



Attitude and Psychological Distress Toward COVID-19 and Vaccination During the Second Wave: A cross-Sectional Survey Among Jordanian Population

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Abstract

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Background: Population attitude toward vaccination plays a crucial role in the success of health promotion against COVID-19, especially with the rapid spreading of the pandemic which severely affects the community. Besides, psychological distress seems to be a challenging issue leading to vaccination hesitancy.

Purpose: This study aims at assessing attitude and psychological distress toward vaccination among the Jordanian population.

Materials and methods: An online survey using the convince sampling method was utilized among people who live in Jordan from the period of January to March 2021.

Results: A total of 894 participants were recruited for this survey. The majority of the participants were female (n=640, 71.6%). Approximately two-thirds of the participants had a bachelor's degree (n=548, 61.3%). Generally, Jordanian participants had a positive attitude toward vaccination. Only



(n=101, 11.3%) of participants reported that they fear death, followed by their fears of unavailability of the vaccines against COVID-19 (n=81, 9.1%), and their feelings that vaccination is just a conspiracy against them (n=58, 6.5%).

Conclusion: To sum up, our study findings show a positive attitude and sufficient knowledge about COVID-19. However, many participants have a vaccination hesitancy due to medical reasons, not being persuaded to take the vaccine, and not being sure about the effectiveness of the vaccination. However, many participants take the Sinopharm vaccine due to the availability of this vaccine and they believe in the effectiveness of this vaccine. Vaccination hesitancy was strongly associated with psychological distress such as fear and worry about the effectiveness of vaccines.

Keywords: Attitude, psychological distress, knowledge, COVID-19, vaccination, second wave, pandemics.

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Introduction

Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) is a novel human pathogen that caused the COVID-19 virus that emerged in Wuhan, China in late 2019 (Haynes et al., 2020). This global pandemic was spread throughout all the countries causing mild to severe symptoms that affect cardiac, respiratory, and renal complications (Malik, McFadden, Elharake, & Omer, 2020). To achieve a high level of immunity and get the highest protection against this virus and its complication, vaccinations become a necessity (Saxena, Skirrow, & Bedford, 2020). However, vaccination hesitancy and concerns about the main side effects and the unknown future properties were the main barriers that prevented people from accepting the vaccination against COVID-19 (Biswas, Mustapha, Khubchandani, & Price, 2021).

The second wave of COVID-19 has a severe impact since it widely spread and severely affected the population. It has crucial consequences that led to escalating the cases of infected population, to reducing the medical supplies, and to increasing death cases, especially among young adults (Asrani, Eapen, Hassan, & Sohal, 2021). Many studies identified several mutation phases of the virus across different countries which were more pathogenic than the first pandemic (Radon et al., 2021). Vaccination is one of the most efficient ways to protect the population against COVID-19, with strong evidence in preventing illness and reducing hospitalization rates, and death (Kaplan & Milstein, 2021).

However, the acceptance rates of COVID-19 vaccination are declining despite the wide encouragement to eradicate the virus effectively (Bartsch et al., 2021) which is leading to many people being hesitant to take the vaccine.

Vaccination hesitancy is known as the delay in refusing or accepting the vaccination, despite the availability of the main sources and supplies in the public centers (Troiano & Nardi, 2021). Accepting COVID-19 vaccination underpins the potential success rates in the vaccination process (Leigh et al., 2022). However, many people hesitated to accept the vaccines for many reasons such as previous immunization behaviors, lack of knowledge about the vaccine, fear of the side effects of the vaccine, preferring to wait for the others until they get the vaccine and worrying about the safety and efficacy of vaccine (Huang et al., 2022).

On the other hand, many surveys were conducted in 2021, which reveal that between 50% to 60% of the respondents were willing to be vaccinated against COVID-19 with many variations across different countries (Biswas et al., 2021; Robinson, Jones, & Daly, 2021). The highest rate of accepting the vaccine was reported in Malaysia, Ecuador, China, and Indonesia with rates of more than 90%. Whereas, Arab countries such as Kuwait and Jordan and other West countries like the United States of America, France, and Italy conveyed a rate of less than 60% among their respondents (Biswas et al., 2021).

