International Journal of Research in Medical Sciences
Panigrahi S et al. Int J Res Med Sci. 2025 Apr;13(4):1504-1513
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20250973

Original Research Article

Unveiling the journey: a deep dive into healthcare workers' preparation, concerns, and experiences with the COVID-19 vaccine- a qualitative study

Sasmita Panigrahi[1], N. Sadhana Priyadarshini[1]*, Nadikrishnan N.[1], Kalaivani Henry[1], Swayampragnya Parida[2]

[1]College of Nursing, AIIMS, Bhubaneswar, Odisha, India
[2]Department of Community Medicine and family Medicine, AIIMS, Bhubaneswar, Odisha, India

Received: 31 January 2025
Revised: 06 March 2025
Accepted: 19 March 2025

***Correspondence:**
N. Sadhana Priyadarshini,
E-mail: con_sadhana@aiimsbhubaneswar.edu.in

ABSTRACT

Background: The COVID pandemic had a profound impact on human life globally and presents an unprecedented challenge to public health, food systems, and the world of work. The COVID vaccine is considered as safe and effective for minimising the impact of COVID-19. However, vaccine related adverse event is one of the major reason for vaccine scepticism. Therefore, this study intended to explore post COVID vaccine related adverse effects and concerns among HCWs.
Methods: A qualitative exploratory study was conducted among HCWs of a tertiary care centre, eastern India, who developed vaccine related adverse effects within 7 days of receipt of COVID vaccine. Information was collected by using indepth interview guide from 12 health care professionals. Then, the data was transcribed, systematically coded and analyzed following the thematic framework approach using MAXQDA-2020 software.
Results: After the analysis four main themes were emerged: vaccination perception and readiness; post vaccination aftermath; management of adverse effects; suggestions. Respondents across the demographic group depicted varied concerns and experiences like they received vaccine to motivate other, be part of research and the vaccination. The most common reported adverse events wererange from headache, body ache, fever, altered taste, dizziness to hyperglycemia, irregular heart rate, diarrhoea and dyspnea. Moreover, their experience from first dose of vaccine convinced them to prepare for the 2nd dose with taking adequate fruit, water and rest.
Conclusions: Knowledge about people's lived experiences and their concerns after receiving COVID-19 vaccine can be used to formulate strategies and awareness programmes to enhance the vaccine uptake in future.

Keywords: COVID, COVID vaccine, Vaccine adverse effect, Vaccine side effect

INTRODUCTION

The COVID-19 pandemic was indeed a profound global crisis that brought the entire world together in shared fear and uncertainty. The entire globe was caught off guard, unprepared to confront the sudden and overwhelming threat.[1] In November 2019, a significant number of pneumonia-like cases were reported in China and rapidly escalated due to its high transmission rate and capacity to cause severe illness. Within weeks, the virus spread worldwide. WHO declared it a pandemic and Public Health Emergency on January 30, 2020. This event marked the start of a global health crisis as the virus quickly spread, severely affecting public health systems, causing widespread disruption, and triggering urgent international action. By September 2, 2021, India had become the second most affected country globally, with over 32.9 million confirmed cases and 439,916 deaths,

making it one of the eight most affected nations by COVID-19 at that time.[2] This pandemic was a powerful eye-opener, revealing the vulnerability of our world and how quickly things can spiral out of control. To fight the pandemic, Vaccine development efforts began in January 2020, with the WHO and researchers from various institutions working to create and test vaccines, standardize assays, and develop regulatory frameworks for innovative trial designs. The WHO has pre-qualified global diagnostics and is leading international trials to evaluate the safety and effectiveness of COVID-19 treatments, ensuring accessible and reliable solutions for the pandemic. The challenge lies in accelerating and harmonizing these processes to ensure safe products are delivered to millions of people worldwide. India rolled out a nationwide COVID-19 inoculation drive on 16th January 2021, prioritizing front-line workers.[3] As the world sought alternative solutions to adapt, healthcare workers found themselves on the frontlines, facing a threat unlike anything they had ever encountered. The challenges they endured were immense, as they not only had to combat the virus itself but also manage the emotional and physical toll it took on them.[4] Additionally, the lack of proper training for redeployed staff and a failure to match their skills to new roles were identified as key challenges.[5] In response to the COVID-19 pandemic, India took a significant step by developing its own vaccines- Covishield, produced by the Serum Institute, and Covaxin, developed by Bharat Biotech. This led to the launch of a massive nationwide vaccination campaign in January 2021, marking a key moment in the country's battle against the virus. The initial phase prioritized frontline workers and healthcare professionals, followed by elderly individuals and those with underlying health conditions. As the campaign expanded, it eventually covered all adults across the country. With a population of nearly 940 million adults, India made remarkable strides in vaccinating its vast population, marking a significant achievement in the global fight against the virus by administering 1.7 billion doses and reaching 100% first dose coverage and 80% full vaccination by February 2022.[6] A meta-analysis of 25 RCTs with 58,889 vaccinated individuals and 46,638 controls found that mRNA vaccines had 94.6% efficacy, while adenovirus-vectored vaccines had 80.2% efficacy. Adenovirus vaccines showed the highest efficacy after both doses against the RBD antigen. mRNA vaccines had more side effects, while aluminum-adjuvanted vaccines had the least. Few severe adverse effects were noted, and all vaccines triggered strong immune responses.[7] Vaccine hesitancy also posed a significant challenge, driven by concerns over side effects and other factors such as administrative issues, side effect management, political influences, personal beliefs, and vaccine-related misinformation.[8] Healthcare workers are essential pillars of prevention and health promotion knowledge, providing much-needed guidance and support to communities during an unprecedented crisis. Effective communication during health crises is key to protecting public safety. Sharing updates and guidelines helps people make informed choices, reduce risks, and support those in need.[9] This study investigated the adverse effects and concerns of pre and post COVID vaccination among healthcare professionals (HCPs). These factors could influence their willingness to receive subsequent doses and affect how they share their vaccination experiences with the public. Finding such issues would help in catering to the concerns in a better way when the country opens a vaccination drive to the general public.

