



## A STUDY REGARDING THE ACCEPTANCE AND ATTITUDE TOWARDS COVID-19 VACCINATION AMONG HEALTH-CARE WORKERS: AN OBSERVATIONAL STUDY IN A TEACHING HOSPITAL

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**ABSTRACT** **Background:** Nationwide COVID-19 vaccination has been launched since 16th February 2021 and health care workers are offered to get vaccinated at first. Vaccine coverage is a yardstick in measuring success of vaccination program. Despite cost-free, its acceptance among healthcare workers is not encouraging. **Objectives:** 1. To estimate coverage of COVID-19 vaccination among different categories of health care workers working in Agartala Government Medical College. 2. To study their attitude towards vaccination. 3. To determine the association between selected socio-demographic parameters and vaccination. **Methodology: Study Design:** Cross-sectional study. **Setting:** Hospital based. Study population: Health care workers of AGMC. **Sample size:** 300 health care workers. Sampling: Convenient sampling. Study period: February 2021. **Study tool:** A pretested structured and validated interview schedule. **Result:** Out of 300 participants, 51% HCWs has received vaccination. Among 51% HCWs 37.9% doctors, 61% technicians and 100% nurses and other HCWs received the vaccine. 51% HCWs accepted the vaccination as protective for COVID-19 and had an attitude to receive the 2nd dose. **Data management:** Data analysis performed in computer using SPSS-25 for windows. Mean and SD will be used to summarize the continuous data and proportions for the categorical ones. P-value <0.05 will be considered significant. **Conclusion:** Currently, during this COVID-19 pandemic, only approximately 51% of the HCWs got a dose of COVID-19 vaccine and majority had an attitude towards receiving the 2nd dose. In the context of a pandemic, vaccine hesitancy is a major barrier to implementing vaccination campaigns. To maintain benefits of vaccination programmes, understanding and addressing vaccine hesitancy will be crucial to their successful implementation.

**KEYWORDS :** Covid-19 vaccination, healthcare workers

### INTRODUCTION

Influenza-like illnesses are caused by more than 200 different viruses and bacteria, of which 4% are by coronaviruses.<sup>1</sup> The World Health Organization estimates that seasonal influenza annually affects 5-15% of the global population with 3-5 million of severe cases and nearly half a million of deaths.<sup>2</sup>

Coronaviruses are a large family of viruses having crown-like spikes on their surface. Three strains of coronaviruses caused severe disease are SARS-COV 1, which appeared in 2002, MERS (found in camels in 2012) and SARS-COV 2 (started in china in the year 2019).<sup>3</sup>

The Covid-19 outbreak started in Wuhan city in china with 46 Lakh confirmed cases and 3 Lakh deaths as of May, 16 2020.<sup>4</sup> SARS-COV 2 is transmitted from one person to another person during sneezing or coughing. COVID-19 has rapidly become a major public health crisis, affecting 86.4 million individuals, and causing 1.9 million deaths globally by January of 2021.<sup>5</sup> The US has reported more than 21 million cases and 357,000 deaths as of 5 January 2021.<sup>5</sup> In Tripura, there were 1240 confirmed cases of covid-19 infection (till June, 2020), of which 782 persons recovered.<sup>6</sup>

To curb this pandemic, apart from effective public health measures such as social distancing, wearing face masks, hand washing, and avoidance of crowded indoor spaces, educating the general population, efficacious vaccination is emerging as essential to mitigating disease several candidates, chiefly health care workers are currently under basic development and some of them were vaccinated in the phase 1 trials.<sup>7</sup> The time taken for the development of a vaccine is 1-1.5 years as different steps are necessary for the preparation.<sup>7</sup>

HCWs are prioritized among the high-risk groups who are considered as candidates for early vaccination. Now, after its development, a covid-19 vaccine faces the challenge of acceptance and attitude among health care professionals in a post crisis context. Thus, this study aims to investigate the acceptance and attitude regarding covid-19 vaccine among health care workers in a teaching hospital of Tripura.

