

## The Most Important Influences That Reduce the Demand of Students of The Technical Institute of Babylon From Immunization Against The Corona Virus

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**Abstract:** The world witnessed a great disaster, after the World Health Organization announced on March 11, 2020 an outbreak of the Corona epidemic in the world, as a result of which life was disrupted in general, and all mankind was confined to their homes for fear of contracting this global epidemic, at that time there was no medicine or A vaccine can limit the spread or infection of this disease. In order to get rid of this epidemic, international pharmaceutical companies have adopted the discovery of an effective vaccine free of side effects, which is the key to survival, so that life can be restored to humanity again. After the availability of vaccines of all kinds, and it became possible for anyone to obtain them for free, a new problem arose, which is that many members of society did not accept the idea of vaccination for reasons that were raised and promoted among the different segments of society, until the vaccination centers in the Iraqi Ministry of Health became empty of visitors. This is what the current study dealt with by conducting an electronic questionnaire through the Google Form program for a segment of the students of the Technical Institute of Babylon affiliated with Al-Furat Al-Awsat Technical University for the year 2021, as the results showed that 65.7% of the students of the Technical Institute of Babylon refused to take the vaccine, while the remaining percentage was 34.3 % took the vaccine. The results were explained by the fact that social networks and the beliefs that were spread at the time caused students to refuse immunization.

**Keywords:** Students, Technical Institute of Babylon, Corona Virus

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# Introduction

Throughout the ages, the world witnessed the spread of residual infectious diseases, which caused the destruction of many societies. Where humanity witnessed the spread of epidemics such as smallpox, tuberculosis, diphtheria and polio, at that time people suffered from the scourge of disease, especially since vaccines were not yet discovered. Treatments for various diseases<sup>1</sup>, today and in the new millennium, a microscopic organism known as the Corona virus invaded the world<sup>2</sup>.

As a result of the genetic evolution of the Corona virus inside the bodies of animals over the years<sup>3,4</sup>, this led to the emergence of new strains, which therefore led to the possibility of fighting it until now, and the reason for this was the occurrence of very large economic losses and deaths<sup>5</sup>. Corona-viruses (COVID-19) constitute the sub-family (*Orthocoronavirinae*), in the family (*Coronaviridae*), order (*Nidovirales*) and realm (*Riboviria*)<sup>6,7</sup>. COVID-19 are enveloped microorganism with a positive sense and contain one -stranded RNA genome and a nucleo-capsid of helical symmetry<sup>8,9</sup>. The genome size of coronaviruses ranges from approximately 26 to 32 kilobases, one of the largest among RNA viruses<sup>10</sup>. They have characteristic club-shaped spikes that project from their surface, which in electron micrographs create an image reminiscent of the solar corona, from which their name derives<sup>11</sup>. COVID-19 is a deadly viral disease that continues to infect many countries around the world. Severe Acute Respiratory Syndrome Virus 2 (SARS-CoV-2) is a new strain of coronavirus that has spread worldwide and has become a major public health concern<sup>12</sup>. Work is still ongoing to develop a COVID-19 vaccine to prevent the spread of the disease and the dangerous effects it causes, and as time progresses, it is hoped that new, more effective vaccines will be developed. Due to the urgent need for universal vaccination against COVID-19, reluctance to take the vaccine has become a serious public health problem, and research on the pathogenesis of the virus among different populations has become very necessary to understand its causes and spread among people<sup>13</sup>. The aim of the current research is to study the most important beliefs and social factors affecting the acceptance of vaccination against the Corona virus for students of the Technical Institute of Babylon.

## Materials and Methods

### Study design

This is a web-based cross-sectional study conducted using an online survey distributed to the students of Babylon Technical Institute, Al-Furat Al-Awsat Technical University (ATU), Iraq. Between September 1 and September 30, 2021. The online survey was designed using Google Forms and sent via private sites with the students of the Institute.

### The questionnaire

The questionnaires depended on a set of questions that were documented by the researchers and that are appropriate to the nature and purpose of the study and included (gender, age, location of the student's residence, have you been vaccinated against the Corona virus, if you are one of the people who have not been vaccinated, what is your reason for abstaining from About vaccination?).

### Statistical analysis

A statistical analysis of the data that was adopted in this study was conducted, and the results were analyzed using the SPSS program (Statistical Package from the Social Sciences, Inc, Chicago, IL, USA), version 13. A descriptive analysis of results was performed to obtain summary tables of participants and study variables. Cross tabulation analysis was also performed to examine the distribution of COVID-19 uptake intent using chi-square tests. The values were considered statistically significant if the *p* value was less than 0.05.