METHODS

Study design

Between 24th June 2021 to 26th July 2021 an exploratory phenomenological qualitative study was conducted with a non-probability purposive sampling method. In-depth interviews were conducted with a diverse group of healthcare providers including doctors, nurses, students, research scholars and housekeeping staffs to understand the experiences related to COVID vaccine adverse effects after receipt.

The research team

The research team consisted of SP, SN, NN, KH are qualitative research experts whereas PS is public health expert and coordinator of COVID vaccination drive. All the team members have expertise in qualitative data collection and analysis.

Research setting

The research was conducted in AIIMS Bhubaneswar which is a tertiary care centre, eastern India. To ensure comfort and understanding, the interviews were conducted in their workplace in Odia, Hindi, and English language reflecting the multicultural setting of a national institution serving people from all corners of India.

Participants recruitment

Healthcare professional aged 18-55 years who had received at least one dose of COVID vaccine and developed adverse effects within 7 days of vaccination were purposefully recruited in the study. Participants were selected based on age, occupation, severity of adverse effect to achieve maximum variation purposive sampling. Participants are explained about purpose of the study and informed consent was obtained.

Instrument and data collection

To dive deeper into concerns and experiences of COVID-19 vaccine adverse effects a semi-structured interview guide was developed which has two sections. The first section gathered demographic details like age, gender, education, occupation, religion, marital status, allergy history, comorbidity, long-term medication intake. The second section focused on exploring vaccine related concerns and adverse effects. The interviews started with

a discussion of the purpose of the study and taking the consent. Interviews took place in a relaxed, private setting. The timing and location were tailored to each participant's convenience, each interview was audio-recorded in addition to taking field notes. Interviews lasted between 15 to 31 minutes, and after five interviews, the interview guide was refined to improve clarity. Data saturation was obtained at 10th interviews, two more interview was conducted to find any new piece of information.

Ethical consideration

The study received ethical approval from the institute's ethics committee (T/IM-NF/Nursing/20/191) before the commencement of data collection. Ethical principles were adhered throughout the research process. Informed consent was obtained from all participants, ensuring that they were fully aware of the study's purpose and their role. Confidentiality of the data was strictly maintained, and participants had the right to withdraw from the study at any time without facing any consequences.

Data analysis

The translated data was carefully reviewed to immerse in the content. An inductive approach was employed to generate codes, subthemes, and themes, which were refined through multiple rounds of review and discussions with co-investigators. MAXQDA software was used to manage and analyse the qualitative data, ensuring a deep and comprehensive understanding of vaccine hesitancy among healthcare providers.

Trustworthiness

Trustworthiness was employed through the study process as per Lincoln and Guba's criteria. The credibility was ensured through prolonged engagement, peer debriefing, and triangulation of data sources and investigators. Transferability was achieved by maximum variation sampling and discussing the vital findings with investigators. Dependability was by accomplished through peer checking where experienced investigator re-analysed some of the data to check for accurate analysis and member-checking to was performed to accuracy of participant's experience. Confirmability was maintained by drawing conclusions inductively, supported by the analysis and codebook, with findings verified through peer and member checking. Transferability was fulfilled by providing detailed description of study process; about the research setting, participant experiences, and data analysis, enabling readers to judge the relevance of the findings in other contexts.

RESULTS

The findings of the study include experience of COVID-19 vaccine among health care providers and their concerns. A total of 12 participants were interviewed by using in-depth interview guide. Most of the participants were female (n=10, 83.3%), mean age 32.25±9.69, 50% of the respondents were clinical and teaching nurses, 25% were students, 16.7% were housekeeping staffs, 41.6% has one or more comorbid disease condition whereas 33.4% was on regular treatment, all of the participants (100%) had received COVAXIN. Details of demographic characteristics of participants are presented in Table 1.

Table 1: Description of the sociodemographic profile of study participants (n=12).

