Risk Perception regarding COVID vaccines among Population in Middle Euphrates governorates

By

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Abstract

Background:

COVID vaccination is important for protecting the health of these populations and reducing health inequities.

Several vaccines have been approved against corona virus disease (COVID) and distributed globally in different regions. However, general community, attitudes and perceptions towards COVID vaccinations are poorly understood. Thus, this study aimed to investigate community, perceptions towards COVID- 19 vaccinations in al middle Euphrates.

Methods:

A cross sectional study exploratory and anonymous population-based was conducted among 885 general individuals (66.8% female; 33.2% male). The survey was conduct using a semi-structured and electronic questionnaire containing informed consent along with two sections (socio-demographics, and perceptions).

Results:

Current study find that most of sample items have risk perception toward COVID vaccines in 42.26%

1. Introduction

Overview

Vaccines are a key strategy to stop the escalation of the COVID pandemic. As of April 8, 2020, there were more than 100 COVID vaccine candidates being developed. This vaccine development is proceeding at a fast pace; prior to March 30, 2020, two vaccine candidates had entered Phase 1 clinical trials while on April 9, five vaccine candidates in total were in Phase 1 clinical trials (Thanh Le et al 2020).

Vaccines are the most important public health measure and most effective strategy to protect the population from COVID, since SARS-CoV-2 is highly contagious virus and affects populations widely and globally. The competition for COVID vaccine invention and development against the spread and catastrophic effects of the disease is ongoing, and new, more effective vaccines are likely to be developed as we move through the pandemic. With the distribution of vaccines underway, it is very important to examine community acceptance and concerns of COVID vaccinations (Saiful Islam et al., 2021).

In order implement the most effective vaccination strategy, we need to know the, perceptions of people about COVID-19 vaccinations. In such a scenario, people's, 0perceptions towards COVID are crucial for Government and policy makers to address all barriers to vaccine distribution.(Saiful Islam et al., 2021).

Concern and regret mediated the relationship between risk assessment and vaccination choice suggesting that risk perception, meant as the concern of the disease, guides the vaccination's choice, encouraging preventive health behavior.(Caserotti, Girardi, Rubaltelli, Tasso, & Lotto, 2020).

When people have a positive attitude toward an event or stimulus, they tend to perceive low risk and high benefit associated with it, whereas the opposite happens when people have a negative attitude toward an event or stimulus. COVID is likely to induce a high-risk perception, as it is a new disease, for which both science and people have little or no information and experience, with a catastrophic nature, thus evoking strong feelings. Additionally, people have a more limited understanding of new viruses than old viruses that they have known for a long time, and for this reason, the low predictability of the COVID course could increase the perception of risk. Mistrust towards vaccines represent a significant challenge in achieving the vaccination coverage required for population immunity.(Paul, Steptoe, & Fancourt, 2021).

It is crucial to building public confidence in vaccine programs. This includes explaining how vaccines work, as well as how they are developed, from recruitment to regulatory approval based on safety and efficacy. Effective campaigns should also aim to carefully explain a vaccine's level of effectiveness, the time needed for protection (with multiple doses, if required) and the importance of population-wide coverage to achieve community immunity. Instilling public confi- dence in regulatory agency reviews of vaccine safety and effective- ness will be important.(Lazarus et al., 2021).

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Importance of study:

The risk-as-feelings model describes people's reactions to danger as instinctive and intuitive .People's responses vary depending on the specific characteristic of a hazard. Specifically, risks are perceived as more dangerous when they are uncommon, unknown to science, characterized by a catastrophic nature, or killing many people at once. Besides, an important role in the perception of risk was played by affect: it demarcates a stimulus or a context as positive or negative, depending on its specific goodness or badness. Thus, affect affects the decision-making process with fast assessments, automated and rooted in experiential thinking.

Problem Statement:

Risk Perception regarding COVID vaccine among Population in Middle Euphrates governorates

Objectives of the study:

1. This study aimed to investigate the risk perceptions regarding the COVID vaccine among the general populations

2. To find out the relationship between level of risk perception and educational status.

Definition of the terms:

Risk

Theoretical Definition

In simple terms, **risk** is the possibility of something bad happening.[1] Risk involves <u>uncertainty</u> about the effects/implications of an activity with respect to something that humans value (such as health, well-being, wealth, property or the environment), often focusing on negative, undesirable consequences. Many different definitions have been proposed. The international standard definition of risk for common understanding in different applications is "effect of uncertainty on objectives".

Perception

Theoretical Definition

Perception is the sensory experience of the world. It involves both recognizing environmental stimuli and actions in response to these stimuli.

Vaccine

Theoretical Definition

Acquired immunity to a particular infectious disease. A **vaccine** typically contains an agent that resembles a disease-causing microorganism and is often made from weakened or killed forms of the microbe, its toxins, or one of its surface protein

Chapter Three

Results

This chapter demonstrations the findings of analyzing data through statistical package for social science (SPSS), the study was achieved (885) person from public with age ranging (20-55) years.

