

# BMJ Open Acceptance of COVID-19 vaccines in Palestine: a cross-sectional online study

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## ABSTRACT

**Introduction** In Palestine (West Bank and Gaza), there have been more than 320 890 known cases of COVID-19, resulting in 3452 deaths. The detrimental effects of the virus can be seen in the nation's health, economy and government operations, leading to radical uncertainty that is exacerbated by the absence of any definitive treatment or vaccines. The level of knowledge about and trust in treatment and vaccination varies worldwide. This study aims to assess the willingness of Palestinians to receive a COVID-19 vaccine and their knowledge about such vaccines.

**Methods** An online survey of adults over 18 years old (n=1080) was conducted in Palestine in October 2020. Using multivariate logistic regression, we identified correlates of participants' willingness to get a COVID-19 vaccine.

**Results** We found that about 63% of participants were willing to get a COVID-19 vaccine. However, acceptance varied with the specific demographic variables that were investigated. Women, married participants and those aged 18–24 years are more likely to take the vaccine. Further, participants with good knowledge about the vaccine and its side effects are more willing to get the vaccine.

**Conclusion** The availability of a safe and effective COVID-19 vaccine in Palestine is crucial to decrease the burden of COVID-19 morbidity and mortality. In addition, to ensure a high vaccination rate, health awareness campaigns should target those who are not willing to get the vaccine, especially those who are more vulnerable and the elderly.

## INTRODUCTION

The novel coronavirus (COVID-19) was first detected in Wuhan in 2019, signalling the start of a severe global pandemic.<sup>1</sup> Since then, COVID-19 has infected over 107 532 472 people and caused 2 354 212 deaths worldwide. As of April 2021, COVID-19 has infected 317 961 Palestinians and caused 3406 deaths.<sup>2</sup> This has resulted in serious consequences for world health and the global economy and forced governments to operate in a context of radical uncertainty, as there were previously no definitive treatments or vaccines.<sup>3</sup> Consequently, many countries have acknowledged these tremendous problems and are cooperating to improve the situation. Vaccines for

## Strengths and limitations of this study

- This study is the first to estimate the willingness of people to receive a COVID-19 vaccine in Palestine.
- This study has a good and high participation rate.
- This study is a cross-sectional online survey; therefore, it was subjective to participation bias.

COVID-19 are an important health measure to help bring the pandemic under control, and several promising vaccines have already been approved and are considered safe and effective. Several countries have started the process of vaccinating their populations using Pfizer/BioNTech, Moderna, Sputnik V, Sinopharm and Oxford-AstraZeneca vaccines.<sup>4 5</sup> Since the virus poses a significant threat to public health, vaccination is an essential intervention; however, public perception toward the uptake of COVID-19 vaccines has not yet been determined.

Determann and colleagues found that disease and vaccination programmes influence respondents' receptiveness to vaccines during a pandemic, which affects vaccine uptake.<sup>6</sup> Previous studies have shown that the general population's intention to accept or decline a vaccine is influenced by their perception of personal risk, attitude toward vaccination and ethnicity. Kourlaba and colleagues reported that the acceptance rate for vaccination was 57.7% in Greece,<sup>7</sup> while a behavioural model developed by Schwarzingger and colleagues predicted that 29.4% (95% CI: 28.6% to 30.2%) of the French population of working age would refuse the COVID-19 vaccine.<sup>8</sup>

The medical services in Palestine are fragmented and are provided by the Palestinian Ministry of Health (PMOH), non-governmental health institutions, military medical services, United Nations (UN) Relief and Works Agency, and the private sector.<sup>9</sup> The number of medical cadres registered in various medical associations in Palestine has reached 31 873, of which 24 432 (76.6%)