

The COVID-19 Vaccination Acceptance and Perceived Risk: A Survey in Northwestern Iran

Hassan Mohammadi¹ , Faraz Armanmanesh¹ , Fariba Heidari^{1,2*} ¹ Department of Community and Family Medicine, Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran² Research Center for Evidence-Based Medicine, Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

ARTICLE INFO

Article Type:
Original Article

Article History:
Received: 16 Apr 2022
Accepted: 6 Nov 2022
ePublished: 18 Mar 2023

Keywords:
COVID-19,
Vaccine,
Rejection,
Acceptance,
Risk

Abstract

Background. The coronavirus disease 2019 (COVID-19) is still a global leading public health issue, especially in low- and middle-income countries (LMICs). Vaccine hesitancy can decelerate the effect of mass vaccination programs. This study aimed to assess the determinants of COVID-19 vaccination acceptance and its relationship with the perceived risk of COVID-19 among the Iranian population at the beginning of the vaccination program.

Methods. In this cross-sectional survey conducted in June 2021 in Tabriz, Iran, 500 subjects aged 18-64 years were investigated. The collected data included the demographic variables, participants' previous COVID-19 infection, history of the COVID-19 infection and mortality in the participant's family members, perceived risk of COVID-19, and COVID-19 vaccine acceptance. The data were analyzed using the SPSS software version 16. Independent t-test and logistic regression were also performed.

Results. The acceptance, doubt, and rejection of COVID-19 vaccine were reported by 232 (46.4%), 129 (25.8%), and 139 (27.8%) cases, respectively. Multivariate regression analysis showed that the age, education level, profession, and perceived risk of COVID-19 were significantly associated with the acceptance of the COVID-19 vaccine.

Conclusion. The acceptance rate of the COVID-19 vaccine was not optimal among the studied population at the beginning of vaccination program, and about half of the participants reported the vaccine acceptance. People with low education, low perceived risk level for COVID-19, and younger people may have been considered a high-risk group for doubt or rejection of the COVID-19 vaccine.

Mohammadi H, Armanmanesh F, Heidari F. The COVID-19 Vaccination Acceptance and Perceived Risk: A Survey in Northwestern Iran. *Depiction of Health*.2023; 14(1): 137-147. doi: 10.34172/doh.2023.10. (Persian)

* Corresponding author; Fariba Heidari, E-mail: Fariba_heidari@hotmail.com



Extended Abstract

Background

Since 2019, the novel coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 has spread throughout the world. Despite controversies over the effectiveness of COVID-19 vaccines, the seven most commonly used vaccines showed the efficacy of more than 65%. Although highly effective vaccines are presently available, some challenges including vaccine hesitancy may result in continued mortality and morbidity. Globally, up to 11 April 2022, only about 58% of the global population were fully vaccinated, mainly due to a much lower vaccination rate in low- and middle-income countries (LMICs).

According to the ministry of health of Iran, 67% of the population received two doses of COVID-19 vaccines until the same date. Although considerable vaccine doses are currently available, vaccine hesitancy is considered an important problem. Given the above discussion, this study aimed to evaluate the COVID-19 vaccination intention and perceived risk of COVID-19 as well as to assess their determinants and relationship.

Methods

This cross-sectional study was conducted in June 2021 in Tabriz, north-west of Iran. The sample consisted of 500 individuals aged 18-64 years, including both health care workers and the general population. The inclusion criteria were the tendency to participate in the study and being in 18-64 age range. The exclusion criteria were having the previous shots of the COVID-19 vaccines and being under 18 or over 65 years. The data collection tool had 4 main domains. The first part focused on demographic variables. The second part surveyed about the previous COVID-19 infection in the participant and the history of the COVID-19 infection or mortality in their family members. The third domain assessed the perceived risk of COVID-19 by using a modified version of the questionnaire validated by Karlsson et al. This tool consisted of six items including one item about perceived susceptibility of getting infected, three about perceived severity, and two about worries of falling ill and transmission to others. To use the Persian version of the COVID-19 perceived risk tool, the forward and backward translation was process.

Cronbach's alpha coefficient was used to assess the internal consistency. The fourth domain of the questionnaire assessed the COVID-19 vaccine acceptance. First a brief explanation was offered, suggesting that "all developed vaccine should pass through three phases of trials to check the efficacy and safety before being approved and licensed". Then the participants were asked to answer the question "do you agree to take the COVID-19 vaccine?"

The data collection tool was distributed in two modes including the paper-form in the primary health care centers and faculties of Tabriz University of Medical Sciences, and the web-form by sending a link of the online questionnaire developed in Porsline website via the WhatsApp channels.

The data were analyzed using the SPSS software version 16. The t-test and logistic regression were performed to analyze the associations. The odds ratios (OR) and 95% confidence intervals (CI) were reported. The statistical significance level was considered less than 0.05.

Results

The overall Cronbach's alpha coefficient for the Persian version of the COVID-19 perceived risk questionnaire was 0.73. In total, 142 subjects (28.4%) were health care workers. The mean (SD) age of the participants was 31.0 (10.03) years. The COVID-19 vaccine acceptance, doubt, and rejection were reported by 232 (46.4%), 129 (25.8%), and 139 (27.8%) cases, respectively.

Our multivariate regression analysis showed that the age, education level, profession, and perceived risk of COVID-19 were significantly associated with the acceptance of the COVID-19 vaccine. The history of previous COVID-19 infection in the participant and COVID-19 infection or death in her/his family members showed no significant association with COVID-19 vaccine reception.

Data analysis showed that the history of self-infection or history of family member's morbidity and mortality due to COVID-19 had no statistically significant relationship with the perceived risk of COVID-19. Analyzing the reasons for vaccine hesitation showed that

majority of the cases who rejected or doubted the vaccine were concerned about the side effects of the vaccine.

Conclusion

Our results showed that the Persian version of the COVID-19 perceived risk questionnaire had an acceptable reliability and may have been used in future researches. The findings of our study showed that the acceptance rate of the COVID-19 vaccine was not ideal among the Iranian population.

Vaccine acceptance was significantly lower in people with primary or secondary education levels in comparison with those with master's degrees or higher, with 75% and 40% lower odds, respectively, which was consistent with results from other studies. Higher socioeconomic status is a predictor for uptake of healthcare or preventive interventions. This is an important paradox in health systems that less-privileged people needing more health services receive less, perhaps due to their negative attitudes toward health, lack of information, inequity in access, or being more impressed by the irrational propagation.

Our results also revealed that people with low education, the low perceived risk level for COVID-19, and younger people may have been considered high-risk groups for doubt or rejection of the COVID-19 vaccine. One of the most common reasons for rejection or hesitation of COVID-19 vaccine uptake was the concerns about not having enough information about the vaccine and the long-term side effects of the vaccine.