Table (3.1) Statistical distribution of subjects by their Socio-Demographic Data

Items	Sub-groups	Study group Total = 885	
		Frequency	Percentage
Age / Years	20-29	770	87.01
	30-39	69	7.80
	40-49	33	3.73
	50-59	13	1.47
Gender	Male	299	33.8
	Female	586	66.2
Educational Status	Primary School	11	1.2
	Secondary School	56	6.3
	Institute or College	818	92.4
Marital Status	Single	697	78.8
	Married	179	20.2
	Widowed	5	0.6
	Divorced	4	0.5
Occupation	Employee	272	30.7
	Unemployed	613	69.3

Table (3.1) shows statistical distribution of subject sub-groups by their socio-demographic data, it explains that the majority of the subjects subgroup are: subjects with ages between (20-29) years old (87.01%), female subjects (66.2%), those who graduated from institute or colleges (92.4%), those who are single (78.8%), those who are unemployed (69.3%).

Table (3.2): Descriptive statistics and assessment of risk perception of study subjects regarding COVID-19 vaccine

| Questions	Resp.	Freq. Total = 885	%	MS	Assessment
1	Yes	322	36.4	2.08	Moderate
1	I don't know	166	18.8	2.08	Moderate
1	No	397	44.9	2.08	Moderate
2	Yes	322	36.4	2.03	Moderate
2	I don't know	211	23.8	2.03	Moderate
2	No	352	39.8	2.03	Moderate
3	Yes	292	28.8	2.04	Moderate
3	I don't know	338	38.2	2.04	Moderate
3	No	255	33.0	2.04	Moderate
4	Yes	478	31.2	2.23	Moderate
4	I don't know	131	14.8	2.23	Moderate
4	No	276	54.0	2.23	Moderate
5	Yes	182	47.7	1.66	Poor
5	I don't know	281	31.8	1.66	Poor
5	No	422	20.6	1.66	Poor
6	Yes	38	4.3	2.81	High
6	I don't know	91	10.3	2.81	High
6	No	756	85.4	2.81	High
Overall Total Assessment				**2.15**	**Moderate**

MS : Mean of Scores ; low : MS = 1-1.66; Moderate : MS = 1.67-2.33 ; High : MS≥2.34

Table (3.2) reveals descriptive statistics and assessment of risk perception of study subjects regarding COVID-19 vaccine, it explains that the assessment of the majority of the items is (moderate) ; except for the item number (5) which is (poor), and item number (6) in which the assessment is (high), while the overall total assessment is also (moderate) .

This assessment is based on the statistical scoring system that indicated total mean of scores between (1-1.66) as (poor), while those with scores between (1.67-2.33) as (moderate) and those with mean of scores equal or more than (2.34) as (high).

Table (3.3): Frequency and percentage of subjects' subgroups according to their risk perception regarding COVID-19 vaccine

Subjects' subgroups	Poor	Moderate	High
Frequency	220	374	291
Percentage	24.86	42.26	32.88
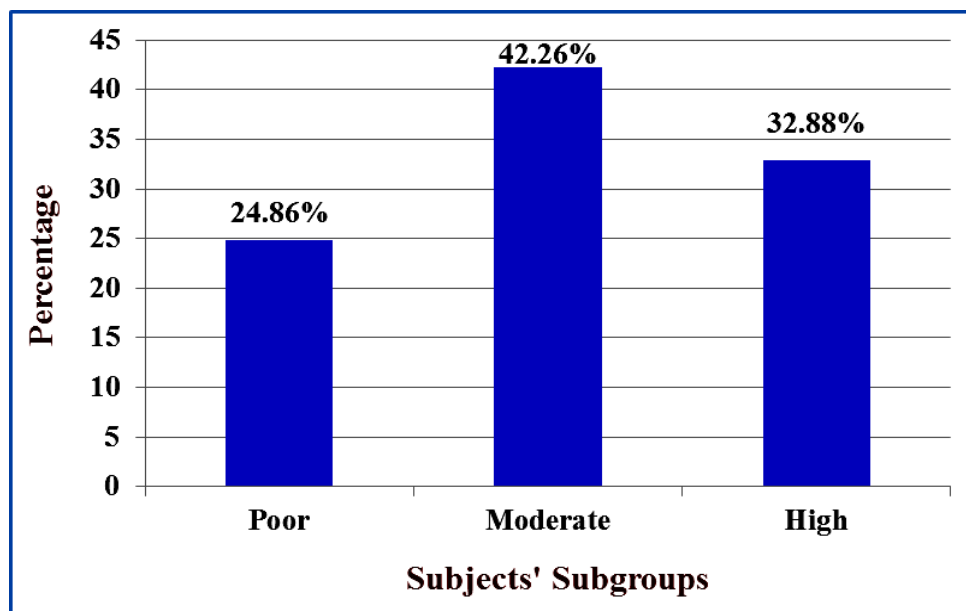
Figure (3.1) : Percentage of subjects' subgroups according to their overall knowledge assessment risk perception regarding COVID-19 vaccine

Table (3.3) and figure (3.1) are about descriptive statistics of subjects' subgroups according to their risk perception regarding COVID-19 vaccine, it shows that about (24.86%) of the subjects have low risk perception, (42.26 %) of them have moderate risk perception; while (32.88 %) have high risk perception .

