

**ORIGINAL ARTICLE**

## Assessment of perceptions of physicians towards COVID-19 Vaccination in Pakistan

Maria Naseer Malik<sup>1</sup>, Maira Yaseen<sup>2</sup>, Iqra Haseeb<sup>3</sup>, Muhammad Sami Hassan<sup>4</sup>, Arslaan Javaeed<sup>5</sup>, Sanniya Khan Ghauri<sup>6</sup>

**Authors Affiliation:**

Holy Family Hospital,  
Rawalpindi, Pakistan<sup>1</sup>

CMH Muzaffarabad,  
Muzaffarabad, Pakistan<sup>2</sup>

Dow International Medical  
College, Karachi, Pakistan<sup>3</sup>

Scunthorpe General Hospital,  
Northern Lincolnshire & Goole  
NHS Foundation trust, UK.<sup>4</sup>

Poonch Medical College,  
Rawalakot, Pakistan<sup>5</sup>

University of Toronto,  
Canada<sup>6</sup>

**Correspondence to:**

Maria Naseer Malik  
mariamalik2811@gmail.com

**ABSTRACT**

**INTRODUCTION**

Vaccination can be one of the most effective primary preventive measure against COVID-19. The only viable solution for the current COVID-19 pandemic is developing the herd immunity. This statement is correct, especially for developing countries like Pakistan, which have very limited healthcare resources. The perceptions of healthcare providers can influence the success of vaccination campaign. The aim of this study is to assess the perception of doctors towards COVID-19 vaccination.

**METHODS**

A cross-sectional study was conducted amongst practicing doctors of tertiary level healthcare facilities of Rawalpindi and Islamabad. The study participants were provided an online questionnaire containing questions regarding their perceptions towards COVID-19 vaccine.

**RESULTS**

A total of 471 doctors returned and filled the questionnaire out of the 563 questionnaires distributed (response rate 74.7%). About 41% participants believed that there was

no association between vaccination and development of chronic illnesses. Almost 35% of the participants felt that popular belief of vaccines being associated with chronic illnesses has created doubts in their minds. Majority (73.16%) participants believed that COVID-19 vaccine is safe to use, while 6.65% believed that the vaccine is not safe. Around two third of participants (75.3%) plan to get vaccinated, while 16.15% participants were hesitant to get vaccinated. Almost 87% of the participants felt that the vaccine was safe enough to be recommended to others.

**CONCLUSION**

Most of the doctors have a positive perception regarding vaccination for COVID-19, but some healthcare professionals continue to have doubts. More studies are required to understand the reasons behind such beliefs and educational interventions can be planned accordingly

**KEYWORDS**

COVID-19; vaccination; mRNA vaccine; perceptions; hesitancy

**INTRODUCTION**

COVID-19 has emerged as a major catastrophe of this century. It has become a pandemic, and no country has been spared from its impact. It is an infection caused by SARS-CoV-2 virus, which is constantly mutating to change its strain. Being a droplet infection, it has a high secondary attack rate.<sup>(1)</sup> Although around 80% of cases are asymptomatic or mild, certain high-risk groups like elderly (aged over 65 years), people with co-morbidities (like cardiovascular disease, diabetes) have shown higher morbidity and mortality.<sup>(2)</sup> At present, around 157 million cases of COVID-19 have been confirmed worldwide and 3.2 million deaths have been recorded.<sup>(3)</sup> In Pakistan, 8.5 lac confirmed cases and 18,797 deaths of Covid-19 have been

reported.<sup>(4)</sup> In absence of definitive treatment, primary prevention remains the main stay for control of this pandemic. The primary prevention against COVID-19 includes hand hygiene, use of mask, social distancing and vaccination.

At present, a number of countries have developed and are still working on vaccine development against COVID-19. In 2020, more than 50 vaccines for COVID-19 were undergoing trials.<sup>(5)</sup> At present, 14 vaccines are under use in various countries.<sup>(6)</sup> Although, there is availability of effective vaccines against COVID-19, it solves a very small part of the problem. As experienced in the past with universal immunization against vaccine preventable diseases, acceptance of vaccine by the community plays a major role.