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Mental and psychological distress increased during the pandemic of COVID-19. A survey that was conducted in the United States showed an elevated stress level, suicidal ideation, attempts, and anxiety since the time of the pandemic. These findings may be related to the loss of their work and income, social isolation, and feeling insecure about being infected with COVID-19. However, evidence supports the safety of vaccination against COVID-19 and its effectiveness in preventing complications and death. A critical gap persists to identify whether the vaccination reduces the psychological distress among the population or not.

Assessing the awareness and attitudes of the population toward COVID-19 vaccination is crucial to taking the appropriate preventive measures and imposing the right policy. Hence, the purpose of this study is to assess the attitude toward vaccination and identify the psychological distress among the Jordanian population.

Material and methods

Study design and participants

An online survey using the convince sampling method was utilized among people who live in Jordan from the period of January to March 2021. Adult participants were invited to participate in the survey through an accessed link using Google Form. The study objectives, survey content, and brief description of the survey were explained truthfully on the first page of the link. Besides, informed content was requested to be approved on the first page of the survey content. The privacy and confidentiality of participants were maintained. Moreover, access from one phone device was restricted to avoid the probability of repeating the participation. A total of 894 participants responded and completed the survey. This study was approved by the Institutional Review Board Ethical committee at Al-al Bayt University.

Measures

Demographic characteristics

Participants were asked to provide their demographical data including, age, gender, marital status, presence of any

chronic disease (s), smoking status, if they have insurance, monthly income, educational level, educational background, and their living place.

Participant's attitudes toward COVID-19 and vaccination

The awareness of COVID-19 and the vaccination effect were evaluated by asking the following questions: "if they believe that the vaccination was safe", "if the pharmaceutical companies will develop safe vaccines for COVID-19", "if they will take the vaccine to protect themselves from COVID-19 complications", "if they will refuse or hesitate to take the vaccine, and why". The participants' attitude was measured using a Likert scale as follows strongly agree =0, agree=1, either agree or disagree=3, disagree=4, and strongly disagree=5.

Psychological distress of COVID-19 and vaccination

Psychological distress was assessed using the following questions, "the most source of worries about COVID-19 and the vaccinations effect", "if they fear taking the vaccine", "the most preferable vaccine to be taken and why", "if they feel that there is Conspiracy toward them". Three possible options can be selected "yes, no, uncertain".

Statistical analysis

Completed questionnaires were coded, and then the data were analyzed using the Statistical Package for the Social Science (SPSS), version 26. Descriptive statistics such as means, frequencies, standard deviation, frequencies, and percentages were used to summarize sample characteristics.

Results

A total of 894 participants were recruited for this survey. The majority of the participants were female (n=640, 71.6%), and around half of the participants were married (n=373, 41.7%) but two-thirds of them have no children (n=542 60.6%). Approximately two-thirds of the participants had a bachelor's degree (n=548, 61.3%). Around half of the participants had a middle-income salary ranging from 255 to 599 (n=412, 46.1%) and were mostly living in rural places (n=537 60.1%). Table 1 provides a detailed description of the participants' demographics.



[please insert table 1 here]

Participant's attitude toward COVID-19 and vaccination

Generally, Jordanian participants had a positive attitude toward vaccination, since (n=393, 44%) agreed that vaccinations are safe and around half of the participants approve that the vaccinations are important for protection against COVID-19. They also believe that the pharmaceutical manufacturers were fighting to develop safe vaccines to protect them from COVID-19 and its complications (n=496, 55.5%). In addition, more than half of the participants had a strong intention to take the vaccine when it gets approval (n=467, 52.2%). However, they were not ready to pay for the vaccine from their pockets to protect themselves from the pandemic of COVID-19 (n=627, 84.8%). See table 2

[please insert table 2 here]

Participant's knowledge of COVID-19 and vaccination

One-third of the participants believe that they were getting infected with the COVID-19 virus (n=353, 39.5%). For the participants who were vaccinated, the most taken vaccine was Sinopharm (273, 30.5%). The most common reported side effects of vaccinations were chills, headache, myalgia, and other side effects such as general weakness, fatigue, constipation, chest pain, numbness, and insomnia. However, about one-third of the participants have not reported any side effects (n=271, 30.3%). Participants reported that they mostly rely on social media, the internet, and television as the trusted source of getting information about vaccinations. The participants who were not vaccinated reported that they did not take the vaccines due to medical reasoning, in addition to not being persuaded by the effectiveness of the vaccine (n=70, 7.8%). See Table 3

