



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research
Vol. 15, Issue, 05, pp.24803-24809, May, 2023
DOI: <https://doi.org/10.24941/ijcr.45134.05.2023>

**INTERNATIONAL JOURNAL
OF CURRENT RESEARCH**

RESEARCH ARTICLE

SYMPTOMS EXPERIENCED AND INTERVENTIONS USED AFTER FIRST DOSE OF COVISHIELD AND FEAR OF COVID-19 AMONG HEALTH CARE PERSONNEL: A CROSS SECTIONAL SURVEY

***Deeksha Sharma and Monika Dutta**

Nursing officer, Day Care Wing, AIIMS Rishikesh, India and Associate Professor, NINE, PGIMER, Chandigarh

ARTICLE INFO

Article History:

Received 11th February, 2023
Received in revised form
27th March, 2023
Accepted 03rd April, 2023
Published online 30th May, 2023

Key words:

COVID-19, Covishield, AEFI,
Side effects, Health Care Personnel, Fear.

***Corresponding Author:**
Deeksha Sharma

ABSTRACT

Vaccination against COVID-19 is the gold standard for protection as well as prevention. Majority of the people are concerned about vaccine safety and efficacy; this makes public hesitant for receiving the vaccine. Concerns and apprehensions about the vaccine's side effects are widespread among people. The aim of this study was to explore the symptoms experienced and interventions used after the first dose of Covishield among health care personnel of northern region of India. It also aimed to assess fear of COVID-19 among health care personnel. Method: This was a cross-sectional study carried out via an online survey on 400 health care personnel (who had received at least first dose of covishield) from August 2021 to February 2022. Results: The results include the responses of 400 vaccine recipients. Data analysis carried out using SPSS. Semi-structured questionnaire and seven-item fear of COVID-19 scale (FCV-19S) were used to collect information on study variables. Majority of the participants 334 (83.5%) had both local and systemic side effects. Pain at injection site 138 (34.50%) was the first symptom noticed; followed by fever 111(27.75%). 136(34%) experienced first symptoms after 4-8 hrs of vaccine and the symptoms lasted only for <2days among 238 (59.50%) subjects. Antipyretics 246(61.5%) were used to overcome side effects. 223(55.75%) did not use any home remedy to manage symptoms. Moderate level of fear of COVID-19 was reported by 42% of the participants. Out of 400 health care personnel only 222 had received both doses so the comparison of symptoms after first and second dose could only be done on them. There was significant improvement in the self-reported health status after the second dose of Covishield ($p < 0.05$). Conclusion: In this study it was identified that health care personnel had both local and systemic side effects after first dose of Covishield which were effectively managed by using antipyretics. Most of the health care personnel (HCPs) had a moderate level of fear of COVID-19.

Copyright©2023, Deeksha Sharma and Monika Dutta. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Deeksha Sharma and Monika Dutta. 2023. "Symptoms experienced and interventions used after first dose of Covishield and fear of COVID-19 among health care personnel: A cross-sectional survey". *International Journal of Current Research*, 15, (05), 24803-24809.

INTRODUCTION

India is currently experiencing the third wave of the COVID-19 pandemic, and it has been three years since the country's first coronavirus case was identified. Throughout this period, India has fought both the original virus and its modified forms. Three waves of COVID-19 and its seven mutated versions, several of which proved to be fatal, have been fought by India. According to the Indian SARS-COV-2 Genomics Consortia (INSACOG) Alpha, Beta, Gamma, Delta, B.1.617.1 and B.1.617.3, AY series, and Omicron are the seven variations of concern that have been reported in India in the last two years. The COVID-19 third wave is currently being driven by the Omicron and Delta variants, which have been shown to be the most deadly of these.

The pandemic is not over yet, thus efforts should be directed at stopping the virus spread and saving lives.¹ Remdesivir, antivirals, antibiotics, steroids, cytokine inhibitors, monoclonal antibodies, and convalescent plasma therapy are the treatment approaches that have been suggested to manage COVID-19. Despite the clinical advantages, none of them have been proven to be successful in treating the condition.² Mass vaccination is the most effective way to create herd immunity against the COVID-19 pandemic.^{3,4} Considerable scientific rigor has been dedicated to the creation of vaccine for COVID-19, resulting in the fastest vaccine development in history. For instance, the Pfizer-BioNTech vaccine was authorized for emergency use in the UK on December 2, just one year after the initial case was reported in China.⁵⁻⁷ Covaxin and covishield were the most commonly used indigenous vaccines in India.⁸ On January 16, 2021, India formally began the first

