

Exploring the Reasons Behind Refusal Covid-19 Vaccination Among South of Iraqi People

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ABSTRACT— Latest days of 2019, WHO was reported a cases of new pneumonia type in Wuhan City, China. On beginning of 2020, it identifies the causative agent as a novel coronavirus (2019-nCoV). So can many drugs company manufactured different types of vaccine or drugs against the diseases before people come into exposure with them in a rapid, safe, and effective approach. vaccination is a biological preparation known as active acquired protection to a specific infectious disease. To determine and evaluate the reasons for refusing immunization with the vaccine against COVID-19 until now in Iraq. We select 1000 participants who did refuse taking the COVID-19 vaccine from all provinces of Iraq (North, Central, and South). The study focused on the reasons for not receiving the COVID-19 vaccine until now, after that we collect the obtained data in Microsoft Excel program tables then statistically analyzed as show in results using IBM SPSS Statistics version 26. Result show the Individuals aged 21-30 years were more likely to refuse immunizations than those aged 18-20 years, whereas those aged 18-20 years were less likely to refuse vaccines. The study revealed a strong relationship among education levels, individuals who have university degree higher rates of rejection vaccines depend on reasons as compared to Primary, secondary, and post-graduate degrees. It's also worth noting that the clear majority of married people said they would refuse to take the vaccine if they had to choose between the two. According to occupation, there is a significant difference between rural and countryside occupation individuals who are rejection vaccines according to reasons. The biggest cause of refusal in the current study is fear of side effects 39.4% mainly because the vaccine may harm fertility. We also, noticed that 20.4% of participants said it is personal freedom. The fearing from side effects is the main cause then other causes depend on age group or occupational, social status, education level, and gender which means the misinformation is more than the fact about the vaccination or immunization against COVID19 due to different type of social media a TV channel that shade peoples thoughts, and bad control of Iraqi government on the media sector and holding rumor mongers accountable and inciting people not to take the vaccine, and what cause a large number of deaths. Also, an important cause of refusal related to the MOH which make poor and late role in educating people about the use of vaccines, their safety, and their reliable sources, compared to the fierce attack that wants to take the vaccines.

KEYWORDS: Covid-19, types of vaccine, drugs

1. INTRODUCTION

Vaccinations can protect you against dangerous diseases before you come into contact with them in a quick, safe, and efficient manner. One of the most significant public health advances in human history. A vaccine is a biological preparation that provides active acquired protection against a specific infectious disease [1].

Immunization is an essential human right and an essential part of primary healthcare. It's also among the finest investments in health that money can buy. Infectious illness outbreaks can be prevented and controlled with the use of vaccines. A vaccination often comprises a substance that resembles a germ that causes a disease; this substance is frequently created from a bacteria's weaker or dead forms, its toxins, or one of its surface proteins. The substance activates the immune system to identify the substance as a threat, eliminate it, and then identify and eliminate any subsequent bacteria linked to the substance that the body may come into contact with. Prophylactic vaccinations can be used to avoid or lessen the symptoms of a future infection by a natural or "wild" a pathogen, or a treatment (to fight a disease that has already occurred, such as cancer) [2], [3]. When creating a vaccination, there are three main methods. Their distinctions are whether they use a complete virus or bacterium, only the immune system-stimulating components of the germ, or just the genetic material that contains the instructions for producing particular proteins rather than the entire virus, figure (1) [4].

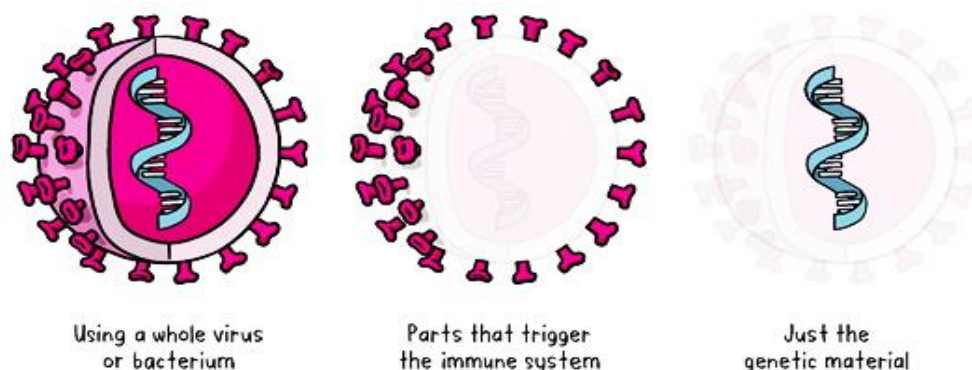


Figure 1: main approaches of vaccine [4]

