ramathibodi Hospital.

Participants were interviewed one-on-one using an in-depth semi-structured telephone interview approach. They were asked a set of questions compiled by the researchers based on the vaccine hesitancy questionnaire developed by the WHO and adapted for the Thai context (Table 1).

Data Analysis

All audio recordings were transcribed verbatim in Thai by the researcher. The identities of all participants were removed. Thematic analysis was conducted using the 6-stage comprehensive thematic analysis approach developed by Braun et al.[18] Themes and subthemes were coded using Microsoft Excel, version 2013 (Microsoft Corp). All researchers independently reviewed the transcripts multiple times, identified meaningful quotations, and established relevant themes. The results were validated and agreed upon by all researchers, then translated into English by a bilingual researcher, who subsequently verified them with all members of the research team.

Results

Participants Characteristics

Thirteen participants, aged 55 to 83 years, were interviewed. Over 69% of participants were above the age of 60. Most participants (84%) had a preexisting health condition and visited family physicians to manage their health conditions. If given a chance to receive the COVID-19 vaccination of their choice, 12 participants (92%) stated that they would still refuse, while 1 participant expressed hesitancy and may reconsider in the future. More than 60% of the interviewed participants lived in Bangkok, while the remaining lived in rural provinces (Table 2).

Table 1. Questionnaire for In-Depth Interviews

Questionnaire
1) Have you ever registered for COVID-19 vaccination?
2) Have you encountered any obstacles or events related to vaccination in the past that may have resulted in a refusal to be vaccinated against COVID-19?
3) What is your opinion about the vaccine against COVID-19?
4) Do you have a preference for any type of COVID-19 vaccination?
5) Have you encountered obstacles or difficulties in registering for the COVID-19 vaccination?
6) Have you received any information regarding the COVID-19 vaccine? If yes: Where did the source of the information come from? Examples: newspapers, news, social media, relatives, friends
7) Has anyone advised you to get vaccinated against COVID-19?
8) Has anyone prevented you or warned you not to get COVID-19 vaccination?
9) If you were given the opportunity to get vaccinated against COVID-19, what would your decision be? Please tell me more about this.
10) If a relative or someone you know has been vaccinated against COVID-19, what is your opinion regarding this?

Table 2. Baseline Characteristics of Participants

Characteristic	No. (%)
Age, y	
50-59	4 (30.77)
60-69	3 (23.08)
70-79	4 (30.77)
80-89	2 (15.38)
Gender	
Male	2 (15.38)
Female	11 (84.62)
Marital status	
Single	3 (23.08)
Married	8 (61.54)
Widowed	2 (15.38)

Table 2. Baseline Characteristics of Participants (Continued)	
Characteristic	**No. (%)**
Education	
Primary education	5 (38.46)
Secondary education	2 (15.38)
Higher education	6 (46.15)
Underlying diseases	
None	2 (15.38)
Diabetes	4 (30.77)
Dyslipidemia	7 (53.85)
Hypertension	8 (61.54)
Chronic kidney disease	1 (7.69)
Osteoarthritis	1 (7.69)
Asthma	1 (7.69)
Hyperthyroidism	2 (15.38)
Thalassemia	1 (7.69)
Osteoporosis	1 (7.69)
Number of diseases	
0	2 (15.38)
1	1 (7.69)
2	7 (53.85)
> 2	3 (23.08)
Living place	
Bangkok Metropolitan region	8 (61.54)
Central region	2 (15.38)
Eastern region	1 (7.69)
North eastern region	1 (7.69)
Southern region	1 (7.69)
Occupation	
Unemployed	2 (15.38)
Employed	5 (38.46)
Retired	6 (46.15)
Health entitlements	
Universal Health Coverage	2 (15.38)
Social security scheme	1 (7.69)
Civil servant	6 (46.15)
Self-pay	4 (30.77)

Themes

This study revealed 4 main themes contributing to COVID-19 vaccine hesitancy and refusal among unvaccinated patients: fear of vaccination, vaccine safety and effectiveness, health information, and personal health beliefs. The details of each theme are described below.

1) Fear of Vaccination

Fear of vaccination was apparent among most participants. One of the main concerns voiced by most participants was the potential side effects that could worsen their current health status. For some participants, their hesitancy grew stronger after hearing first-hand negative health information from people around them.

