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Short Communication

Decoding COVID-19 vaccine hesitation: a qualitative study

N. Sadhana Priyadarshani[1], Sasmita Panigrahi[1]*, Jaison Jacob[1], Nadiya Krishnan[1], Swayam P. Parida[2], Geetarani Nayak[1]

[1]College of Nursing, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India
[2]Department of Community Medicine, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

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***Correspondence:**
Dr. Sasmita Panigrahi,
E-mail: nurs_sasmita@aiimsbhubaneswar.edu.in

ABSTRACT

The COVID-19 pandemic has introduced a new global reality, requiring societies to confront an unfamiliar disease and its effects. Countries faced two significant challenges: developing an effective vaccine and addressing vaccine hesitancy, a key barrier to achieving widespread inoculation. In 2019, the WHO identified vaccine hesitancy as one of the top ten threats to global health. The success of vaccination campaigns depends on public trust and willingness to accept the vaccine. India initiated its nationwide COVID-19 vaccination drive on 16 January 2021, prioritizing front-line workers. However, despite repeated efforts, vaccine hesitancy persisted among some healthcare personnel. So, to explore the underlying individualized reasons of COVID-19 vaccine hesitancy among healthcare providers a qualitative study was conducted, as their opinions significantly influence public attitudes toward vaccination. The study employed a qualitative phenomenological approach to investigate vaccine hesitancy among healthcare workers and students at a tertiary health center in Odisha, India. Twelve participants were purposively selected from various departments. Semi-structured interviews were conducted to explore attitudes and beliefs surrounding COVID-19 vaccines. Data from the interviews were transcribed, coded, and analyzed using the thematic framework method. Three primary themes were emerged from the analysis: mental dynamics, socio-economic discourse, and governance. The subthemes of mental dynamics include fear, personal support network, belief and perceptions and trust. In socioeconomic discourse personal support network & information distortion. Concerns about vaccine efficacy were prevalent. Vaccine hesitancy in India is driven by factors such as misinformation, mistrust, cultural beliefs, and personal experiences. Addressing these concerns through targeted, evidence-based communication is essential for successful vaccination campaigns.

Keywords: COVID-19, Vaccine hesitancy, Healthcare workers, Students

INTRODUCTION

The COVID-19 pandemic has drawn global attention due to its rapid geographic spread, high mortality and morbidity rates, and significant socioeconomic impact. COVID-19 has profoundly affected human lives, placed immense strain on healthcare systems, and disrupted the global economy.[1] Both underdeveloped and developed countries have been impacted, but low and middle income countries, especially marginalized populations, have suffered the most.[2] The World Health Organization declared it a pandemic on 11 March 2020.[3] It was very challenging for the countries to minimize the disastrous effects of the pandemic despite various comprehensive strategies like nationwide lockdowns, universal screening of international passengers, and mandatory quarantine.[4]

Various control measures, such as antiviral therapies and monoclonal antibodies against S protein, were ultimately ineffective in curtailing transmission.[5] Consequently, vaccine development and administration emerged as one of the most critical strategies for preventing and controlling the COVID-19 pandemic.[6]

Effective and safe COVID-19 vaccines are still desperately needed to stamp out the pandemic and restore social and economic activities by creating mass immunization. The urgency to mitigate the pandemic leads to unprecedented collaboration among scientists, research institutions, and pharmaceutical companies, and there is a race to develop safe and effective vaccines. The genetic information SARS COV-2 was made publicly available on 10th January 2020, then, many companies exploded in vaccine development, and clinical trials were conducted at an accelerated pace.[7] Till 30 March 2023, nearly 183 vaccines are in clinical development, 199 are in pre-clinical development, and till now, nearly 50 vaccines have been approved for use against COVID-19.[8]

India has developed its own indigenous vaccine, namely Covaxin and Covishield and began a nationwide inoculation drive on 16 January 2021 to vaccinate vulnerable people, specifically frontline and health care workers, in the initial phase.[2] Despite these efforts in India, by September 2021, only 13.73% of the country's population has received both doses of the COVID-19 vaccine, whereas 28.34% has received only one dose of the vaccine.[9]

The success of this strategy completely relies on people's acceptability to vaccines. Hesitancy towards newly developed vaccine against COVID-19 was the universal problem which was evident from the previous studies: Bangladesh (46.2%), China (57.7%), Russia (45.1%), France (41.1%), Kuwait (76.4%) and Jordan (71.6%).[10-12] The World Health Organization (WHO) defined vaccine hesitancy as a "delay in accepting or refusing vaccines despite availability of vaccination services."