### METHODOLOGY:

A Hospital based Cross-sectional study was conducted in AGMC and GBP Hospital among Health care workers of AGMC. It was conducted before the start of 2<sup>nd</sup> dose of covid-19 vaccination. The duration was

approximately 3 months (from February-April 2021). A total of 300 Health care workers of AGMC were interviewed using a pre-tested pre-designed questionnaire. The questionnaire included information regarding socio-economic parameters like sex, marital status, socio-economic status, category of HCWs.

Information was also collected on whether HCWs received the first dose of vaccination, willing to receive the 2<sup>nd</sup> dose, if vaccination could give protection against Covid-19. Exclusion criteria included HCWs, who refused to participate in the study. Convenient Sampling technique was used to draw the participants for the study. Data collection was done after taking informed consent from the participants in the study.

### Data Management-

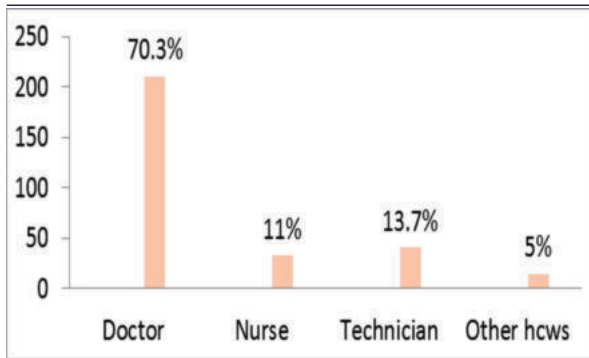
Data entry and analysis will be done in computer using SPSS – 21 for windows. Data will be presented with the help of tables, charts, diagrams etc. Descriptive statistics presented in frequencies and percentages. Tests for co-relation like Chi-square test used to study association with vaccination. P-value <0.05 will be considered statistically significant.

### RESULTS-

Total 300 participants participated in the study. According to the study, 211 (70.3%) health care workers were doctors, 33 (11%) were nurses, 41 (13.7%) were technicians and remaining 15 (5%) were Other HCWs. (Figure 1). Out of 300 participants enrolled in the study, 153 (51%) HCWs received the 1<sup>st</sup> dose of the Covid -19 vaccine (Figure 2). Among 211 (70.3%) doctors, only 80 (37.9%) took vaccine.

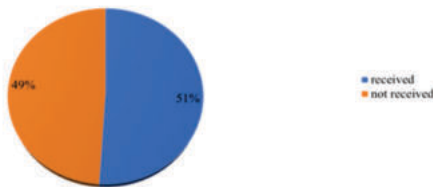
33 (11%) nurse and 15 (5%) Other HCWs, all of them were vaccinated by the 1<sup>st</sup> dose. 41 (13.7%) were technicians, and only 25 (60.9%) took the vaccination (Figure 3). 49.3% participants believed that vaccine will protect them, 45.7% said no idea, 5% believe no protection by the vaccine.

In Table 1, it is clearly shown that majority of the study participants, irrespective of their category, socio-economic status, sex and marital status significantly accept the vaccination. Table 2, depicts 51% HCWs who received the 1<sup>st</sup> dose were significantly willing to receive the 2<sup>nd</sup> dose of vaccine.



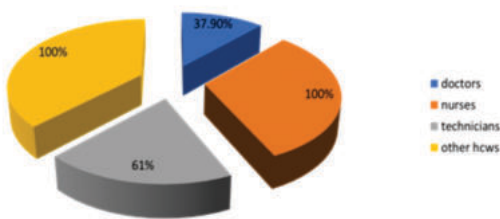
**Fig 1: Occupation Of The Study Participants**

Among 300 HCWs,70.3% were doctors,11% nurses ,13.7% technicians and 5% other HCWs.



**Fig:2 Vaccination status among study participants (n=300)**

This figure shows, only 51% HCWs received the 1st dose of the vaccine.