phase of an indigenous COVID-19 vaccination program for front-line healthcare providers. And first dose was inoculated to a sanitary worker who was working in Delhi AIIMS. This process aimed to dispel the fear among common people and motivated everyone to get vaccinated.⁹ All of the vaccines created to far have some level of adverse effects after immunization (AEFI), and COVID-19 vaccination is no exception. According to a study on adverse reactions to the first dose of the ChAdOx1nCoV-19 (Covishield) vaccine in Nepal's first vaccination phase, moderate reactions were reported in (84.9%), severe minor reactions were seen in (0.02%), and serious reactions were seen in (0.05%).¹⁰ A study conducted in the UK using the COVID Symptom Study app found that the incidence of local and systemic reactions were, respectively, 58.7% and 33.7% after the first dose of the ChAdOx1 nCoV-19 vaccine.¹¹ After receiving the first dose of the ChAdOx1 nCoV-19 vaccine, Korean healthcare professionals in a different study using the Mobile Vaccine Adverse Events Reporting System (MVAERS) experienced an AEFI of 66.1%.¹² In India, there is not enough information available about the safety profile of different vaccines. Public vaccine hesitation is a result of insufficient data, and there is speculation that despite the availability of vaccines, adequate vaccination rates may not be obtained as a result of vaccine hesitancy.¹³ Despite this, medical professionals—particularly the doctors, nurses, and other healthcare professionals who are leading the COVID-19 defense—have claimed psychological distress, burnout, and psychosomatic problems.¹⁴⁻¹⁶ The increasing number of patients with COVID-19 had posed a great impact on health care providers particularly nurses who comprise the largest group of health professionals¹⁷⁻¹⁸ In this outbreak, nurses play a variety of roles, including dealing with suspect patients, triaging patients, identifying possible infection cases, and administering crucial care to COVID-19 patients¹⁹. The additional shifts and lengthy hours needed to care for patients with COVID-19 and their unique family needs seriously endanger the health of the nurses.²⁰ Nurses who are directly involved in treating patients with COVID-19 work under great pressure and stress. The fear and hesitancy among HCPs for getting vaccinated was mainly due to unknown status of vaccine's side effects. Due to this a need was felt to undertake this study and since initially covishield was the most commonly used vaccine in India hence it was necessary to conduct this study. In Saudi Arabia, a cross-sectional study on COVID-19 among HCPs revealed that, 10.7%, 73.5%, and 15.7% of participants had low, moderate, and severe level of fear and anxiety respectively.²¹ Another cross-sectional study from Saudi Arabia among nurses revealed a mild fear of COVID-19. Marital status and older age were found to be associated with higher level of fear.²² The shortage of data about side effects of covishield and its management and fear of COVID 19 among health care personnel's raise the need of this study. The results of this study may help to assess the side effects of covishield specific to Indian demography and might be a torch bearer to setup methodologies or interventions to help cope with the fear faced from COVID-19.

MATERIALS AND METHODS

Study Design and Participants: This was a cross sectional study carried among health care personnel who had received at least first dose of Covishield in the northern region of India. An online survey was conducted to gather the information between August 2021 and February 2022. By using snow ball sampling technique 400 HCPs were contacted and link of the

study was distributed via whatsapp and e-mail. HCPs including paramedics, nursing officers, and nursing trainees were approached to fill the online google form. HCPs who have received Covishield vaccine (first vaccine introduced for HCPs) were included in the study to maintain homogeneity and rest were excluded.

Ethical Consideration: Before the data collection, an online informed consent was taken and only those who responded were enrolled for the study.

Data Collection: Online link to fill consent form was sent and then a semi structured questionnaire and fear of COVID 19 (FCV-19) scale were forwarded. The form contained five sections i.e. History of COVID-19, post-vaccination symptoms and interventions used, vaccination experience, fear of COVID 19 and sociodemographic profile. It took 10-15 minutes to complete this form.

Tools: Fear of COVID-19 scale: Ahorsu et al.²³ have recently created a quick and reliable scale (FCV-19S) to measure someone's fear of the COVID-19. The Seven items were in the FCV-19S scale. (e.g., "I am most afraid of COVID-19", "My heart races or palpitates when I think about getting COVID-19"). A five-item Likert-type scale is used to ask the participants to rate their level of agreement with the assertions. Responses included "strongly disagree", "disagree", "neither agree nor disagree", "agree", and "strongly agree". The score ranged from 1-5 for each item and overall minimum possible score was 7 and maximum was 35. Greater the score more is the fear. Semi-structured questionnaire content validation was done by seeking expert opinion.

Data Analysis: Data analysis was carried out using descriptive and inferential statistics. Statistical package for social science (SPSS) program version-23 was used. The primary outcomes were symptoms experienced after first dose of Covishield vaccine and fear of COVID 19. Secondary outcomes were vaccination experience, perception and experience regarding Covishield vaccine and self reported health status before and after the 2nd dose of Covishield.

