

Perception of Front-line workers on Covid 19 Vaccination: The Effects, Side effects and Acceptance

A. Priyadharshini¹, Jarina Begum², Saptarishi Bose³, Syed Irfan Ali⁴, Satyajit Pattnaik⁵,
Dhananjaya Sharma⁶, Paromita Roy⁷

¹PG Resident, ³Associate Professor, ^{5,6}Professor, Department of Community Medicine, Great Eastern Medical School & Hospital, Srikakulam, Andhra Pradesh, India, ²Professor, ⁴Professor, Department of Community Medicine, Manipal Tata Medical College, Jamshedpur, Jharkhand, India, ⁷Assistant Professor, Department of Dental, Great Eastern Medical School & Hospital, Srikakulam, Andhra Pradesh, India.

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Abstract

Background: In 2021 only very few COVID-19 vaccines were anticipated in India. There is lag in vaccination drive & scanty literature on perception of front-line workers on COVID-19 vaccination. The study was planned to get an insight into vaccination effects, side effects & acceptance.

Methods: A cross-sectional study was conducted among front-line workers in a tertiary healthcare institute from March - May 2021 through an online google survey form. The data of the study was collected & analysed using percentage.

Results: 84% were 21 to 30 years of age, 51% were male. Almost 90.4% had taken 2 doses of vaccination, majority had Covaxin (91.5%). 10.6% & 26.5% delayed taking 1st jab & 2nd jab, attributed to fear of side effects, unavailability, tested positive for covid-19. Around 61.7% experienced side effects & majority had myalgia, injection site pain. Most of them perceived it effective in terms of less severity of disease after vaccination. Other prophylactic measures included (95.7%) covid precautions, (40.4%) Ivermectin, (25.5%) immune boosters & (18%) home remedies, 75.5% perceived vaccination as best way to tackle pandemic, whereas 23% stated natural immunity is better. 68% vouched for given opportunity to choose their vaccine, 47.9% preferred government setup.

Conclusion: All perceived it effective with minimal side effects. Although initially doubtful later showed full acceptance towards vaccines. Based on evidence study recommends administrative strengthening, provision of opportunity to choose vaccines, capacity building of vaccinators & vaccine awareness.

Key words: covid 19 vaccination, perception, side effects.

Introduction

Covid 19 disease originated from Wuhan, Hubei province, China in December 2019^[1]. It spread throughout the planet as a pandemic, infecting all the countries on the planet. The ICTV (International

Committee on Taxonomy of Viruses) declared "Severe Acute Respiratory Syndrome Coronavirus 2" (SARS-COV-2) as the name of the new virus on February 11th 2020^[2]. World Health Organization reported "COVID-19" as the name of this new disease on 11 February 2020^[2]. In India, it affected every nook

Corresponding Author: A. Priyadharshini, PG Resident, Department of Community Medicine, Great Eastern Medical School & Hospital, Srikakulam, Andhra Pradesh, India.

and corner of the country, in India the first case was recorded on 30th January 2020 in the state of Kerala [3]. The incubation period varies from 2 to 14 days, the symptoms include fever or chills, cough, shortness of breath and difficulty in breathing, loss of smell or taste, and in severe cases leads to death [4]. So, the death rate kept on increasing throughout the globe. A few drugs like Hydroxychloroquine and Remdesivir have been used as a desperate measure to fight COVID - 19, but we need is a drug or vaccine that will protect against the COVID - 19 Disease. Many researchers were trying throughout the world to find the prevention and treatment of this disease, the promising results were shown up by the Vaccines. Vaccines are very productive tool that can cover the public health. On the global landscape many Vaccines were being under development, in India currently, we are using two vaccines, Covaxin and Covishield.

Covishield

Manufactured by Serum Institute of India, Pune in Collaboration with Astra Zeneca. It is a viral vector based recombinant vaccine known by the specific name chAdox-1n Cov-19 (corona virus-19 type). It is a Single Recombinant Monovalent Type Vaccine. Given to the age group > 18 years, in 2 doses (0.5ml each) in the interval of 4 weeks apart, given through intramuscular and the preferred site is deltoid muscle [5]. This vaccine got its approval on 1st January 2021 to use in India, from Central Drugs and Standard Committee (CDSCO) [6].

Covaxin:

Manufactured by Bharath biotech international ltd., in collaboration with the Indian Council of Medical Research (ICMR) and National Institute of Virology (NIV) Pune. Covaxin has been developed indigenously by Bharath Biotech, India. It is a Whole virion inactivated SARS-COV-2 vaccine represented by BB152. The strain used is NIV-2020-770, and the strength used for vaccine preparation in India is 6mcg per 0.5 ml dose [5]. Covaxin got its emergency use certificate on January 3rd 2021 [6].

India started its largest vaccination drive on January 16th 2021 for 30 lakhs healthcare workers and front line workers [7]. The data regarding the people who are getting vaccinated, are entered in the CO-WIN database.

