

Perceptions of Tunisians on COVID-19 Vaccines: A Qualitative Study on a Sample of General Population

Jomli Rabaa^{1,2*}, Habbachi Dorsaf², Jemli Hend², Ourari Sabrine², Ouali Uta^{1,2}, Zgueb Yosra^{1,2} and Mrabet Ali²

¹Psychiatry Department (A) Razi Hospital, La Manouba, Tunisia and Faculty of Medicine of Tunis, University Tunis El Manar, Tunis, Tunisia.

²Faculty of Medicine of Tunis, University Tunis El Manar, Tunis, Tunisia.

*Correspondence:

Jomli Rabaa, Psychiatry Department (A) Razi Hospital, La Manouba, Tunisia and Faculty of Medicine of Tunis, University Tunis El Manar, Tunis, Tunisia.

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ABSTRACT

Background: Given that vaccine acceptance is the primary means to hopefully end this pandemic and given the deleterious consequences of vaccine hesitancy, understanding its determinants is critical.

Aim: The aim of the study was to identify Tunisians' mental perceptions and attitudes towards COVID-19 vaccines.

Methods: We conducted a qualitative study in the form of a focus group consisting of 11 people randomly selected from the general Tunisian population using a topic guide containing seven open-ended questions in Tunisian dialect covering the topic of COVID-19 vaccines.

Results: Eleven people agreed to participate in the research session. The age of the participants ranged from 35 to 55 years with a mean of 42 ± 8.27 . Their academic status varied from an elementary to a university education level.

We found unanimous vaccine hesitancy in the group. Main themes reported were: Religious coping and external health locus of control, concerns about the safety and efficacy of the vaccines due to the short development time frame of current SARS-CoV-2 vaccines and the lack of ethnic diversity in vaccine studies, the distrust in the manufacturer with belief in a "western-plot" conspiracy.

Conclusion: The perceptions and opinions of our focus group of Tunisian citizens about vaccination against COVID-19 consisted of unanimous vaccine hesitancy, with doubts about its safety and efficacy, religious coping and external health locus of control, and belief in conspiracy theory as the main themes. Public health authorities must implement multi-faceted and systematic interventions, including the involvement of mosques in the awareness campaign.

Keywords

Vaccine hesitancy, COVID-19, Coronavirus SARS-CoV-2, Tunisia, Developing country.

Abbreviations

SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2.

Introduction

Coronavirus Disease-2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is

the most severe global health emergency declared by the World Health Organization [1]. As of 27 July 2021, COVID-19 has been confirmed in 194 million people, and it has caused 4 million deaths worldwide [2]. An exceptional international research endeavor has brought about efficacious vaccines against the causal factor of COVID-19 [3,4]. Incoming evidence indicates that mass vaccination programs, which are in progress worldwide, can considerably decrease the incidence of COVID-19 infections, hospitalizations, and deaths [5-8]. Based on the Strategic Advisory Group of Experts on Immunization (SAGE), vaccine

hesitancy is the term used to describe: “delay in acceptance or refusal of vaccination despite availability of vaccination services” [9]. Vaccine hesitancy is complex and context specific, varying across time, place, and vaccines. It is influenced by factors such as complacency [low perception of the disease risk), convenience (availability, affordability, and delivery of vaccines in a comfortable context) and confidence (trust in vaccination safety, effectiveness) [9]. In Tunisia, the Ministry of Health launched an awareness campaign in television spots and different social media platforms and started the vaccination campaign on the 13 March 2021 aiming to have vaccinated half of the Tunisian population by the end of 2021 [10]. However, to date, on July 31, 2021, only 1,104,286 people are completely vaccinated and only 4,020,572 are registered in the national vaccination platform “Evax” [11].

Aim

The aim of the study was to identify Tunisians' mental perceptions and attitudes towards COVID-19 vaccines to examine the predictors of the COVID-19 vaccine hesitancy in the Tunisian population. This approach will determine key stakeholders of vaccine acceptance for efficacious interventions in Tunisia.

Methods

Study Population

A group of citizens, randomly selected from the visitors of the Psychiatrist department A at Razi Hospital, Manouba, Tunisia, were invited to participate in the study.

Written consent was obtained from each participant who agreed to be interviewed and filmed.

Date and location

In the meeting room around a U-shaped table in the Department of Psychiatry, A of Razi Hospital in Manouba, 24 May 2021.