It is evident from the literature that socioeconomic factors, Religion, education level, lack of trust on the vaccine, fear of the side effect, family and friend support, mass media, health service responses during pandemic, mistrust of government and pharmaceutical companies are substantially influenced by an individual's decision for vaccine uptake.[3,10,11,13-16] Despite the increasing need to understand vaccination behaviors and the factors influencing vaccine uptake, there is a notable scarcity of studies on COVID-19 vaccine hesitancy in India. Existing research on vaccine hesitancy within the country has been limited and insufficient to fully comprehend the underlying factors affecting vaccination decisions.

In response to this gap, the authors have undertaken a qualitative study aimed at exploring the barriers to COVID-19 vaccination uptake among healthcare providers. This investigation seeks to uncover the key factors that hinder vaccination among this critical group. The findings from this study are expected to provide valuable insights for policymakers and stakeholders. By addressing the identified barriers, they can formulate more effective strategies and policies to enhance vaccine uptake, particularly as vaccination drives expand to include all age groups in the future.

METHODS

Methodology

In-depth interviews were conducted with 12 healthcare providers, including doctors, nursing professionals, students, research scholars, and housekeeping staff, to explore their viewpoints regarding vaccine uptake and the reasons for hesitancy towards receiving the COVID-19 vaccine provided by the Government of India. The interviews were conducted in three languages Odia, Hindi, and English depending on the respondents' comfort, given that the setting is a national institution serving a diverse population from different parts of the country.

The research team comprised experts in qualitative research methodology, ensuring rigorous and systematic data collection. A purposive and snowball sampling technique was employed to recruit participants who met the study criteria. Data collection continued until data saturation was achieved, meaning no new information emerged from the interviews.

Participants included healthcare workers aged 18-55 years who had delayed intentionally taking the COVID-19 vaccine. Excluded from the study were individuals unwilling to participate, those who did not consent to the recording of the interviews, and those contraindicated from the COVID-19 vaccine. The study received approval from the institute's ethical committee prior to the commencement of data collection. Ethical principles were adhered to 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.

The health belief model (HBM) serves as a vital framework for understanding the attitudes of healthcare workers toward vaccination. It suggests that their personal beliefs about disease severity, susceptibility, and vaccine benefits greatly impact their health behaviors. Research highlights that effective public health initiatives should specifically address these beliefs to influence vaccination intentions among healthcare professionals. As policymakers develop future plans, it's crucial to consider these factors to enhance vaccination program effectiveness. By aligning strategies with HBM constructs, healthcare organizations can improve outcomes, ensuring that workers are not only well-informed but also more likely to advocate for vaccinations within their communities. This targeted approach will ultimately strengthen public health efforts moving forward.[17] HBM, this theory holds that health-related behavior depends on the combination of several factors, namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy.

Perceived susceptibility

Despite the expertise, healthcare professionals are not immune to the psychological phenomenon. Even with extensive knowledge and preventive strategies, healthcare workers can sometimes underestimate their risk of contracting diseases, potentially due to cognitive bias and underestimation. This can lead to lower adherence to protective measures and vaccine hesitancy.

Perceived severity

Health personnel often assess the physical, emotional, or financial impacts of a disease. If they believe the consequences are severe (e.g., disability, loss of quality of life), they are more likely to engage in hesitant behaviors.

Perceived benefits

It is the belief that taking a certain action will lead to a positive outcome, such as reducing the risk of illness or improving health.

Perceived barriers

These are the beliefs about the tangible and intangible factors that make it difficult to decide on health behavior, such as trial phase not completed, WHO not approved, trust issues and lack of support from employer.

Cues to action

This is an important component of the HBM that refers to triggers or reminders that prompt individuals to take health-related actions.

Self-efficacy

Self-efficacy reflects an individual's belief in their own capabilities to take action and achieve desired health outcomes.

Instrument and data collection

To gain a deeper understanding of COVID-19 vaccine hesitancy, a semi-structured interview guide with relevant probes was developed. The data collection tool was divided into two sections - section I: demographic data of the participant, and section II: semi-structured in-depth interview questions related to COVID-19 vaccine hesitancy.

Face-to-face interviews were conducted in a relaxed and private setting, preferably at the participants' workplaces, in English, Odia, or Hindi, based on the participants' preferences. The timing and location of the interviews were arranged to accommodate the participants' convenience. Each interview was recorded using a mobile phone, with prior consent obtained from the participants. The average duration of the interviews ranged from 15 to 25 minutes. After conducting five interviews, the interview guide was reviewed and revised to enhance clarity and relevance. An additional investigator was present during the interviews to take field notes.

To ensure the validity of the data, a systematic procedure was followed, which included Verification with Respondents and confirming the accuracy of the data with participants at the end of each interview.

Debriefing

Discuss with the research team to review and refine the interview process.

Member checking

Validating findings with the participants to ensure accurate representation of their views. All interviews were transcribed and translated into English for analysis.

