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Exploring the Perceptions of Nurses on Receiving the SARS CoV-2 Vaccine in Palestine: A Qualitative Study

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Abstract

Background: Uncertainty about vaccination among nurses are major barriers to managing the ongoing COVID-19 pandemic worldwide.

Purpose: To explore nurseś perceptions about receiving the SARS CoV-2 vaccine to inform the upcoming Palestinian Ministry of Health (MOH) vaccination efforts.

Methods: Four focus groups were conducted with nurses between January 18 and 30, 2021, before MOH launched vaccinations in Palestine. Participants working in government and private facilities were invited to participate and completed an online or paper form to provide demographics, review the study purpose, and give consent. Meetings were facilitated in Arabic either online via the Zoom platform or face-to-face using the same interview guide. Transcripts were translated into English and coded using a template analysis approach.

Results: Forty-six nurses, with a median age of 29.5y (range, 22–57) from across Palestine participated. Three major themes emerged: uncertainty, trust, and the knowledge needed to move forward. Uncertainty related to the evolving nature of COVID-19, the rapidity of vaccine development, the types and timing of available vaccines. The need for trusted experts to share scientific information about the vaccines to counteract the misinformation in social media. Moreover, reliable vaccine information may help vaccine-hesitant nurses move to vaccine-acceptors and to convince others, including their patients.

Conclusion: The negative perception of nurses towards vaccines is problematic in Palestine and uncertainty about which vaccine(s) will be available adds to the lack of education and mass-media misinformation. Other countries with vaccination efforts that are not wholly planned or implemented and may be struggling with similar concerns.

Keywords

COVID-19, SARS CoV-2 vaccine, hesitancy, rejecters, acceptors, nurses, palestine

Introduction

Background

The ongoing COVID-19 pandemic triggers immense human suffering and socioeconomic difficulties. As of February 25 2021, the WHO reported more than 112 million confirmed cases of COVID-19, including about 2.5 million deaths (World Health Organization, 2021b), and Palestine began the third lockdown.

Health care workers (HCWs) were reported to have a greater than 3-fold higher risk of having a SARS-CoV-2-positive result than the general population (Nguyen et al., 2020). They constituted up to 10% of reported COVID-19 cases in China (Bandyopadhyay et al., 2020), Ireland (Health Protection Surveillance Centre, 2021), and reaching up to 20% in Spain (Bandyopadhyay et al., 2020). Several healthcare-associated outbreaks affected healthcare providers, patients, and the general population (European Centre for Disease Prevention & Control, 2020). A

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systematic review of COVID-19 infection and mortality of HCWs worldwide found that nurses were the largest HCW group infected with COVID-19, 38.6% of those infected (Bandyopadhyay et al., 2020).

Vaccines are a crucial tool in the fight against COVID-19, and progress toward producing so many vaccines is highly encouraging. As of February 18 2021, at least seven different vaccines have been launched in countries (World Health Organization, 2021a). Vulnerable populations are the top priority for vaccination in all countries, with HCWs one of the highest priorities (Yang et al., 2021). They are a high-risk group for contracting COVID-19, a source for virus transmission, and affect public vaccine uptake.

Nurses have been frontline healthcare workers throughout the pandemic, both in primary health care clinics and hospitals, and studies conducted in Palestine revealed genuine concern about COVID-19, which would affect uptake of vaccination (Maraqa et al., 2020). Quantitative studies show that Palestinian HCWs, particularly nurses, are hesitant to accept the SARS CoV-2 vaccine (Maraqa et al., 2021; Rabi et al., 2021).

Literature review

The effectiveness of COVID-19 vaccination relies on the achievement of adequate coverage to maintain herd immunity, which is estimated to be 67% (Randolph & Barreiro, 2020). To attain this, the WHO issued guidance on developing a national plan for COVID-19 vaccination to study and understand the drivers of COVID-19 immunization, which are diverse, context-specific, and vary over time (Sunstein et al., 2020; World Health Organization, 2020a). In particular, what people think and feel about vaccines; the social forces that motivate or impede vaccination; the personal motivations (or hesitancy) to accept vaccination; and the realistic factors that affect vaccination demand (World Health Organization, 2020a, 2020b).

Nurses are a source of medical knowledge, usually the first to reach patients and administer vaccines (Gómez-Ochoa et al., 2020). Patients often prefer nurses over physicians because nurses share information in a more straightforward format, give more lifestyle advice, and have better communication skills (Laurant et al., 2005). Nurses are considered more trustworthy and unlikely to recommend a vaccine to patients until they themselves are convinced (Paterson et al., 2016; Willis & Wortley, 2007).