Table (3.4): Association between Preventive measurements pursued by college subjects and their demographic data

Demographic Data	Chi Square	df	Significance P value
Age	32.58	4	**0.000**
Gender	15.18	2	**0.0005**
Educational Status	20.13	4	**0.0005**
Marital Status	12.6	6	**0.04**
Occupation	8.64	2	**0.01**

Table (3.5) explains the association between preventive measurement pursued by college subjects and their demographic data; it explains that there is significant relationship (p< 0.05) between employee's job performance and their selected demographic data including: age, gender, educational status, marital status and occupation.

4. Discussion:

Risk perception plays a major role in estimating the extent of community awareness regarding the seriousness of COVID pandemic and the extent of the willingness to cooperate in the implementation of health preventive measures, at the individual, local, and international levels. A

research gap exists regarding the extent of risk perception in response to health pandemics among various societies, especially Arab societies.

The risk perception was positively associated with age, knowledge, and preventive behaviors. Proper risk communication to promote protective behaviors is very essential since waiters are more at risk to be infected with COVID and their infection with the virus has public health implications. The findings from the current study provided the evidence for health policy on the risk perception, and its association with preventive behaviors among waiters during the early stage of the COVID pandemic.

Regarding beliefs about vaccination, the vast majority of participants in a study conducted by Biasio and others, disagreed completely with the negative statements about the relevance of vaccination. However, a proportion of them, though small, were only partly in disagreement and some agreed. The strong correlation between the positive opinions about vaccination, levels of education and VL of respondents, confirms the importance of improving the health literacy skills through targeted interventions (Biasio et al., 2020)

In a study attempts to understand coronavirus disease (COVID) vaccine demand and hesitancy by assessing the public's vaccination intention and willingness to pay (WTP). Confidence in COVID vaccines produced in China and preference for domestically made or foreign-made vaccines was investigate.

Results A total of 3,541 complete responses were received. The majority reported a probably yes intent (54.6%), followed by a definite yes intent (28.7%). The perception that vaccination decreases the chances of getting COVID-19 under the perceived benefit construct (OR = 3.14, 95% CI 2.05–4.83) and not being concerned about the efficacy of new COVID

vaccines under the perceived barriers construct (1.65, 95% CI 1.31–2.09) were found to have the highest significant odds of a definite intention to take the COVID vaccine.(Id et al., 2020).

Reveals descriptive statistics and assessment of risk perception of study subjects regarding COVID-19 vaccine, it explains that the assessment of the majority of the items is (moderate) ; except for the item number (5) which is (poor), and item number (6) in which the assessment is (high), while the overall total assessment is also (moderate) .

This assessment is based on the statistical scoring system that indicated total mean of scores between (1-1.66) as (poor), while those with scores between (1.67-2.33) as (moderate) and those with mean of scores equal or more than (2.34) as (high).

Largent et al find in his study, Overall, 61.4 %(95% CI, 60.0%-63.0%) of respondents indicated, they would likely get a COVID-19 vaccine. Nearly one-half (48.6%; 95% CI, 44.8%-53.0%) of respondents regarded requiring COVID-19 vaccination for children attending school as acceptable or very acceptable (hereafter, acceptable), and 38.4% (95% CI, 34.6%-42.0%) regarded it as unacceptable or very unacceptable(Largent et al., 2020)

As in current study the majority of participants was female (66.2%) (78.8%) single,(69.3%) unemployed, and (92.4%) institute of college, also in our study the risk perception about COVID vaccine is moderate in (42.26%), Khubchandani 2021 find in 1878 individuals participated in the study where the majority were females (52%), married (56%), employed full time (68%), and with a bachelor's degree or higher (77%). The likelihood of getting a COVID-19 immunization in the study population was: very likely (52%), somewhat likely (27%), not likely (15%), definitely not (7%), with

individuals who had lower education, income, or perceived threat of getting infected being more likely to report that they were not likely/definitely not going to get COVID-19 vaccine (i.e., vaccine hesitancy).(Khubchandani et al., 2021)

1.5. Conclusions

This study conclude that the high usage of news media is concerning given the potential for alarming, sensationalist portrayals of the pandemic. In addition, myths, rumors and misinformation can quickly spread online, particularly via social media. Reliance on social media might have contributed to uncertainty around COVID, for example, about whether people have natural immunity and whether specific home remedies (garlic, vitamins, and rinsing noses with saline) help protect against coronavirus. It may also explain some uncertainty around whether the virus was human-made and deliberately released. Uncertainty and rapidly changing information have been change the level of risk and risk perception.

Recommendations

This study recommend that is very important to control media and directed it toward positive affect about vaccine and its possible adverse effects and expected risks.

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