Variables	Frequency	%
Age (in years)		
Mean age±SD	32.25±9.69	
Range	21-50	
Gender		
Male	2	16.7
Female	10	83.3
Education		
Secondary	6	50
B. Sc Nursing	1	8.3
M. Sc Nursing	1	8.3
PhD Nursing	1	8.3
MBBS	1	8.3
MD Pediatric	2	16.8
Occupation		
Doctor	1	8.3
Nurse	6	50
Student	3	25
Housekeeping staff	2	16.7
Religion		
Hindu	9	75
Christian	3	25
Marrital status		
Married	6	50
Unmarried	6	50
COVID status with 3 months		
Yes	0	0
No	12	100
History of systemic disease		
DM	1	8.3
HTN	1	8.3
Hypothyroidism, migrain**e**	1	8.3
DM, hypothyroidism	1	8.3
Asthma	1	8.3
Nil	7	58.4
History of prolonged medication intake		
Yes (OHA, thyroxi**n**, telmisartan)	4	33.4
Nil	8	66.6

Upon analysis of the transcribed data, four key themes and 12 subthemes were emerged. The major themes are: vaccination perception and readiness; post vaccination aftermath; management of adverse effects; suggestions.

Theme 1: vaccination perception and readiness

Readiness to receive the COVID-19 vaccine is a key factor in understanding and improving vaccination coverage and overall public health outcomes. However, the readiness to receive COVID vaccine is depends upon individual's perception about COVID vaccine, motivating factors and their concerns about the vaccine.

Conviction about COVID vaccine

Most of the participants strongly believed that COVID vaccine could protect them and their family members from this deadly disease and good coverage of vaccine can cotrol the transmission of the disease.

"*COVID-19 is a pandemic which affected all age group worldwide. Fatality and mortality are there. Vaccine is a possible solution to control this pandemic*" (P9). "*It is my belief that the vaccine can prevent the occurrence of COVID-19. I was waiting when the vaccination process will start. Many of my friend counselled me not to take the vaccine, But I took that".* (P11)

However, some of the participants expressed their concerns about the completion of clinical trial, expedited production of vaccine and unclear efficacy of the vaccine.

"*The vaccine is in the trial phase; we are not sure about the role of vaccine*" (P8). *"I am not fully supporting to COVID vaccine as there may be COVID disease after taking vaccine. But more chances are there for protecting against disease"* (P3). *"Previously the news was like it will take time for development of vaccine. But suddenly in Jan 2021, vaccination process started with priority to health care workers. then I had some doubt. I searched literature about vaccines, manufacturer, which trial phase completed and its efficacy rate."* (P1)

Table 2: Key theme and sub-themes of healthcare workers' preparation, concerns, and experiences with the COVID-19 vaccine.

Themes	Subthemes	Codes	
Vaccination perception and readiness	Conviction about COVID-19 vaccine	Pandemic guarding, waiting for the vaccine, death deterrence, reduce complication, survival solution	Positive conviction
		Beta stage of vaccine production, don't believe COVID vaccine, don't believe immunity boosting	Not fully convicted
	Concerns about COVID vaccine	Unsure efficacy, fear of adverse effect, worried about systemic problem, drug interaction, kinship care	
	Catalyst for COVID vaccination	Guiding force, civic responsibility, professional stewardship, contribution to the big drive, contribution to the research, governance assurance	
	Preparedness for the shot	Nutritional preparedness, information retrieval, consulted physician from the institution and abroad	Significant preparation
		Unplanned readiness	No specific preparation
Post vaccination aftermath	Spectrum of adverse effect	Adverse effect presentation, onset and duration of symptoms, anguish, affected my routine activities, second hand experience.	
	Psychological response to adverse effect	Self assurance, safety concern, apprehension, scared, repent, decision about the 2nd dose.	
	Behavioral changes	Habit reformation, routine adherence	
Management of adverse effects	Management of adverse effects after 1st dose	Home remedy, food and fluid, medical management, rest	
	Preparedness before the second dose	Dietary preparedness, planned time off, partner with	
Suggestions	Suggestions to public	Health risk assessment, vaccine uptake, safe and effective, manageable adverse effect, information about vaccination fact	
	Suggestion to the institution	Arrangement of vaccination point, monitoring and follow up, recovery leave	

Concerns about COVID vaccine

Although participants acknowledged the necessity of COVID vaccination for the frontline workers, still they expressed many concerns, including fear of side effects, anaphylaxis, and the potential for subclinical conditions to be unmasked or long-term sequalae to arise. Doubts were also raised about the scope, scale, and quality of the clinical trials, which led to questions about the reliability of the COVID-19 vaccine research and evidences.

Furthermore, some individuals were apprehensive that taking the vaccine might result in contracting COVID-19.