The Pfizer-BioNTech COVID-19 Vaccine is approved for emergency use and is available under the EUA as a two-dose primary series for individuals 5 years of age and older, a third primary series dose for individuals 5 years of age and older who have been determined to have certain types of immunocompromise, and a single booster dose for individuals 12 years of age and older at least five months after completing a primary series of the vaccine [5]. AstraZeneca carries the genetic code for the spike protein, which is a major component of the SARS-CoV2 virus. The spike protein was put into a harmless common cold viral "carrier" (an adenovirus). The viral carrier transports the spike protein into your cells, where it can be read and replicated [6]. Your immune system will then be trained to recognize and combat the SARS-CoV-2 virus. Once within cells, the adenovirus has been changed so that it cannot proliferate. This implies it cannot infect other cells or spread to them. Everyone above the age of 16 should get vaccinated against COVID-19. With a few exceptions, the COVID19 Vaccine AstraZeneca is appropriate for people aged 18 and up [7]. The Sinopharm vaccine was created in the traditional way, with an inactivated virus. In an inactivated vaccine, the virus - in this example, the coronavirus that causes COVID-19 - is killed or altered so that it cannot replicate. It cannot cause disease and is hence appropriate for persons with weakened immune systems [8]. Despite being inactivated, this vaccination can still elicit a significant immunological response. As an inactivated virus vaccine, it works by exposing the body's immune system to the virus but avoiding the risk of a significant illness response. The body responds by producing antibodies, which aid the immune system in fighting infection from a live coronavirus [9]. Three COVID-19 vaccines have recently been licensed in Iraq, namely (Pfizer/BioNTech, Oxford-AstraZeneca, and Sinopharm).

2. Aim

The goal of this study is to investigate COVID-19 vaccine acceptance and refusal, as well as the factors influencing vaccination intention in different regions of Iraq.

3. Method

A cross section study was used in various Iraqi governments. The survey was conducted between 1/11/2021 and the end of April 2022. The current study enrolled a total of 1000 participants. The survey form has 21 questions separated into two sections. The first included sociodemographic information such as age, sex, educational level, Eco social status, and location of residence (either countryside or rural). In the second segment, participants completed a standardized questionnaire (Whether they not administrated the vaccine, Side Effect, unlike global vaccine, is there awareness from MOH, there awareness from medical staff, etc.). The survey was written in Arabic and translated into English for everyone's convenience, and it took each respondent five minutes to complete.

4. Statistical Analysis

For sociodemographic factors (gender, sex, occupation, education, and locations), descriptive tests (frequency and percentage) were utilized primarily, and a Chi-square test was used to determine the p-value. We then used a GraphPad prism v 8.0 to draw the graphs. IBM SPSS Statistics version 26 was used.

5. Results

5.1 Socioeconomic status

Males constituted 46.6% of the 1000 participants in the current study, while females constituted 53.4%. There was no significant difference between the genders when it regards to vaccination intentions. Individuals aged 21-30 years were more likely to refuse immunizations than those aged 18-20 years, whereas those aged 18-20 years were less likely to refuse vaccines. Individuals with a University degree had a greater prevalence of vaccine refusal 49.4% than those with other levels of education, according to the study $p < 0.01$. It's also worth noting that the clear majority of married people 67.1% said they would refuse to take the vaccine if they had to choose between the two Table (1).

Table 1: Sociodemographic characteristics

Gender	N	%	χ^2	P
Male	466	46.6	4.62	0.032
Female	534	53.4		
Age			χ^2	P
18-20	102	10.2	311.36	0.001
21-30	418	41.8		
31-40	174	17.4		
41-50	158	15.8		
>50	148	14.8		
Education			χ^2	P
Primary	144	14.4	487.06	0.001
Secondary	325	32.5		
University	494	49.4		
Post-graduate	37	3.7		
Social status			χ^2	P
Single	329	32.9	116.96	0.001
Married	671	67.1		
Occupation			χ^2	P
Rural	133	13.3	538.75	0.001
Countryside	867	86.7		
NO. of Causes			χ^2	P
1.00	628	62.8	1242.76	0.001
2.00	202	20.2		
3.00	102	10.2		
4.00	52	5.2		

