PREVALENCE OF MISCONCEPTIONS AND PRESENTATION OF COVID-19 POST-VACCINATION SYMPTOMS AMONG HEALTH CARE WORKERS OF KARACHI, PAKISTAN

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ABSTRACT

OBJECTIVE

To understand the reasons behind medical professionals' resistance to the COVID-19 vaccine and the negative effects, the vaccination has.

STUDY DESIGN

Cross-sectional study design.

PLACE AND DURATION OF STUDY

Dow University of Health Sciences, Ojha Campus Karachi, Pakistan from March 2021 till May 2021.

SUBJECTS AND METHODS

Altogether, 260 samples were recruited and analysed to investigate the reason(s) of unwillingness for vaccination in healthcare workers and approaches for treating COVID-19. Data were analysed via IBM SPSS Statistics version 25.0 and the results were expressed in frequencies and percentages.

RESULTS

Altogether, 41.8% of vaccinated participants developed post-vaccination symptoms including fever, flu, body ache, headache and allergic reactions. Despite experiencing post-vaccination symptoms, a large group of people (65.6%) did not take any medication to ease the symptoms.

CONCLUSION

The study's subjects reportedly expressed reluctance to receive the COVID-19 vaccination. Social media played a key role in spreading the misconceptions regarding vaccination.

KEYWORDS

Vaccine hesitancy, Post-vaccination Symptoms, Social Media, Allegations, COVID-19 vaccine.

INTRODUCTION

Acceptance of vaccination has been lessening for the recent several years.[1] Immunisation against severe acute respiratory syndrome has been recommended for healthcare workers as a priority. An effective and safe vaccine can resolve the COVID-19 pandemic, but the hesitancy to get the vaccination is common. Globally, SARS-CoV-2 transmission has led to an increase in COVID-19 infections. It was declared as a worldwide pandemic on 11 March 2020. Several therapeutic medications have been introduced to treat COVID-19 disease, but the lack of effective treatments against COVID-19 stimulated research development race to have a prime focus on vaccines production.[2]

Even though COVID-19 vaccines are offered worldwide, but people were reluctant to accept them.[3] The hesitancy of being immunised against COVID-19 is an unclear phenomenon involving several factors playing a role.[3] The rapid production of multiple vaccinations against the pandemic created the risk of safety concerns.
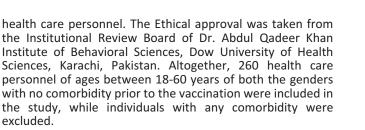
Purified, inactivated SARS-CoV-2 vaccine, Sinopharm was the first Chinese vaccine approved by the World Health Organization (WHO) for emergency use. In late December 2020, Phase III clinical trials have begun in Pakistan and in other countries. In Pakistan, the vaccine Sinopharm was approved in January 2021 for the emergency use, and it began as vaccination campaign by February 2021.[4]

Sinopharm has shown 79.34% efficacy and displayed mild symptoms like body ache, fever, injection site pain and headache etc.[5] To discover the side effects experienced by healthcare workers of Karachi, Pakistan after getting immunised with Sinopharm, the present study was conducted in a tertiary-care hospital. The survey was solely for health care workers as they are more exposed to coronavirus disease. The study also evaluated the frequency of vaccinated and unvaccinated people and to explore the health care professionals' perspective about COVID-19 vaccination hesitancy. This study additionally investigated the symptoms presentation among health care personnel after getting vaccinated by Sinopharm.

SUBJECTS AND METHODS

A cross-sectional analysis was completed from March 2021 till May 2021 that was mainly concentrated on the evaluation of

health care personnel. The Ethical approval was taken from the Institutional Review Board of Dr. Abdul Qadeer Khan Institute of Behavioral Sciences, Dow University of Health Sciences, Karachi, Pakistan. Altogether, 260 health care personnel of ages between 18-60 years of both the genders with no comorbidity prior to the vaccination were included in the study, while individuals with any comorbidity were excluded.