The acceptance of the vaccine depends upon the confidence, effectiveness and convenience factors. (7)

The healthcare providers are one of the most high risk group as they deal with patients on daily basis. They have been given priority in vaccination drives against COVID-19 in many countries including in Pakistan. (8) The perceptions of healthcare workers, especially the ones who are directly involved in the vaccination process, are of utmost importance. They can play a major role in generating positive perception about COVID-19 vaccine in the general population as well. Therefore, it is essential that the perceptions of doctors are assessed regarding vaccination for COVID-19.

In order to develop herd immunity using widespread vaccination, it is imperative to assess the perceptions of healthcare workers especially doctors. Very few researches have been done in the European countries to assess the perception of healthcare workers about COVID-19 vaccine. They have revealed that vaccine hesitancy has been increasing among healthcare workers. There is lack of such research in South Asian countries. Till date no similar study has been conducted in Pakistan. Current study is an effort to fill in the vacuum of information in this region. The objective is to assess the perception of doctors towards COVID-19 vaccination

## METHODS

Current cross-sectional study was conducted at eleven hospitals of Rawalpindi and Islamabad in Pakistan. The study lasted from November 2020 to April 2021. The study participants were sent a pre-structured and validated questionnaire, which contained 6 questions regarding perceptions towards COVID-19 vaccine. The investigators ensured anonymity of the participants and prior approval of Institutional Ethics Committee was obtained. The data was entered in MS Excel and analyzed using SPSS v21. The results were presented as frequencies and percentages.

## RESULTS

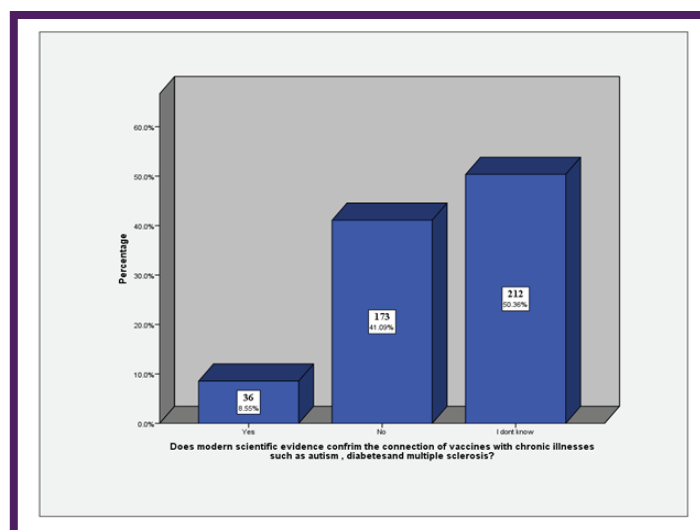
A total of 563 questionnaires were distributed amongst medical officers out of which 421 were completely filled and returned constituting a response rate of 74.77%.

As seen in table 1, most doctors were from the age group of 25 to 30 years (52.0%). Majority of the participants were female (88.4%). Most participants had experience ranging from 1 to 5 years (77.2%).

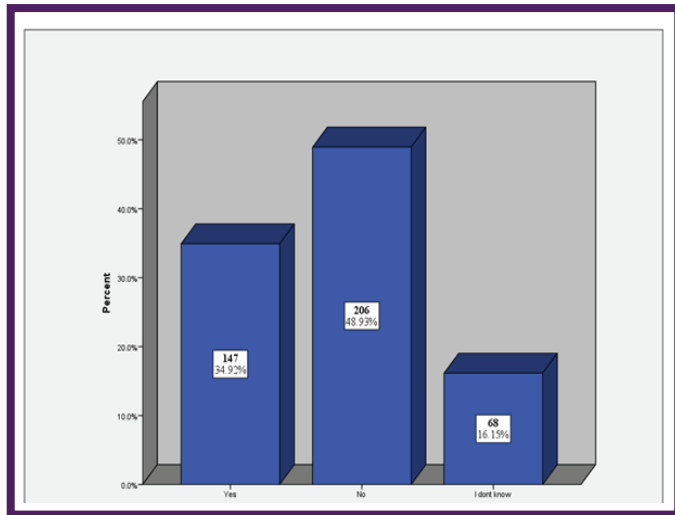
As seen in figure 1, about 41% of the participants believed that there was no association between vaccine and chronic illnesses. About 50% had no information regarding the said association.