"I was a bit scared about the side effects as I am taking thyroid medication for a long time and having Migraine. I thought my Migraine may worsen. So, I was asking repeatedly everybody who are sitting nearby "kuch nhi hoga na... kuch nhi hoga na". (Anxious look…) (P11)

"I was worried about the side effect as I heard from some of my friends related to side effects. Some of friends had 15 days of fever, another had dyspnea" (P9)

"I heard from news that few of the recipient develop cardiac problem. So, there was a bit fear. There is no as such helping hand in my family, so I was worried how to manage all household activities in case if any problem develops." (P8, P1)

"I was little scared about the future of my family if anything happened to me. I was worried if something will happen then who will take care of family? In God's name I took vaccine." (eye rolling upward with heaviness of voice…) (P4)

Catalyst for COVID vaccination

Although participants had several concerns regarding the efficacy of the COVID vaccine, the speed of its development, the novelty of the vaccine, and potential unknown side effects, they still choose to participate in the vaccination drive. The public health campaign, mandatory vaccine requirements, validated research findings, and a sense of civic duty played key roles in encouraging them to receive the COVID vaccine.

"As we are front line workers and for our protection we need to take vaccine. Moreover, By taking the vaccine we are also helping for the research." (P8)

"Though it is not 100% still It is proved it is safe and have some efficacy. So, I took a chance when it is effective and safe without any hesitation. Govt has taken initiative to vaccinate all health care personnel. So, it is my social responsibility to take vaccine." (P9)

"I do not believe the vaccine. I am the ward In-charge. I took vaccine just to motivate my staffs. Actually, I was not interested. (smile…expression of no belief). It is like contribution to the big drive and cooperation to the administration." (P6)

Preparedness for the shot

Amidst widespread buzz and conflicting opinions in the media about the COVID-19 vaccine, respondents adopted diverse approaches for decision-making and took steps to prepare both physically and psychologically to ensure their safety. Some of them conducted thorough literature reviews to understand vaccine efficacy, consulted their treating doctors to assess potential contraindications, and sought advice from experts in the field. However, some respondents admitted to not taking any specific precautions, as volume of information often, causes stress for some individuals. Additionally, some respondents ensured an adequate breakfast on the day of vaccination to better manage potential side effects.

"I had searched some of literature before taking vaccine related to type of vaccine and its efficacy. Gathered information from some friends working in abroad related to efficacy and potential adverse reaction. Regarding psychological preparation- spoken to expert related to safety of vaccine and effectiveness." (P9)

"I took sufficient food in breakfast in comparison to other days. I took sufficient food on that day because I thought if any problem will happen it will protect." (P11, P7)

Post vaccination aftermath

Spectrum of adverse effects

Most of the study participants experienced at least one post-vaccination adverse events including fever (75%), pain or swelling at the injection site (58.3%), similar percentage of severe headache and body-ache (41.6%), vomiting, whereas others had experienced palpitation, raised blood sugar, migraine and allergic reaction. However, none of them had reported any severe or unmanageable reactions (Figure 1). Additionally, most of them reported the adverse effects were comparatively lesser than the first dose.

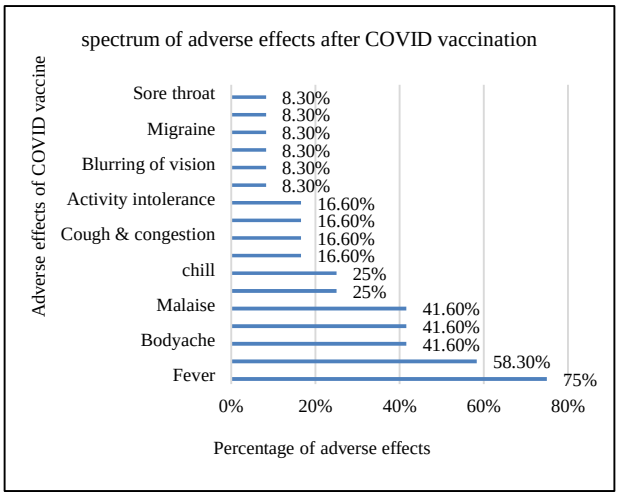

Figure 1: Percentage of adverse effects after COVID vaccination among health care workers (N=12).

"After 5 minutes of vaccination suddenly heart rate was increased to 150 and it was for 2 hours and reduced to 120 then 100. After 2nd dose, in the very next day I developed body ache, malaise, pain at the site of injection". (P10)

*"From evening 5pm I started headache and was very severe by 9pm. I was crying like anything. The intensity was so severe, and I admitted in hospital at 10 pm. Fever (>100F), vomiting twice, nausea, shivering and severe migraine. I was unable to do anything due to feeling of weakness. 2 days taste was altered. No interest to take any food". (facial grimacing shows painful past event…) (*P11)

*"I was having a bit pain at the site of injection. But next day I developed with fever, breathing difficulty, fatigue, dizziness, fever and chill. Headache was there for almost 7 days. Severe weakness, body ache and fever were there continuously for 3 days. Unable to any routine activities. There was no much problem after 2nd dose. Body-ache and malaise was there only for 2 days." (*P8)

"As a whole it affected my day-to-day activities. Having severe headache, fever, chillness, unable to walk, productive cough and congestion for 3 days. I felt like somebody has bitten me and the whole body is wounded. It was very painful. But during the second it was very less, only flu like symptoms was there." (P6)

"I had pain over my whole hand. And at evening I had high grade fever, cold and allergic reaction in form of rashes and swelling all over my body developed except scalp, palm and sole. The Vaginal itching was so severe that I couldn't sleep during night. I checked the RBS and it was high. Due to weakness, I was unable to walk Even I had eye pain and sore throat and not able to swallow any food or drinks for some days." (Frowning face…) (P4)

Most of the participant reported the post vaccination adverse effects were mostly developed within 5-6 hour of taking the vaccine and was resolved maximum by 7-10 days. Very few cases it started within few minutes and remains for more than 2 weeks.