Data were collected via random non-stratified convenient sampling from the health care workers including consultants, house officers, lab researchers, lab professionals, research associates, midwives, nurses, technicians, housekeepers and peons, that are in direct contact with COVID-19 patients. The questionnaire was filled by using Google forms and in printed forms. Information regarding demographic data, along with reasons and allegations for unwillingness of accepting vaccines and presentation of symptoms, were reported. Data were analysed via IBM SPSS Statistics version 25.0 and results were expressed in frequencies and percentages.[6,7]

RESULTS

Covid-19 vaccine acceptance plays a significant role in fighting the pandemic. Health care personnel were among the first group to receive immunisation; therefore, it is crucial to know their attitudes regarding COVID-19 vaccination.[8] Among 260 study population of health care personnel, 56.2% were immunised against COVID-19 vaccine (Table 1), whereas most unvaccinated people were hesitant about being vaccinated with COVID-19 vaccine and stated multiple reasons that varied among health care personnel.

Within the unvaccinated group, 34.0% of health care personnel did not trust the vaccine because of diverse logic, whereas 66.0% were reluctant because they feared encountering side effects (Table 2).

Social media plays an important role in diverting peoples' perception regarding post vaccination effects on health, 68.5% of health care personnel reported that they heard statements against COVID-19 vaccines via social media platforms, while 31.5% developed negative perception regarding COVID-19 vaccine because of the comments shared by peers.

Among the vaccinated group, 41.8% experienced post vaccination symptoms, while 58.2% remained asymptomatic. 34.4% individuals from the symptomatic group took different medications to improve their symptoms, whereas 65.6% individuals did not take any medicinal therapy to combat the symptoms (Table 3).

Table 1

Distribution of population with respect to vaccinated and non-vaccinated personnel (n=260)

S.No.	Vaccinated/Unvaccinated	Frequency (n)	Percentage (%)
1	Vaccinated	146	56.2
2	Unvaccinated	114	43.8

Table 2

Distribution of unvaccinated personnel with respect to reasons behind unwillingness towards vaccination (N=76)

S.No.	Reasons behind vaccine unwillingness	Frequency (n)	Percentage (%)
1	Vaccines are not reliable They did not believe in vaccination They did not trust Chinese products 5G chip might be introduced into their bodies There is no benefit of getting vaccination	26	34
2	We might suffer from some permanent medical ailment (e.g., sterility) We might get multiple systemic disorders We might have COVID-19 infection again	50	66

Table 3

Methods used by individuals for the subsidence of COVID-19 symptoms (N= 61)

S.No.	Methods of symptoms subsidence	Frequency (n)	Percentage (%)
1	By taking relevant medication	21	34.4
2	No medications	40	65.6

DISCUSSION

Nearly 11% of the global population was immunised against COVID-19 vaccine by the beginning of June 2021.[9] However, the ratio of vaccinated individuals was comparatively lower in low-income-countries. The main reason for the low number of immunised populations in developing countries was their hesitancy towards getting vaccination, because of multiple reasons such as vaccine safety, potential side effects and efficacy. Among the general population, health care workers were among the first ones to receive immunisation against the COVID-19 disease, irrespective of their willingness to get vaccinated.[10]

Therefore, it is important to know the reasons behind their unwillingness towards COVID-19 vaccination and to address the barriers to widespread the vaccine acceptance. With this approach a cross-sectional survey-based study was planned to determine health care workers' perspective towards COVID-19 vaccine and to highlight its post vaccination effects.

The present study showed nearly equal distribution of people in vaccinated and unvaccinated health care group (Table 1).

Among unvaccinated health care workers, 33% reported that they were not afraid of getting vaccination, and they will be vaccinated soon. However, 66% indicated their reluctance towards vaccination and stated their rationale, including side effects and trust issues with Chinese products. These findings are supported by Glampson et al, who also reported a high ratio of vaccine hesitancy among the population of Northwest

London.[11] While the results of Al-Sanafi and coworkers are contrary to our findings and they found high acceptance of getting a COVID-19 vaccine.[12]