Objective:

- To evaluate the perception of frontline workers towards covid 19 vaccination.
- To access the after effect following the vaccination.
- To provide evidence-based recommendation.

Materials and Methodology

Study design: A cross-sectional study was conducted among the frontline workers, working in a tertiary care center in Srikakulam district, Andhra Pradesh.

Study period: March 2021 – May 2021.

Sampling method: Complete enumeration.

Sample size: 94

Study tool: Online google survey form having questions with sociodemographic details including age, gender, occupation, perception towards vaccine as multiple-choice questions, and open-ended questions.

Inclusion criteria:

- All medical frontline workers who have taken COVID-19 Vaccination.
- All participants who filled the survey forms.

Exclusion criteria:

- All medical frontline workers who did not respond to the survey.
- All participants who filled the survey form incompletely.

Statistical analysis:

The data were collected and entered in the Microsoft excel sheet and analysis was done in the form of frequency and percentage, to describe the study population and their perception towards Covid 19 vaccination.

Results

In our study, 84% of study participants belong to the age group of 21 – 30 years and 31-45 years was 16%. Majority of participants were males (51%) and 49% were females. Among the study participants 91.5% had taken the Covaxin and 8.5% had taken

the Covishield. Among the study participants, 90.4% had taken two doses of Covid 19 vaccination. Among the participants 35.1% were infected by Covid 19 disease before taking 1st dose of vaccination, 13% were infected between the 2 doses and 18% were infected after 2nd dose of vaccination. Around 33% of participants were not infected by Covid 19 disease before and after the vaccination. Among the study participants 75% perceived that if they take vaccination, they will be protected from the covid 19 infection and 22.9% of the participants perceived that once infected with covid 19 will provide them lifelong immunity and 2.1% of the participants perceived that both the infection and the vaccination will give them the protection. Among the study participants, 68% vouched for giving the option to choose between the vaccines. Majority of the participants, 47.9% felt government setup is the best place to get vaccinated where as 28.7% stated community setup and 23.4% stated private setup to get vaccinated. Majority of the participants, 62.7% preferred intramuscular route of administration of vaccine, 31.9% preferred nasal route and 5.3% preferred oral route of administration of the vaccine. Majority of the participants (81.1%) were observed for 30 minutes after vaccination and 13.2% were observed for 1 hour after vaccination to see for any side effects.

Table 1: Covid 19 vaccination side effects

Variables	Frequency	Percentage
Reason for taking Covid 19 vaccination.		
Protective against the covid 19 infection	71	75.5%
Peer pressure	23	24.5%
Awareness of side effects before taking the Covid 19 vaccination.		
Yes	89	94.6%
No	5	5.4%
Experienced side effects post vaccination.		
Yes	58	61.7%
No	36	38.3%
Delay in taking the Covid 19 vaccination.		
1 st dose	10	10.6%
2 nd dose	25	26.5%
Reason for delay in taking the vaccination.		
Fear of side effects	23	24.4%
Unavailability of vaccine	10	10.6%
Tested positive for Covid 19	14	14.8%

Type of side effects experienced post vaccination.		
Myalgia	61	64.8%
Injection site pain	47	50%
Headache	42	44.6%
Tiredness	33	35.1%
Fever, nausea & irritability	32	34%
Vaccination side effects need to be managed by medication.		
Yes	20	21.2%
No	74	78.8%

Table 2: Perception of Covid 19 vaccination

Variables	Frequency	Percentage
Perception of participants about Covid vaccine efficacy. (Got covid 19 disease after vaccination).		
Effective	64	68%
Vaccination decreases the severity of the infection.	17	18%
Vaccination decreases mortality.	13	14%
Other prophylactic measures followed other than covid 19 vaccination.		
Covid precautions	90	95.7%
Ivermectin	38	40.4%
Immune boosters	24	25.5%
Home remedies	17	18%
Vaccination is the best method to tackle the pandemic.		
Yes	71	75.5%
No	21	22.3%
Maybe	2	2.2%
Natural immunity is better than Covid 19 vaccination.		
Yes	22	23.4%
No	55	58.6%
Maybe	17	18%

Discussion

As the fear of covid 19 disease was creating panic among the population, the introduction of vaccination has given a mixed response. In our study, we analysed the perception of the covid 19 vaccination among frontline workers, so that it provides an evidence-based data among the population and encourage them to get vaccinated.

From our study we found that 75.5% showed positive attitude towards vaccination that it will protect them from the COVID 19 disease. Our findings were similar with the studies done by USA which showed 70%^[8] of vaccine acceptance, and in UK showed 86%^[9] of vaccine acceptance.