"Headache started after 4-5hour of taking the vaccine and remain for 2-3 days. Weakness was there till 5 days." (P11)

"After 5min of vaccination suddenly heart rate was increased to 150. And became normal after 3-4hours." (P10)

"6-8 hours after vaccine I developed severe headache, fever, chillness, malaise, productive cough. After that there was a gap. Again after 15 days same thing was there for 2 days." (P6)

Psychological response to adverse effect

Despite the various motivating factors encouraged participants to receive the vaccine, doubts persisted regarding after effect of adverse events. Although the reported adverse events were not severe, still they had concerns about their possible consequences which made some participants to think for the second dose (16.6%). Some of the participants (41.3%) regretted after receiving the vaccine.

The psychological responses may be influenced due to observation of side effects of their colleagues, news on social media or may be their own adverse events.

"I was very panic when side effect developed and called every one to be with me. It came to my mind that why I took the vaccine? Being a medico, we know what is the meaning of 150 heart rate right. Anything can be happened. (smiling with raising the eyebrow…) Seriously I thought of not taking the 2nd dose." (P10)

"I was worried for my second dose. I was very disturbed and told my family memberrs to come. Why it is happening with me always? All my friends motivated me not to take the 2nd dose. (Low and heavy voice… remembering past painful events)." (P11)

"I was thinking why I took vaccine? I am staying alone. No one is there to take care, these many days of suffering, leave... I was thinking it would be better I would not have taken the vaccine. I was asking to myself what is the benefit of taking vaccine?" (P7)

However, some respondents demonstrated an understanding of the immunological process (8.3%) and remained calm after receiving the vaccine, showing minimal psychological impact from the adverse effects

"Before taking the vaccine, I was exposed twice. I tested 3 times; 2 times it came negative and once as in conclusive. So, in that way I thought I had some antibodies inside body. So, I developed reaction because of exaggerated immune response." (P5)

Behavioral changes

Some of the participants adopted strategies to combat the vaccine related adverse events in the successive doses. Some of them not took any measure and they accepted that the adverse events are due to immunological processes.

"Like previously, I used to wear mask and wash my hands before and after also. I am doing same thing because the efficacy still under the research so why to take risk since the second phase also coming so it is better to prevent." (P12)

*"I am feeling confident after taking vaccine. I am feeling protected even though we don't know about the efficacy. If I will get infection also it will not affect me much." (*P1)

Management of adverse effects

Participants adopted various strategies to manage vaccine-induced adverse events. While some sought medical consultation while others used home remedies to alleviate their symptoms.

Management of adverse effects after first dose

Most participants took tablet paracetamol to relieve from pain and fever. Some of them took leave (58.3%) from work to rest and rejuvenate, while others modified their dietary patterns (24.95), consumed adequate fruits to prevent or to decrease side effects and consumed ORS (8.3%) to feel better. Moreover, 16.6% of participants had not taken any specific measures and got resolved automatically by next day and similar percentage of participants had managed the symptoms with home remedies.

"For itching I applied lemon and turmeric all over body. Ice packs also applied. For vaginal itching, I consulted gynaecology dept. I did some blood investigation and took levocetrizine, antifungal and diabetic medicine" (P4).

"I managed the side effects by taking tab. Paracetamol for 2 days. Took sufficient non-veg, plenty of water and rest." (P6)

"On the day of vaccination, I admitted in hospital one night for migraine and high-grade fever. Received injection pantoprazole, paracetamol and ondem. Tablet paracetamol took for 2 days and 2 days leave also I took." (P11)

Preparedness before the second dose

Participants had adopted various precautionary measures before the second dose. Some focused on maintaining a balanced diet and staying hydrated, while others consulted their primary physician and adjusted their schedules to allow rest during the post-vaccination period.

"Previously I used to take migraine medicine irregularly. But 2 weeks before to 2nd dose I took migraine medicine regularly. Taking fruits and sufficient water." (P11)

*"This time I planned 1 or 2 days off. So that I can take rest. I am also taking fruits and drinking sufficient water. I never touch fruits except banana, but since last 2 days I am taking fruits to fight with this post vaccine status." (*P6)

Suggestions

Suggestions for public

Respondents who received the COVID vaccine shared various suggestions for the public. They emphasized about the importance of staying calm and informed, follow COVID appropriate behaviour and be prepared for mild side effects.

