Knowledge and Attitude of Paramedical Staff Towards COVID-19 Vaccine in Babylon City

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Abstract

Background: Several vaccines against coronavirus disease (COVID-19) have been licensed and are being distributed globally in various regions. The general population's knowledge, and attitudes of COVID-19 vaccinations, on the other hand, are poorly understood. **Subjects and Methods:** This study is a descriptive; cross sectional study conducted at 4 hospitals and primary health care sectors in Babylon City. The Data were collected by direct interview with the paramedical staff by the researcher, by using a self-reporting questionnaire form. **Results:** The current study showed that the highest proportion of paramedical staff, 28% in Imam Al-Sadiq Hospital. The mean ± SD of their ages was 36.3±15.7 years, the age range at the time of study was between (19-59) years. The study found that 50.25% of participants were single and for Job title, distribution of Medical assistant constitutes were 40% of participants. **Conclusions:** We conclude that most paramedical staff had good scores for knowledge and attitude towards Covid-19 vaccine, despite found poor scores for some participants.

Key words: *Knowledge, Attitude, Paramedical Staff, Covid 19 Vaccine*

Introduction

Coronavirus disease (COVID19) is a lethal disease that continues to afflict many countries around the world. This is caused by the new coronavirus strain SARS-CoV-2 which has become a major public health issue around the world [1].

Vaccines are an essential method for preventing the spread of the COVID19 pandemic. More than 100 COVID-19 vaccine candidates were being produced as of April 8, 2020.[2]. This vaccine development is going fast; two vaccine candidates had entered Phase 1 clinical trials prior to March 30, 2020 [3], and five vaccine candidates were in Phase 1 clinical trials as of April 9, 2020.[4]. Given the large population and the relatively high vaccine hesitancy for current vaccinations as well as low vaccination coverage, understanding vaccine acceptance is crucial [5 6].

Since SARSCoV2 is a highly contagious virus that affects populations all across the world, vaccinations are the most important public health measure and the most effective method for protecting the population from COVID19. The competition to develop COVID19 vaccines to prevent the disease's spread and devastating consequences is still on[7 8], and new, more effective vaccines are likely to emerge. With vaccine distribution ongoing, it's vital to determine community acceptance of COVID-19 vaccinations [9].

The willingness to be vaccinated against infectious diseases is recognized as a major factor influencing vaccination program success. Vaccine apprehension is a complicated public health issue in China. Vaccine scandals and warnings of serious side effects of vaccination have raised vaccination hesitancy and mistrust in the country's immunization program over the last decade [10].

Aim of Study

To identify knowledge and attitude of paramedical staff towards Covid-19 vaccine in Babylon City.

Subjects and Methods:

Study design and **Time of Study**: This study is a descriptive; cross sectional study conducted at 4

hospitals and primary health care sectors in Babylon City. Data were collected during the period starting (The third of January 2021- The first of March 2021).

Sampling Technique: Total number of participants in this study was 400 paramedical staff randomly selected from two hospitals "Imam Al-Sadiq Hospital, and Hilla Teaching Hospital". And two primary health care sectors as "First Al-Hilla sector, and Second Al-Hilla sector, Were chosen from Babylon City by simple random sampling technique (Table 1).

Table 1: The total number of paramedical staff randomly selected from Health Organizations in Babylon City.

Health Organization	The total number of paramedical staff randomly selected in this study	
	No	%
Imam Al-Sadiq Hospital	112	28%
Hilla Teaching Hospital	97	24.25%
First Al-Hilla sector	91	22.75%
Second Al-Hilla sector	100	25%
Total	400	100%

Data Collection:

The Data were collected by direct interview with the paramedical staff by the researcher, by using a self-reporting questionnaire form.

Statistical Data Analysis

Analysis of data was carried out using the available statistical package of SPSS-25 (Statistical Packages for Social Sciences- version 25). Data were presented in simple measures of frequency, percentage, mean, standard deviation, and range (minimum-maximum values).The significance of difference for different percentages (qualitative data) were tested using Pearson Chi-square test (c2-test).Statistical significance was considered whenever the P value was equal or less than 0.05.

