

ORIGINAL ARTICLE

Assessment of knowledge and apprehensions regarding COVID-19 vaccine among Health Care Workers attending a COVID vaccination centre of a Private Tertiary Care Centre, Kolkata: A cross-sectional study

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ABSTRACT

Background: A massive global human disaster has been created by a contagious respiratory infectious disease caused by SARS CoV-2, which was classified as a pandemic by World Health Organisation (WHO). During this second wave of COVID-19, vaccination is utmost important for the healthcare workers to reduce the severity of the disease. **Objective:** The present study was done to study the socio-demographic profile of the health care workers attending a COVID vaccination centre and to assess the knowledge and apprehensions regarding COVID-19 vaccine among them. **Methodology:** An observational, descriptive, cross-sectional study was conducted for 6 months. All the health care workers getting COVID-19 Vaccine in the chosen time span and health care workers giving consent for the study were included in the present study while those being sick or giving no consent were excluded. **Results:** In this study, around 33.8% of the study population were aged between 21–30 years, 84.6% resided in urban areas, 58% have taken the 2nd dose of vaccine in last one month, which showed a positive attitude and acceptance regarding COVID-19 vaccine among them. Around 97% have taken Covishield vaccine rather than Covaxin. None of the health care workers have reported AEFI, but some of them (14%) have suffered from mild fever, headache and body pain after taking the vaccine. Around 23% of them suffered from COVID-19 before vaccination but after vaccination 14% have reported about being infected. After vaccination, 58.5% of them thought they were “less likely” to get COVID-19. Most of the them (77%) know that only vaccination cannot end the disease. Almost all health care workers (97%) take the responsibility of encouraging other people to take the vaccine without any fear. **Conclusion:** The study shows that there are diminished worries among the healthcare workers regarding acquiring the Covid-19 infection after receiving the vaccines. All of them are quite familiar with the term ‘COVID Appropriate Behaviour’. Most of them are encouraging their colleagues, friends, relatives to take the vaccine as soon as possible which reveals their acceptance of Covid-19 vaccine.

KEYWORDS

COVID-19, Covaxin, Covishield, COVID Appropriate Behaviour, Vaccination

INTRODUCTION

A massive global human disaster has been created by a contagious respiratory infectious disease caused by SARS CoV-2. It was classified as a pandemic by World Health

Organisation (WHO) on 11 March, 2020[1]. Since then, COVID-19 has spread all over the globe [2]. In West Bengal, total 20.2lacs cases are confirmed including 21,216 total deaths in the state, with as of 27 June, 2022[3].

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Acquiring immunity against the virus is essential, which can be acquired in two ways, either naturally or through vaccine. Vaccines can prevent the adverse effects, even if the virus is contracted. The COVID-19 vaccination in India began from 16 January, 2021[4]. The first group to receive the doses included the healthcare workers [4]. The second group to receive the doses included the frontline workers [4]. The third group to receive the vaccination were the persons over 60 years of age and over 45 years of age with co-morbidities, from 1 March, 2021[4]. The fourth group included the persons over 45 years of age, from 1 April, 2021[4]. From 1 May, 2021, MoHFW has started the vaccination program for persons above 18 years of age to cope up with the 2nd COVID-19 wave [4]. As of 27th June, 2022, the Indian Government has administered 4.8lac doses among the people of India majorly with usage of 2 vaccines, namely, Covaxin vaccine manufactured by Bharat Biotech, or Covishield (local name for Oxford, AstraZeneca) vaccine manufactured by Serum Institute of India. On 13 April, 2021, MoHFW, has approved the Sputnik V vaccine in India[5].

According to studies, it has been found out that Covaxin vaccine has an efficacy of about 81% and Covishield vaccine has an efficacy of about 78% [6][7][8]. Despite the efficacy being high enough, hesitancy about taking the vaccine exists, due to several unanswered queries about the side effects, safety and precaution. Vaccine acceptance is a social tool for advent, implementation and continuation of any vaccination programme. In 2019, WHO listed vaccine hesitancy as one of the top ten threats to global health [9]. Vaccine hesitancy may be influenced by misinformation, political causes etc. Global survey of potential COVID-19 vaccine acceptance shows that 48% of the study population were confused about the vaccine and remained unsure whether they would have the vaccine[10]. Different studies were constructed to know the acceptance of vaccine in China (54.23%)[11], United States(46%)[12], Saudi Arabia(50.5%) [13], France(75%)[14], Bangladesh(60%)[15] and Republic of Congo(28%)[16]. In Delhi, 79.5% of the study population of health care workers were willing to take the vaccine [17]. In Andhra Pradesh, some health care workers took the vaccine but they didn't want their family to take it[18]. In Karnataka, there was hesitancy and most percentages were still deciding what to do [19].

