Current Clinical and Medical Education

Barriers Related To COVID-19 Vaccination among Undergraduates Nursing Students

Dr. Iman A Jaber[1]

[1]PhD/Nursing

Instructor, Baghdad College of Medical Sciences

Abstract: Background: Since the initial notification of a series of severe respiratory disease cases in China, the current coronavirus outbreak, known as COVID-19, has spread throughout the world, wreaking havoc on people's lives, families, communities, and societies. As a result, the World Health Organization (WHO) declared a pandemic.

Aims: Explore the level of COVID-19 vaccine hesitancy and determine the factors and obstacles that could influence vaccination choices.

Methods: cross-sectional design was conducted on (200) Undergraduates nursing students (males and females) in four classes who were studying at (Baghdad colleges of medical sciences Nursing department) started from November 16th 2021 up to the end of 19th May 2022 A questionnaire was constructed for the purpose of the study .A Data was collected using a questionnaire style, which included (4) parts: Socio-demographic characteristics ,student's knowledge related to barriers.

Results and conclusion: The study concluded that 48%) females and (52%) males, (48%) (58%) of them were between (18 – 22) years old, and (98%) they know what's the meaning of COVID-19. the (90%) of total nursing students who have moved to take the vaccine. Barrier about receive of the vaccine (96%) prefer to wait for more experiments and results about this vaccine.

Recommendation: The study recommended by increase Information by the media, social media on COVID-19 vaccines, particularly with reference to falsehoods and fear of side effects. There is a need to develop public health education programming and messaging to encourage vaccine uptake among college students

Keyword: Barriers, COVID-19, Vaccination, Undergraduates Nursing Students.

Corresponding Author: Dr. Iman A Jaber †, PhD/Nursing Instructor, Baghdad College of Medical Sciences
orcid.org/0000-0002-5579-5686

Introduction

The current coronavirus outbreak, known as COVID-19, has spread throughout the world since the first reports of a cluster of cases of acute respiratory illness in China. It has severely damaged people's lives and caused enormous suffering for families, communities, and societies worldwide, leading to the World Health Organization (WHO) to declare a pandemic. (Patel A, Jernigan DB ,2019).Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the causative virus for the coronavirus disease 2019 (COVID-19) ongoing pandemic (World Health Organization.2020 .Cucinotta D, Vanelli.2020).

The World Health Organization branded the initial CoV virus outbreak, which started in Wuhan, Hubei, China, at the end of 2019 as COVID-19 on February 11, 2020. (William,B, et al .,2020coronaviruses are a broad family of viruses that can cause illnesses ranging from the common cold to more serious conditions. They quickly spread to more than 200 nations and were deemed a global pandemic by the World Health Organization in March 2020. (World Health Organization, 2020).

The vaccines are effective interventions that can reduce the high burden of diseases globally. However, public vaccine hesitancy is a pressing problem for public health authorities(Tamam El-Elimat, Mahmoud M.etal,2021) vaccines are one of the most reliable and cost-effective public health interventions ever implemented that are saving millions of lives each year(Hajj H.2015)

Keeping the public informed and following the guidelines are crucial to handling a situation this size. Additionally, discussions about controlling, limiting, and preventing the spread of COVID-19 have taken place all around the world. Worldwide, about 2.9 million people have died from SARS-CoV-2 infections, which have affected over 135 million people. (World Health Organization.,2021)

The best way to prevent COVID-19 and help a nation get back to normalcy is with an effective vaccine. As evidenced by public health practices, a sufficient number of individuals must receive vaccinations in order to contain an outbreak such as COVID-19.thus Two vaccines received an emergency use authorization (EUA) from the United States in December 2020..(Food and Drug Administration 2020).

Significance of the Study

It is important to determine the vaccine willingness of individuals and the barriers to vaccination. We aimed to determine the acceptability of the COVID-19 vaccine and the effect of attitudes, perception and beliefs on vaccination willingness among medical students. (Mehmet. O, Burkay. Y et al.,2021). the researchers of the current study thought that the student in this college must know the important of take the vaccine due to the clinical training in the hospital to reduce the infected so us their family.