Plan for data analysis

The translated data were thoroughly reviewed to immerse in the content. An inductive approach was used to develop codes, subthemes, and themes. Themes were refined through multiple reviews and extensive discussions with co-investigators. MAXQDA software facilitated the management and analysis of the qualitative data, ensuring a comprehensive understanding of COVID-19 vaccine hesitancy among healthcare providers.

Trustworthiness

To ensure rigor and trustworthiness in the study, several strategies were implemented. Credibility was achieved by using verbatim quotes, conducting regular debriefing sessions with data collectors, and employing triangulation of data sources and investigators. Maximum variation sampling was also used to capture diverse perspectives. Dependability was addressed by thoroughly documenting and recording the analysis process for audit trails, alongside peer-checking and member-checking to enhance reliability. For confirmability, conclusions were drawn inductively with the support of the analysis and codebook, and verified through peer and member checking. Transferability was facilitated by providing comprehensive details about the research setting, participant experiences, and data analysis, allowing readers to assess the applicability of the findings. Finally, authenticity was maintained by accurately representing the varied range of vaccine hesitancy among healthcare providers.

RESULTS

Participants information

Participants were chosen from a variety of groups, including tutors, nursing students, MBBS students, nursing

officers, medical officers, research associates, and attendants. The average age of the participants was 29.3±5.39, years and the mean duration of the interviews was 19.8±2.76 minutes. Other demographic characteristics are depicted in Table 1.

Themes and subthemes

Three primary themes emerged from the analysis: mental dynamics, socio-economic discourse, and governance factors. These themes encapsulate the core thoughts and beliefs of vaccine-hesitant healthcare providers, highlighting how personal and social factors, along with trust in the vaccine, shaped their decisions regarding COVID-19 vaccination. Table 2 provides a summary of the themes and subthemes.

Theme 1: Mental dynamics

This theme describes the complex interplay of individual thoughts, beliefs, emotions, cognitive processes, and external influences that affect decision-making and behavior. The decision to vaccinate against COVID-19 was often emotionally challenging. Subthemes under mental dynamics included fear, personal support network, beliefs and perceptions, and trust.

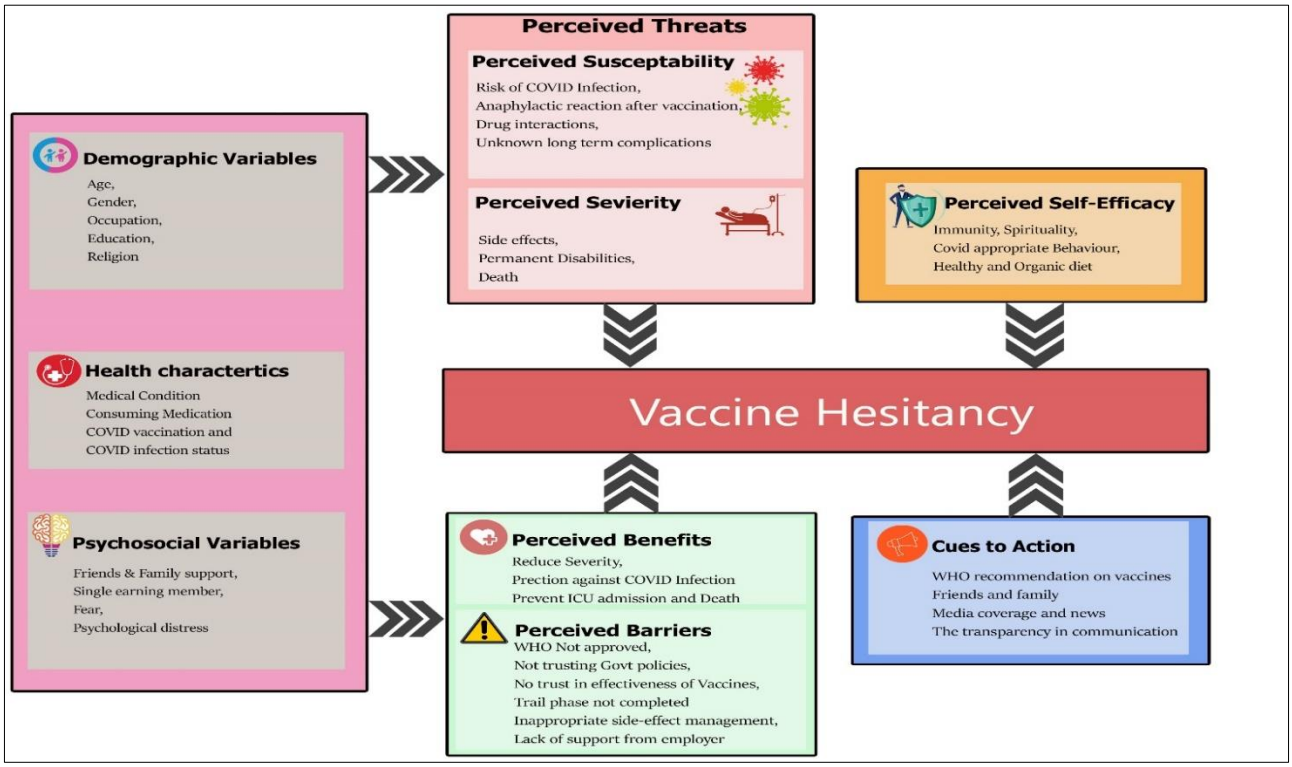

Figure 1: Health care belief model on vaccine hesitancy for COVID-19 vaccination among health care professionals.