RESULTS

Table 1. Socio-demographic Characteristics of the Study Participants (n=400)

Socio-demographic characteristics	Participants	Percentage (%)
Age (yrs)		
Less than 30	376	94
22.8 ± 4.6	24	6
More than 30		
Mean age ± SD		
Gender		
Female	367	91.8
Male	33	1.1
Religion		
Hindu	328	82
Sikh	38	9.5
Muslim	18	4.5
Others	16	4
Habitat		
Rural	196	49
Urban	204	51
Occupation		
Nursing trainees	293	73.3
Nursing officers	56	14
Paramedics	51	12.7
Marital Status		
Unmarried	342	85.5
Married	58	14.5

The study results showed that among all the participants majority (94%) were from less than 30 years of age group and mean age was 22.8 ± 4.6 . Almost 91.8% of the participants were females and only 1.1% were males. Majority (82%) of the participants belonged to Hindu religion. Just more than half (51%) of the study participants were residing in urban area. The study population comprised of nursing trainees (73.3%), nursing officers (14%) and paramedics (12.7%). Majority (85.5%) of study participants were unmarried. (Table 1)

Table 2 COVID-19 Risk Parameters Profile of the Study Participants (n=400)

Variables	Participants	Percentage (%)
History of COVID-19		
Present	53	13.25
Absent	347	86.75
Suffered with COVID-19 (n=53)		
Before first dose of covishield	40	75.5
After first dose of covishield	13	24.5
Menstrual history in females (n=367)		
Regular	333	90.7
Irregular	34	9.3
Co morbidities		
Absent	363	90.8
Present	37	9.3
Types of co-morbidities(n=37)		
Diabetes mellitus	4	10.8
Hypertension	13	35.1
Thyroid disorders	8	21.6
Others	12	32.4
BMI(Kg/ m²)		
Normal (18.5-24.9)	242	60.5
Underweight (<18.5)	96	24
Overweight (25-29.9)	62	15.5

Among the study participants, only 13.25% (n = 53) had a history of confirmed COVID-19 infection, out of which 3.25% (n = 13) suffered after the first dose of covishield and 10% (n=40) suffered prior to vaccination. None of the participants reported any history of hospitalization. Among all female participants majority (90.7%) had a history of regular menstrual cycle. Most (90.8%) of the study participants reported no co-morbidities. Among the others, majority of them reported hypertension (35.1%) as a co-morbidity. More than half (60.5%) of the participants had normal BMI, where as 24% were underweight and 15.5% were overweight. (Table 2)

Table 3. Incidence of Side Effects Among Study Participants Following 1st dose of Covishield (n=400)

Characteristics	Participants	Percentage (%)
Types of side effects		
Local	31	7.75
Systemic	35	8.75
Both local and systemic	334	83.5
First noticed symptoms		
Fever	111	27.75
Pain at injection site	138	34.50
Headache	53	13.25
Bodyache	82	20.50
Giddiness and lightheadedness	12	3
Others	4	1
Timing of onset of first symptoms after vaccination		
With in 1 hour	44	11
1-4 hours	107	26.75
4-8 hours	136	34
>8 hours	113	28.25
Duration of symptoms lasted		
<2 days	238	59.50
2-3 days	121	30.25
3-5 days	28	7
5-7 days	8	2
>7days	5	1.25

Majority (83.5%) of the participants developed both local and systemic symptoms while local and systemic symptoms alone were seen in 7.75% and 8.75% of the participants respectively. Injection site pain (34.50%) and fever (27.75%) were the most common local and systemic symptoms respectively. Majority of the participants (34%) developed their first symptom within 4-8 hours following vaccination. Over half (59.50%) of the participants said their symptoms disappeared in under two days. (Table 3)

Table 4. Management of Side Effects by Study Participants (n=400)

Variables	Participants	Percentage (%)
Vaccination hamper ability to work in some way		
Yes	19	4.75
No	381	95.25
First consulted person after side effects		
Health care providers	180	45
Friend	140	35
Teacher	7	1.75
Others	23	5.75
No one	50	12.50
Medicines used to overcome side effects		
Antipyretics	246	61.5
Antibiotics	34	8.5
Analgesics	36	9
Antihistamines	2	0.5
others	8	2
Not used any medicine	105	26.25
Duration of medicines use to manage the symptoms		
<2 days	225	56.25
2-3 days	55	13.75
3-5 days	6	1.50
5-7days	6	1.50
>7days	3	0.75
Not used any medicine	105	26.25
Home remedies used to manage the symptoms		
Not used any home remedy	223	55.75
Ice application at injection site	28	7
Plenty of water	145	36.25
Others	4	1
Diet followed to manage the symptoms		
Normal diet	349	87.25
Liquid diet	22	5.50
Protein rich diet	21	5.25
Bland diet	8	2

Covishield vaccine hampered the ability to work in only 4.75% of the participants while others (95.25%) remained unaffected. Majority (45%) of the study participants consulted a health care provider for alleviating their side effects. About 81.5% of vaccine recipients had to take some sort of medications for alleviating the side effects. Antipyretic was the most used (61.5%) medication, followed by analgesics (9%) and antibiotics (8.5%).