Campaigns to improve vaccination acceptance and reduce vaccine hesitancy among nursing students are needed. Accurate knowledge and perception about COVID-19 vaccines are the stronger predictors of vaccine hesitance or acceptance among Egyptian nursing students..(Fadia A , , Sameer A2022)

Objectives of the study: The study aims to explore and examine the extent of COVID-19 vaccination reluctance and identify the elements and obstacles that can influence a decision to receive a vaccination.

Methodology:

Descriptive (cross-sectional) design

Setting

Data were collected from the student were studying at (Baghdad colleges of medical sciences)

Sample

There was a non-probability (purposive) sample in the study. of (200) Undergraduates nursing students (males and females) were selected, who were studying at (Baghdad colleges of medical sciences) in four classes

Tools

Data collection was conducted using a questionnaire style with four key sections. The first section addresses three primary parts.: Demographic characteristics, The second part is the student's knowledge related to barriers of COVID-19 vaccination among undergraduate nursing students, it includes (4) questions. third part – is related to the section of students who have been vaccinated only without the other section, it includes (16) questions. The fourth part (4) – is related to the section of students who have been not vaccinated, without the other section, it includes (19) questions. The questions about the knowledge of student were graded as 1, 2, and on a Likert scale with two options: Yes and No.

Validity

Expert panel research is used to estimate content validity.

Using the test-retest method and Alpha Cronbach, the questionnaire's reliability was assessed. 10 students. The answers were found to be identical, and the questionnaire items had a correlation coefficient (r) of 0.79.

Statistical Analysis:

The application of inferential statistics (Alpha Cronbach, Reliability) and descriptive statistics (frequency, percentage, Mean of score (M.S.), and Relative Sufficiency (R.S.)) was used to analyze the data.. The knowledge scored as (No, and Yes), and scored as (1, 2) respectively.Mean of score (MS): The mean of score which was equal to(Low (1-1.25), Moderate (1.26 – 1.75), and High (1.76 –2] and by using SPSS version.

Ethical Consideration

Request was submitted through the Baghdad College for medical sciences\ Nursing Department for approval of the study to seek permission for data collection obtained

Results of the Study:

Part 1: Socio-demographic characteristics

Table (1): distribution of undergraduates nursing students by their socio-demographic characteristics data.

Socio-Demographic Characteristics	Total sample (n= 200)			
Gender	F		(%)	
Male	105		52%	
female	95		48%	
Baghdad college for medical sciences/Nursing Department				
Stage 1	37		18%	
Stage 2	102		51%	
Stage 3	39		20%	
Stage 4	22		11%	
Social status				
Single	176		88%	
married	22		11%	
divorced	1		0.5%	
Widower	1		0.5%	
Age (year)				
18-22	116		58.%	
23-26	62		31.%	
27- and above	22		11.%	
do you know what's the meaning of COVID-19	Yes		No	
	195	98%	5	2%
The source of information				

Social media		83	42%
Nursing staff		56	28%
Friends & family		17	8%
College and references		39	20%
The ones who don't know the meaning of COVID-19		5	2%

Table (1) showed that the most of students who joined the questionnaire were the second stage (51%) of the total. It included (48%) females and (52%) males which mean that the male students were the majority in the study. And (88% singles)

Part 2: Assessment of students' knowledge Related to Barriers of COVID-19 Vaccination

Table (2): students' knowledge Related to Barriers of COVID-19 Vaccination

Items	Frequency and percentage				N =200	
	Yes		No		M.S	Assess
Have you been infected?	99	49%	101	51%	1.50	M
Have any of your family members been infected?	127	63%	73	36%	1.64	M
Was there a death of a friend or a family as a result of the infection?	101	50%	99	49%	1.51	M
Have you taken the vaccine?	180	90%	20	10%	1.90	H

(Mean of score Low (1-1.49), Moderate (1.5 – 1.75), and High (1.76 –2]

This table show the students' knowledge Related to Barriers of COVID-19 Vaccination, Although there was (51%) students have not been infected in our college, but the students who have moved to take the vaccine was (90%) of total nursing students among our college.

Part 3: Vaccinated students.

Table (3) This part presents a group of questions include a particular cause that were possibly the main causes that made our college students take the action to receive the vaccine.