Vaccine hesitancy is an obstacle to high vaccination coverage. Concerns about the safety of SARS CoV-2 vaccines, given the rapid development, may lead to vaccine hesitancy. Vaccine acceptance rate among physicians and nurses is lower than expected, with nurses more vaccine-hesitant than physicians (Dror et al., 2020). This may be due to the lack of information on the new vaccines' efficacy and safety (Gagneux-Brunon et al., 2020; Wang et al., 2020), and the rapid spread of misinformation in the media and online networks (Loomba et al., 2020).

Following the CDC's recommendation on the phased delivery of the SARS CoV-2 vaccine, the Palestinian Ministry of Health (MOH) is about to launch the vaccination of health care workers before offering it to the entire population. Studying the behavioral and social drivers of vaccination acceptance will guide evidence-based planning and understand priority target groups' characteristics and related influences (World Health Organization, 2020a). Therefore, the purpose of this study is to explore nurses' perceptions about receiving the SARS CoV-2 vaccine to inform the upcoming Palestinian MOH vaccination efforts.

Table 1. Focus Group Interview Guide.

Statement about anonymity, confidentiality of responses, and data protection methods.
Because COVID-19 is new, some of this information may not be available yet; how do you balance the need to know and willingness to take the vaccine because it will protect you?
What information do you need to feel confident in receiving the SARS CoV-2 vaccine? *Probes: how developed/ who developed/ testing of vaccine/how well it works/ how long it works?*
What experts do you need to hear from to feel confident about receiving the SARS CoV-2 vaccine? *Probes: International expert—name? Palestinian expert—name? Community expert—name? Religious expert?*
What experts do you think you and the general public need to hear from to feel confident about receiving the SARS CoV-2 vaccine?
What forums are the best places for educating you about the vaccine? *Probes: local television? ANNU programs? Social media—which ones? Mosque? Other?*
What forums are the best places to educate the public about the vaccine? *Probes: local television? ANNU programs? Social media—which ones? Mosque? Other?*

Methods

Given the need for timely information, focus groups were thought to be the fastest way to gather data and to sample nurses practicing in different settings (Morgan & Morgan, 1997). Nurses either cared for COVID-19 patients in hospitals or would be responsible for vaccine administration when it was made available by the MOH.

Sample and setting

Four focus groups were conducted by purposefully sampling nurses in both public (government) and private (academic and Non-government Organization (NGO)) clinics and hospitals in Palestine. (Krueger & Casey, 2014).

Data collection

Researchers created the semi-structured interview guide from a literature review of recently published articles with similar study objectives (Fu et al., 2020; Lazarus et al., 2020; Magadmi & Kamel, 2020; Saied et al., 2021; Učakar & Kraigher, 2019), and the World Health Organization guidance on developing a national deployment and vaccination plan for SARS CoV-2 vaccines (World Health Organization, 2020a). Questions were chosen to better understand the findings in the quantitative study of Palestinian nurses on their concerns related to COVID-19 vaccinations (Rabi et al., 2021). The guide was pilot tested on several nurses and adjustments were made. See Table 1 for the interview guide.

We sent the MOH directors of nursing (matrons) at 13 different government facilities covering the three main regions in Palestine formal letters of invitation. The matrons shared the invitation with staff nurses and encouraged voluntary participation. The same procedure was followed at the private hospitals and clinics (academic and NGO). Matrons did not participate or see who attended the focus groups, so participation was confidential and not coerced.

Prior to the virtual and in-person sessions, participants reviewed an online form that outlined the study's purpose and objectives, assured confidentiality and privacy, and asked them to complete their demographic data and background information. In addition, each responded "yes" or "no" to the following question: "Do you intend to get the SARS-COV-2 vaccine once available?" Completion of the form and attendance at the focus group was considered consent to participate in the study.

Two independent academic researchers experienced with focus group facilitation and qualitative analyses (a female doctor, and a male nurse) facilitated the face-to-face and Zoom platform sessions. Both used the interview guide. It was hoped that intetrviewer's independence from the participating facilities would inspire confidence and honesty. Focus groups occurred between January 18 and 30, 2021, before MOH launched vaccinations efforts in Palestine. No incentives were provided for participation, except the knowledge that they were contributing to the planning of a successful vaccination effort in Palestine. Sessions were audio-recorded, conducted in Arabic, and lasted a median of 70 min (range 62–95). Researchers verified the accuracy of the transcripts and the same bilingual researchers translated the transcripts into English.

The study protocol was approved by a university Institutional Review Board (Reference No: F.Med. Jan. 2021/16).