Characteristic	Frequency	Percentage
Age (Years)		
20 to 25	195	46.3
25 to 30	219	52.0
30 to 35	7	1.7
Gender		
Male	49	11.6
Female	372	88.4
Experience		
< 1 year	82	19.5
1 to 5 year experience	325	77.2
15 to 20 year	14	3.3

**Table 1: Socio-demographic profile of the participants**



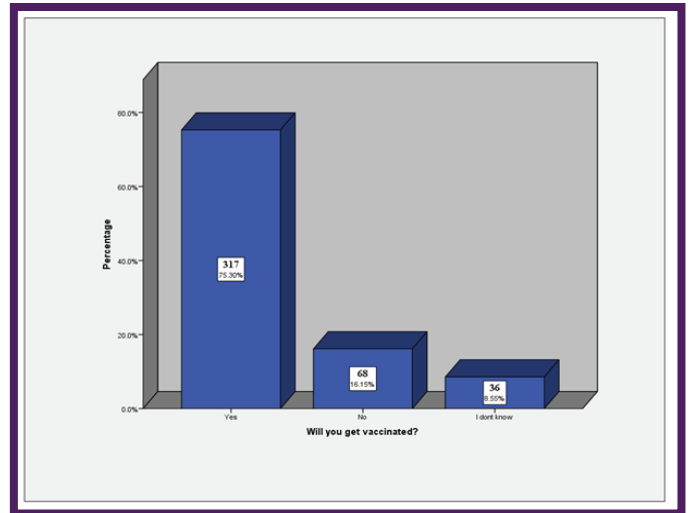
**Figure 1: Perceptions participants regarding association of vaccine with chronic illnesses like autism, diabetes and multiple sclerosis**



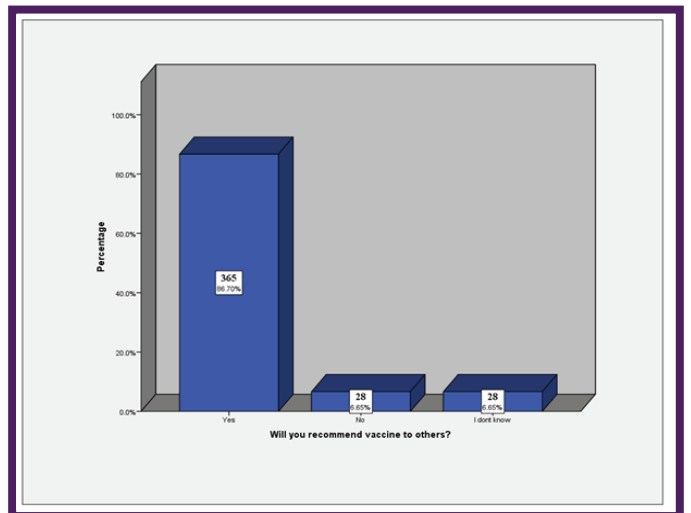
**Figure 2: Does the popular belief about connection between vaccines with development of chronic diseases, such as autism and multiple sclerosis, affect your perception?**

It shows that about 35% of the participants felt that popular belief on vaccine's association with chronic illnesses had created doubts in their minds.

All the participants believed that it was important to vaccinate general population to control the COVID-19 infection.



