

# Impact of COVID-19 Vaccination on the Attitude of Health Care Workers toward Preventive Measures

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## ABSTRACT

**OBJECTIVE:** To compare the pre and post-vaccination effects of vaccination on various COVID SOPs and to determine whether or not HCWs take adequate precautions.

**METHODOLOGY:** This cross-sectional study was conducted between May and July 2021. Online survey forms were distributed via social media platforms, completed by male and female house officers, medical officers, postgraduate trainees, residents, and specialists/consultants at Holy Family Hospital in Rawalpindi.

**RESULTS:** Our study enrolled 104 volunteers. The participants ranged in age from 18 to 30 years, and males constituted more than half of the study population. The most frequently used designation was postgraduate trainees/residents, which accounted for 34% of all participants. 100% of medical professionals used masks before vaccination, and 45% of medical professionals practiced social distancing. Fourteen of the participants discontinued the use of masks following vaccination. Hand washing and sanitizing habits decreased by 14.

**CONCLUSION:** Vaccination has made life easy for HCWs, as negative trends are observed towards preventive measures. The pandemic timeline and physical and mental well-being depreciation also played a crucial role in the COVID-19 SOPs. So let us all hope that the whole population gets vaccinated and the virus gets eradicated.

**KEYWORDS:** Attitude, SARS-COV-2, Vaccination, Healthcare workers, COVID-19, Practices, Knowledge

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## INTRODUCTION

Health care workers (HCWs) include doctors, nurses, and laboratory technicians ETC, who provide aid and help to the sick<sup>1</sup>. Whenever an emergency like a natural disaster or disease outbreak, they stood as a concrete wall, supported their nations, and got them through the most challenging times. They have always been the first line of defense<sup>2</sup>.

COVID 19 burst out in Wuhan in China in December 2019 and was soon declared a pandemic in March 2020<sup>3</sup>. Severe lockdowns were imposed worldwide as it was a make-or-break situation, and hundreds of thousands of lives were at stake. But even in these challenging times, health care workers acted efficiently and effectively and stood firm. Because of them, we are on the verge of easing the COVID-19 restrictions<sup>4</sup>.

Besides HCWs, vaccination has played a considerable role in saving lives and reducing the load on health care facilities<sup>5</sup>. In the past, vaccines have been proven to be an essential weapon to fight against different pathogens; it's because of vaccination we could eradicate measles, smallpox and almost polio<sup>6-8</sup>. It proved to be a breakthrough during

the coronavirus pandemic.

This study will highlight the impact of vaccination on the attitude of HCWs towards preventive measures. This study will compare the effects of vaccination on various COVID SOPs before and after vaccination. Will showcase whether the HCWs are taking adequate preventive measures or not. It will also enlighten us about the variance in attitudes towards preventive measures with the difference in designation and age group.

## METHODOLOGY

We conducted this cross-sectional study in May-July 2021 at Holy Family Hospital, affiliated with Rawalpindi Medical University. Our sample comprised 104 patients who were enrolled through a stratified random sampling technique. Both males and females house officers, medical officers, postgraduate trainees or residents and specialists/consultants working at Holy Family Hospital were included in our study. Nursing staff members, undergraduate medical students, physiotherapists & those who were not vaccinated for COVID 19 were excluded from our study. Ethical approval for this research was granted by the Department of Medicine, Holy Family Hospital Rawalpindi wide letter ref MU1-071-15Mar21.

For this study, we disseminated an online survey form

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via social media platforms questionnaire comprised of 2 sections. Section 1 of the survey concerned basic demographics like age and gender designation, and Section 2 consisted of questions regarding the preventive measures and protocols to be followed to restrict the spread of COVID-19.

To determine the significance and correlation of the impact of vaccination on the attitude of medical professionals and gender-based differences, we used the t-test and Pearson's Chi-square test. The significance level was set at  $p < 0.05$ . A detailed review and analysis were done, and results were presented using percentages and frequencies displayed using tables. For quantitative variables mean standard deviation was calculated by SPSS version 21.

## RESULTS

All the health care workers vaccinated for COVID 19 took part in the study; 104 volunteers complied with the inclusion criteria and filled the online Performa. The age group ranged from 18-60 years, but most participants were 18-30, and the second common group was 30-40 years. A male population made up more than half of the study population. Additionally, the most repetitive designation was the postgraduate trainees/residents, comprising  $\frac{3}{4}$  of the total participants. Consultants and specialists were the next large group of participants.