Type of interview

Data were collected through a focus group using a piloted topic guide (Table 1).

Table 1: Topic guide in dialect Arabic and in English.

1. اشنوه يلزمنا باش ترجع حياتنا طبيعية؟	1. What will it take for us to return to normal life?
2. عندكم فكرة على البلدان اللي بداو بالتلقيح شنوة صار فيهم؟	2. Do you have any idea which countries have started vaccination?
3. تتصوروا التلقيح باش يكون ناجح في تونس؟	3. Will the anticovid vaccine be effective in Tunisia?
4. تتصوروا التلقيح بش يقضي على الفيروس والا باش يخلينا نتعايشوا معاه كيما اي فيروس اخر؟ كيما فيروس القريب؟	4. Will the vaccine get rid of the corona virus? Will it become like the flu virus?
5. هل التلقيح عندو اثار جانبية؟ كيما شنوة؟	5. Does the vaccine have any side effects? like what?
6. تعرفوا شكون لفتح و تعلق؟	6. Do you know anyone who got the vaccine? did they have any problems?
7. تتصوروا اللي التلقيح عندوا تاثير على الصحة فقط و الا يتجاوزها و يمس مجالات اخرى؟ كيما شنوة؟ (التعليم، الاقتصاد السياحة...)	7. Do you think the vaccine could have other consequences? like in education? or tourism? or other?

The entire discussion was recorded in audio-visual mode with a total duration of 1 hour.

We also collected data on participant gender, age, education, and profession prior to the session.

Investigators

The main researcher is a psychiatrist with a degree in cognitive and behavioral therapies and sociology of communication. She was assisted by a family physician.

Topic guide (Table 1)

The topic guide included seven open-ended questions in dialectal Arabic (Table 1) in the form of opinions, attitudes, and perceptions about COVID-19 vaccines.

Transcription

The transcription started on the same day: both interviewers listened to the audio-visual recording of the session individually for about 6 hours, noting on a sheet all the questions and answers in word-by-word mode, noting the hesitations, contradictions, non-verbal language, and interruptions in order to respect the accuracy of the content and avoid as much as possible the primary impressions and subtle analyses of the interviewer. The next day, the two interviewers conducted a comparative analysis of the two fact sheets by grouping together the questions that were discussed at length [12,13]. Relevant quotes were translated to English by bilingual co-authors.

Results

Seven women and four men participated in the study with a mean age of 42 ± 8.27 (Table 2).

We will present below the main perceptions, opinions and attitudes revealed by the responses of our interviewees.

Ways to regain life normalcy

Two participants stated that the respect of barrier gestures and the application of anti-COVID protective measures were necessary.

Table 2: Characteristics of participants.

Number of Participants	Sex	Age (years)	Level of Education	Profession
1	Female	52	Primary education	Day worker
2	Male	49	Secondary education	Technician
3	Female	35	Secondary education	unemployed
4	Male	49	Secondary education	Day worker
5	Female	33	Master's degree	Sales representative
6	Male	54	Secondary education	Taxi driver
7	Female	46	Secondary education	Unemployed
8	Male	39	Bachelor degree	Mechanic
9	Female	33	Bachelor degree	Nursing auxiliary
10	Female	45	Secondary education	Nursing auxiliary
11	Female	32	Primary education	Day worker

All participants insisted on the importance of faith and multiplying prayers to God. “Some prayers were broadcasted in mosques, and we learned them by heart and recorded them on our phones” one interlocutor reported. All participants unanimously stated their strong belief in the effectiveness of these prayers “especially when the praying person is sincere in his religious beliefs” and “prays with purity”, specified one of the participants.

Vaccine efficacy, safety, and adherence

All participants declared having doubts about the efficacy and safety of the vaccines.

Ten of them didn't register on the national free platform “Evax” to receive the vaccine. “Neither did all my acquaintances and family members”, reported a participant.

Nine participants declared having no intention of getting the vaccine. The 10th participant stated that he would only get it if healthcare personnel gave it to him in his house. The Eleventh stated her intention to register on “Evax”.

The reasons cited for the refusal of the vaccine were resumed in the following categories:

Doubts about the safety of the vaccine

Two participants reported that their acquaintances died after being vaccinated. They suspected that expired vaccines have caused the reported deaths.