All the studies were done in the initial phase of vaccination. By reviewing many researches, we have concluded that there is not much study about the topic in West Bengal. Health care workers have an important role in informing, advising, and promoting vaccinations in accordance with the most up-to-date scientific evidence. Thus, their knowledge and apprehensions about the vaccines can be a crucial role to make the vaccination programme effective and help in overcoming this pandemic situation. Adverse event following immunization is any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the usage of the vaccine. If not rapidly and effectively dealt with, can undermine confidence in a vaccine and ultimately have dramatic consequences for immunization coverage and disease incidence. In India only 286 fatal casualties were noted post COVID vaccination. Based on above information, the present study was done to study the socio-demographic profile of the health care workers attending a COVID vaccination centre of Bellevue Clinic, Kolkata, West Bengal and to assess the knowledge and apprehensions regarding COVID-19 vaccine among health care workers attending the COVID vaccination centre.

MATERIAL & METHODS

An observational, descriptive, cross-sectional study was conducted at COVID-19 vaccination centre of Bellevue Clinic, Kolkata from 16th January 2021 to 15th June 2021 (6 months). All the health care workers getting COVID-19 Vaccine in the chosen time span and health care workers giving consent for the study were included in the present study while those health care workers being sick or giving no consent were excluded from this study. All the health care workers who were vaccinated during the mentioned time span were taken as the sample size by complete enumeration. The study tool included structured questionnaire, COVID-19 Vaccine register of Bellevue Clinic, Kolkata, mobiles and excel sheet. The vaccine beneficiaries were interviewed through phone calling through prepared questionnaire. The Institutional Ethical Clearance was taken for the study. The list of COVID-19 vaccine beneficiaries getting vaccine in the chosen time period were collected from Hospital's COVID-19 vaccine register. From the list health care workers were shortlisted. The beneficiaries who gave consent were asked

questions from the pretested questionnaire consisting questions to assess both Socio-demographic status and level of knowledge and Apprehensions about COVID-19 vaccine. All collected data was analysed by suitable and appropriate software and statistical techniques.

Standard Operating Definitions

Health Care Workers: In our study, a healthcare worker is one who delivers care and services to the sick and ailing either directly as doctors and nurses or indirectly as aides, helpers, laboratory technicians, or even medical waste handlers.

AEFI: Adverse event following immunization is any untoward medical occurrence which follows

immunization and which does not necessarily have a causal relationship with the usage of the vaccine.

RESULTS

A total of 130 people, who gave consent, were interviewed via the pre-designed questionnaire. The persons had taken Covid vaccination from vaccination centre at Bellevue Clinic, Kolkata, and their views were taken to get an idea about their knowledge and apprehensions regarding the Covid vaccines via a pretested structured questionnaire having 16 questions. The results of their responses are tabulated in tables and charts under the following headings:

TABLE 1: SOCIODEMOGRAPHIC PROFILE OF THE STUDY PARTICIPANTS

| Age | Frequency | Percentage(%) |
|------------------|-----------|---------------|
| 21—30 | 44 | 33.8 |
| 31—40 | 30 | 23.1 |
| 41—50 | 27 | 20.8 |
| 51—60 | 21 | 16.2 |
| 61—70 | 8 | 6.2 |
| Total | 130 | 100 |
| Sex | Frequency | Percentage(%) |
| Male | 75 | 57.7 |
| Female | 55 | 42.3 |
| Total | 130 | 100 |
| Religion | Frequency | Percentage(%) |
| Hindu | 112 | 86.20 |
| Muslim | 18 | 13.80 |
| Christian | 0 | 0 |
| Other | 0 | 0 |
| Total | 130 | 100 |
| Education | Frequency | Percentage(%) |
| Illiterate | 0 | 0 |
| Secondary | 0 | 0 |
| Higher Secondary | 40 | 30.77 |
| Graduate | 57 | 43.80 |
| Post graduate | 33 | 25.38 |
| Total | 130 | 100 |

Inference: Majority of the study population fall in the category of 21—30 years age group – 44 (33.80%). The age range varied from a minimum of 21 years to a maximum of 69 years, with a mean of 39±12 years.

Inference: Majority of the study population is male – 75 (57.70%) and the Male:Female ratio is 1.36:1.