5.00	16	1.6		
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5.2 Refuse reasons according to Gender and Age

We noticed that the majority of participants 39.4% rejected due to adverse effects of the vaccine, 56.1% of them were female. And about 21.6% (50% to 50%), 20.4% (53.4% to 46.6%), and 18.6% (54.3% to 45.7%) did not like to administrated the vaccine due to unlike global vaccine, freedom, and warring M.O.H, respectively. While less than 10% their reasons for not being vaccinated were have different reasons as in table (2) and figure (1). Our data found that the relationship between age groups was strong ($p < 0.001$), the younger individuals 21-30 years were 43.2% as compared with other age 41-50, 31-40, >50, and 18-20 (17.4%, 15.4%, 15.2%, and 8.9% respectively). It is stated that the bulk percent of reasons for vaccination refusal between 21-30 year was for emergency only 68.4% while the lowest reason was rapid vaccine discover 25.0%. The age 18-20 years old most of them believed that the vaccines for emergency used only while the age group 31-40 years old fearing from medical staff, on other hand others ages groups 41-50 and >50 believed that rapid vaccine discover and Vaccines contain active virus respectively, table (2) and figure (2).

Table 2: Reasons for refusing to get vaccinated against COVID-19 according to gender and age

Cause	Gender		Age				
	Male	Female	18-20	21-30	31-40	41-50	>50
	%	%	%	%	%	%	%
Side Effect	43.9%	56.1%	12.2%	40.6%	14.7%	15.5%	17.0%
Unlike global vaccine	49.5%	50.5%	6.0%	41.2%	19.0%	19.9%	13.9%
Warring M.O.H	54.3%	45.7%	8.6%	41.4%	12.9%	11.8%	25.3%
Recently discover	57.6%	42.4%	9.6%	40.0%	14.4%	23.2%	12.8%
I have good immunity	48.7%	51.3%	13.5%	57.1%	19.9%	7.1%	2.6%
I have good Ab	45.5%	54.5%	3.6%	52.7%	14.5%	7.3%	21.8%
Vaccines contain active virus	67.6%	32.4%	17.6%	38.2%	11.8%	26.5%	5.9%
Warring from storage	91.7%	8.3%	11.1%	47.2%	11.1%	25.0%	5.6%
Medical staff advised that	37.5%	62.5%	0.0%	62.5%	12.5%	12.5%	12.5%
Fearing from medical staff	76.7%	23.3%	0.0%	30.0%	26.7%	16.7%	26.7%
Fear from government	60.9%	39.1%	6.5%	30.4%	21.7%	28.3%	13.0%
I believed as conspiracy	57.6%	42.4%	6.1%	27.3%	24.2%	12.1%	30.3%
Rapid vaccine discovers	39.5%	60.5%	7.9%	25.0%	7.9%	40.8%	18.4%
For emergency only	89.5%	10.5%	21.1%	68.4%	0.0%	0.0%	10.5%
Freedom	53.4%	46.6%	9.3%	45.6%	19.1%	14.2%	11.8%
Others	24.4%	75.6%	9.8%	28.0%	14.6%	15.9%	31.7%