Table 1: Demographic characteristics of participants (n=12).

Participant number	Gender	Age in years	Healthcare personnel category	Marital status	Religion	COVID affected status	Interview duration minutes
P1	Male	34	Nursing faculty	Married	Hindu	Never	20
P2	Female	27	Nursing officer	Unmarried	Hindu	Never	20
P3	Female	30	Nursing officer-	Unmarried	Hindu	Once	25
P4	Male	29	Research associate	Married	Christian	Never	18
P5	Female	37	Nursing faculty	Married	Christian	Once	20
P6	Female	23	Nursing student	Unmarried	Hindu	Never	15
P7	Male	26	Intern MBBS	Unmarried	Christian	Never	20
P8	Female	32	Nursing officer	Married	Christian	Never	22
P9	Male	35	Nursing faculty	Married	Christian	Never	20
P10	Male	36	Medical faculty	Married	Hindu	Once	23
P11	Male	23	MBBS student	Unmarried	Christian	Never	20
P12	Male	20	Attendant	Married	Hindu	Once	15

Table 2: Key themes and sub-themes shaping healthcare professionals' perceptions and attitudes towards COVID vaccine hesitancy.

Theme and sub-theme (with reasons)	Quotes (best suited)
Mental dynamics	
Fear: related to the following: develop side effect (P1, P2, P3, P11), death (P4, P5), disability (P4, P9), anaphylaxis reaction (P4), and drug interaction (P-4, P-11, P-9)	"Yes, some news that I got from WhatsApp, as some persons died after vaccination, which also affected me. I know these are not authenticate information. Still, I was confused about receiving the vaccine because of that information" (P1). First- side effect. Second- post-vaccine sign symptoms. I was scared that an anaphylaxis reaction or any severe allergy reaction would happen. Even some times, drug interactions may occur (P4). "When we first asked to take the vaccine, the complete trial was not over. We heard that many are experiencing side effects. We have also worked with the COVID-19 ICU and witnessed the vaccine side effects such as seizures and others (P2). "I was taking steroids for arthritis, so I thought it might be a contraindication. At the same time, I am on Sidha medicine and wanted not to mix both allopathic and Siddha medicine. Secondly, if the time between COVID and vaccine preparation is six months, it would not be possible to make an effective vaccine. So, it is an actual experiment on me. So I had hesitation about why I would undergo an experiment"(P9). The hospital environment is not safe (P-10).
Personal support network: no one to take care (P4, P2), no family support, no friends (P4, P2), I am a single-earning member (P4, P12), I am lazy (P7), and trying to find ways how not to take the vaccine (P6)	"I saw many of my friends receive vaccines, and they developed many issues like severe body pain, fever, and headache. As I am a student, I have my clinical to do. If I fall sick, no one will take care of me. So, if I fail to do my duty due to sickness, I will be marked absent, and again, I have to do compensation. No extra sick leave will be also given. So, I may have to face many problems" (P6).
Belief and perception: my immunity is good (P-10), I believe in pure things-the vaccine is not pure (P3), spirituality (P5), and waiting for the best vaccine - want a non-invasive mode of administration of vaccine (P8)	"I think we should not take any outside things, which means something not from our body should not be inserted into our body. I'm not comfortable with all this. Even I have not taken ivermectin tablets given on a trial basis in our institute. when I was COVID-19 positive then, I also had not taken any medication for treatment" (P3). "I believe in GOD, and I'm praying every day continuously for the safety of my family and Me and others. God's protection is much more than any other vaccine. Spiritual strength is more effective than any other protection mode for me" (P5). This is the first time all countries are preparing the vaccine. So, we don't even have any other proven vaccine to compare its efficacy and risk. There is no point in comparing the vaccine (P8). COVID waves are coming one after another. If I take one vaccine now and it will show in the next wave, it doesn't have any effect, and another vaccine will come. So, how often do I have to take a vaccine for one disease? (deep breath with a frustrated look) (P4).
Trust issues: is there is no difference before and after vaccination (P3), WHO not approved (P3), and hiding cause of death (P9)	"I was not sure whether the vaccine was working or not. So, I used to go through many articles and literature searches to find evidence on the vaccine efficacy." WHO does not approve the vaccine we are getting in our institute, and with a Covaxin certificate, we can't go outside the country. Even the Indian Govt is asking to take one dose of Covishield to travel outside India. So, I was confused and not confident about the vaccine (P4). "I don't believe in this vaccine. It is a half-baked process of vaccine drive. This vaccine came to market before all processes were completed, and the general public received it. Many people are dying. We are not sure if it's because of the vaccine or comorbidity. If the result is published first and all information is published without any hidden or confusing information, it will be easier to take the vaccine" (P5).
Socio-economic discourse	
Socio-economic: no one to take care (P4, P2), no family support, no friends (P4, P2), I am a single-earning member (P4, P12), I am lazy (P7), and trying to find ways how not to take the vaccine (P6)	"I saw many of my friends receive vaccines, and they developed many issues like severe body pain, fever, and headache. As I am a student, I have my clinical to do. If I fall sick, no one will take care of me. So, if I fail to do my duty due to sickness, I will be marked absent, and again, I have to do compensation. No extra sick leave will be also given. So, I may have to face many problems" (P6).