TABLE 2: DISTRIBUTION OF STUDY POPULATION ACCORDING TO HISTORY OF COVID INFECTION

| Infection history | | Frequency | Percentage(%) |
|-----------------------------------|-----|-----------|---------------|
| Infected before receiving vaccine | Yes | 31 | 23 |
| | No | 99 | 76.15 |

| Infection history | | Frequency | Percentage(%) |
|----------------------------------|-------|-----------|---------------|
| | Total | 130 | 100 |
| Infected after receiving vaccine | Yes | 18 | 14 |
| | No | 112 | 86 |
| | Total | 130 | 100 |

Inference: Only 23% were infected with covid-19 before vaccination, while none were infected with covid-19 after vaccination.

Most of the people interviewed are Hindu – 112 (86.20%). Majority of the study population is Graduate – 57 (43.80%). Majority of the study population are doctors working at the hospital— 54 (41.5%).Majority of the study population is

married – 88 (67.7%).Most of the study population reside in urban areas – 110 (84.6%).Most people i.e, 66 (50.8%) took the vaccine as they thought it will prevent the severity of Covid disease if they happen to get infected by Covid-19. Almost everyone in the study population were vaccinated by Covishield Vaccine—126 (97%).

FIGURE 1: TYPE OF VACCINE RECEIVED BY THE HEALTHCARE WORKER

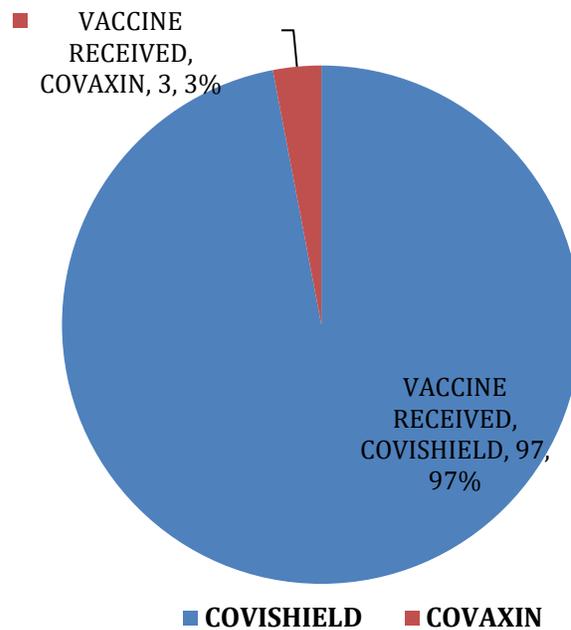
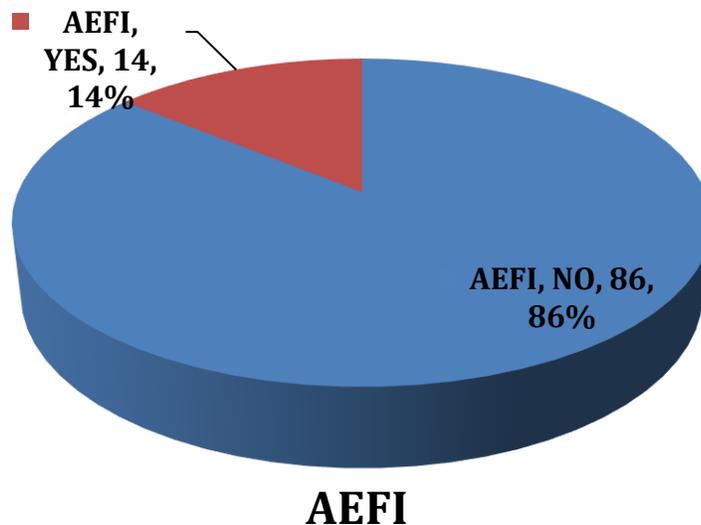
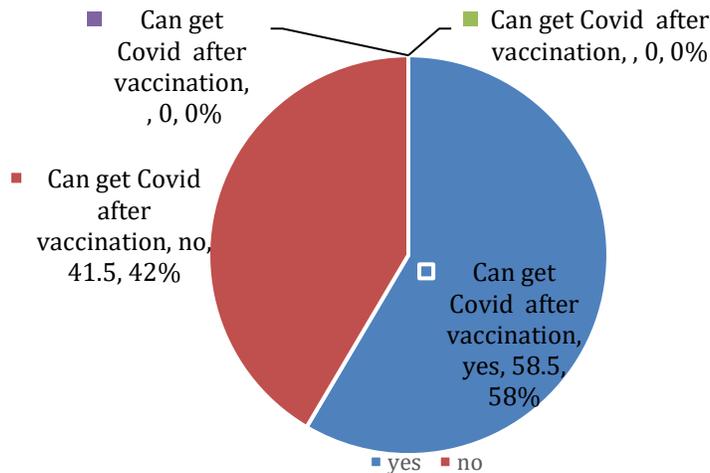


FIGURE 2: ADVERSE-EFFECTS FACED BY VACCINATED PERSONS



Inference - Most of the people—111 (85.4%) had no adverse effects after vaccination.