More than half (56.25%) of the participants had taken medication for less than 2 days to manage side effects following vaccination. More than half (55.75%) of the study participants had not taken any home remedy for the side effects while others used plenty of water (36.25%) and application of ice at injection site (36.25%). Most (87.25%) of the study participants responded that they preferred normal diet for alleviating the side effects. (Table 4)

Table 5. Vaccination Experience of Study Participants (n=400)

Variables	Participants	Percentage (%)
Place of getting vaccination		
Government centers	369	92.25
Private hospitals	31	7.75
Got explanation about side effects by staff		
Received	300	75
Not received	100	25
Satisfaction with vaccination staff explanation		
Not received any explanation	100	25
Satisfied	285	71.25
Not satisfied	15	3.75
Rating of vaccination experience		
Very good		
Good	98	24.50
Neutral	226	56.50
Bad	61	15.25
Very bad	13	3.25
	2	0.50
Still following COVID-19 precautions (mask, sanitizers etc.)		
Yes	395	98.75
No	5	1.25
Encouraging other people to get vaccination		
Yes	391	97.75
No	9	2.25

Most (92.25%) of the participants chose to get their vaccination at a government center. Majority (75%) of them received an explanation about the side effects of the vaccine and a little less than three fourth (71.25%) of them were satisfied with the explanation. Out of all the participants 81% had either a good or a very good vaccination experience. Almost all (98.75%) of the participants were still following the COVID-19 precautions and encouraging other people to get vaccinated (97.75%). (Table 5).

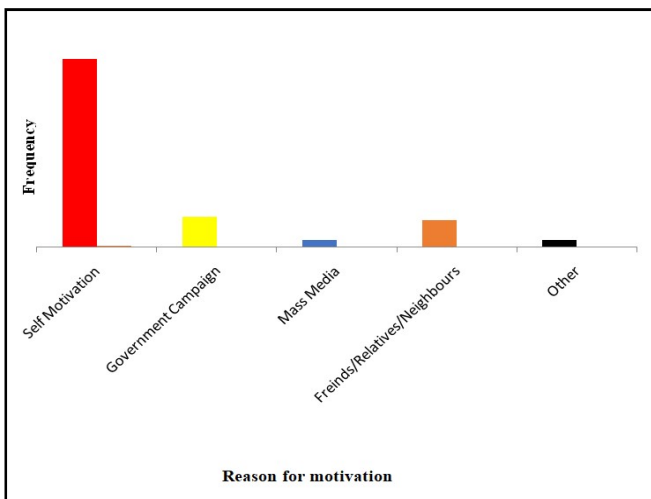


Figure1 Perception and Awareness of Participants Regarding Covishield Vaccine (n=400)

Of the 400 participants, 72.5% stated that they had taken the vaccine out of self motivation, 11.75% were motivated by a government awareness campaign, 10.25% listened to a suggestion by a family member/relative or a friend. Only 2.75% were inspired by mass media while the remaining (2.50%) were inspired by various reasons. (Figure 1)

Table 6 Incidence of Side Effects Among Participants After 2nd Dose of Covishield (n=400)

Variables	Participants	Percentage (%)
Immunized with 2nd dose of covishield		
Yes	222	55.50
No	178	44.50
Symptoms after 2nd dose of covishield (n=222)		
Present	66	29.7
Absent	156	70.2
Rating of symptoms as comparison of first dose (n=222)		
No symptoms	156	70.2
Similar	17	7.65
Less severe	41	18.4
More severe	8	3.6

Out of all the participants a little more than half (55.50%) had completed their second dose of vaccination. Majority (70.2%) of the participants reported that they were asymptomatic after the second dose while 18.4% of the study participants reported the symptoms as less severe as compared to first dose. (Table 6)

Table 7 Self Reported Health Status After 1st and 2nd Dose of Covishield (n=222)

Self-reported Health status ↓	After 1 st dose of covishield	After 2 nd dose of covishield	χ^2 (df) p-value
Very good	51 (22.97)	66 (29.73)	25.17(0.001)*
Good	131(59.01)	144 (64.86)	
Neutral	38 (17.12)	7(3.15)	
Bad	2(0.90)	5(2.25)	

This table depicts comparison of self reported health status after first and second dose of Covishield vaccination. 81.98% of the participants reported ‘Very Good’ or ‘Good’ as their health status which increased to 94.59% after second dose of covishield. There was significant increase in the self reported health status was seen after the second dose of covishield (p=0.001).