Data analysis

Demographics and data collected prior to the focus groups were summarized using descriptive statistics. After two focus group meetings, no new responses were heard, suggesting saturation (Hennink et al., 2019). The pre-scheduled focus groups were held in order to understand the thoughts of additional nurses working in both private and government settings. One author coded transcripts as they were completed, following conventional content analysis (Hsieh & Shannon, 2005). Two of the research team reviewed the codes and made suggestions about the overarching themes. Following a template analysis approach (Crabtree & Miller, 1999), an Excel spreadsheet with columns for larger themes and rows representing the four focus groups and entered coded data into the template. The template was reviewed and quotes were collected on the basis of the best illustrated themes and subthemes. To address rigor, researchers shared the results with the quantitative authors on the team and with a member from each focus group location (government, NGO, and academic) (Morse, 2015). Varied locations allowed for diversity of opinions and experiences in both primary care and public health and hospital settings. The independence of the researchers helped to ensure participant honesty without worries about employer repercussions, aiding to the credibility and trustworthiness of the findings (Lincoln & Guba, 1985).

Results

The focus group discussions about vaccination are organized into three themes: uncertainty, trust, and the knowledge needed to move forward. Each theme is presented with illustrative quotations.

Participant demographics

Forty-six nurses participated in one of four groups: government #1–12, non-government #2–10, academic hospital-11, and NGO hospital-13. Over two-thirds of the participants were married (61%) and female (72%), with a median age of 29.5 years (range 22–57). Most had never had a chronic illness, and 31% had received a flu shot in the past year. Only 14% had been diagnosed with COVID-19 and 22% had a family member who contracted the infection. More than half (53%) had not received formal training related to COVID-19.

Uncertainty

The main concern discussed in all the focus groups was uncertainty about COVID-19 and the vaccines. An Arabic word that means "fear of the unknown" was used frequently. The unknowns about the new disease and treatments and continually changing guidelines were discussed. A hospital nurse captured the frustration: "The way they [the government] dealt with COVID-19 was unstable, inconsistent, one day one decision, another day another decision." Another hospital nurse normalized the experience: "The problem is not only in the State of Palestine, even the World Health Organization [is unsure] … I think it is the fear of the unknown--You don't know what it is, so you try something."

The rapid development of vaccinations also caused ambivalence. At least one nurse in each focus group expressed the concern: "usually it takes years [to develop a vaccine]" and "this vaccine has been produced very quickly." Participants questioned "whether or not immunity from having had COVD-19 is enough protection", "if having good health means we don't have to be vaccinated," "if good nutrition is adequate," and "if some vaccine side effects are worse than COVID."

However, unique to Palestine was the uncertainty about which vaccines they would receive. One observed: "I blame the MOH because they said they will bring it in January, and January has passed and no vaccine." MOH planned to purchase vaccines through the COVID-19 Vaccine Global Access (COVAX), an initiative launched by the WHO, or given to them by other countries. At the time of the focus groups, nothing was known for sure.

Participants discussed the pros and cons of effectiveness and the side effects of the different vaccine possibilities: Russian and Chinese brands versus the American Pfizer vaccine which was being used in Israel. One nurse shared: "We are talking from the experience [of others] but not [with] enough information; we do not know what will happen [here]." Because of Palestine's economic and political situation, one nurse worried that "the fake or a cheap version of the vaccine might be used that may have additional side effects." Nurses wondered if Palestinians might be "mice in an experiment" for one of the vaccine safety and effectiveness trials, and "we are considered [to be] from the third world, we don't know what will happen." A hospital nurse said, "We are from the fourth or fifth world and have no part in the development."

MOH's inability to be definitive resulted in a vacuum of reliable information, which was filled by social media. A hospital nurse said, "Someone from the MOH should speak [out] and explain what the vaccine is; we have decided to use this one—for this reason and this and this … which one had which side effects … what they are going to do." But MOH was unable to do so which furthered the uncertainty.

Trust

Discussions about the many unknowns, led to conversations about who could be trusted. Nurses who were active on social media themselves, worried how "Facebook and WhatsApp are not giving true information." One nurse observed: "In my opinion, all our life is dominated by social media such as Facebook, and there are many rumors and misinformation, a lot of sarcasm about the vaccine." Others said: "Facebook has ruined the vaccine with misinformation about the side effects," "these self-defined experts," and "Facebook is scary … a lot of lies and myths."