The study evaluated multiple reasons of hesitancy highlighted by health care participants of the study, including that the vaccines are vain. They responded that these vaccines are not reliable because they do not believe in vaccination against the virus. Further, they do not trust Chinese products, while some had a fear that a 5G chip might be introduced into their bodies (Table 2). Other concerns against the vaccine include myths associated with vaccination, and they believed that there were no benefits of getting vaccinated, rather they get affected by it. Statements about these concerns were: we may catch COVID-19 infection again, we may suffer from some permanent medical ailment (e.g., sterility)or we may catch COVID-19 vaccine side effects.[13] Several other studies have been conducted to assess the reasons behind vaccine hesitation and all the studies revealed that there was a higher level of concern regarding safety, side effects and efficacy of the vaccine than any other reason.[14] Similar findings are also reported in our study where health care personnel were concerned about the side effects that they would receive once injected with a COVID-19 vaccine.

Further, the present study also tried to discover the root cause or source behind these allegations of having reluctance to accept immunisation against COVID-19 vaccination among health care personnel. To our surprise, it was the social media platforms which played a major role in spreading these accusations. This finding is supported by the findings of Machingaidze et al and Muric et al who also evaluated that social media created the misunderstandings and possibly added to vaccine reluctance.[15,16] Another root cause underlined in this study, for developing hesitation towards COVID-19 vaccine, was the varying ideologies of peers which developed negative perception against the vaccine as the study participants (31.5%) reported that they heard these allegations from their colleagues.

The second aspect of this research study was the presentation of symptoms after getting Sinopharm COVID-19 vaccine. Of 260 health care personnel who volunteered for the survey study, 146 received vaccination, and among them, 61 experienced symptoms.

One study mainly concentrated on the healthcare professionals reported that there were no serious post-vaccination symptoms, rather mild and temporary symptoms including fever, lethargy, and myalgia.[17] Our study showed symptoms that were milder and short-lived, that required no hospitalization and subsided on their own. Some studies stated Sinopharm has been reported as safe and well acceptable in the clinical trials.[18,19] In addition, animal studies also reported the safety of Sinopharm against SARS-CoV-2 disease. While mild side effects of the drug were reported, which include headache, fever, nausea, dizziness, vomiting, allergic dermatitis and fatigue were reported.[6] These results also support our findings where participants who received Sinopharm vaccine experience body aches, headaches, joint pain, local Pain, flu, fever, vomiting, myalgia, and other allergic reactions that include chills, bloating, redness, sleep, lethargy, local swelling, etc.

As far as therapy regarding post vaccination symptoms was concerned, relatively fewer participants (34.4%) used relevant medicines to improve their post vaccination symptoms, while the larger group of study population (65.6%) neither took any relevant medications, nor they required hospitalization, rather they let the symptoms subside on their own.

LIMITATIONS
The present study has some limitations. First, it was a cross-sectional study so causality could not be established. The study revolves around Sinopharm being the only vaccine available in Pakistan at the time the study was conducted.

CONCLUSION
Majority of study population of health care workers were vaccinated. Individual perception is affected by social media and peer effect. Only mild symptoms were reported post vaccination, which subside naturally with no treatment.
Further studies including different vaccines in the future are required to highlight the effects of multiple vaccination against COVID-19.

ACKNOWLEDGMENT

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Undertaking Form

Sr. #	Author Name	Affiliation of Author	Contribution	Signature
1	Iqra Shahid	Department of Biotechnology, University of Karachi, Pakistan	Data collection, analysis and made the first draft of the manuscript	
2	Dr. Tooba Noor	Department of Physiology, Dow International Medical College, Dow University of Health Sciences	Data collection, prepared the questionnaire and contributed in developing the methodology.	
3	Quratulain Amir	Institute of Medical Technology, Dow University of Health Sciences, Karachi, Pakistan	Data analysis, reviewed the manuscript and prepared the final draft	
4	Dr. Washdev	Dr. Abdul Qadeer Khan Institute of Behavioral Sciences, Dow University of Health Sciences, Karachi, Pakistan	Conception of idea critically reviewed the paper and made important contributions.	
5	Dr. Farina Hanif	Department of biochemistry, Dow University of Health Sciences, Karachi, Pakistan	Conceived the original plot, developed hypothesis and contributed in making the final draft.	