"*In case of any side effects contact with doctor. Take phone number of doctor or vaccination team, should take sufficient food and water. If you are having any disease then take medicine regularly." (P11)*

"If anybody is not contraindicated or not having systemic disorders can take vaccine." (P8)

Suggestion to the institution

Participants emphasized the importance of clear and transparent communication before vaccination to address concerns and to develop trust. They also highlighted the need for well-equipped vaccination rooms capable of handling any potential emergencies. Additionally, they suggested providing an extra post-vaccination day off to recover from any adverse effects.

"All kinds of equipment should be present at the vaccination room to manage the emergency situations like ECG machine, monitor, Glucometer and other devices" (P1)

"Separate vaccination room should be there for female, so that some privacy would be maintained. And institute should provide 1-2days of leave for vaccination." (P6)

DISCUSSION

COVID-19 is recognized as one of the largest pandemics in the recent history that has shaken the human civilization in all sphere of life.[10] Initially the pandemic was managed with a combination of public health measures, medical interventions, and community efforts. Despite of these efforts, cases continued to rise. Thus, vaccination becomes the most practical and cost-effective way to combat the disease and safeguard the public's health.[11] Therefore, there was a race to develop a COVID-19 vaccine in many parts of the world. India also started Mission COVID Suraksha with a focus on bringing 5-6 safe, efficacious, affordable and accessible COVID-19 Vaccine at the earliest for the citizens of India.[12]

Following vaccine development, the Government faced two major issues; first: who will receive the vaccine in the first stage, secondly how to increase the vaccine acceptance rate. There was a debate arose over prioritizing recipients. The US Centre for Disease Control and Prevention recommended that frontline workers including healthcare professionals and individuals who are at the highest risk of severe illness should be prioritized for vaccination.[13] However, when the vaccine became fully available for distribution, a varied degree of acceptance was reported among public globally. The highest COVID-19 vaccine acceptance rates (>90%) were found in Ecuador, Malaysia, Indonesia and China whereas lowest was in Kuwait, Jordan, Italy, Russia, Poland, US, and France.[14] The primary reasons for hesitancy were identified as concerns about side effects and doubts regarding the vaccine's effectiveness and the duration of its protection.[15]

Healthcare workers' acceptance to COVID-19 vaccine and their post-vaccination experiences directly influences public decision-making, as healthcare professionals are

regarded as the most trusted source of vaccine information and individuals often depend on the guidance of healthcare professionals to decide whether to accept or decline the vaccine.[16,17]

In our present study, most of the participants have similar perception about COVID vaccine. They believed that vaccine is as an essential tool for controlling the pandemic, reduce complication and mortality associated with COVID and they waited eagerly for its release. Moreover, they also perceived that HCWs are more susceptible to develop COVID infection, hence requires the vaccination shot. This findings are consistent with a study where participants were expressed, vaccine will reduce mortality and severity of the infection and hence can protect their families, bring normalcy of life.[16,18,19] Furthermore, the motivation to receive the vaccine was to be part of the nationwide big vaccination drive, interested to contribute for research and as a part of their professional and social responsibility which was supported by many studies.[16,20] On the other hand, HCWs had many concerns about standards of clinical trial, expedited production that leads to mistrust about vaccine efficacy, fear of side effect and recurrence of COVID infection after taking the vaccine.[20,21]

The incidence of side effects of the vaccines in real world was lower than that recorded during clinical trials and side effects are comparatively low in second dose than the first.[22] Several studies showed similar side effects like injection-site pain, fever, lethargy, headache, redness/swelling at the injection site whereas other studies reported occurrence of diarrhea, vomiting, flu syndrome, neurological manifestations, joint pain and skin rashes.[23-27] Similar kind of mild adverse effects were experienced by our study participants whereas few participants reported that their underlying disease condition was flared up, heart rate was >150 beats per min immediately after the vaccination and loss of smell and taste, breathing difficulty and diarrhea and vomiting. The experienced side effects forced them to the feeling of regret and skepticism for the second dose. In the contrary, majority of the participants revealed that the side effects after the second dose were quite low in compared to the first dose. Furthermore, one participant stated that experiencing mild side effects is a positive indication of the immune system's response, suggesting the vaccine's efficacy which is similar to study conducted in Iraq.[18] In the context of duration of suffering, most of them recovered within 72 hours of taking the vaccine whereas very few had suffered till one week which is corroborated with the study finding of Riad et al, 45.1% of the side effects lasted for 1 day, while 35.8% lasted for 3 days, 9.4% lasted for 5 days, 5.3% lasted for one week, 3% lasted for over a week. The severe side effects that required medical intervention was reported by only 1.3%.[28]

The present study aimed to explore the experiences of HCWs regarding COVID-19 vaccination. Most of the participants reported mild adverse effects, such as fever, body aches, and fatigue, which were effectively managed with tablet paracetamol and rest. However, some participants experienced moderate degree of side effects, including severe weakness, migraines, breathing difficulty, diarrhea, vomiting, and severe itching. These adverse reactions significantly impacted their daily routines, making it difficult for them to perform household activities. Additionally, participants who had young children or lived alone found the experience was really challenging, as they lacked immediate support during the recovery period.