Despite vaccine ambivalence, all the focus groups reported trust in MOH and WHO. "WHO is responsible for the health of the world," one nurse said and elaborated. "The people of Palestine, we [have] experienced many frustrations, so we will not be convinced until we are 100% sure and from WHO; and MOH takes its information from WHO." The focus group facilitator assured confidentiality when she pressed groups about their trust in MOH and whether or not they were being honest and not saying something because they were worried about consequences for their jobs or from their employers. The nurses who worked for the government were universally confident: "MOH does not recommend things that are hazardous." "Trust in MOH is huge." But even nurses who worked in private facilities expressed their trust. A nurse employed at an academic hospital said, "It is impossible for the MOH to be against us." Another nurse working in an NGO facility described her experience:

> I want to take any vaccine by MOH, they [vaccines] are in the fridge and there is a checklist, and I mean, by virtue of my work, I see them, how if they come to vaccinate someone at the hospital they use a bag with ice to maintain the temperature, and they take care of the timing and how to store it. In my opinion, these matters are not a source of concern.

Once MOH ascertained which vaccines were to be distributed in Palestine, focus groups suggested that the best way to communicate and confront what were called the "rumors" and "lies" on social media were "trusted experts" as "spokespersons". These included: doctors in Infectious Disease, Preventive Medicine or Immunology; government officials; religious leaders; and heads of clans. A nurse explained:

> The heads of Clans have the power … and significant influence and they may influence people [about vaccination.] We don't have to ignore the religious aspect and the cultural aspects, values, and traditions on this issue [because their support will help].

Other nurses agreed with approaching Imams. One said, "..you are talking about different ways of thinking, [more traditional]. Some are religious, and I think that the religious people really have an effect on people."

Nurses in every focus group stressed the importance of being educated themselves, "being models for others," so they could convince their patients. A nurse who worked for the government in primary care said:

> It is very important for the health care workers here to have information about the disease and the vaccine, and its side effects. In that case, we will explain to people that we play a big role with patients and other targeted groups.

In other words, patients trusted the nurses so they were an important target group for education about vaccination, nurses working in both public and private facilities.

The knowledge needed to move forward

As mentioned, prior quantitative survey research showed vaccine hesitancy in nurses, so we explored their concerns. Nurses in all the groups were scattered along a continuum of vaccine acceptance to vaccine rejection, with many willing to accept the vaccine with additional education from the trusted sources described above. A face to face format was preferred by several as seen in the quote below. Other formats included the local government television station that had been a trusted source of education early on in the pandemic, a station out of Qatar, as well as videos featuring trusted experts.

Approximately a third of participants were willing to have a vaccine (Vaccine acceptors, n = 15) and believed it would benefit and protect them, their families, patients, and colleagues. They hoped it would "stop the chain of infection," "allow life to return to normal," and "[they'd] even be able to travel again." Six mentioned colleagues in Israel who had already had the vaccine and reported positive experiences.

Nurses unwilling to have the vaccine (Vaccine rejecters, n = 11) didn't feel that they were at risk despite being exposed to COVID-19 in their jobs. Of the 17 who had COVID-19 or had a family member infected, several thought they were protected. Other rejecters blamed the lack of knowledge about vaccines, the potential side effects, and the fact that there were too many types of vaccines as reasons to avoid vaccination. Besides, "they worried about the state of our current understanding of the new COVID-19 virus." Two nurses wondered about how the long-term management of patients who developed side effects from the vaccine would be managed, since the government did not fully cover health care expenses in Palestine.

Eleven nurses across all the groups expressed hesitancy toward vaccination, which for some could be assuaged with information. One participant summarized the sentiments of many of the hesitant in the focus groups, "Actually, I will not have it. I may change my opinion if I get information about it, and then I may get the vaccine." Another primary care nurse who was initially unsupportive of the SARS CoV-2 vaccine described her process of change:

> Today, I attended a lecture about the vaccine, and I have changed my mind about it. Now I will get it [vaccine] because I understand everything about it. I will be a role model for others. Health care workers with the knowledge; we will convince others.

Credible information about the type of vaccine(s) available in Palestine, the side effects, and its effectiveness appeared to be essential for nurses to agree to vaccination and to encourage their patients to do the same. One said, "We have to know all the details, then we [will] work hard to convince all the people in the community, and hope we can then break the circle of infection." Nurses seemed to prefer "formal" training, in-person, or a video done by an expert. Although YouTube videos and online modules were available and encouraged by employers, only 45% felt they were formally trained about COVID-19.

While there was some discussion about whether or not MOH might mandate COVID-19 vaccination in Palestine, nothing was certain. But four nurses had no choice about whether or not to have the vaccine because of Israel's mandate. One of those nurses blamed the Occupation for "the COVID-19 passport" (mandated vaccination): "Next week I'll have it; I don't have the choice anyway because, in March, everything will reopen in Israel and to enter any place [there], you'll need to show evidence you got the vaccine."