[ID01]: "*I have witnessed friends suffering from strokes and dying after vaccination.*"

[ID06]: "*Fear of side effects, I have an underlying disease, so I'm scared.*"

[ID09]: "*I have many chronic diseases. So, I was terrified.*"

The rapid timeline from the first cases of COVID-19 to vaccine development also led many participants to question the legitimacy of the vaccines.

[ID01]: "*Listen to the news, and this vaccine has been researched for less than one year, only 6 months, and the vaccine was studied for 6 months and developed to be given to the mass population. How come? It seems like using people as a testing tool!*"

[ID02]: "*Because there is no confidence in the vaccine. Which vaccine has been developed in under 2 years? There is no way I would believe in a vaccine fully developed in this timeframe.*"

2) Vaccine Safety and Effectiveness

Apart from concerns about side effects, the continued rise in COVID-19 infections among the vaccinated population raised doubts about vaccine safety and effectiveness.

[ID05]: "*My reason is that I do not trust the vaccines… Also, if I receive the vaccine, I could still get infected… People who have received 1, 2, 3, or 4 doses still get infected. I don't want to put my life at risk.*"

[ID09]: "*When my son got infected with COVID-19, it further made me doubt the vaccine's protection capabilities.*"

[ID10]: "*My boyfriend got infected, despite having four doses of vaccination. So, my point of view is that vaccination doesn't help. It's like taking something into our body.*"

[ID11]: "*I want more assurance from the general population getting vaccinated. Despite the high infectivity rate and aim to achieve herd immunity, our lives are also essential.*"

Two participants noted that the term used to describe all COVID-19 vaccines was emergency vaccines. They pointed out that the manufacturers would be utterly immune to any unforeseen circumstances that may arise.

[ID07]: "*I believe that worldwide vaccines, no matter which country developed them, are all called 'emergency vaccines', and even if anything happens, there will be no accountability.*"

[ID13]: "*This vaccine, just like the drugs, is for emergency use, and it's not 100% protective.*"

3) Health Information

Nine participants reported exposure to negative news about COVID-19 vaccines, including reports of adverse effects and potential future harm. Most of this information was obtained from social media platforms such as the LINE application, YouTube, Facebook, and from mainstream Thai news channels. Such information heightened their fears and further reduced their willingness to get vaccinated.

[ID03]: "*I got frightened by the news on television. The news anchor kept on repeating, 'another death'... He would keep on repeating news on people dying from vaccination.*"

[ID08]: "*I watched the news, they kept on saying, 'Have you seen this effect and that effect?' This made me scared.*"

4) Personal Health Beliefs

Many participants discussed self-care and hygiene, as well as using Thai herbal medicine as a safe and natural method to prevent diseases. These remedies are unique and have cultural significance in Thailand.