Continued.

Theme and sub-theme (with reasons)	Quotes (best suited)
Communication: the communication is not transparent (P1, P2, P3, P11), hiding information (P4, P5), media coverage and news, and no one to clarify doubts. Experts are also not sure (P6)	"We attended a class on the COVID-19 vaccine, and we tried to clarify the doubts related to the COVID-19 vaccine. Even the experts and specialists were also confused about the vaccine's efficacy" (P6). I feel the information what we get from media are the evidence only. I saw in the news that, in Tamil Nadu, 6-8 celeb expired 2-3 days following this vaccination. After that they are hiding the reason od death. We are also reading that vaccine may trigger abnormal blood coagulation. This people the diagnosis they made is heart block. So I think I am right in my sense (P9).
Governance	
Administrative: consent properly not taken. It should be voluntary. (P9, P11). No trust in private companies producing vaccines in India (P6, P10, P5). Improper side effect management. No specific skilled team to manage side effects (P2, P1). No leave if side effects develop and compensation for leave for the same (P6)	"Consent is also told that there will be no compensation or relaxation will be not given. It was written voluntary when taking the vaccine, which is not ethical. I'm not ready to take any unethical things" (P5). "Nowadays, showing a COVID-19 vaccine certificate when traveling is mandatory. In that case, I'm really confused about what to do. Though I don't want to, I'm still not getting any solution to avoid the vaccine. After a complete dose also, many healthcare personnel are affected with COVID" (P6). As I am a student and I have my clinical to do. If I will fall sick no one is there to take care. So if due to sickness I fail to do my duty then I will be marked absent and again compensation also I have to do. No extra sick leave will be also given. So, I may have to face many problems.
Political: government not adhering to policy, vaccine production norms are not followed (P9, P6), and government trying to take credit (P9)	I feel that this vaccine drives severe political things involved. Which vaccine to be sent to which districts state is also due to political decision. The amount of vaccine to be sent to the state is also politically based. (P4) India, Europe, or the whole world prepared the vaccine within 1 year of duration. The duration itself I feel it is an experiment. In Indian vaccines, the vaccines are private products, not Govt. One and the govt is marketing it. So trust is very little in Indian vaccines (P9)
Vaccine related: 3rd phase trial result (P1, P3, P6, P9, P12), vaccines of different brands, cold chain maintenance, booster dose availability (P4), not permitted to travel abroad after vaccination (P9), and WHO not approved (P10)	Many waves of COVID with different strain. "Again, much research is going on for different vaccine administration modes through nasal drop, nasal spray, and oral. So, I hope something will come up soon. Without injections, we can take the vaccines. So, I want a painless vaccine administration with high efficacy, which is still ineffective. I'm waiting for it." (P4)

Fear

Deciding to take the COVID-19 vaccine brought forth emotions such as fear and anxiety. The novel nature of COVID-19 and the rapid development of its vaccine led to apprehension, especially due to reported side effects and unverified information in the media. The limited availability of reassuring scientific information left many feeling as though vaccination required a leap of faith.

Individual belief and perception

Personal beliefs and perceptions were key in deciding on the COVID-19 vaccine. These internal factors helped individuals assess risks and benefits, affecting their confidence. Some felt they could manage COVID-19 without the vaccine, relying instead on preventive measures and personal health.

Self-perception

Group identity also impacted self-perception. Individuals who identified with a community supportive of vaccination were more motivated to get vaccinated, while those aligned with vaccine-skeptical groups might avoid vaccination to maintain social identity.

Trust

Trust is essential in decision-making and greatly influenced people's willingness to vaccinate. Confidence in the COVID-19 vaccine was reinforced when individuals believed it was safe, effective, and backed by transparent clinical data, adequate side-effect reporting, and consistent information from trusted sources.