We found that 75% of the participants has positive attitude towards the vaccine that it will protect them from the infection and 24.4% had the fear of side effect after taking the vaccine, 23.4% preferred natural immunity is better than the covid 19 vaccine. Which was similar to the study done by Danabal KGM et al., in Tamil Nadu India found that 50% of the population showed positive attitude toward vaccine, 14.5% preferred natural immunity and 24.6% hesitated not to take vaccine because of the fear of side effects of the vaccine and 32.6% preferred to take the vaccine for its effectiveness^[10].

In a study done by Kishore J et al., found that 70.4% of the participants were showing the acceptance to get vaccinated and 55.6% of the participants wanted injectable form of vaccine and 44.3% wanted oral route of administration of the vaccine^[11]. Which was similar to our study with 75% of vaccine acceptance and 62.7% of participants preferred the intramuscular route of administration and 31.9% preferred nasal route.

A study done by Jayadevan R et al., found that 65.9% of participants reported at least one side effect after taking covid 19 vaccine. The side effects reported were 45% of tiredness followed by myalgia (44%), fever (34%), headache (28%), and pain at injection site (27%). And 27% needed medication to relieve the symptoms. Which was similar to our study 61.7% of participants experienced side effect post vaccination. Majority of the participants experienced myalgia (64.8%), injection site pain (50%), headache (44.6%), tiredness (35%) and fever (34%) and 21.2% of the participants needed medication to get relief from the symptoms^[12].

We analysed from our study the advantage of vaccination is:

- Provides individual immunity,
- Decreases the severity of the disease,
- Herd immunity and protection to others.

Disadvantages of vaccination is:

- Not 100% effective,
- Side effects like myalgia, injection site pain and fever.

Suggestions for vaccinators:

- Giving opportunity to choose in between the vaccines,
- Tackling the misinformation regarding the vaccines,
- Creating the awareness about the vaccination,
- Availability of the vaccines.

Conclusion

Our result displays all the participants perceived the vaccine with minimal side effects. Although initially there was a doubt about the vaccine but later showed full acceptance toward the vaccines. Based on the evidence the study recommends administrative strengthening, provision of opportunity to choose vaccines, capacity building of vaccinators and vaccine awareness.

Ethical Clearance: Taken from the Institutional Ethical Committee

Conflict Of Interest: Nil.

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References

1. Nadeem MS, Zamzami MA, Choudhry H, Murtaza BN, Kazmi I, Ahmad H, et al. Origin, Potential Therapeutic Targets and Treatment for Coronavirus Disease (COVID-19). *Pathogens* 2020; 9(4):307. <https://doi.org/10.3390/pathogens9040307>.
2. Naming of the Coronavirus disease (COVID - 19) and the virus that causes it. Naming the coronavirus disease (COVID-19) and the virus that causes it (who.int) (Last accessed on 04.01.2023)
3. Andrews MA, Areekal B, Rajesh KR, Krishnan J, Suryakala R, Krishnan B, et al. First confirmed cases of COVID-19 infection in India: A Case Report. *Indian J Med Res* 2020; 151:490-2.
4. Coronavirus disease (COVID - 19) symptoms <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> (Last accessed on 04.01.2023)
5. Letter from Additional Secretary Ministry of Health

- and Family Welfare Regarding Contraindication and Factsheet for COVID 19 Vaccines. Letter from Addl Secy MoHFWreg Contraindications and Fact sheet for COVID19 vaccines.PDF (Last accessed on 04.01.2023).
6. India approves Covishield, Covaxin Vaccines in Fight Against COVID-19 <https://www.moneycontrol.com/news/india/covid-19-vaccine-approved-dcgi-serum-institute-india-bharat-biotech-covishield-covaxin-coronavirus-vaccine-6296911.html> (Last accessed on 04.01.2023)
 7. Coronavirus India's largest vaccination programme begins on January 16. <https://www.thehindu.com/news/national/coronavirus-worlds-largest-vaccination-programme-begins-in-india-on-january-16/article33582069.ece> (Last accessed on 04.01.2023)
 8. Reiter PL, Pennell ML, Katz ML. Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated? *Vaccine* 2020; Sep 38 (42): 6500-7.
 9. Salali GD, Uysal MS. COVID-19 vaccine hesitancy is associated with beliefs on the origin of the novel coronavirus in the UK and Turkey. *Psychol Med* 2020;1-3.
 10. Danabal KG, Magesh SS, Saravanan S, Gopichandran V. Attitude towards COVID 19 vaccines and vaccine hesitancy in urban and rural communities in Tamil Nadu, India—a community-based survey. *BMC Health Services Research*. 2021 Dec;21(1): 994.
 11. Kishore J, Venkatesh U, Ghai G, Heena, Kumar P. Perception and attitude towards COVID-19 vaccination: A preliminary online survey from India. *J Family Med Prim Care*. 2021 Aug;10(8):3116-3121.
 12. Jayadevan R, Shenoy R, Anithadevi TS. Survey of symptoms following COVID-19 vaccination in India. *Medrxiv*. 2021; Jan 1.