No	Standard items	The frequency & percentage of per answer N =200 taken the vaccine=180					
		Yes		No		M.S	Assess
1	Did you vaccinate voluntarily?	144	72%	36	18.0	1.80	H
2	How many doses have you taken?	146 2 doses	81%	34 1 dosage	18%	1.81	H
3	You take the vaccine due to college instruction	133	73%	47	26.5	1.74	M
4	required of my job	148	82%	32	17.0	1.82	H
5	I take the vaccine because I wanted to travel	54	30%	126	70%	1.30	L
6	I think vaccination can stop and prevent COVID19	138	76%	42	34%	1.77	H
7	I think the vaccine prevent the spread of the virus to my family and friends.	153	85%	27	15%	1.85	H
8	due to previous infected	71	39.0	109	61%	1.39	L
9	I think the vaccine is safe and effective.	150	75%	30	25%	1.83	H
10	The vaccine increases my immunity.	150	75%	30	25%	1.83	H
11	I trust the information published about the vaccine effectiveness	141	78%	39	22.5%	1.78	H
12	I am at a risk of acquiring COVID-19	106	58%	74	32%	1.59	M
13	I live with persons who greater risk having corona.	120	66%	60	34%	1.67	M
14	Regarding the COVID-19 vaccine's	119	66%	61	34%	1.66	M

	potential negative effects, I am not concerned.				
15	I want to get back to my regular life as quickly as I can.	147	81%	33	19%	1.82	H
16	I encouraged my family and friends to get vaccinated.	148	72%	32	18%	1.82	H

(Mean of score Low (1-1.49), Moderate (1.5 – 1.75), and High (1.76 –2]

Table (3) demonstrate the most major cause to get the vaccine was to go back to our normal life before the pandemic occurred; it made (81%) which was a higher percentage than the percentage of the ability of being infected, which made (66%). And most of them assess high and moderate of mean of score

Part 3: Not Vaccinated Students.

Table (4) barrier between the students and the receiver of the vaccine; it has been presented to the samples

Standard items	The percentage of per answer N =200 Didn't taken the vaccine=20					
	Yes		No		M.S	Assess
I'm against vaccines generally.	10	50%	10	50%	1.50	M
I'm at high-risk group	12	60%	8	40%	1.60	M
I have seasonal flu.	12	60%	8	40%	1.60	M
You belief that the vaccine is myth.	7	35%	13	65%	1.35	L
I think vaccines are dangerous.	7	35%	13	65%	1.35	L
I think the vaccine won't work and ineffective.	11	55%	9	45%	1.55	M
I'm worried about the vaccine's adverse effects and don't think it's safe.	13	65%	7	35%	1.65	M
With diligence, COVID-19 can be prevented without vaccination.	16	80%	4	20%	1.80	H
I have no chance of contracting COVID-19.	9	45%	11	55%	1.45	L
I trust my immune	12	60%	8	40%	1.60	M
I'm afraid of injections.	6	30%	14	70%	1.30	L
Religious causes.	3	15%	17	85%	1.15	L
I've read and heard unfavorable things regarding the vaccine.	18	90%	2	10%	1.90	H
I prefer to wait for more experiments and results about this vaccine.	19	95%	1	5%	1.95	H
I'm worried about its side effects, like hospitalization.	16	80%	4	20%	1.80	H
Fear of genetic effects at the long term.	19	95%	1	5%	1.95	H
fear of infertility	16	80%	4	20%	1.80	H

Have you postponed taking the vaccine?	18	90%	2	10%	1.90	H
Are you ready to take the vaccine?	7	35%	13	65%	1.35	L

(Mean of score Low (1-1.49), Moderate (1.5 – 1.75), and High (1.76 –2]

Table (4) demonstrate the main cause is -as expected before- most of students with a percentage of (96%) prefer to wait for more experiments and results about this vaccine, to be sure for exact that it wouldn't affect them on the long-term. and that's why there was a huge slide of students have postponed taking the vaccine in a percentage of (92%).