“I think these vaccines can be extremely dangerous. They could contain chemicals that are carcinogens or that have a castrating effect”, an interlocutor stated, supported by the rest of the group.

Another participant reported having doubts about the intention of the manufacturers of the vaccines: “Non-Muslim countries could be sending us lethal products.”, he stated, and later added. “Or they could be using our population as laboratory guinea pigs”. Another one added “An imam even warned us not to fall victims in this biological war”.

One participant stated that making a vaccine in such short period is worrisome, and that even scientists aren't sure about potential adverse effects.

Concerning the vaccine awareness campaigns, multiple participants reported that the trust in political leaders was lost since a long time. “We don't even watch TV like before and informational spots are not convincing either way”, added another.

One participant reported that he was extremely alarmed when

he found in social media information about severe side effects specifically the possibility of becoming disabled three years after receiving the vaccine. Another added that even her family doctor refused to be vaccinated.

Doubts about efficacy

All participants reported having doubts about the efficacy of the vaccines.

“The continuing increase of the number of positive COVID-19 cases and deaths since the start of the vaccination campaign is proof that vaccines are not effective.”, concluded one participant.

“In addition, they say that it would provide 90% protection against the virus, meaning that I could nonetheless get infected because of the 10% lacking”, added another.

What would it take to convince you to get vaccinated?

“Having an example of a country that has no more COVID-19 cases after vaccinating its population could work”, stated one of the participants.

“I should be able to choose between available vaccines after being informed of their manufacturers and possible adverse effects.” insisted another.

One participant proposed to stop disseminating depressing information about the global pandemic. “It could help people to start thinking positively and accept vaccination» she added.

Another participant suggested that “we need a good vaccine, like the one I've gotten during my military service. It's very effective and I've never gotten sick because of it”.

One participant insisted on the importance of the involvement of imams in the awareness campaign for the COVID-19 vaccination.

Discussion

To the best of our knowledge, this study is the first qualitative study in the Tunisian population aiming to identify Tunisians' mental perceptions and attitudes towards COVID-19 vaccines. We found unanimous vaccine hesitancy, with doubts about its safety and efficacy, religious coping and external health locus of control, and belief in conspiracy theory as the main themes.

Vaccine hesitancy is a global phenomenon. A study aiming to assess COVID-19 vaccination acceptance rates worldwide in December 2020 found that the highest rates were found in Ecuador (97.0%), Malaysia (94.3%), Indonesia (93.3%) and China (91.3%) and the

lowest rates were found in Kuwait (23.6%), Jordan (28.4%), Italy (53.7), Russia (54.9%), Poland (56.3%), US (56.9%), and France (58.9%) [14].

Specific local and geopolitical factors seem to make the situation even more challenging in developing countries, like the distrust in political leaders and inefficacious media communication [15]. Indeed, the quality of the Maghreb crisis communication media during COVID-19 was found to be insufficient in most of its dimensions and items, particularly from a psychosocial standpoint [16]. This disconnection was echoed in our focus group. Increasing the aptitudes of communication agents to develop informational culturally adapted material during health crises is indispensable and should be regarded as an urgent matter.

One of the other main themes found in our research was religious coping. Religious coping involves relying on one's faith, not just for refuge and comfort, but also for possible explanations. Viewing the crises as an Act of God that cannot be changed or prevented can be an external health locus of control [17]. Furthermore, speculative evidence indicates that during tragic events, much emphasis is placed on prayer, scripture readings, and closeness to God as the way out of the crisis [18,19]. These themes were found unanimously in our study, attesting to the relevance of religion in the lives of the Tunisian people, which is in agreement with literature [20]. In fact, Religiosity is a paramount entity in the life of most Arab Muslim-majority populations [21]. Additionally, literature reported that individuals with high levels of religiosity were more prone to have negative outlook toward scientific progress [22]. Consequently, while religion offers a source of comfort, higher levels of engagement in religious practices may unintentionally spread misinformation, yielding unsafe practices. An association of religiosity with lower intention of getting COVID-19 vaccination was indeed reported in a recent study [23]. Moreover, religious communities have great confidence in local spiritual leaders like the imams and are under the influence of these leaders' personal doubts and fears. These leaders are consequently a potential powerful source of propaganda of the anti-vax position. Including them actively in the awareness campaign by public authorities is of utmost importance.