Theme 2: Socio-economic factors

Personal support network

The decision to get vaccinated can be daunting due to the conflicting opinions presented in the media. Support from family and friends can help individuals maintain their choice and bolster their confidence in their decisions. However, without this encouragement or support during any vaccine-related side effects, individuals may feel

unsure or unsupported, which can deter them from getting vaccinated. Additionally, socio-economic factors significantly impacted decisions regarding COVID-19 vaccination, with important considerations including income, education, occupation, social support, effective communication, risk perceptions, and accessibility to vaccination.

Information distortion

Clear and empathetic communication from government and policymakers was critical in promoting vaccine uptake. When official messages were consistent and transparent, people were more likely to trust and accept the vaccine. Conversely, inconsistent or unclear messaging can exacerbate hesitancy, leading to confusion and skepticism about the safety and efficacy of vaccines.

Theme 3: Governance

The political and administrative systems played crucial roles by establishing policies, managing distribution, ensuring equitable access, and maintaining clear public communication. Transparent information about vaccine safety, effectiveness, and the importance of vaccination helped build trust and address concerns. Additionally, allowing employees recovery time post-vaccination contributed to a healthier work environment, especially in roles requiring in-person interactions. Lapses in any of these governance elements could lead to mistrust and increased vaccine hesitancy.

DISCUSSION

The COVID-19 pandemic has spotlighted the profound stress experienced by healthcare workers as they navigate a novel and rapidly evolving crisis. During this period, countries have faced dual challenges: first, the development and distribution of an effective vaccine, and second, overcoming vaccine hesitancy to ensure widespread immunization. The success of vaccination campaigns hinges not only on the availability of vaccines but also on public trust and acceptance. For instance, acceptance rates have been reported to be over 90% in East and Southeast Asian countries, while Mediterranean countries have seen rates below 60%. Healthcare workers, as frontline personnel, play a crucial role in counseling and communicating the importance of vaccination, thereby facilitating the vaccine drive.[18] This disparity of vaccine hesitancy is well recognized. So, this study delves into the individualized causes of vaccine hesitancy among healthcare workers during the early stages of the COVID-19 vaccination rollout, aiming to identify the root causes that may impede the effectiveness of vaccination efforts. The findings were categorized into individual, administration, and vaccine-related issues.

The oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown. The arrival of vaccines during the COVID-19 pandemic was met with a complex mix of fear and hope, revealing the intricate relationship between psychological distress and vaccine acceptance. On one hand, widespread health-related anxieties and fears about COVID-19 spurred a higher willingness to get vaccinated as people sought to protect themselves and their loved ones from the virus. Conversely, fears related to social and economic consequences, such as a recession, stock market crash, or conspiracy theories, often undermined.[19] In the present study, we found out about the other face of fear. Many healthcare professionals experienced vaccine hesitancy due to a range of fears concerning adverse reactions, from mild symptoms to severe health issues, which are significant factors contributing to this hesitancy—the fear of death or long-term disability following vaccination. People with pre-existing health conditions are particularly apprehensive and concerned that the vaccine could worsen their comorbidities. Additionally, worries about drug interactions and anaphylactic reactions. Furthermore, concerns about the safety of vaccination sites.

Navigating vaccination's social and economic challenges can be tough for healthcare personnel without family or friends to lean on. For single earners or those who feel isolated, the prospect of managing health alone and the potential economic impact of vaccination can be daunting. However, the option to receive the vaccine in a group setting can provide crucial support and solidarity, making the process less daunting and more manageable. Addressing these social and economic concerns is essential for encouraging vaccine uptake and supporting overall well-being. Similar findings highlighted by Maria Nicola that the COVID-19 pandemic has severely strained global healthcare systems, placing healthcare workers at heightened risk due to their inability to work remotely. This situation underscores the need for early viral testing for asymptomatic and frontline staff. The crisis has exposed critical vulnerabilities, such as high healthcare costs, shortages of protective equipment like N95 masks, and inadequate ICU beds and ventilators. In developed countries like the US, uninsured individuals in high-risk jobs face additional challenges, as contracting the virus can lead to severe financial consequences and psychosocial distress, job dissatisfaction.[20,21]

Some participants have expressed critical concerns about vaccine administration. Ensuring proper consent and maintaining the voluntary nature of vaccination is vital for preserving trust among health personnel. Skepticism arises as they believe private companies produce vaccines, especially amid competition and disputes, which can erode confidence. Effective management of side effects requires a skilled team and clear strategies, including appropriate compensation for those affected. The lack of leave for workers adds another layer of complexity. Addressing these issues is essential for improving vaccine uptake and advancing public health. Supporting this issue, some studies highlighted that years of medical training, expertise, and extensive clinical experience do not shield healthcare workers from the same emotions and dilemmas

experienced by the general public. Even with their professional expertise, their concerns about vaccination must be acknowledged and addressed while still upholding high standards of practice. Finding this balance is often challenging and may require a process of trial and error. Organizations and individuals promoting vaccine acceptance need to understand the complexities of vaccine hesitancy and carefully assess the effectiveness of various interventions.[22]