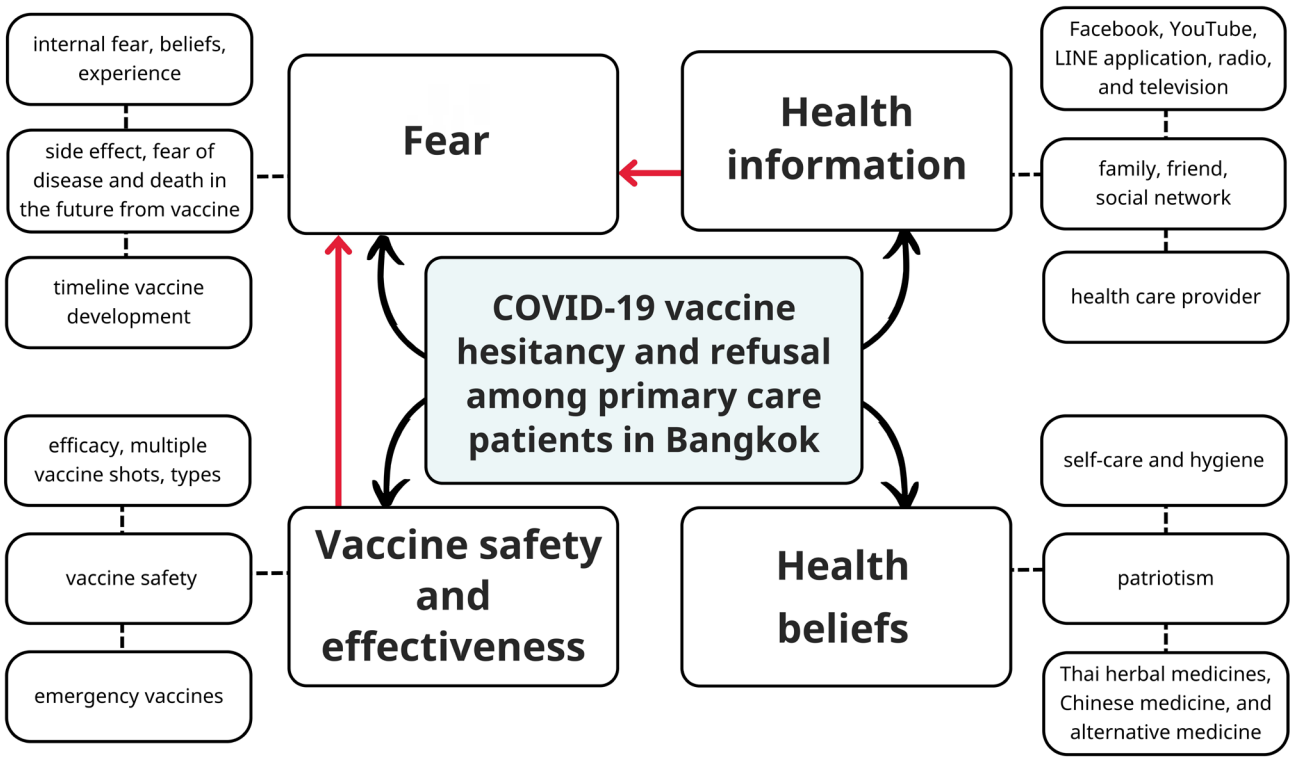
[ID01]: "*I eat foods that are spicy, hot, and herbs... I eat basil leaves, kaffir lime leaves, galangal, lemongrass, and Tom Yam condiments.*"

[ID03]: "*When I hear about COVID news, I take ginger water as it has anti-inflammatory properties. When I have nasal congestion, I mix boiled onions with boiling water and inhale to help clear congestion.*"

[ID07]: "*I carry a small bottle of alcohol gel with me and always wear a mask. I have noticed that Japanese people have been wearing masks when they are ill for quite some time. When everyone wears a mask, it helps reduce the transmission of diseases.*"

The qualitative data showed that vaccine safety concerns, doubts regarding vaccine effectiveness, and negative health information were closely linked to the fear of vaccination (Figure 1).

Figure 1. Themes of COVID-19 Vaccine Hesitancy and Refusal Among Unvaccinated Patients



Discussion

This study revealed 4 themes affecting COVID-19 vaccine hesitancy and refusal among unvaccinated patients in a Family Medicine outpatient clinic at the Faculty of Medicine Ramathibodi Hospital. Fear of vaccination was the most decisive factor among participants in this study. This is in line with previous studies citing fear as a driving factor in decision-making.[19] This study observed that most participants who had opted out of vaccination were older adults over 60. The older adults are considered the most vulnerable group with the highest mortality and morbidity rates from COVID-19 infection, and they also have a high rate of vaccination hesitancy.[20] Many participants expressed concerns that potential side effects could worsen their health. Consistent with previous studies, reported concerns about vaccine side effects played a significant role in vaccine hesitancy.[8, 11] Especially among older adults, the primary concerns were the risk of serious adverse events following immunization, such as complications related to age and existing medical conditions and death.[14] Other studies have reported that vaccine hesitancy and refusal were due to the fear of side effects, concerns of safety and efficacy, and the short duration of clinical trials.[21]

This study found that beliefs/doubts about vaccine safety and effectiveness significantly contributed to hesitancy and refusal among participants. Some data have expressed that vaccination did not reduce the transmission of the virus.[17] Furthermore, some qualitative studies on COVID-19 vaccine hesitancy among unvaccinated Americans have reported factors contributing to hesitancy or refusal, including concerns about the safety of COVID-19 vaccines.[22]