FIGURE 3: PEOPLES' BELIEF IF THEY COULD GET COVID AFTER VACCINATION

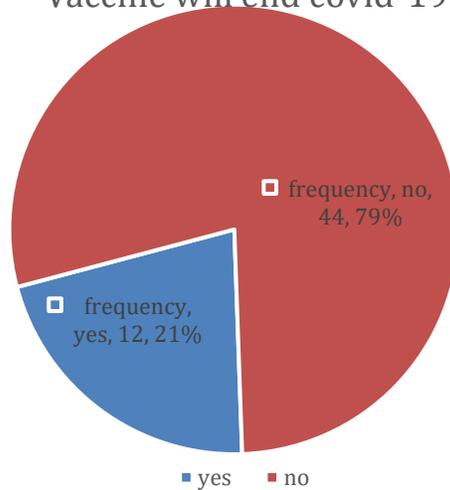


Can get covid after vaccination

Inference: Most of the people believed that they could get covid-19 even after vaccination

FIGURE 4: PEOPLES' BELIEF WHETHER VACCINE WILL END COVID-19 OR NOT.

Vaccine will end covid-19



Inference - Majority of the people didn't believe that vaccine can end covid-19 disease

FIGURE 5: KNOWLEDGE OF COVID APPROPRIATE BEHAVIOUR

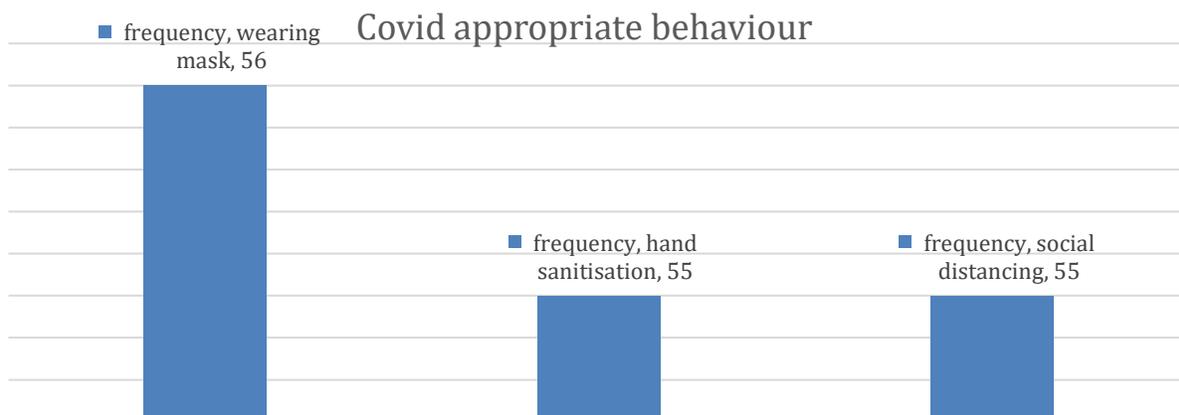
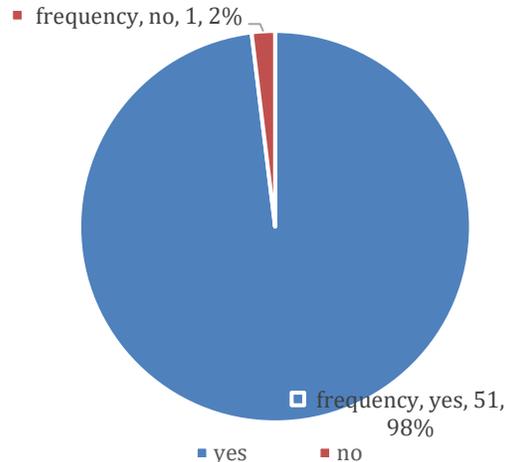


FIGURE 6: ENCOURAGEMENT TO TAKE COVID VACCINE



Encourage others to take vaccine

Inference - Almost all the people (98%) encouraged others to take the vaccine.