**Fig 3: Category of HCWs receiving vaccination (n=300)**

This diagram shows all nurses and other HCWs took the 1st dose , while only 37.9% doctors and 61% technicians received the dose.

**Table 1: The association of socio-demographic profile of the HCWs and Covid-19 vaccination:**

Socio-demographic Factors		Vaccine Received, n (%)	Vaccine not received, n (%)	p-value
Category of health care worker	doctors	80(52.3)	131 (89.1)	0.000
	nurses	33 (21.6)	0 (0.00)	
	technicians	25(16.3)	16(10.9)	
	Other HCWs	15(9.8)	0(0.00)	
Socio-economic status	upper	86 (57)	65 (43)	0.038
	lower	67(45)	82 (55)	
Sex	female	102 (86.4)	16 (13.6)	0.010
	male	51 (28)	131 (72)	
Marital status	Unmarried	41 (26.8)	115 (78.2)	0.000
	Married	112 (77.8)	32 (22.2)	

This table shows, significant acceptance of the vaccine among the study participants.

**Table 2: Attitude towards 2nd dose of covid-19 vaccination :**

		2ND DOSE OF VACCINE		P-value
		Will receive, n (%)	Will not receive, n (%)	
Category of health-care workers	doctor	80(52.3)	131(89.1)	0.0001
	nurse	33(21.6)	0(0.00)	
	technician	25(16.3)	16(10.9)	
	Other hcws	15(9.8)	0(0.00)	

**DISCUSSION :**

In this study, we examined the acceptance of Covid-19 vaccine among different categories of Health care Workers ,taking a representative sample of 300 workers working in a teaching hospital in Agartala, Tripura. We observed that a significant number (51%,153) of the HCWs accepted the Covid-19 vaccine for the 1st dose .These workers had a positive attitude towards the 2nd dose of vaccination and believed vaccination can prevent the disease. It was also seen less acceptance of the vaccine among remaining workers, because of possible AEFI .

Similar findings in a cross-sectional study regarding acceptance of Covid-19 vaccine among 1,314 HCWs in Ethiopia by Yilma D et.al shows 25.5% HCWs would not accept aCovid-19 vaccine and 20.2% (n=264) were not willing to recommend vaccination to others.8

Wang WM et.al conducted a study on covid-19 vaccination acceptance among health care workers and non-healthcare workers in 2021 and 76.98% HCWs accepted the Covid-19 vaccine.9

In a large study surveyed among 23,582 healthcare workers in kingdom of Saudi Arabia only 64.9%(15,299) HCWs accepted vaccination. Of 8202(35.1%),who said they would not accept the vaccine, the main reason behind not acceptance of the vaccine was fear of potential side-effects.10 A state level cross-sectional survey on Covid-19 vaccine acceptance and its determinants in the general population of Delhi by Sharma P et.al in 2021 among 20312 adult participants revealed the vaccine acceptance rate was 67.7% , with 43.8% having received the 1st dose.11

The strength of our study was that it included a vulnerable population ,likely to be effected more to the Covid-19 disease. The study population was quite a representative of the general population also. The vaccination status was preferably validated by vaccination certification .

The limitations include a smaller sample size, less generalizability due to vaccine hesitancy among the HCWs, limited vaccine availability and accessibility.

**CONCLUSION:**

Currently, during the pandemic, approximately 51% of the HCWs got a dose of COVID-19 vaccine and had an attitude towards receiving the 2nd dose. In the context of a pandemic, vaccine hesitancy is a major barrier to implementing vaccination campaigns. To maintain benefits of vaccination campaigns, understanding and addressing vaccine hesitancy will be crucial for successful implementation

**Recommendations-**

Mass Vaccination strategies are one of important ways in controlling the surge of COVID-19 infections. HCWs and front-line staffs must eagerly vaccinate themselves as a self protective measure. Taking 1st as well as 2nd dose of vaccine is necessary in building an absolute immune response.

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