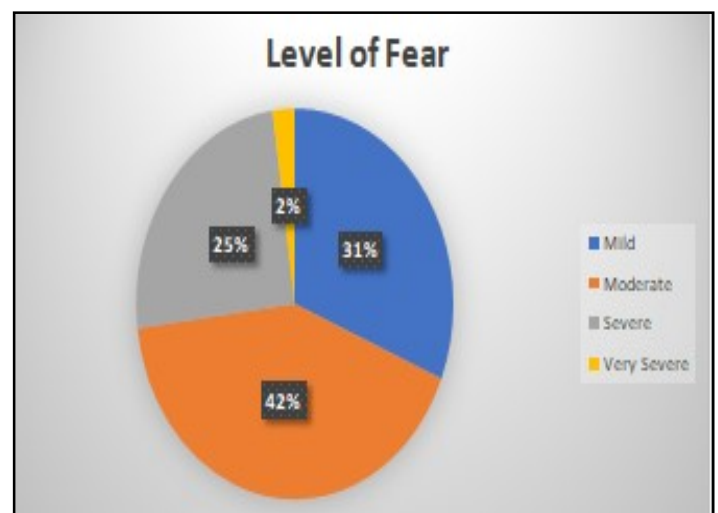


Figure 2. Level of Fear of COVID-19 Among the Study Participants (n=400)

The level of fear regarding COVID-19 among most of the participants (42%) was moderate. One fourth (25%) of participants had severe level of fear. (Figure 2)

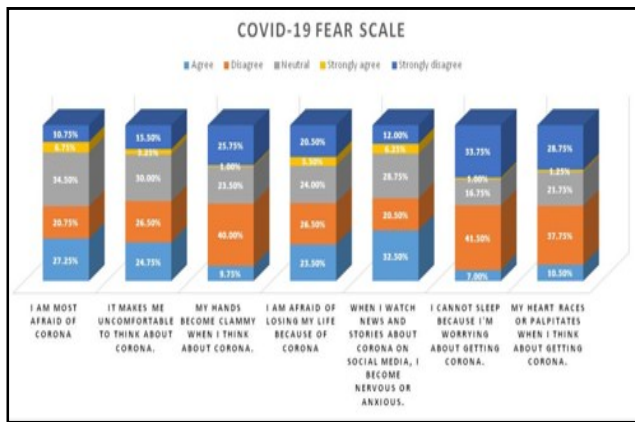


Figure 3. Assessment of Fear as Per COVID-19 Fear Scale (n=400)

According to the COVID-19 fear scale, 34% of participants were afraid of COVID-19 as compared to 31.25% who were not afraid. When asked if thinking about COVID made them uncomfortable 28% of the participants agreed while 42% disagreed. 10.75% of the study participants developed tremor or sweating in their hands when they thought about corona virus. 28.80% of the participants were afraid of losing their life due to corona. News and stories about corona made 38.75% of the participants nervous or anxious. Only 8% of the participants complained that they were unable to sleep because of the fear of getting COVID-19. 11.75% of the study participants reported that their heart races or palpitates when they think about getting corona while 66.25% disagreed with the statement. (Figure3)

DISCUSSION

By boosting the immune system of the vaccinated person, vaccination is a crucial step in the prevention of numerous infectious diseases, including COVID-19. Because vaccinations are given to millions of individuals, their safety and effectiveness are crucial considerations. Any safety problem with the vaccine may prove to be a barrier to a successful immunization. Therefore, it is crucial to assess each stage of vaccine production, particularly the post-marketing phase.²⁴ The potential side effects following several COVID-19 vaccines have already been listed by the Centers for Disease Control and Prevention (CDC) in the USA. Some of these include fatigue, a fever, chills, nausea, vomiting, joint pain, and pain and swelling where the injection was made.²⁵ The percentage of local and systemic reactions, or 7.75% and 8.75%, respectively, was relatively similar. The majority of subjects (83.5%) experienced both local and systemic symptoms. These results are in line with the research done by Menni *et al* and Jeon *et al*, which found that the majority of vaccines caused two or more types of reactions, whether they were local or systemic. The most frequent initial symptom was pain at the injection site (34.50%), followed by fever (27.75%).¹¹⁻¹² In the present study majority (83.5%) of participants experienced both local and systemic side effects following COVID vaccination. The most frequent adverse events (AEFI) associated with the COVID-19 vaccination were found to be pain at the injection site (34.50%), followed by fever (27.75%), with most people reporting these AEFI within 4–8 hours (34%). More than half of the participants (59.50%) stated that their symptoms disappeared in under two days.

Similar results were reported by Kaur *et al*, where it was found that two most frequent side effects following COVID immunization were pain at the injection site (22.3%) and exhaustion (18.4%), with the majority of people suffering these AEFI within 24 hours.²⁶ According to the WHO, the most common and mild to moderate adverse reactions to the COVID-19 vaccination were fever, weariness, headache, muscle discomfort, chills, diarrhea, and soreness at the injection site.²⁷ In present study 61.5% of participant took antipyretics to overcome side effects for <2days (56.25%). Similar findings were quoted by Shrestha *et al*. where 55.6% of participants adopted self medication as a modality for AEFI management after covishield.²⁸ In this trial, the covishield vaccine had an adverse effect on only 4.75% of subjects, while the remaining 95.25% were unaffected. Similar results were reported by Kaur *et al.*, who found that out of 1036 individuals, only 8.8% took a leave of absence from work after receiving the immunization, and that 102 (9.8%) experienced difficulties carrying out daily tasks as usual.²⁶ Health care providers (4.5%) were first consulted persons after vaccination followed by friends (3.5%) of the participants.