Discussion

Our data show that a third of the nurses we talked to were accepting of the vaccine. Another third might be favorable if they had information about the efficacy and side effects of the different COVID-19 vaccines available in Palestine. The demographic characteristics of our participants were similar to nurses across the occupied territory, where the majority are between the ages of 30 and 50, female, married, and without chronic diseases (Maraqa et al., 2021). The nurses' seasonal flu vaccine uptake in this study was low, only 31%, which is consistent with previous Palestinian studies (Maraqa et al., 2021; Nazzal et al., 2015). To control the current pandemic, the uptake of COVID-19 vaccinations by HCWs is imperative, as the evidence shows that positive attitudes towards vaccination influence both vaccine uptake and promotion to patients (Danchin, 2020; Fisk, 2021).

Palestine does not have the resources to run a vaccine campaign for all citizens on its own. At the time of this writing (March 2021), Palestine—an occupied territory under Israeli military control—had not yet started vaccination. Israel, with 90% of Israelis vaccinated, ignored its recognition and position as an occupier of the West Bank, as well as its responsibility to protect the health of the occupied people, as set out in the Geneva Convention and emphasized by the United Nations and 18 Human Rights Organizations (Watt et al., 2021). As a result, MOH did not yet know which vaccinations would be available, making it challenging to share specifics related to efficacy and side effects. This uncertainty was evident in our data. Not only is COVID-19 a new disease with evolving knowledge about the course and treatments, but uncertainty about which vaccines would be used in Palestine compounded the challenges of the rapidly developed vaccines.

Despite this uncertainty, a third of our participants wanted the vaccine for many of the same reasons reported in other studies: willingness to protect their health and those that surround them, both their patients and families (Haviari et al.,

2015), and reaching herd immunity in order to recover "normality" (Awaidy et al., 2020).

A 2020 systematic review and meta-analysis demonstrated the importance of adequate knowledge about the new vaccines' effectiveness and side effects so that HCWs were confident enough to accept the vaccines (Galanis et al., 2020). In our study, approximately a third of the nurses would likely accept the vaccine with better education about vaccine efficacy and side effects. While Palestine could not do this without knowing which vaccines would be available, data from other countries vaccinating their populations may help build greater confidence and knowledge in Palestine.

Finnish researchers pointed out the need to study whether or not more vaccine-related education or training increased HCWs' confidence and willingness to recommend vaccines (Karlsson et al., 2019). While our nurses wanted "all the details," scientific evidence-based information from trustworthy health authorities and experts, there is no guarantee that knowledge informs behaviors. In addition, given the uncertainty and lack of credible information in Palestine, nurses worried that social media, which is a widespread news source, was filling the gap with predominantly false information. Their call for MOH to begin a public education campaign with community leaders who already have the public's trust (e.g., religious leaders, clan leaders, academics, influencers) echoed previous recommendations by the CDC, WHO, and multiple publications showing the importance of public health interventions to increase the vaccine's uptake among the general population (Paul et al., 2021). Clear and consistent information regarding vaccines enhanced acceptance and trust levels for COVID-19 vaccines (Dodd et al., 2021).

Limitations

Our study's limitations include: Focus groups were done both in-person and virtually. While nurses expressed themselves, interacted with each other, and were happy to have the opportunity to share their experiences and vent their fears, anger, frustration, and concerns in both formats, body language and eye contact are more difficult to detect on Zoom. During in-person groups, the facilitator could make eye contact and draw out those who were quiet; this was more difficult on the virtual platform. The facilitator tried to explore the participants' honest thoughts and to ensure that they were not just giving the expected "noncritical" response, which is often culturally appropriate in the Arab world ("Arab Cultural Awareness,", 2006).

Implications and recommendations

Nevertheless, nurses from across the West Bank working in hospitals and primary care in both public and private health care facilities participated. They are key to the success of any vaccine program in Palestine. The study's timeline captured the uncertainty at its peak, during the period where the Palestinian vaccination effort was not yet wholly planned or implemented. These findings may be useful to other countries struggling with the same concerns.

We recommend that MOH and other government authorities continue to secure vaccines for Palestine and that international human rights organizations continue their campaign to help in this effort. Secondly, MOH should complete their vaccine rollout priorities and educate both government and non-government HCWs about COVID-19 vaccines in preparation for the ultimate campaign. The experience of the few thousand Palestinians who are beginning to receive vaccines may educate others as well as the data from the vaccination efforts in other countries.

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Supplemental Material

Supplemental material for this article is available online.

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