Results

Distribution of Demographic data of the health workers

Table 2: Showed the demographic characteristics of paramedical staff. The highest proportion of paramedical staff, 28% in Imam Al-Sadiq Hospital and for gender, distribution of female constitutes were 51%. While 41.25% of the studied sample were (19-29) years of age. As for Marital status, the study found that 50.25% of participants were single and for Job title, distribution of Medical assistant constitutes were 40% of participants. A high percentage (94.5%) of the studied sample was residence in urban regions**.**

Table 2: Demographic characteristics of the sample with number (percentage) of paramedical staff

Socio-demographic characteristics		No	%
Health organization	Imam Al-Sadiq Hospital	112	28%
	Hilla Teaching Hospital	97	24.25%
	First Al-Hilla sector	91	22.75%
	Second Al-Hilla sector	100	25%

Cont... **Table 2: Demographic characteristics of the sample with number (percentage) of paramedical staff**

Demographic data:			
Gender	**Male**	**196**	**49%**
	Female	204	51%
Age group	19-29	165	41.25%
	30-49	151	37.75%
	50-59	84	21%
	Mean ±SD (Range)	**36.3±15.7 (19-59)**	
Marital status	Single	201	50.25%
	Married	190	47.5%
	Other	9	2.25%
Job title	Medical technologist	102	25.5%
	Medical assistant	160	40%
	nurse	138	34.5%
Residence	Urban	378	94.5%
	Rural	22	5.5%

Table 3 demonstrated that 58.5% of the studied sample responded "yes" regarding have sufficient knowledge about the Covid-19 vaccine. And the answers 50.75% of paramedical staff were correct about Covid-19 vaccine is an effective way to protect individuals from serious Covid-19 disease. The incorrect answer about the COVID-19 vaccines contain human or animal products were 47% of participants. A high percentage (93.75%) of the studied sample was the correct answer "no" about the influenza vaccine can prevent COVID-19. And the answers 77.5% of paramedical staff were correct "don't know" about COVID-19 can vaccines affect fertility. The current study found that 89.25% of the studied sample were correct to answer "don't know" about the Covid-19 vaccine has long-term safety concerns. While The highest proportion of paramedical staff, 44.75% were a source of COVID-19 vaccine information from the internet and social media.

Table 3: Knowledge of Paramedical staff toward Covid-19 vaccine

Questions	**Yes**		**No**		**Don't know**	
	No	**%**	**No**	**%**	**No**	**%**
Do you have Sufficient knowledge about Covid-19 vaccine?	234	58.5%	166	41.5%	-	-
Do you know about the effectiveness of COVID-19 vaccine?	192	48%	9	2.25%	199	49.75%

Cont.. **Table 3: Knowledge of Paramedical staff toward Covid-19 vaccine**

Covid-19 Vaccine is an effective way to protect individuals from serious Covid-19 disease	203	50.75%	181	45.25%	16	4%
Do you think that Covid-19 Vaccine can change DNA?	94	23.5%	200	50%	106	26.5%
Do the COVID-19 vaccines contain human or animal products?	188	47%	-	-	212	53%
Do you think that the influenza vaccine can prevent COVID-19?	-	-	375	93.75%	25	6.25%
A COVID-19 vaccine can cause serious complications	55	13.75%	12	3%	333	83.25%
Can COVID-19 vaccines affect fertility?	67	16.75%	23	5.75%	310	77.5%
Does vaccination increase autoimmune diseases?	193	48.25%	43	10.75%	164	41%
Covid-19 Vaccine work effectively to protect individuals & societies.	203	50.75%	181	45.35%	16	4%
Is it safe to take more than one type of covid-19 vaccine?	26	6.5%	297	74.25%	77	19.25%
Is it allowed to take the vaccine during infection with Covid-19 disease?	42	10.5%	316	79%	42	10.5%
Do you think that taking the Covid-19 vaccine allows leaving the mask?	51	12.75%	277	69.25%	72	18%
Do you think that the Covid-19 vaccine has long-term safety concerns?	43	10.75%	-	-	357	89.25%
What are your source(s) of COVID-19 vaccine information?					No	%
	Internet and social media				179	44.75%
	Mass media				32	8%
	Friends and families				17	4.25%
	Others				172	43%

Table 4: The current study showed that 50.75% of respondents were responded "yes" about take the COVID-19 vaccine without any hesitation if it is available in Iraq. While 50.75% of the studied sample had no preference to acquire immunity against infectious diseases naturally (by having the disease), 55.25% of respondents had trust the ministry of health to ensure that vaccines are safe. Well as 77.25% of paramedical staff had trust science to develop safe effective new vaccines. Half of the studied sample (50%) respond "yes" regarding the COVID-19 vaccine is essential for everyone, and 50.5% of participants respond "yes" about encouraging family/friends/relatives to be vaccinated against COVID-19. While 49.5% of paramedical staff responded "yes" regarding fear of adverse reactions for Covid-19 vaccine, also 63.5% of participants were responded "yes" for the COVID-19 vaccine should be distributed fairly to everyone. A high percentage (56.25%) of the studied sample were respond "don't know" regarding the safety of a vaccine developed in an emergency, during an epidemic, can be considered guaranteed**.**