The possible reason for HCPs being the first person to be contacted after side effects might be attributed to the fear of COVID among masses at the time of data collection and this might explain why majority of participants 55.75% did not opt for any home remedy in present study. Based on these findings we can conclude that the symptoms experienced by most of the participants were mild this conclusion was further reinforced by the fact that majority 87.25% of participants followed normal diet instead of opting for a special diet after vaccination. Government centers were the common places where (92.25%) majority of participants got their vaccination. The possible reason might be the cost effectiveness, faith on government employees and initiatives taken by government for vaccination. Majority (75%) of participants received explanation about side effects from the employee side at the time of vaccination and it can be further enhanced by training and educational programme for the employees to keep them up to the date with the latest information. And about 71.25% of participants were satisfied with explanation provided regarding side effects and their management. It helped them to reduce their anxiety and any misunderstanding regarding covishield vaccination. It might be one of the reason that in present study 97.75% of the participants encouraging other people to get vaccination.

With a greater understanding of the virus and its vaccine, vaccination adoption is rising, with young healthcare professionals showing the most approval for the vaccine shot.²⁹ The further results also suggest that the majority (97.75%) of the study participants reported that they are still following COVID-19 precautions (mask, sanitizers etc.). Similar findings were quoted by Rahman *et al* where majority (88.82%) of the study population reported positive responses regarding maintaining healthy behavior even after being vaccinated.³⁰ In present study majority 56.50% of the study participants had good vaccination experience. It might be the biggest reason that in about 9 months India achieved a milestone for crossing 100 crore doses of COVID-19 vaccine.³¹ Of the 400 participants, 72.5% said they received the vaccine due to personal motivation, 11.75 % said a government awareness campaign motivated them, and 10.25 % said they took a friend's or family member's advice. Only 2.75% were inspired by mass media while the remaining

(2.50%) were inspired by various reasons. These findings are contrary to the findings of Islam *et al* where the majority (53%) of participants source of knowledge about the COVID-19 vaccine, from mass media, social media and the internet.³² In present study little more than half (55.50%) had completed their second dose of vaccination. Majority (70.2%) of the participants reported that they were asymptomatic after the second dose while 18.4% of participants said that symptoms were more severe after first dose. Only 3.6% of the study participants reported the symptoms as more severe as compared to first dose. These findings are comparable to those of a study by Beg BM *et al.*, in which 37.8% of participants reported that they had felt the majority of the symptoms following the first dose of the vaccine. Only 13.7% of individuals reported experiencing severe symptoms after the second dose.³³ 81.98% of the participants reported 'Very Good' or 'Good' as their health status which increased to 94.59% after second dose of covishield. None of the participants reported 'Very Bad' as their health status after the second dose. There was significant increase in the health status after the second dose of covishield ($p < 0.05$). The COVID-19 pandemic has put a tremendous load on healthcare professionals and raised severe concerns. The pandemic had a previously unheard of effect on nurses, causing negative psychological issues (such as terror). According to the study's current findings, HCPs had a moderate level of dread about COVID-19. These results matched those of a research by Moussa *et al.*, which revealed that nurses in Saudi Arabia during the COVID-19 epidemic experienced a moderate level of dread.²²

CONCLUSION

This study found that after receiving the first dose of Covishield, HCPs experienced both local and systemic side effects, which were primarily treated with antipyretics. Symptoms were mild in severity and short lived. Most of the HCPs had moderate level of fear of COVID-19 as per FCV-19. Majority of the participants reported that they were asymptomatic after the second dose as compared to first dose. Additionally, the first dose's side effects were more severe than the second's. Therefore, self reported health status after second dose of vaccine was better. Based on these findings it can be concluded that vaccine was safe and additionally also help in alleviating the fear of COVID-19 among the participants in turn motivating them to get vaccinated.

Limitations

There is a potential of recollection bias because the HCP's data were gathered right away following vaccination. Since this research was cross-sectional, the long-term effects of the COVID vaccine could not be examined. The snowball sampling method has a limit on sample size. Health professionals have a much higher level of understanding about COVID, its immunization, and how to handle its adverse effects than the general public. This could limit the generalizability of present study findings.

Informed Consent: Informed consent was obtained from all the participants included in the study.

Acknowledgement: We conclude our acknowledgment by appreciating all those who have contributed to this study directly or indirectly.

Financial Support and Sponsorship: Nil

Conflict of Interest: There are no conflicts of interest.