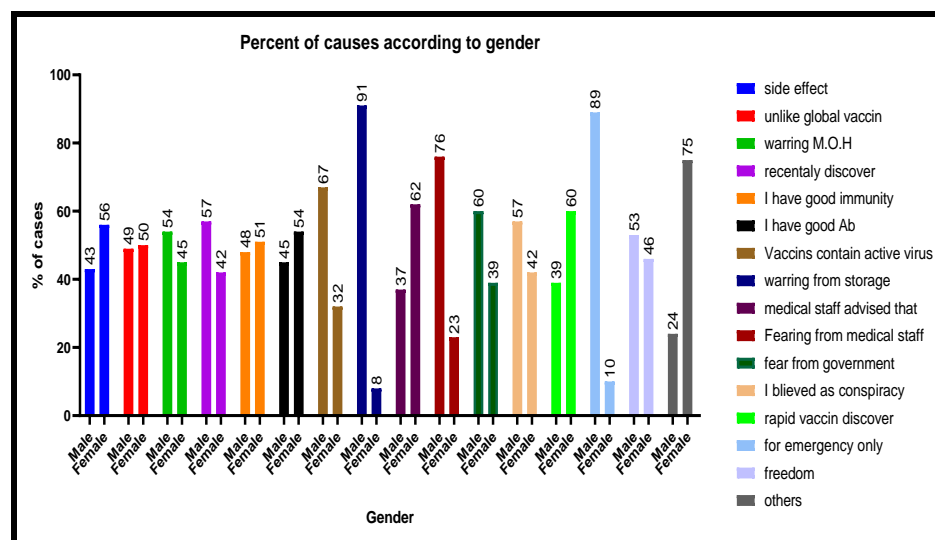


Figure 1: Refused causes percent of participants according to gender.

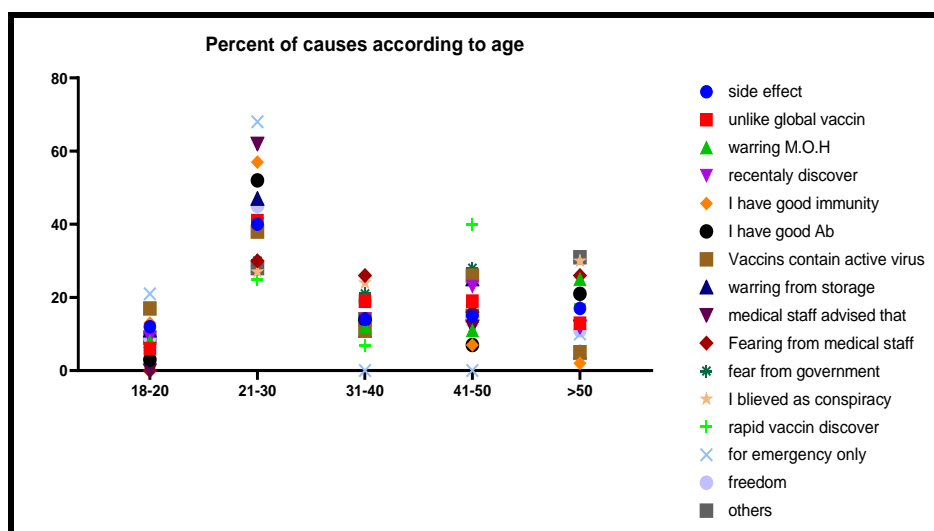


Figure 2: Refused causes percent of participants according to age.

5.3 Refuse reasons according Education level and Occupation

Our study revealed found strong relationship ($p < 0.001$) between education levels, meanwhile individuals who have university degree higher rates of rejection vaccines depend on reasons (52.4%) as compared to Primary, secondary, and post-graduate degrees (13.8%, 31.8%, 2.1%, and 12.3% respectively). The highest percent reasons for vaccination refusal between university degree was “I believed as conspiracy” 48.5% while the lowest percent was “medical staff advised that” 12.5%. the most reason to reject vaccine between individuals with primary degree was “medical staff advised that”, while between those who have secondary degree was “I believed as conspiracy” otherwise individual with post-graduate degree believed that medical staff fearing was the most reason to reject the vaccine, table (3), figure (3). According to occupation, there is a significant difference ($p < 0.001$) between rural 13.6% and countryside 86.4% occupation individuals who are rejection vaccines according to reasons. The highest percent reasons for vaccination refusal between rural region was “for emergency only” while no one believed that “medical staff advised that”. the most reason to reject vaccine between individuals with countryside region was “side effect, table (3), figure (4)

Table 3: Number and Percent of causes to refused vaccines according to education and occupation