Table 4:Attitude of Paramedical staff toward Covid-19 vaccine

Questions	Yes		No		Don't know	
	No	%	No	%	No	%
Do you take the COVID-19 vaccine without any hesitation if it is available in Iraq	203	50.75%	181	45.25%	16	4%
do you prefer to acquire immunity against infectious diseases naturally (by having the disease)	181	45.25%	203	50.75%	16	4%
Do you trust the ministry of health to ensure that vaccines are safe	221	55.25%	179	44.75%	-	-
Do you trust science to develop safe effective new vaccines	325	81.25%	75	18.75%	-	-
The COVID-19 vaccine is essential for everyone	200	50%	78	19.5%	122	30.5%
Encouraging family/friends/relatives to be vaccinated against COVID-19.	202	50.5%	180	45%	18	4.5%
Do you think it is not possible to reduce the incidence of COVID-19 without vaccination?	203	50.75%	181	45.25%	16	4%
Fear of adverse reactions for Covid-19 vaccine	198	49.5%	171	42.75%	31	7.75%
The COVID-19 vaccine should be distributed fairly to everyone	254	63.5%	146	36.5%	-	-
Are the government institutions able to provide a sufficient amount of COVID-19 vaccine?	73	18.25%	156	39%	171	42.75%
Do you the safety of a vaccine developed in an emergency, during an epidemic, can be considered guaranteed	65	16.25%	110	27.5%	225	56.25%

Table 5: Showed that there were no significant relationships between the overall knowledge of paramedical staff and socio-demographic characteristics (gender, marital status, and residence) (p-value >0.05). while significant association for variables as a health organization, age group, and job title (p=0.003, p=0.024, and p=0.037, respectively) as explained in table

Table 5 : Association between Demographic Characteristics of Studied Samples and Knowledge Score about Covid-19 Vaccine.

variable		Knowledge score						P value
		Poor(>20)		Fair (20-24)		Good (≥25)		
		No	%	No	%	No	%	
Health organization	Imam Al-Sadiq Hospital	12	10.71%	33	29.46%	67	59.82%	0.003*
	Hilla Teaching Hospital	8	8.25%	29	29.89%	60	61.85%	
	First Al-Hilla sector	15	16.48%	42	46.15%	34	37.36%	
	second Al-Hilla sector	11	11%	23	23%	66	66%	
Gender	Male	17	8.67%	21	10.71%	158	80.61%	0.246
	Female	27	13.24%	26	12.75%	151	74%	
Age group	19-29	14	8.48%	41	24.85%	110	66.67%	0.024*
	30-49	6	3.97%	22	14.56%	123	81.45%	
	50-59	8	9.52%	12	14.28	64	76.19%	
Marital status	single	32	15.92%	44	21.89%	125	62.18%	0.278
	Married	21	11.05%	32	16.84%	137	72.1%	
	other	2	22.22%	2	22.22%	5	55.56%	
Job title	Medical technologist	6	5.88%	22	21.56%	74	72.55%	0.037*
	Medical assistant	26	16.25%	22	13.75%	112	70%	
	nurse	22	15.94%	30	21.74%	86	62.32%	
Residence	Urban	79	20.9%	101	26.72%	198	52.38%	0.971
	Rural	5	22.73%	6	27.27%	11	50	

*Significant difference between proportions using Pearson Chi-square test at 0.05 levels.
* Total number of paramedical staff involved in the study was 400

Table 6: No significant association for all items or variable except having health organization, and job title the association found to be statistically significant (P-value <0.05)

Table 6:The association between Demographic Characteristics of Studied Samples and Attitude Score about Covid-19 Vaccine.