REFERENCES

1. Two years on, India continues to fight against COVID-19 and variants. Available from <https://www.indiatoday.in/coronavirus-outbreak/story/COVID-19-and-coronavirus-variants-india-continues-to-fight-1906393>, accessed on 2022-01-30
2. Dong Y, Shamsuddin A, Campbell H, Theodoratou E. Current COVID-19 treatments: Rapid review of the literature. *J Glob Health*. 2021 Apr 24; 11:10003. Available from: <https://doi.org/10.7189/jogh.11.10003> PMID: 33959261.
3. Frederiksen LSF, Zhang Y, Foged C, Thakur A. The Long Road Toward COVID-19 Herd Immunity: Vaccine Platform Technologies and Mass Immunization Strategies. *Frontiers in Immunology*. 2020 July 21; 11:1817. Available from: <https://doi.org/10.3389/fimmu.2020.01817> PMID: 32793245
4. Vignesh R, Shankar EM, Velu V, Thyagarajan SP. Is Herd Immunity Against SARS-CoV-2 a Silver Lining? *Frontiers in Immunology*. 2020 Sep 30; 11:2570. Available from: <https://doi.org/10.3389/fimmu.2020.586781> PMID: 33101320
5. Ball P. The lightning-fast quest for COVID vaccines—and what it means for other diseases. *Nature*. 2021 Jan 1; 589(7840):16–8. Available from: <https://doi.org/10.1038/d41586-020-03626-1> PMID: 33340018
6. WHO issues its first emergency use validation for a COVID-19 vaccine and emphasizes need for equitable global access. Available from: <https://www.who.int/news/item/>, accessed on 31-12-2020.
7. U.K. Approves Pfizer Coronavirus Vaccine, a First in the West—The New York Times. Available from: <https://www.nytimes.com/2020/12/02/world/europe/pfizer-coronavirus-vaccine-approved-uk.html>, accessed on 02-12-2020.
8. Covaxin Vs Covishield- A Detailed Comparison. Available from: <https://pharmeasy.in/blog/covaxin-vs-covishield-a-detailed-comparison/> accessed on 16/2/2023.
9. Aiiims Delhi Sanitation Workers Receives India's First COVID-19 Shot. Available From :<https://www.who.int/india/news/feature-stories/detail/aaiims-delhi-sanitation-worker-receives-india-s-first-covid-19-shot>, accessed on 16/02/2023.
10. Shrestha S, Devbhandari RP, Shrestha A, Aryal S, Rajbhandari P, Shakya B, Pandey P, Shrestha RK, Gupta M, Regmi A. Adverse events following the first dose of ChAdOx1 nCoV-19 (COVISHIELD) vaccine in the first phase of vaccine roll out in Nepal. *Journal of Patan Academy of Health Sciences*. 2021 Apr 29;8(1):9-17.
11. Menni C, Klaser K, May A, Polidori L, Capdevila J, Louca P, *et al.* Vaccine side-effects and SARS-CoV2 infection after vaccination in users of the COVID Symptom Study app in the UK: a prospective observational study. *Lancet Infect Dis*. 2021 Apr 27; Available from: [https://doi.org/10.1016/S1473-3099\(21\)00224-3](https://doi.org/10.1016/S1473-3099(21)00224-3) PMID: 33930320 .
12. Jeon M, Oh CE, Lee J. Adverse Events Following Immunization Associated with Coronavirus Disease 2019 Vaccination Reported in the Mobile Vaccine Adverse Events Reporting System. 2021 May 03; 36 (17):e114. Available from: <https://doi.org/10.3346/jkms.2021.36.e114> PMID: 33942578
13. Dror AA, Eisenbach N, Taiber S, Morozov NG, Mizrahi M, Zigran A, *et al.* Vaccine hesitancy: the next challenge in the fight against COVID-19. *Eur J Epidemiol*. 2020; 35(8):775–9. Available from: <https://doi.org/10.1007/s10654-020-00671-y> PMID: 32785815.
14. Barello, S., Palamenghi, L., and Graffigna, G. (2020). Burnout and somatic symptoms among frontline healthcare professionals at the peak of the Italian COVID-19 pandemic. *Psychiatry Res*. 290:113129. doi: 10.1016/j.psychres.2020.113129
15. Giusti, E. M., Pedroli, E., D'Aniello, G. E., Stramba Badiale, C., Pietrabissa, G., Manna, C., *et al.* (2020). The psychological