During the COVID-19 pandemic, people around the world have been leaning toward an excessive use of the internet and social media [24]. In fact, this activity can lower their feelings of loneliness, and it can provide them with information on the states of emergency in their countries and globally [25]. However, excessive news consumption during the pandemic was found to lead to acute psychological distress and mental health problems, such as anxiety and depression [26]. Our focus group reported indeed being overwhelmed by the negative news reported in social media. In 2019, 62.3% of the population in Tunisia were already reported to be Facebook subscribers [27]. Furthermore, a Tunisian study taking place in the early phase of COVID-19 found that around 40% of 751 women had problematic social media use [28]. Rapid consumption of health information from informal sources [e.g., social media, religious website, family, friends, and

colleagues), are prone to the dissemination of unclear, false or misleading health information and myths or conspiracy theories [29]. Additionally, sharing false news that contains biased, emotionally charged information tends to capture more attention and interest than detached, positive, or neutral information [30]. Indeed, another cultural religious theme found in our study and reported in literature is the famous COVID-19 vaccine conspiracy story that has been actively propagated through social media portraying the COVID-19 vaccine as a "Western plot" to sterilize Muslim women [31]. Believers in such a conspiracy were found to be more likely to refuse COVID-19 vaccines [15].

Containing misleading information from social media is a difficult mission, but reducing fear and building confidence with the public is of crucial importance and only possible when local authorities enhance the quality and level of details of the information that they share during such crises.

Another key player in vaccine acceptance are healthcare workers. They present role models for communities with regards to attitudes towards COVID-19 vaccination. Hence, hesitancy of healthcare workers towards vaccination can crucially affect the efforts aiming to contain the pandemic by influencing patient vaccine uptake [32]. A large-scale multinational post-vaccine-availability study showed a significant rate of vaccine hesitancy among Arabic-speaking healthcare workers residing in and outside of Arab countries (25.8% and 32.8%, respectively) [33]. The highest rates of hesitancy were among participants from the western regions of the Arab world (Egypt, Morocco, Tunisia, and Algeria) (33). In fact, from 60 Tunisian health care workers, 30 (49.2%) reported that they won't get the vaccine, 11 (18.0%) weren't sure, 8 (13.1%) responded that they will wait and see its effects on others, and four (6.6%) responded that it would depend on the type of vaccine. Only eight (13.1%) responded that they'll get vaccinated [33]. The most cited reasons for hesitancy were concerns about side effects and distrust of the expedited vaccine production and healthcare policies.

Knowledge about particular vaccines, their efficacy and safety, will help to build health care workers' own confidence in vaccines and their willingness to recommend vaccines to others [32]. Societal endorsement and support from colleagues were found to be also very important [32].

Our focus group revealed concerns about the safety of the vaccines due to the short development time frame of current SARS-CoV-2 vaccines, the distrust in the manufacturer, and the lack of ethnic diversity in vaccine studies. Similar concerns were reported in literature [34]. A Jordanian study found that about 40% of participants didn't have confidence in pharmaceutical companies to develop safe and effective COVID-19 vaccines [15].

Mobilizing key actors within existing religious, scientific, and political structures toward a common goal of vaccination is

of paramount importance. Health-care systems and religious institutions should work together to transmit accurate, clear, and transparent messages that address people's concerns about COVID-19 challenges and to mitigate harmful misinformation.

Conclusion

Given that vaccine acceptance is the primary means to hopefully end this pandemic and given the deleterious consequences of vaccine hesitancy, understanding its determinants is critical. Construction of multi-component and systematic interventions are required by public health authorities. These interventions should take the form of reviving the trust in national health authorities and structured awareness campaigns that offer transparent information about the safety and efficacy of the vaccines and the technology that was utilized in their production with involvement of mosques in the sensibilization campaign.

This study holds several limitations. Firstly, it involved only 11 interlocutors who may not be speaking for the entire Tunisian population. Secondly, it is a transversal study that doesn't evaluate possible intervention efficacy. Owing to these limitations, the results cannot be generalized. The great strength of this study is that it is likely the first Tunisian study to collect first-hand data from local people on how they perceive COVID-19 vaccines. It adds timely data to existing literature on the factors of vaccine hesitancy. From this perspective, the study has great scope, as we hope that it will trigger further research on this topic.

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