variable		Attitude score						P value
		Poor(>20)		Fair (20-24)		Good (≥25)		
		No	%	No	%	No	%	
Health organization	Imam Al-Sadiq Hospital	9	8%	43	38.39%	60	53.57%	0.008*
	Hilla Teaching Hospital	9	9.27%	39	40.2%	49	50.5	
	First Al-Hilla sector	11	12%	45	49.45%	35	38.47%	
	second Al-Hilla sector	11	11%	23	23%	66	66%	
Gender	Male	13	6.63%	29	14.8%	154	78.57%	0.499
	Female	19	9.31%	34	16.66%	151	74%	
Age group	19-29	14	8.48%	39	23.63%	112	67.87%	0.162
	30-49	5	3.31%	28	18.54%	118	78.15%	
	50-59	8	9.52	17	20.24%	59	70.24%	
Marital status	single	16	7.96%	58	28.85%	127	63.18%	0.073
	Married	14	7.36%	32	16.84%	144	75.78%	
	other	1	11.11%	2	22.22%	6	66.67%	
Job title	Medical technologist	17	16.66%	12	11.76%	73	71.56%	0.027*
	Medical assistant	31	19.37%	31	19.37%	98	61.25%	
	nurse	20	14.49	39	28.26%	79	57.25%	
Residence	Urban	68	17.99%	100	26.46%	210	55.56%	0.799
	Rural	3	13.64%	7	31.82%	12	54.55%	

*Significant difference between proportions using Pearson Chi-square test at 0.05 levels.
* Total number of paramedical staff involved in the study was 400

Discussion

The current study showed that 48% of paramedical staff responded "yes" to know about the effectiveness of the COVID-19 vaccine. This result agreed with the published study findings conducted in Bangladesh [11], which found that 54.3% of participants responded "yes" regarding knowledge about the effectiveness of the COVID-19 vaccine.

The results of this study indicated that 45.25% of paramedical staff responded "No" regarding Covid-19 vaccine is an effective way to protect individuals from serious Covid-19 disease. This result disagrees with the finding of another study done in China [12], which found that 89.5% of participants responded "yes" regarding COVID-19 vaccination as an effective way to prevent and control COVID-19.

The results of this study indicated that 93.75% of paramedical staff does not think that the influenza vaccine can prevent COVID-19. This finding disagreed with the previous study results done in Bangladesh [13], which found that only 35.20% of participants does not think that the influenza vaccine can prevent COVID-19.

In this study, 41% of paramedical staff responded "don't know" about vaccination increase autoimmune diseases. This result agreed with the published study findings conducted in Bangladesh [11], which found that 58.8 % of participants responded "don't know" regarding vaccination increase autoimmune diseases.

In this study, the highest proportion of source of COVID-19 vaccine information is 44.75% of participants for internet and social media. This result is in agreement with the finding another study done in Romania [14], which found that 45% of participants indicate to internet sources.

About 45.25% of the studied sample had a preference to acquire immunity against infectious diseases naturally (by having the disease). This result agrees with the published study findings conducted in Bangladesh [13], which found that 34.60% of participants strongly agreed to preference for natural immunity.

The current study showed that 39% of paramedical staff said the government institutions unable to provide a sufficient amount of COVID-19 vaccine. The finding is in agreement with the previous study results done in Bangladesh [13], which found that 37.80% of participants strongly disagree for provide a COVID-19 vaccine for all citizens for free.

In this study, 44.75% of respondents had no trust in the ministry of health to ensure that vaccines are safe. This result disagreed with another study's findings conducted in Canada [15], which found that 87.04% of participants had trust the ministry of health to ensure that vaccines are safe.

The current study showed that 81.25% of the studied sample had trust science to develop safe effective new vaccines. This result is in agreement with another study's findings conducted in Belgium [15], which found that 87.04% of participants had trust science to develop safe effective new vaccines.

In this study, 50.75% of paramedical staff responded "yes" about think it is not possible to reduce the incidence of COVID-19 without vaccination. This result agreed with the published study findings conducted in Bangladesh [11], which found that 63.4 % of participants responded "yes" regarding thinking it is not possible to reduce the incidence of COVID-19 without vaccination

The results of this study indicated that only 16.25% of paramedical staff responded "yes" regarding the safety of a vaccine developed in an emergency, during an epidemic, which cannot be considered guaranteed. This result disagreed with the study findings done in France [15], which found that 45.15% of participants responded "yes" to the safety of a vaccine developed in an emergency, during an epidemic, which cannot be considered guaranteed.

Conclusions

1- We conclude that most paramedical staff had good scores for knowledge and attitude towards Covid-19 vaccine, despite found poor scores for some participants.

2- The study found that most paramedical staff in First Al-Hilla sector had the poorest and fair knowledge score comparison other health organizations that have good scores for most items.

Ethical Clearance: None

Source of funding: None

Conflict of Interest: None

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