Most people with side effects had only fever (67%) after vaccination. Almost everyone i.e. 121 (93%) people were fully vaccinated with the 2nd dose during the time of this study. Almost one-fourth i.e. 31 (23%) out of 130 people were infected with Covid-19 before vaccination, while 18 (14%) people were infected with Covid-19 after vaccination. Majority of the people thought they were “Very likely” to get Covid-19 before vaccination—64 (49.21%), whereas after vaccination they thought they were “less likely” to get Covid-19—76 (58.5%). Majority of the people thought it was “likely” they could die from Covid-19—44 (33.80%) , whereas after vaccination they thought that it was highly “unlikely” they could die from Covid-19 i.e. 86 (66.2%). More than three—fourths of the respondents i.e. 100 (77%) did not believe that vaccine can end Covid-19 disease. Majority i.e. 83 (64%) of the respondents were informed about the vaccination programme, as they were healthcare workers working at the clinic. Almost all the people i.e. 121 (93%) have basic knowledge about Covid appropriate behaviour. All of the persons follow Covid appropriate behaviour even after vaccination. Almost all the people i.e 126 (97%) encouraged others to take the vaccine.

DISCUSSION

In our study, we found around (58%) of the health care workers have taken the 2nd dose of vaccine in last one month, which shows a positive attitude and acceptance regarding COVID-19 vaccine among them compared to other study done in Democratic Republic Of

Congo where only 28% of study population shows a positive attitude regarding COVID-19 vaccine [14]. In our study around 97% have taken Covishield vaccine rather than Covaxin vaccine in the last one month. None of the health care workers have reported AEFI, but some of them (14%) have suffered from mild fever, headache and body pain after taking the vaccine. A study in Nepal also shows majority of the health care workers have the similar symptoms[23]. In comparison with our study, different other studies constructed in China(54.23%)[9], United States (46%)[10], Saudi Arabia(50.5%)[11], shows a lower acceptance regarding the vaccination procedure. This low acceptance may be explained by the harm of social networks and spread of misinformation across traditional media. Around 23% of the health care workers suffered from COVID-19 before vaccination but after vaccination 14% have reported about being infected. Scientists at the Indian Council of Medical Research(ICMR) said the percentage of people who have been infected by the Corona virus after being vaccinated is not more than 0.04%[24]. This reflects that vaccination builds a strong immunity against COVID-19 among them and prevents the adverse effects of it.

After vaccination, 58.5% of them thought they were “less likely” to get COVID-19 as the vaccination greatly reduces the risk of getting infected. But another study in Los Angeles shows only 27.5% agreed that a vaccine would protect them from the severity of COVID-19[10]. Majority of the health care workers of our study (33.8%) thought it was likely they could die from COVID-19 before vaccination, but vaccination

brings positivity among the health care workers and they thought that it was highly unlikely that they could die from COVID-19 (66.2%), after vaccination. A study conducted in New Delhi shows 53.5% people felt that they might die from COVID-19 before vaccination[15]. Most of the health care workers (77%) know that only vaccination cannot end the disease. Health care workers are the bridge group of hospital infection transmission, and the professionals playing key roles to recommend vaccines to the general population[12].

In our survey, almost all health care workers (97%) take the responsibility of encouraging other people to take the vaccine without any fear. Majority of the health care workers of our study got the information about vaccination from mobile (37.5%), whereas a study in UAE shows majority of the health care workers got the information from social media (61%)[26]. A successful vaccination strategy doesn't just protect the health of health care workers, but also limit the transmission between the health sector and the community. All of them are quite familiar with the term 'COVID Appropriate Behaviour', i.e. wearing masks, proper sanitizer, maintaining social distancing before as well as after vaccination. Majority of the study population in China also take a good quality of preventive measures[25].

At last it can be said that it is essential to regularly monitor the practice of health care workers towards COVID-19 vaccines in the period ahead, not only because of their role in vaccination campaigns but also for their involvement in patient care[12].

CONCLUSION

Currently, during this Covid-19 pandemic, some of the healthcare workers were interviewed through phone calls who had taken the vaccine (mostly Covishield). The study shows that healthcare workers have a good knowledge on Covid appropriate behaviour as they are maintaining these even after getting vaccinated. The study also shows that there are diminished worries among the healthcare workers regarding acquiring the Covid-19 infection after receiving the vaccines. Also their likeliness to die in Covid is reduced after taking the vaccines. Most of the healthcare workers are encouraging their colleagues, friends, relatives to take the vaccine as soon as possible which reveals their acceptance of Covid-19 vaccine.

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