## Result and Discussion

### Study participants

Questionnaires of 1331 students were obtained, for the link that was launched to them via the Google Form, through special websites with the students of the Babylon Technical Institute (first + second grade) and for different ages , genders and location of the student's residence.

The results of the study showed that the number and percentage of females participating in the questionnaire is more than males. At the same time, the age group between 18-22 years was more in number and percentage compared to other age groups, while the questionnaire showed that the student housing site in the Rural had the most number and the percentage of urban dwellers to answer the questionnaire, as shown in Table No. (1).

**Table 1. Sociodemographic characteristics of participants (n=1331).**

Characteristic	Category	Frequency	%
Gender	Male	616	46.3%
	Female	715	53.7%
Age (year)	18-22	955	71.8%
	23-26	245	18.4%
	27-30	131	9.8%
location of the student's residence	Urban	563	42.3%
	Rural	768	57.7%

#### Attitude of participants towards vaccination

The results of the questionnaire showed that 30.4% of the students of the institute had taken the vaccine, and that 69.6% had refused to take the vaccine. While the age, gender, and location of the student's residence showed a variance in the extent of acceptance of vaccination from abstention, as in Table No. 2.

**Table 2. Response of Babylon Technical Institute students to the COVID-19 vaccine by age, gender, and student residence location.**

Characteristic	Category	Vaccinated	Frequency	%	p-value
Gender	Male	Yes	196	48.4%	0.306*
		No	420	45.4%	
	Female	Yes	209	51.6%	
		No	506	54.6%	
Age (year)	18-22	Yes	295	72.8%	0.726*
		No	660	71.3%	
	23-26	Yes	74	18.3%	
		No	171	18.5%	
	27-30	Yes	36	8.9%	
		No	95	10.3%	
location of the student's residence	Urban	Yes	179	44.2%	0.353*
		No	384	41.5%	
	Rural	Yes	226	55.8%	
		No	542	58.5%	

n=1331

\*Not statistically significant at the p-value 0.05.

**Table 3. The number and percentages of vaccinated Babylon Technical Institute students and those who refuse to take the Covid-19 vaccine.**

Type of vaccine	Gender				Age						Location			
	Male	%	Female	%	18-22	%	23-26	%	27-30	%	Rural	%	Urban	%
Pfizer	165	26.8%	152	21.3%	218	22.8%	66	26.9%	33	25.2%	166	29.5%	151	19.7%
AstraZeneca	14	2.3%	12	1.7%	11	12%	9	3.7%	6	4.6%	15	2.7%	11	1.4%
Sinopharm	32	5.2%	33	4.6%	43	4.5%	16	6.5%	6	4.6%	20	3.6%	45	5.9%
Do not vaccinated	405	65.7%	518	72.4%	683	71.5%	154	62.9%	86	65.6%	362	64.3%	561	73%
Total	616	100%	715	100%	955	100%	245	100%	131	100%	563	100%	768	100%
	n=1331				n=1331						n=1331			

**Table 4. If you are one of the people who have not been vaccinated: What is the reason for your refusal to vaccinate?**

Reasons for refusing to take the Corona vaccine	Frequency	Percent
Vaccine causes death.	44	3.3%
Fear of secondary complications caused by the vaccine.	195	14.7%
Recently recovered from the disease.	94	7.1%
I think the vaccine needs time to prove its success?	173	13.0%
The vaccine is ineffective in my opinion.	54	4.1%
The vaccine causes infertility.	43	3.2%
I am pregnant or breastfeeding.	61	4.6%
What is published in the media about the disadvantages of the vaccine.	40	3.0%
I have a disease and I can't get the vaccine	56	4.2%
Vaccine uselessness	24	1.8%
Currently infected with Corona virus	17	1.3%
The virus is an illusion and does not exist	4	0.3%
Not convinced that there is a vaccine for the Corona virus	526	39.5%
Total	1331	100%

Corona Virus 19 (COVID-19) originated and spread in Wuhan City of the People's Republic of China in December 2019<sup>14</sup>, Where the first infections appeared in hospitals in Wuhan, for patients with respiratory signs characterized by atypical pneumonia, and the cause was unknown at the time <sup>15</sup> , and quickly spread to all parts of the world and became a global health crisis<sup>16</sup>. The pathogen has been diagnosed as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) <sup>17</sup> and It is believed that the origin of this virus is from animals, which took decades to evolve, and thus succeeded in transmitting to humans <sup>18,19</sup>. On March 11th of 2020, the World Health Organization (WHO) stated that the outbreak of the viral disease COVID-19 - first identified in December 2019 in Wuhan, China - has reached the level of a global pandemic. At that time, the World Health Organization called on governments in various countries of the world to take the necessary health and medical measures to prevent the spread of the epidemic<sup>20</sup>. Corona virus (Covid-19) has exhausted health systems, disrupted the routine immunization programs followed by health and medical institutions, forced the closure of schools, universities and all state institutions worldwide, and places of work for simple people who work in handicrafts, and caused a decrease in per capita income. Because of the ban on movement and trade, which caused an economic recession in all countries of the world<sup>21</sup>.