Discussion:

Discussion of Distribution of Socio-Demographic Characteristics of study sample

Results out of this table reveal that that (52%) sample were female, (58.0%) of them were between (18 – 22) years old, half of them from Stage 2. This result agree with study done in Brazil found 250 students, of which58.5%(n=147) were females, aged between 18 and 25 years(Ítalo E, Paulo R etal,2021)..   In our college the second stage have made the vast majority in the study, while it made (24.2%) in study done by Mehmet. O, Burkay. Y et al.2021) and majority was (26.4%) which was the first stage's ratio.

(98%) of them know what's the meaning of COVID-19 affliction, while (42%) of them heard about Covid-19 from Social media. Also this result is supported by study done by(Hayder. H, Veena. R.2021) Of the students who answered the questionnaire (19.4% of males and 80.6% of females), more than half (58%) were between the ages of 20 and 25.

Part 2: Assessment of students' knowledge Related to Barriers of COVID-19 Vaccination.

The result of this section indicated there was (51%) students who have not been infected in our college, and most of with moderate in mean of score but the students who have moved to take the vaccine was (90%) of total nursing students among our college. This result is disagreed with study done by(Hassan Hadi. K,(2021) ˙ Which discovered that (16.4%) reported believing that it would enable them to return to a normal life as a reason for wanting to be vaccinated, not because they fear to be infected or fear of spreading the virus.

According to a research among Egyptian medical students, the most frequently mentioned justifications for accepting the Covid-19 vaccination were defense against the virus and the protection of others., By (Heba M , Abd Eetal 2022) although the detected (49%) of our students who have been infected, there was (10%) of students who believed that they have acquired immunity against Covid-19.

Part 3: A. Vaccinated students.

Results out of this table indicated that who actually vaccinated, were (10) item with high significant from (16) item in this table and their answers approved that the most major cause to get the vaccine was to go back to our normal life before the pandemic occurred; it made (81%) which was a higher percentage than the percentage of the ability of being infected, which made (66%). And most of them assess high and moderate of mean of score.

The result disagrees with study done by (Mahmoud M Basima A. Almomani et al;2021) indicated the (76%) were worried about suffering from infection. And Close to 90% stated that Their daily lives had been disrupted by the illness.. And so us this result supports our study because; based on the researcher's point of The majority of pupils (91.4%) said that implementing isolation protocols may stop COVID-19.and (61.6%) considered that the available information is sufficient. This also supports our study, because we indicated (78%) who trust the information published about the vaccine effectiveness.

Part 4: B. Not Vaccinated Students.

indicated most of them assess high and moderate of mean of score and it shows that the main cause is -as expected before- most of students with a percentage of (95%) prefer to wait for more experiments and results about this vaccine, to be sure for exact that it wouldn't affect them on the long-term. and that's why there was a huge slide of

students have postponed taking the vaccine in a percentage of (90%). So there was a (80%) of people were afraid of getting vaccinated because of the possibility of infertility, as well as (95%) of our samples were afraid of the genetics effects at the long term. This result was supported by the report from (Kanyike, O, Jonathan .K; et al. 2021) medical students in Uganda) which indicated that the same reason made a (53.5%) of students. This explains to us that social media's posts and false rumors in their society made the same ratio due to their medical conditions, like having the seasonal flu. As everyone knows COVID-19's vaccine is very new, and there was no much experiments that showed a side effect, and because every vaccine has been published before there always was a side effects, so for Corona virus vaccine, we had (30%) of students who have been worry about the potential side effects, but a (69%) showed no fear or even care if there was a side effects in the first place.

Conclusion:

The study concluded that 48%) females and (52%) males, (48%) undergraduate nursing students of (Baghdad college for medical sciences\ Nursing department).)58%) of them were between (18 – 22) years old, and (98%) they know what's the meaning of COVID-19. source of information the social media with (42%) .Concerning students' knowledge Related to Barriers of COVID-19 Vaccination the result shows the (90%) of total nursing students who have moved to take the vaccine . Concerning the students, who were actually vaccinated, and their answers approved that the most major cause to get the vaccine was to go back to our normal life before the pandemic and most of them knowledge assess high and moderate of mean of score Concerning the student's barrier about   receive of the vaccine (96%) prefer to wait for more experiments and results about this vaccine, to be sure for exact that it wouldn't affect them on the long-term.