[Please insert table 3 here]

Psychological distress toward COVID-19 and vaccinations

Mostly, the participants were a worried to get the infection of COVID-19, or any one of their family members (n=460, 51.5%). Others were fearful of death (n=101,

11.3%), followed by their fear of unavailability of the vaccines against COVID-19 (n=81, 9.1%), and their feelings that vaccination is just a conspiracy against them (n=58, 6.5%), followed by fears related to financial issues and worries related to work, respectively. However, there were (n=125, 13.9%) who reported that they had no worries regarding COVID-19 and vaccination. Furthermore, more than half of the participants reported that they did not fear injections (n=568, 63.5%), and they did not believe that their fear formed a barrier to taking the vaccine (n=558, 62.4%). See table 4

[please insert table 4 here]

Discussion

This study was conducted to assess the attitude, knowledge, and psychological distress against COVID-19 in the second wave among the Jordanian population. In the second wave, the government took restrictive measures with a wide pan to protect the population from COVID-19 and its complications. Besides, the vaccination took a crucial role in the promising approach to protection against severe COVID-19 (Ssentongo et al., 2022). In the context of this study, the participants had a positive attitude toward vaccination since they had a strong intention for being vaccinated when the vaccine gets official approval. However, less than half of the participants did not believe that the vaccine is safe and effective in protecting against COVID-19. This finding was similar to the finding of a systematic review that included more than seven million participants through included eighteen studies which revealed that the vaccine efficiency waned over time with good protection against the complications of COVID-19, however, the vaccination effectiveness is still not completely defined (Ssentongo et al., 2022).

Besides, the current study disclosed sufficient knowledge of the participants about COVID-19 in the aspects of transmission, symptoms, and prevention which is consistent with the results of many studies where the participants had good knowledge about COVID-19, and they also had an optimistic attitude to handle the measure protection measures (Bhartiya et



al., 2021; Cai et al., 2021; Tumurbaatar et al., 2021). About a third of the participants took Sinopharm vaccine in the current study, which was consistent with study findings that were conducted by Ahamed, Ganesan, James, and Zaher (2021) on the United Arab Emirates population who have a strong motivation to take Sinopharm vaccine after being convinced that this vaccine is the most effective type against the strains of COVID-19. However, most of the Jordanian participants in this study reported that they had hesitancy to take the vaccine due to many factors such as medical reasons, not being persuaded to take the vaccine, and not being sure about the effectiveness of the vaccine. Many studies prove that the hesitancy to take the vaccine after its production is due to the low confidence about the effectiveness of the vaccine (Soares et al., 2021), being offered the vaccine by unknown manufacturers and decrease in the rates of COVID-19 cases (Thanapluetiwong, Chansirikarnjana, Sriwannopas, Assavapokee, & Ittasakul, 2021).

studied participants believed that the most reliable source of vaccination information was from social media, and television followed by the health care providers. This result is contradictory to many studies which show a varying degree of reliable sources of information about the vaccination, for instance, a cross-sectional study that was conducted in Poland, shows that experts' materials are the major source of information about COVID-19 vaccines (Rzymiski, Zeyland, Poniedziałek, Małeczka, & Wysocki, 2021).

Finally, vaccination hesitancy and resistance to taking the vaccine were strongly associated with many psychological characteristics that restrict the participants from accepting the idea of vaccination during the second wave of the COVID-19 pandemic. These factors were related to participants' worries about their families getting the infection or the side effect of the vaccine, followed by being forced by the government to take the vaccine. These findings were consistent with a study that was conducted in China which reveals that fear of the main side effects and the effectiveness of the vaccine were the main factors for developing vaccination hesitancy and the

resistance against taking the vaccine (Xu et al., 2021).

Conclusion

To sum up, our study findings show a positive attitude and sufficient knowledge about COVID-19. However, many participants have a vaccination hesitancy due to medical reasons, not being persuaded to take the vaccine, and not being sure about the effectiveness of vaccination. However, many participants take Sinopharm vaccine due to the availability of this vaccine and they believe in the effectiveness of this vaccine. Vaccination hesitancy was strongly associated with psychological distress such as fear and worry about the effectiveness of vaccines.