The continued lack of reliable health information concerning COVID-19 vaccine remains a significant public health challenge. Findings from this study indicate that the "infodemic" — an excessive spread of both accurate and inaccurate information — had an impact on patients' anxiety levels and negative perceptions towards vaccination.[23, 24] This information spreads quickly through digital and physical channels much like a disease, complicating the public's ability to access reliable information.[25] Some studies have identified social media as a primary source of vaccination information and this trend is contributing to vaccine hesitancy.[10] Consequently, it is imperative that healthcare professionals actively disseminate accurate, evidence-based information to counter misinformation.[26]

Nevertheless, in people who do not receive COVID-19 vaccine, this may be due to their personal beliefs in caring for and protecting their health. Especially in Thailand, where there is a view that "food as herbal medicine". Previous research has reported that functional medicinal plants may help enhance the immune system and manage respiratory tract infections.[27] Moreover, some studies reported that traditional medicine is being considered a possible treatment for COVID-19, and the WHO is working with some research institutions around the world to select traditional medicine products with potential use for the treatment of COVID-19.[28]

An earlier study on COVID-19 vaccine resistance among Thai seniors highlighted factors contributing to hesitation, including low education, lack of trust in the healthcare system, and questionable vaccine selection by government authorities.[29] Younger citizens may also have had easier access to immunization due to their technological skills, as registration were online. It has been widely reported that many older adults faced difficulties navigating online vaccination platforms and struggled to get vaccinated.[30, 31]

However, many individuals in the working-age population may have been subjected to mandatory vaccinations in the workplace, which can be viewed as paternalistic.[32, 33]

Mandatory vaccination has been shown to increase vaccination rates in some contexts, however ethical concerns regarding vaccine mandates and patient autonomy remain.[8] This study found that media personnel and healthcare workers impacted decision-making. In the future, unbiased and evidence-based information should be provided while respecting an individual's autonomy in making health-related decisions.

Several studies used the "5C Model" to describe major factors of vaccine hesitancy, which are confidence (importance, safety, and efficacy of vaccine); convenience (context-specific access issues related to time and vaccine availability); communication (sources of information); context (ethnicity, religion, occupation, and socioeconomic factors); and complacency (perception of low risk and low disease severity).[24, 25, 34] This study found that the participants' responses aligned with the model in the domains of confidence, communication, convenience, and context. This model is a practical framework for understanding vaccine hesitancy.

Strengths and Limitations

The study offers insights into vaccine perceptions within specific sociocultural and healthcare contexts in Thailand, enhancing an understanding of beliefs about self-care, herbal medicine, and local attitudes toward vaccination.

Despite achieving data saturation, this study has limitations. The sample size was small and primarily consisted of female participants, which limited representation of the male perspectives. The data collection occurred during the fifth wave of COVID-19, between March 2022 and June 2022, toward the end of the pandemic. This timing may have excluded certain groups, such as individuals subject to mandatory vaccination, from participation.

Recommendations

This study focused only on patients and did not incorporate the perspectives of healthcare professionals. Including healthcare providers in future studies would enable comparative analysis between patients' and clinicians' views on vaccine hesitancy. Additionally, all participants were adults aged 55 to 83 years, excluding younger populations and children. Future studies should therefore include a wider age range to capture generational differences in vaccine attitudes and behaviors.

Conclusions

The study found that vaccine hesitancy and refusal among patients were primarily driven by fear of side effects, concerns about vaccine safety and effectiveness, personal beliefs, and exposure to inaccurate information from various sources. Most participants relied on their sense of autonomy to guide decision-making. The study also demonstrated the prevalence of an infodemic, with a relatively high amount of health information, both online and offline, significantly influencing decision-making. Therefore, government agencies should develop a knowledge management platform that disseminates widely-accessible evidence-based health information. Such a platform would enable patients to make well-informed and autonomous decisions.

Additional Information

Acknowledgments: The authors would like to thank all participants for their time and insights and for sharing their valuable experiences in this research. The authors also extend their gratitude to Natasha Chawla a family physician and expert in English language, for reviewing the language of this research study.

Ethics Approval: This study received ethical approval from the Human Research Ethics Committee, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand (MURA2022/168 on 8 March 2022). All participants were given the study information sheet before the interview, which provided them irrelevant information about the study.

Clinical Trial Consideration: This study does not report on a clinical trial.

Financial Support: This research project was supported by Faculty of Medicine Ramathibodi Hospital, Mahidol University (RF_65094, Veerachai Sachdev).

Conflict of Interest: The authors declare no conflict of interest concerning the research, authorship, or publication of this qualitative study.

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