Recommendations:

Based on the early stated conclusion, the present study recommends that:

1-The study recommended by increase Information by the media, social media regarding COVID-19 vaccinations, particularly with regard to misconceptions and side effect fears.

 2-Develop public health education programming and messaging to encourage vaccine uptake among college students with varying levels of vaccine hesitancy promotes behavioral confidence among college students to receive the COVID-19 vaccine

Conflict of Interest

The authors declare that they have no conflict of interests.

Reference:

1. Abdelkader FA, Alkubati SA, Alsabri M, McClean C, Albagawi B, Alsaqri SH, Al-Areefi M, Abo Seada AI. COVID-19 vaccination knowledge, perception, and reason for adherence and nonadherence among Nursing students in Egypt. SAGE open nursing. 2022 Nov;8:23779608221141234.

2. Fortner A, Schumacher D. First COVID-19 vaccines receiving the US FDA and EMA emergency use authorization. Discoveries. 2021 Jan;9(1).

3. Hajj Hussein I, Chams N, Chams S, El Sayegh S, Badran R, Raad M, Gerges-Geagea A, Leone A, Jurjus A. Vaccines through centuries: major cornerstones of global health. Frontiers in public health. 2015 Nov 26;3:269.

4. Al Kazzaz HH. COVID19 vaccination choice among Iraqi students at Al-Zahraa University for women. F1000Research. 2021;10.

5. Hasan H, Raigangar V, Osaili T, Neinavaei NE, Olaimat AN, Aolymat I. A cross-sectional study on university students' knowledge, attitudes, and practices toward COVID-19 in the United Arab Emirates. The American journal of tropical medicine and hygiene. 2021 Jan;104(1):75.

6. Abd Elgalil HM, Elsheikh AA, Ahmed DS, Ahmed AM, Mohamed SS. COVID-19 vaccination perception and acceptance among female medical and nursing students at Al-Azhar University, Egypt. Infection and Drug Resistance. 2023 Dec 31:1069-79.

7. Chaves ÍE, Brito PR, Rodrigues JG, Costa MS, Cândido EL, Moreira MR. Hesitation regarding the COVID-19 vaccine among medical students in Brazil. Revista da Associação Médica Brasileira. 2021 Nov 26;67:1397-402.

8. Kanyike AM, Olum R, Kajjimu J, Ojilong D, Akech GM, Nassozi DR, Agira D, Wamala NK, Asiimwe A, Matovu D, Nakimuli AB. Acceptance of the coronavirus disease-2019 vaccine among medical students in Uganda. Tropical medicine and health. 2021 May 13;49(1):37.

9. El-Elimat T, AbuAlSamen MM, Almomani BA, Al-Sawalha NA, Alali FQ. Acceptance and attitudes toward COVID-19 vaccines: A cross-sectional study from Jordan. Plos one. 2021 Apr 23;16(4):e0250555.

10. Kaya MO, Yakar B, Pamukçu E, Önalan E, Akkoç RF, Pirinçci E, Gürsu MF. Acceptability of a COVID-19 vaccine and role of knowledge, attitudes and beliefs on vaccination willingness among medical students. The European Research Journal. 2021;7(4):417-24.

11. Patel A, Team Jernigan DB. Initial public health response and interim clinical guidance for the 2019 novel coronavirus outbreak-United States, December 31, 2019-February 4, 2020.

12. El-Elimat T, AbuAlSamen MM, Almomani BA, Al-Sawalha NA, Alali FQ. Acceptance and attitudes toward COVID-19 vaccines: A cross-sectional study from Jordan. Plos one. 2021 Apr 23;16(4):e0250555.

13. Grant WB, Lahore H, McDonnell SL, Baggerly CA, French CB, Aliano JL, Bhattoa HP. Evidence that vitamin D supplementation could reduce risk of influenza and COVID-19 infections and deaths. Nutrients. 2020 Apr;12(4):988.

14. Siddiqui S, Alhamdi HW, Alghamdi HA. Recent chronology of COVID-19 pandemic. Frontiers in public health. 2022 May 4;10:778037.

15. Comito C, Pizzuti C. Artificial intelligence for forecasting and diagnosing COVID-19 pandemic: A focused review. Artificial intelligence in medicine. 2022 Jun 1;128:102286.