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Conflict of Interest Statement

I hereby disclose all of my conflicts of interest and other potentially conflicting interests, including specific financial interests and relationships and affiliations relevant to NeuroQuantology Journal. I also agree that I will not use any confidential information obtained from my activities with NeuroQuantology Journal to further my own or others financial interests.

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Date: 3-8-2022.

Statement of informed consent: implied consent were taken from the participants.

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Table 1: Demographics characteristics of nurses (N=894)

Characteristic	M (SD)	F (%)
Age	29.2 (11.3)	
Gender		
Male		254 (28.4)
Female		640 (71.6)
Marital Status		
Single		491 (54.9)
Married		373 (41.7)
Divorced		11 (1.20)
Widowed		19 (2.10)
Education level		
Secondary		171 (19.1)
Diploma		58 (6.50)
Bachelors		548 (61.3)
Postgraduate studies		117 (13.1)
Smoking status		
Smoker		258 (28.9)
Non-smoker		636 (71.1)
Presence of comorbidities		
Yes		84 (9.40)
No		810 (90.6)
Health insurance		
Government or military		640 (71.6)
Private		68 (7.60)
No insurance		186 (20.8)
Occupational status		
On his/her work		324 (36.2)
Retired		18 (2.00)
Not working		552 (61.7)
Monthly income		
Less than 250		335 (37.5)
255-599		412 (46.1)
600-1000		93 (10.4)
More than 1000		54 (6.00)
If they have children		
Yes		352 (39.4)
No		542 (60.6)
Living place		
Rural		537 (60.1)
Urban		357 (39.9)

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Table 2: Participants` responses to the attitude toward vaccination.

Question No.	Item	Disagree Frequency (%)	Agree Frequency (%)	Uncertain Frequency (%)
1	Vaccination is generally considered safe	217 (24.2)	393 (44.0)	284 (31.8)
2	It is important to get the vaccine for protection and safety	181 (20.2)	464 (51.9)	249 (27.9)



3	Pharmaceutical manufacturers will develop safe vaccines against COVID-19	128 (14.4)	496 (55.5)	270 (30.2)
4	American and European vaccines are safer than Jordanian vaccines	264 (29.5)	261 (29.2)	369 (41.3)
5	I will take the vaccine when it is available Jordanians will refuse to take the vaccine when it gets the approval	166 (18.6)	467 (52.2)	261 (29.2)
6	We are ready to pay for the vaccine by ourselves from our pockets	185 (20.6)	350 (39.2)	359 (40.2)
		627 (84.8)	134 (15.0)	2 (0.20)

Table 3: Participant's knowledge about COVID-19 and vaccination

Items	Frequency (%)
Did you think you got infected with COVID-19	
Yes	353 (39.5)
No	318 (35.6)
Not sure	223 (24.9)
What is the name of your given vaccine	
Sinopharm	273 (30.5)
AstraZeneca	54 (6.00)
Pfizer-BioNTech	238 (19.5)
Not vaccinated	329 (36.8)
A side effect of vaccinations	
Headache	141 (15.8)
Chills	198 (22.1)
Myalgia	55 (6.20)
Others	229 (25.6)
No side effects	271 (30.3)
Mention the reason for not taking the vaccine	
Medical reasons	70 (7.80)
Not persuaded	70 (7.80)
Not sure	25 (2.80)
Most reliable source about vaccination	
Social media, internet, and Television	363 (40.7)
Healthcare providers	227 (25.4)
Government	68 (7.60)
Pharmacy reports and scientific journals	42 (4.70)
Do not trust any source of information	194 (21.7)

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Table 4: Psychological Distress against COVID-19 and Vaccinations

Items	Frequency (%)
The most source of worry during COVID-19	
Getting infected with COVID-19	226 (25.3)
Getting infected by a family member with COVID-19	234 (26.2)
Death	101 (11.3)
Financial issues	48 (5.40)



Worries related to work	17(1.90)
Unavailability of vaccines	81 (9.10)
Presence of conspiracy	58 (6.50)
Being composed to take the vaccine	125 (13.9)
No worries to take the vaccines	4 (0.40)
Fear of injection	
Yes	267 (29.9)
No	568 (63.5)
Not sure	59 (6.60)
Did you think that your fear formed a barrier to taking the vaccine	
Yes	167 (18.7)
No	558 (62.4)
Not sure	169 (18.9)