Vaccine hesitancy is deeply rooted in complex trust issues that can profoundly affect public health efforts. A significant concern is the trust individuals have in the vaccines themselves. With the introduction of new vaccines, like those developed for COVID-19, there often lacks a well-established benchmark or comparative standard to gauge their effectiveness and safety comprehensively. This absence of a reference point can generate uncertainty about which vaccine might be the most reliable choice and whether it adheres to the highest standards of efficacy.[23] Moreover, the mode of vaccine administration—particularly invasive methods such as injections—can contribute to hesitancy. For those already anxious or skeptical about vaccines, the discomfort associated with injections can be a significant deterrent, complicating efforts to improve vaccine uptake.[24] On a broader scale, pervasive distrust in health authorities and pharmaceutical companies further intensifies these issues. When individuals question the motives behind vaccine promotion and the transparency of the development process, it becomes increasingly difficult to build widespread acceptance and confidence in vaccination programs.[25]

COVID-19 vaccine hesitancy is deeply intertwined with public perceptions of governmental integrity and procedural adherence. When individuals perceive that the government is not faithfully adhering to established health policies, it erodes trust in the vaccination process, fueling skepticism about both the vaccine's reliability and the overall integrity of the health system.[26,27] Additionally, concerns about whether vaccine production norms and safety protocols are being properly followed can heighten fears about the quality and efficacy of the vaccines.[28,29] Furthermore, if the vaccine rollout is perceived as a political maneuver aimed at gaining government credit rather than a genuine public health effort, it can significantly undermine trust and discourage public participation.[30] Addressing these issues transparently is crucial for rebuilding confidence and ensuring the success of vaccination programs. COVID-19 vaccine hesitancy often hinges on several intriguing issues that spark public skepticism. Many people question the reliability of phase 3 clinical trials, wondering if these results truly reflect real-world effectiveness. The sheer variety of vaccine brands, each with different efficacy rates and formulations, adds to the confusion, making it challenging for individuals to choose the most reliable option. Concerns about whether vaccines are stored and transported correctly preserving their efficacy through strict cold chain maintenance further complicate matters. The debate over the necessity and availability of booster doses also stirs doubt about long-term protection. Moreover, if vaccination does not unlock freedom from travel restrictions, some may question its true value. The lack of WHO endorsement for certain vaccines and the ongoing evolution of new virus strains amplify these uncertainties. Tackling these issues with transparent, engaging communication and robust research is key to restoring public confidence and boosting vaccine acceptance.

CONCLUSION

COVID-19 vaccine hesitancy among healthcare workers is a complex and intriguing phenomenon that challenges our understanding of trust in science and authority. While these professionals are often seen as the frontline defenders of public health, many grapple with conflicting emotions and doubts about vaccines. Personal experiences, exposure to misinformation, and a general wariness about the speed of vaccine development fuel this hesitancy. Interestingly, some healthcare workers desire more transparency and dialogue, seeking to understand the data behind the vaccines rather than simply accepting them at face value. This internal conflict not only impacts their own health decisions but also influences the perceptions of the broader community, highlighting the need for targeted education and open conversations. As the pandemic evolves, addressing the concerns of these key influencers is vital to fostering a culture of trust and resilience in public health initiatives.

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REFERENCES

1. De P, Chakraborty I, Karna B, Mazumder N. Brief review on repurposed drugs and vaccines for possible treatment of COVID-19. Eur J Pharmacol. 2021;898:173977.
2. Marathe SD, Bassi S, Thapliyal N, Prakshale B, Shah VG, Salunke S. Factors associated with COVID-19 vaccine hesitancy: a community-based household survey in Pune district of Maharashtra, India. J Global Health Rep. 2022;6:e2022048.
3. Phillips R, Gillespie D, Hallingberg B, Evans J, Taiyari K, Torrens-Burton A, et al. Perceived threat of COVID-19, attitudes towards vaccination, and vaccine hesitancy: A prospective longitudinal study in the UK. Br J Health Psychol. 2022;10:12606.