Causes	Education				Occupation	
	Primary y %	Secondary %	University %	Post-graduate %	Rural %	Countryside %
side effect	18.0%	37.3%	41.1%	3.6%	13.7%	86.3%
unlike global vaccine	17.6%	28.2%	50.9%	3.2%	21.8%	78.2%
warring M.O.H	17.2%	37.1%	42.5%	3.2%	15.6%	84.4%
recently discover	8.8%	43.2%	41.6%	6.4%	12.0%	88.0%
I have good immunity	11.5%	26.9%	59.0%	2.6%	13.5%	86.5%
I have good Ab	21.8%	20.0%	54.5%	3.6%	23.6%	76.4%
Vaccines contain active virus	17.6%	23.5%	58.8%	0.0%	14.7%	85.3%
warring from storage	0.0%	33.3%	66.7%	0.0%	13.9%	86.1%
medical staff advised that	25.0%	12.5%	62.5%	0.0%	0.0%	100.0%
Fearing from medical staff	0.0%	26.7%	66.7%	6.7%	6.7%	93.3%
fear from government	15.2%	41.3%	43.5%	0.0%	4.3%	95.7%
I believed as conspiracy	12.1%	48.5%	39.4%	0.0%	21.2%	78.8%
Rapid vaccines discover	19.7%	43.4%	36.8%	0.0%	11.8%	88.2%
For emergency only	10.5%	31.6%	57.9%	0.0%	31.6%	68.4%
Freedom	10.8%	21.6%	64.7%	2.9%	7.8%	92.2%
Others	14.5%	33.3%	51.0%	1.2%	6.1%	93.9%

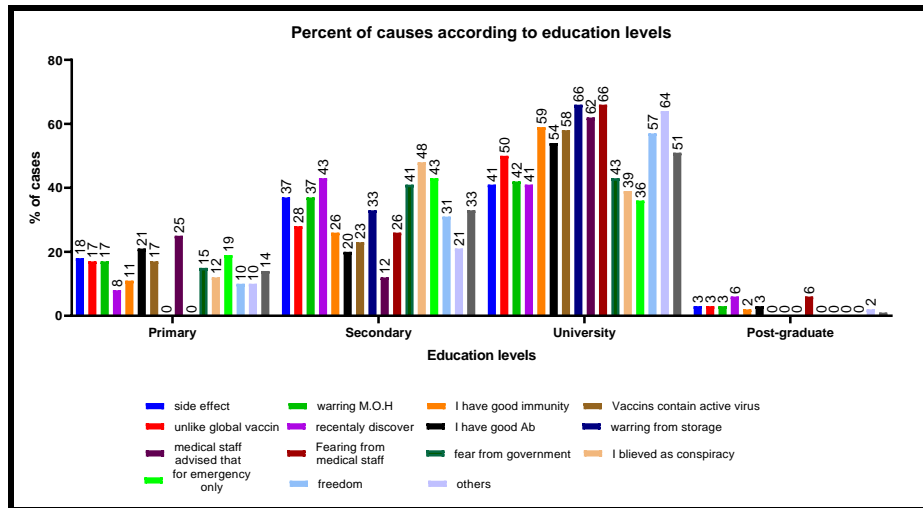


Figure 3: Percent of cause to refused vaccination according to education levels.

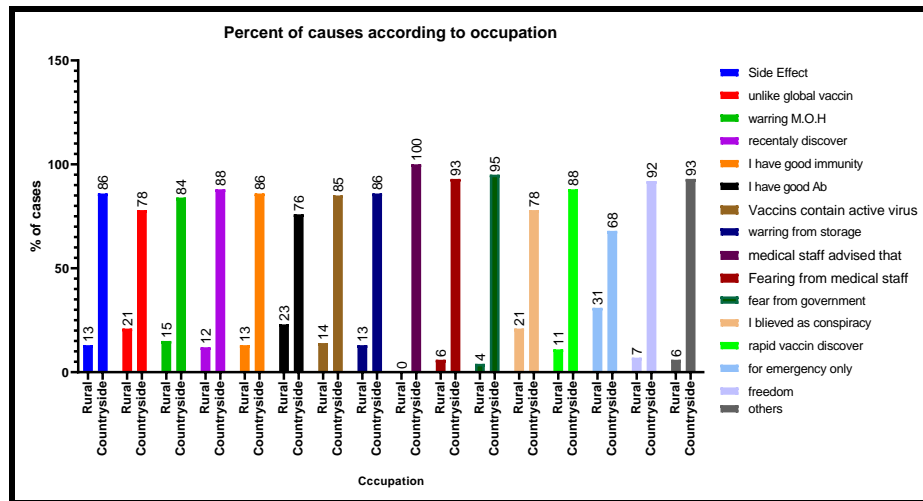


Figure 4: Percent of cases refused vaccines according to occupation.