Although maximum of our study participants adopted various strategies to manage the vaccine related adverse effects such as taking paracetamol, maintaining a healthy diet, staying hydrated, took adequate rest, some managed by home remedy however few of them was kept under observation for few hours in the vaccination area and one them was hospitalized. These approaches were aligned with findings from a study emphasizing the importance of a healthy diet in boosting immunity and mitigating potential vaccine side effects.[29] Another study conducted in Korea where participants suggested to take herbal medicine and acupuncture to manage vaccine related side effects.[30]

Vaccination promotion is a multidimensional process which should start with public health education with adequate and transparent information. Positive vaccination experience of health care professionals can significantly alter participants' perception and subsequent vaccination behavior. Most of our study participants recommended for vaccination after thorough evaluation of their health condition and follow adherence to the COVID appropriate behavior even after the vaccination as well as encouraging people to report any unusual side effects. Some of them also uttered that they decided to be vaccinated as a part of their civic duty and to motivate other HCWs and public as well. This finding is aligned with the study conducted in Hongkong where HCWs mentioned that taking vaccine is their social responsibility and they want to become a role model for their patients and shared their personal vaccination experience.[20] At the same time our study participants also suggested to provide one post vaccination day off for recovery from the adverse effects.

The main strength of our study is that very limited qualitative study has so far conducted to explore HCWs experience on COVID vaccine related adverse effects. The insights and opinions shared by participants can provide valuable guidance to stakeholders, aiding in the development of new policies. These policies will not only enhance the safety and well-being of vaccine recipients but also improve vaccination uptake among the broader population.

Some limitations of our study which includes; smaller sample size, recall bias, and a higher proportion of females nursing personnel that may limit the generalisability of the results. Moreover, a non-probability convenience

sampling strategy may limit the representation of varied perspectives and experiences on the adverse effects of COVID-19 vaccines.

Future studies are needed to explore side effects experienced in different types and brands of vaccine as well as vaccine acceptance rate among public. Further correlation of participants characteristics with post vaccination adverse effects can be studied quantitatively.

CONCLUSION

The study revealed that most of the participants had trust in the safety of COVID-19 vaccines with concerns for vaccine related adverse effects and methodology to be adopted for its management. The findings revealed about the mild form of side effects could be experienced by the recipient which would be a kind of relief for the public and that will enhance the vaccination uptake. The results of this study can provide valuable insights for developing appropriate strategies to control emerging and infectious diseases in the future.

ACKNOWLEDGEMENTS

The researchers of the present study express thanks to authority institute ethical committee for approval of the study proposal and allow to conduct the study. We thank all participants for sharing their experiences and spending valuable time with us. Without them the study would not be possible.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, et al. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. J Affect Disord. 2020;277:55–64.
2. Siddiqui S, Alhamdi HWS, Alghamdi HA. Recent chronology of COVID-19 pandemic. Front Public Health. 2022;10:778037.
3. Kumari M, Lu RM, Li MC, Huang JL, Hsu FF, Ko SH, et al. A critical overview of current progress for COVID-19: development of vaccines, antiviral drugs, and therapeutic antibodies. J Biomed Sci. 2022;29:68.
4. Vizheh M, Qorbani M, Arzaghi SM, Muhidin S, Javanmard Z, Esmaeili M. The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. J Diabetes Metab Disord. 2020;19(2):1967-78.
5. Vindrola-Padros C, Andrews L, Dowrick A, Djellouli N, Fillmore H, Bautista Gonzalez E, et al. Perceptions and experiences of healthcare workers during the COVID-19 pandemic in the UK. BMJ Open. 2020;10(11):e040503.
6. Dhalaria P, Arora H, Singh AK, Mathur M, S AK. COVID-19 Vaccine hesitancy and vaccination coverage in India: an exploratory analysis. Vaccines. 2022;10(5):739.
7. Pormohammad A, Zarei M, Ghorbani S, Mohammadi M, Razizadeh MH, Turner DL, et al. Efficacy and safety of COVID-19 vaccines: a systematic review and meta-analysis of randomized clinical trials. Vaccines. 2021;9(5):467.
8. Priyadarshini NS, Panigrahi S, Jacob J, Krishnan N, Parida SP, Nayak G. Decoding COVID-19 vaccine hesitation: a qualitative study. Int J Community Med Public Health. 2025;12(1):433-41.
9. Githinji P, MacMillan Uribe AL, Szeszulski J, Rethorst CD, Luong V, Xin L, et al. Public health communication during the COVID-19 health crisis: sustainable pathways to improve health information access and reach among underserved communities. Humanit Soc Sci Commun. 2024;11(1):1218.
10. Panigrahi S, Mohapatra S, Shetty AP, Baby RS, Singh AK. The burden and contributing factors of psychological distress across India during the COVID pandemic. Arch Psychiatr Nurs. 2021;35(6):678-84.
11. Salalli R, Dange JR, Dhiman S, Sharma T. Vaccines development in India: advances, regulation, and challenges. Clin Exp Vaccine Res. 2023;12(3):193-208.
12. Purohit N, Chugh Y, Bahuguna P, Prinja S. COVID-19 management: the vaccination drive in India. Health Policy Technol. 2022;11(2):100636.
13. Bono SA, Faria de Moura Villela E, Siau CS, Chen WS, Pengpid S, Hasan MT, et al. Factors affecting COVID-19 vaccine acceptance: an international survey among low- and middle-income countries. Vaccines. 2021;9(5):515.
14. Sallam M. COVID-19 vaccine hesitancy worldwide: a concise systematic review of vaccine acceptance rates. Vaccines. 2021;9(2):160.
15. Mahato P, Adhikari B, Marahatta SB, Bhusal S, Kunwar K, Yadav RK, et al. Perceptions around COVID-19 and vaccine hesitancy: A qualitative study in Kaski district, Western Nepal. PLOS Glob Public Health. 2023;3(2):e0000564.
16. Sodeify R, Tabrizi FM, Rezaei S. Perceptions of medical staff on COVID-19 vaccination: a qualitative content analysis. J Nurs Midwife Sci. 2024;11(2).
17. Yaqub O, Castle-Clarke S, Sevdalis N, Chataway J. Attitudes to vaccination: a critical review. Soc Sci Med. 2014;112:1-11.
18. Khaleel SM, Shanshal SA, Aladul MI. Adverse reactions of different COVID-19 vaccines among healthcare professionals: A qualitative study in Mosul, Iraq. Clin Epidemiol Glob Health. 2022;18:101175.
19. Alnemari R, Aljohani O, Alnemari A, Awaji M, Alali A, Almarshoud M, et al. Readiness to receive COVID-19 vaccine of general population, healthcare workers and medical students in Jeddah Saudi Arabia. J Healthc Sci. 2021;02(01):20-30.