**TABLE I: AGE, GENDER CHARACTERISTICS ALONG WITH DESIGNATION OF HEALTH CARE WORKERS**

Gender	Male n(%)	Female n(%)	
		59(56.7)	45(43.3)
Age	18-30 n(%)	30-40 n(%)	40-50 n(%)
	67(64.4)	20(19.2)	12(11.5)
Designation	House officer	Post Graduate Trainee/Resident	Specialist/ Consultant
	10(9.6)	77(74.3)	16(15.4)

When inquired about the frequent use of masks before vaccination, almost 100% showed a positive response. The predominant mask type used was surgical face mask, opted by  $\frac{3}{5}$  of the population, while KN-95 was opted by the rest. Most of the HCWs used single masks, and  $\frac{1}{4}$  wore double masks. A vast majority of the participants were habitual of hand washing and sanitizing before vaccination.  $\frac{2}{5}$  of the population used PPE/Aprons/Gowns; the remaining didn't use them. Medical professionals widely followed social distancing as  $\frac{4}{5}$  replied positively, and avoiding social gatherings was commonly witnessed for that purpose.

After vaccination, the frequent use of masks was dropped by  $\frac{1}{4}$  of the participants. A more significant number of individuals favored surgical masks and single layers of masks. Many HCWs also let go of

hand washing and sanitizing as the positive responses decreased by  $\frac{1}{4}$ . Some individuals stopped avoiding social gatherings and didn't frequently practice social distancing.

**TABLE II: FREQUENCY OF SAFETY USED BY CARE GIVERS BEFORE & AFTER VACCINATION**

	Before vaccination (n)	After vaccination (n)	P-Value
Frequent use of masks	100	75	0.001
Frequent hand washing and sanitizing	95	75	0.000
Practice of social distancing	84	65	0.000
Avoidance of social gatherings	90	70	0.000

**TABLE III: FREQUENCY OF HEALTH CARE WORKERS USING PRECAUTIONARY MEASURES POST VACCINATION**

	Designation				P-Value
	After vaccination (n)	House Office (n)	Consultant/ specialist (n)	Resident / trainee (n)	
Frequent use of masks	75	10	16	49	0.000
Frequent hand washing and sanitizing	75	10	16	49	0.000
Practice of social distancing	65	8	16	41	0.000
Avoidance of social Gatherings	70	8	16	46	0.000

## DISCUSSION

There has been ample research done on the hesitancy of HCWs towards vaccination. It has been pointed out that the hesitant group consists more of African and rural people<sup>9</sup>, and vaccine hesitancy has seriously threatened coronavirus eradication<sup>10</sup>.

This study is carried out to analyze the impact of vaccination on HCWs' attitudes towards preventive measures. To begin with, a correlation was found between vaccination for COVID 19 and frequent use of masks. There was a significant decrease in the number of individuals wearing masks before and after vaccination. When different preventive measures were analyzed, and the impact of vaccination was observed, the results showed a significant decrease in the frequency of masks worn, layers of masks, hand washing and sanitizing and practice of social distancing.

This shows that the vaccination led to ease in COVID-

19 restrictions and medical professionals are less cautious about preventive measures.

This predisposes them to different risks; the main risk is to the health of medical professionals<sup>11</sup>, as they are present in a hospital setting and getting hospital-acquired diseases is quite common.

It's a medical professional's responsibility to spread awareness and advocate the preventive practices; the best way is to preach practice themselves.

Secondly, if the patient visiting the hospital will observe that the doctors are not wearing masks and following proper SOPs, why should they.

Moreover, a designation also significantly impacted the attitude towards preventive measures, as the senior consultants/specialist kept following COVID SOPs. At the same time, the medical trainees/residents neglected the preventive measures.

A study by Saqlain M et al.<sup>12</sup> reported that the pharmacists were keener on following COVID SOPs than other HCWs. Furthermore, a recent study in Ethiopia highlighted a positive response of nurses toward preventive measures<sup>13</sup>.

Though the health professionals are well versed with COVID-19-related information and are the earliest group vaccinated for COVID 19 globally, vaccination has led to a relaxed state of mind and reduced the fear of getting infected.

## CONCLUSION

COVID vaccination has been a breakthrough and is the savior of many lives. Vaccination has made life easy for HCWs, as negative trends are observed towards preventive measures. Moreover, the pandemic timeline and physical and mental well-being depreciation also played a crucial role in the ignorance of COVID-19 SOPs. Further research considering the bigger picture and considering the wholesome reasons would further signify the data added by this research. So let us all hope that the whole population gets vaccinated and the virus gets eradicated.

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## AUTHOR CONTRIBUTIONS

Raza MR: Concept, design  
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