**Figure 4: Willingness of participants to get vaccinated**

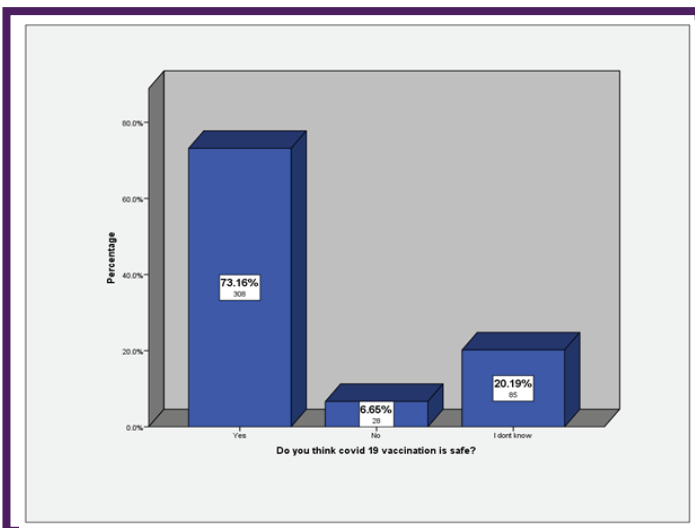


**Figure 5: Willingness of participants to recommend getting vaccinated to others**

As evident in figure 5, around 87% of the participants felt that vaccine is safe enough to recommend to others, while about 7% participants responded they would not recommend vaccination to others.

## DISCUSSION

COVID-19 has been an unprecedented challenge for all the countries in the world. However, overcrowding, large population, limited health infrastructure and lack of awareness pose even harder challenges for developing or developed countries. The situation in Pakistan also suggests that if the disease is not controlled, the country will face a significant burden of cases, which may overcome the capacity of its health system. For example, the total bed capacity in health



**Figure 3: Perception regarding safety of vaccine**

As per figure 3, the majority (73.16%) participants believed that COVID-19 vaccine is safe to use, while 6.65% of them believed that the vaccine is not safe..

We observed that two third (75.3%) participants were willing to get vaccinated, while 16.15% participants were hesitant to take the vaccine. (Figure 4)

institutes of Pakistan is about 14000, while the estimates suggest that only two provinces of Punjab and Sindh will make up about 70000 cases. <sup>(9)</sup>

One of the effective solutions for control of COVID-19 is the development of “herd immunity”. <sup>(10)</sup> Herd immunity can develop by active infection or by vaccination. However, the first option is not a practical one as it might cause a significant loss in lives, residual complications of the disease and cause an excessive burden on the healthcare system. Thus, the only option remains for herd immunity is wide spread vaccination.

The priority for vaccination has been given to healthcare workers. However, just like general population, healthcare workers can also be hesitant regarding this new vaccine. These workers will play a dominant role in vaccine advocacy among the general population. Therefore, their perceptions will have an impressive effect on the success of vaccination drive in Pakistan. Vaccine hesitancy among healthcare worker is not a rare phenomenon. Many researches in the past have revealed vaccine hesitancy among healthcare workers. <sup>(11-13)</sup>

One of the study conducted on Indonesia suggested that the vaccine hesitancy was between 7 to 33% among general population. <sup>(14)</sup> Current study shows that around 17% of the doctors showed vaccine hesitancy. We have observed similar perceptions in different countries and for different vaccines. <sup>(11)</sup> Although the current study has not assessed the reasons or factors responsible for vaccine hesitancy, previous studies conducted in Pakistan have suggested that the main reason for hesitancy is “concern for safety”. <sup>(15)</sup> In the current study also, about 6.67% of the doctors believed that the vaccine was not safe. Media has been a major influence of perception of community amongst health care workers. However, current study found that most of the doctors’ perceptions regarding vaccine were not influenced by the media.

The strength of the current study is its large sample size. However, the current study was conducted only in two of the major cities of Pakistan due to availability of limited resources. Therefore, the results cannot be generalised to healthcare workers working in other cities of the country. The study could not assess the factor affecting the perceptions of the doctors regarding COVID-19 vaccine.

## CONCLUSION

Overall, the perceptions of doctors towards COVID-19 vaccine have been positive with majority of them willing recommend vaccine to others. Almost two third of them were willing to get vaccinated. Their

perceptions are not influenced by allegations of media or other factors. More studies are required to understand the reasons behind vaccine hesitancy and educational interventions can be planned accordingly.

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