6. Discussion

Refusal to receive a vaccination despite the availability of vaccination services is referred to as vaccine refusal. Iraq is experiencing an increase in vaccine refusal instances, which is being observed around the world. It is unknown how the COVID-19 pandemic may affect vaccine refusal. For future immunization campaigns to understand the causes of vaccine rejection and the factors impacting it, it is crucial to identify the rates of COVID-19 vaccine refusal in this study. In the current study, there was no significant difference between the genders when it regards to vaccination intentions against COVID19. Individuals aged 21-30 years were more likely to refuse immunizations than another age group followed by 31-40 years and lastly 18-20 years were less likely to refuse vaccines, which may be due to the age of participants in the current study within this age group (21-30 years) and collected data take a large percentage from colleges, also these percentage may reflex the distribution of Iraqi people with except in 18-20 years since Iraq is considered from developing countries. Also, at this age fear more than others because side effects (effect on fertility) as it was rumored on some social media. These results were following other studies in Iraq [10] and Saudi Arabia [11]. On the other hand, other studies done in different parts of the world declared different findings [12- 14]. Also, we notice the majority of participants 63% refuse to take the vaccine in the current study due to one cause of refusal, 20% for two cases, and some 1.6% for 5 reasons and this may depend on the obsessivity of persons or its satisfied or his confidence in the government which imported

vaccines. In terms of reasons for refusing to obtain the COVID-19 vaccination based on gender, more than half of males 56.1% and nearly half of females 43.9% declined to get vaccinated for various reasons. It is stated that the bulk of reasons for vaccination refusal is more prevalent in males than females owing to warring M.O.H, recently discover, Vaccines contain an active virus, warring from storage, fearing from medical staff, fear from the government, I believed as conspiracy, for emergency only, and freedom. Which showed that the biggest cause is warring from a side effect of vaccine 39.4% then unlike a global vaccine, its freedom, warring M.O.H to least on medical staff advised that 1.6%. Also, we see some participants have other causes for refusing 15.9% like pregnant, having a chronic disease, not needing no go outhouse, having an allergy, now infected with COVID, or being afraid of magnetism, which is more in women than men due to wearing during pregnancy. This could be because gastrointestinal symptoms such nausea, which affected 51 percent of participants, an increase in hunger, which affected 76 percent of patients, and anal fissure, which affected 30 percent of participants, were frequent. A significant portion of males are affected by abnormalities in both metabolic and GIT symptoms [15], [16]. We believe that the causes of refused COVID19 vaccine have different origin some relay to society's culture and believe the rumors from anyone or from social media or some causes relay to a government which was not held accountable or tolerated the spreaders of rumors also, lack of citizen confidence in the government due to the extent of corruption at all levels, including the health sector or some causes relay to MOH which not well educated the population for the vaccine safety, affectivity, storage , possible side effects if present at beginning. This might be as a result of post-vaccination depression, anxiety, and memory loss being higher than in people without the covid-19 one. Additionally, patients who have a history of psychological issues as inpatients with Covid-19 must be administered medication and treated in tandem with a covid-19 treatment strategy [17], [18]. Individuals with a university degree had a greater prevalence of vaccine refusal than those with other levels of education, according to the current study. Vax hesitation and refusal are influenced by a variety of factors, including social, cultural, political, and economic ones. According to studies by [19] parents who have more education are around four times more likely to be concerned about vaccine safety than parents who have less education. On the other hand, a poor education level was linked to vaccine refusal in research by [20]. However, when the relationship between education and domestic vaccine acceptance was looked at, it was discovered that vaccine rejection significantly increased as the education level increased. In this study, there was no significant relationship between education level and preference for foreign vaccines.

7. Conclusion

As we see from all figures and tables in the current study mostly the fear of side effects is the main cause then other causes depend on age group or occupational, social status, education level, and gender which means the misinformation is more than the fact about the vaccination or immunization against COVID19 due to different type of social media a TV channel that shade peoples thoughts, and bad control of Iraqi government on the media sector and holding rumor mongers accountable and inciting people not to take the vaccine, and what cause a large number of deaths. Also, an important cause of refusal related to the MOH which make poor and late role in educating people about the use of vaccines, their safety, and their reliable sources, compared to the fierce attack that wants to take the vaccines.

8. Recommendation

The Ministry of Health and its affiliated institutions should intensify the work of workshops, lectures, seminars, brochures, and conferences on the benefit of the vaccine, reduce the number of infections and deaths, and get rid of the Coronavirus, especially after its safety has been proven and approved globally.

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