The world witnessed a rise in the level of deaths as a result of infection with the Corona virus-19, as daily death rates were recorded at approximately 8000-9000 people per day, which caused an emergency international health crisis, and that the world at that time needed any support from pharmaceutical companies to save the year from danger this global epidemic, these companies have produced more than 250 vaccines that were candidates for use<sup>22</sup>.

This search targeted to understand the common level of awareness, practice, and attitude towards the Corona virus (COVID-19) disease as well as new vaccine acceptance, among pupils field community (Babylon Technical Institute students) at Al-Furat Al-Awsat Technical University, Iraq.

The results in Table No.1 showed that the students of the Babylon Technical Institute who responded to the questionnaire sent to them electronically were of both sexes, with a percentage of 46.3% for males (the number of participants is 616) and a percentage of 53.7% for females (the number of participants is 715). In some time the ages between (18-22 years) showed more participation by 71.8% (the number of participants is 955) compared to other ages, which showed lower percentages. The reason for this is that the ages that are accepted to study at the institute are based on the student's average in high school and their ages. The reason for this is that the Babylon Technical Institute is located in a governorate characterized by a large number of rural areas compared to urban areas. Rural residents are characterized by customs, traditions and social norms, which affected the taking of the Covid vaccine, and this was noted in the low level of students who were vaccinated against this virus. The percentage of students who received the COVID-19 vaccine was less than the percentage of students who refused to take the vaccine, table No.2,3.

The conflicting information about the Covid-19 vaccine, which was approved and permitted by the Iraqi Ministry of Health, and the large number of rumors about the side effects of the vaccine led as a result to many students refraining from taking it for reasons mentioned in Table No. 4, as the result of the referendum showed that 39.5% of the students refused to take the vaccine because they were not convinced that there was a vaccine for the Corona virus, and some others had justified that the vaccine needed time to prove its success? (13%) or fear of secondary complications caused by the vaccine (14.7%), while the other percentages showed low compared to the previously mentioned reasons<sup>23</sup>.

During the spread of the Covid-19 virus, social media played a "misleading" role as a source of information and acceptance of the idea of vaccination against this virus<sup>24,25,26</sup>. Fear of the side effects of immunization against the Corona virus has occupied a very wide echo "through social media, as many pioneers of these means have discussed the danger of taking the vaccine as it causes sterility, chronic diseases, genetic effects on DNA and the abnormalities that this vaccine can cause<sup>27, 28,29</sup>. Another reason for the decline in immunization against Covid-19 is the lack of trust in government and political agencies and vaccine manufacturers, which in turn led to a great societal rejection reinforced by electronic media and the promotion of malicious rumors that dropped the idea of taking the vaccine<sup>30</sup>. Also because of the lack of scientific studies and laboratory experiments of the vaccine used by scientific companies, this resulted in the rejection of vaccination against Covid-19, as there was not enough information about the possibility of taking the vaccine for people with allergies, pregnant women, children, chronic diseases, or its interaction with drugs that all caused Lack of confidence in taking the vaccine and not being convinced that there is a cure during which this disease can be controlled<sup>31</sup>. Due to the spread of panic and fear among the Iraqi people due to the media intimidation of the spread of the Covid-19 virus, this caused the emergence of many rumors that contributed greatly to the refusal to be immunized against this virus<sup>32,33</sup>.

## **Conclusions**

The current study concluded that social networks, dissemination of incorrect information among members of society, and poor health education led to the reluctance of a large percentage of students to incubate against the Covid-19 virus.

## **CONFLICTS OF INTEREST**

Author declares that there are no conflicts of interest.

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## **AUTHORS' CONTRIBUTIONS**

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work. All the authors are eligible to be an author as per the international committee of medical journal editors (ICMJE) requirements/guidelines.

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The authors report no financial or any other conflicts of interest in this work.

## **ETHICAL APPROVALS**

This study does not involve experiments on animals or human subjects.

## DATA AVAILABILITY

This article contains all of the generated data as well as the analyses of that data.

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