- impact of the COVID-19 outbreak on health professionals: a cross-sectional study. *Front. Psychol.* 11:1684. doi: 10.3389/fpsyg.2020.01684
16. Marton, G., Vergani, L., Mazzocco, K., Garassino, M. C., and Pravettoni, G. (2020). 2020s heroes are not fearless: the impact of the COVID-19 pandemic on well-being and emotions of Italian health care workers during italy phase 1. *Front. Psychol.* 11:588762. doi: 10.3389/fpsyg.2020.588762
 17. Fernandez, R., Lord, H., Halcomb, E., Moxham, L., Middleton, R., Alananzeh, I., et al. (2020). Implications for COVID-19: a systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *Int. J. Nurs. Stud.* 111:103637. doi: 10.1016/j.ijnurstu.2020.103637
 18. Goh, Y. S., Ow Yong, Q., Chen, T. H., Ho, S., Chee, Y., and Chee, T. T. (2021). The impact of COVID-19 on nurses working in a University Health System in Singapore: a qualitative descriptive study. *Int. J. Mental Health Nurs.* 30, 643–652. doi: 10.1111/inm.12826
 19. Baskin, R. G., and Bartlett, R. (2021). Healthcare worker resilience during the COVID-19 pandemic: an integrative review. *J. Nurs. Manag.* 2021:10.1111/jonm.13395. doi: 10.1111/jonm.13395
 20. Nie, A., Su, X., Zhang, S., Guan, W., and Li, J. (2020). Psychological impact of COVID-19 outbreak on frontline nurses: a cross-sectional survey study. *J. Clin. Nurs.* 29, 4217–4226. doi: 10.1111/jocn.15454
 21. Mohsin SF, Agwan MA, Shaikh S, Alsuwaydani ZA, AlSuwaydani SA. COVID-19: Fear and anxiety among healthcare workers in Saudi Arabia. A cross-sectional study. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing.* 2021 Jul;58:00469580211025225.
 22. Moussa ML, Moussa FL, Alharbi HA, Omer T, Khallaf SA, Al Harbi HS, Albarqi AA. Fear of nurses during COVID-19 pandemic in Saudi Arabia: A cross-sectional assessment. *Frontiers in Psychology.* 2021:4545.
 23. Ahorsu, D.K.; Lin, C.Y.; Imani, V.; Saffari, M.; Griffiths, M.D.; Pakpour, A.H. The Fear of COVID-19 Scale: Development and Initial Validation. *Int. J. Ment. Health Addict.* 2020, 1–9. [CrossRef]
 24. Singh S, Jain S, Khan BH, Gautam V, Batola M. Assessment of adverse events following first dose of COVISHIELD in healthcare workers of a tertiary care hospital in western Uttar Pradesh: A prospective observational study. *Asian Journal of Medical Sciences.* 2022 May 3;13(5):18-22.
 25. Centers for Disease Control and Prevention. Possible side effects after getting a COVID-19 vaccine Available from: <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html> accessed on february 16, 2023
 26. Kaur S, Singh A, Saini S, Rohilla L, Kaur J, Chandi A, Kaur G, Singh M, Kumar P, Soni SL, Kajal K. Reporting adverse events of ChAdOx1 nCoV-19 coronavirus vaccine (Recombinant) among the vaccinated healthcare professionals: A cross-sectional survey. *Indian Journal of Medical Research.* 2022 Jan 1;155(1):123-8.
 27. World Health Organization. Side effects of COVID-19 vaccines Available from: <https://www.who.int/news-room/feature-stories/detail/side-effects-of-COVID-19-vaccines> accessed on february 16, 2023
 28. Shrestha S, Devbhandari RP, Shrestha A, Aryal S, Rajbhandari P, Shakya B, Pandey P, Shrestha RK, Gupta M, Regmi A. Adverse events following the first dose of ChAdOx1 nCoV-19 (COVISHIELD) vaccine in the first phase of vaccine roll out in Nepal. *Journal of Patan Academy of Health Sciences.* 2021 Apr 29;8(1):9-17.
 29. Malik A, Malik J, Ishaq U. Acceptance of COVID-19 vaccine in Pakistan among health care workers. *medRxiv.* 2021. pmid:34525110
 30. Rahman MM, Chisty MA, Sakib MS, Quader MA, Shobuj IA, Alam MA, Halim MA, Rahman F. Status and perception toward the COVID-19 vaccine: A cross-sectional online survey among adult population of Bangladesh. *Health Sci Rep.* 2021 Dec 14;4(4):e451. doi: 10.1002/hsr2.451. PMID: 34938896; PMCID: PMC8671900
 31. India crosses 100-crore COVID-19 vaccination doses milestone. Available from: <https://www.thehindu.com/news/national/total-COVID-19-vaccine-doses-administered-in-india-crosses-100-crore-milestone/article37102911.ece>, accessed on 16/02/2023.
 32. Islam M, Siddique AB, Akter R, Tasnim R, Sujan M, Hossain S, Ward PR, Sikder M. Knowledge, attitudes and perceptions towards COVID-19 vaccinations: a cross-sectional community survey in Bangladesh. *BMC public health.* 2021 Dec;21(1):1-1.
 33. Beg BM, Hussain T, Ahmad M, Areej S, Majeed A, Rasheed MA, Ahmad MM, Shoaib QU, Aroosa S. Perceived risk and perceptions of COVID-19 vaccine: A survey among general public in Pakistan. *Plos one.* 2022 Mar 24;17(3):e0266028.