20. Ng KM, Chu TK, Lau P. Experience of COVID-19 vaccination among primary healthcare workers in Hong Kong: a qualitative study. Vaccines. 2022;10(9):1531.
21. Sv P, Tandon J, Vikas, Hinduja H. Indian citizen's perspective about side effects of COVID-19 vaccine-a machine learning study. Diabetes Metab Syndr Clin Res Rev. 2021;15(4):102172.
22. Menni C, Klaser K, May A, Polidori L, Capdevila J, Louca P, et al. Vaccine side-effects and SARS-CoV-2 infection after vaccination in users of the COVID Symptom Study app in the UK: a prospective observational study. Lancet Infect Dis. 2021;21(7):939-49.
23. Mohsin M, Mahmud S, Uddin Mian A, Hasan P, Muyeed A, Ali TM, et al. Side effects of COVID-19 vaccines and perceptions about COVID-19 and its vaccines in Bangladesh: a cross-sectional study. Vaccine X. 2022;12:100207.
24. Mittal A, Jain B, Varshney AM, Garg G, Sachan D, Singh RB. Adverse effects after first and second dose of covishield and covaxin: a longitudinal study. J Fam Med Prim Care. 2022;11(11):7339-45.
25. Majumder MAA, Bharatha A, Kumar S, Chatterjee M, Gupta S, Harewood H, et al. Self-reported side effects of COVID-19 vaccines among health professions students in India. Peer J. 2024;12:e17083.
26. El Hilali S, Benmlih S, Haroun AE, Zeghari Z, Khalis M, Frindy M, et al. Adverse effects of COVID-19 vaccines in the Moroccan adults and children during the pandemic. Clin Epidemiol Glob Health. 2024;28:101689.
27. Beatty AL, Peyser ND, Butcher XE, Cocohoba JM, Lin F, Olgin JE, et al. Analysis of COVID-19 vaccine type and adverse effects following vaccination. JAMA Netw Open. 2021;4(12):e2140364.
28. Riad A, Pokorná A, Attia S, Klugarová J, Koščík M, Klugar M. Prevalence of COVID-19 Vaccine Side Effects among Healthcare Workers in the Czech Republic. J Clin Med. 2021;10(7):1428.
29. Al-Bawab R, Abu-Farha R, El-Dahiyat F, Nassar RI, Zawiah M. A qualitative assessment of the adverse effects associated with COVID-19 vaccines: a study from Jordan. J Pharm Policy Pract. 2023;16(1):100.
30. Kang B, Chu H, Youn BY, Leem J. Prevention and management of adverse events following COVID-19 vaccination using traditional Korean medicine: An online survey of public health doctors. World J Clin Cases. 2022;10(28):10053-65.

Cite this article as: Panigrahi S, Priyadarshini NS, Nadikrishnan N, Henry K, Parida S. Unveiling the journey: a deep dive into healthcare workers' preparation, concerns, and experiences with the COVID-19 vaccine- a qualitative study. Int J Res Med Sci 2025;13:1504-13.