4. Panigrahi S, Mohapatra S, Shetty AP, Baby RS, Singh AK. The burden & contributing factors of psychological distress across India during the COVID pandemic. Arch Psychiatr Nurs. 2021;35(6):678-84.
5. Chung JY, Thone MN, Kwon YJ. COVID-19 vaccines: The status and perspectives in delivery points of view. Adv Drug Deliv Rev. 2021;170:1-25.
6. Li M, Wang H, Tian L, Pang Z, Yang Q, Huang T, et al. COVID-19 vaccine development: milestones, lessons and prospects. Signal Transduct Target Ther. 2022;7:146.
7. Tregoning JS, Brown ES, Cheeseman HM, Flight KE, Higham SL, Lemm NM, et al. Vaccines for COVID-19. Clin Exp Immunol. 2020;202(2):162-92.
8. World Health Organization. Data at WHO. Available at: https://www.who.int/data. Accessed on 12 October 2024.
9. Dani MT, Singh AG, Chaturvedi P. COVID-19 vaccine hesitancy in India. Cancer Research, Statistics, and Treatment. 2021;4(3):437.
10. Hossain MB, Alam MdZ, Islam MdS, Sultan S, Faysal MdM, Rima S, et al. COVID-19 vaccine hesitancy among the adult population in Bangladesh: A nationwide cross-sectional survey. PLoS One. 2021;16(12):e0260821.
11. Hong L, Jin Z, Xu K, Shen G, Zou Y, Li R, et al. COVID-19 vaccine uptake and vaccine hesitancy in rural-to-urban migrant workers at the first round of COVID-19 vaccination in China. BMC Public Health. 2023;23:139.
12. Sallam M. COVID-19 Vaccine Hesitancy Worldwide: A Concise Systematic Review of Vaccine Acceptance Rates. Vaccines (Basel). 2021;9(2):160.
13. Dhalaria P, Arora H, Singh AK, Mathur M, S. AK. COVID-19 Vaccine Hesitancy and Vaccination Coverage in India: An Exploratory Analysis. Vaccines (Basel). 2022;10(5):739.
14. Ouni PD, Namulondo R, Wanume B, Okia D, Olupot PO, Nantale R, et al. COVID-19 vaccine hesitancy among health workers in rural Uganda: A mixed methods study. Vaccine X. 2023;13:100260.
15. Xu B, Zhang Y, Chen L, Yu L, Li L, Wang Q. The influence of social network on COVID-19 vaccine hesitancy among healthcare workers: a cross-sectional survey in Chongqing, China. Hum Vaccin Immunother. 17(12):5048-62.
16. Soares P, Rocha JV, Moniz M, Gama A, Laires PA, Pedro AR, et al. Factors Associated with COVID-19 Vaccine Hesitancy. Vaccines. 2021;9(3):300.
17. Zampetakis LA, Melas C. The health belief model predicts vaccination intentions against COVID-19: A survey experiment approach. Appl Psychol Health Well Being. 2021;13(2):469-84.
18. Grossman VA. The COVID-19 Vaccine: Why the Hesitancy? J Radiol Nurs. 2021;40(2):116-9.
19. Bendau A, Plag J, Petzold MB, Ströhle A. COVID-19 vaccine hesitancy and related fears and anxiety. Int Immunopharmacol. 2021;97:107724.
20. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. Int J Surg. 2020;78:185-93.
21. Labrague LJ, de Los Santos JAA. Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. J Nurs Manag. 2021;29(3):395-403.
22. Peterson CJ, Lee B, Nugent K. COVID-19 Vaccination Hesitancy among Healthcare Workers-A Review. Vaccines (Basel). 2022;10(6):948.
23. Gollust SE, Fowler EF, Vogel RI, Rothman AJ, Yzer M, Nagler RH. Americans' perceptions of health disparities over the first year of the COVID-19 pandemic: Results from three nationally-representative surveys. Prev Med. 2022;162:107135.
24. Paltiel AD, Zheng A, Walensky RP. Assessment of SARS-CoV-2 Screening Strategies to Permit the Safe Reopening of College Campuses in the United States. JAMA Network Open. 2020;3(7):e2016818.
25. Dai L, Gao L, Tao L, Hadinegoro SR, Erkin M, Ying Z, et al. Efficacy and Safety of the RBD-Dimer–Based Covid-19 Vaccine ZF2001 in Adults. N Engl J Med. 2022;386(22):2097-111.
26. Troiano G, Nardi A. Vaccine hesitancy in the era of COVID-19. Public Health. 2021;194:245-51.
27. Bajos N, Spire A, Silberzan L, Sireyjol A, Jusot F, Meyer L, et al. When Lack of Trust in the Government and in Scientists Reinforces Social Inequalities in Vaccination Against COVID-19. Front Public Health. 2022;10:908152.
28. Brown MT, Benson CA. Addressing the Challenges of Vaccine Hesitancy Broadly and Related to COVID-19 Vaccines. Top Antivir Med. 2021;29(5):430-9.
29. Patel K, Robertson E, Kwong ASF, Griffith GJ, Willan K, Green MJ, et al. Psychological Distress Before and During the COVID-19 Pandemic Among Adults in the United Kingdom Based on Coordinated Analyses of 11 Longitudinal Studies. JAMA Network Open. 2022;5(4):e227629.
30. Harris JN, Mauro C, Andresen JA, Zimet GD, Rosenthal SL. COVID-19 vaccine uptake and attitudes towards mandates in a nationally representative U.S. sample. J Behav Med. 2023;46(1–2):25-39.

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