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A STUDY TO ELUCIDATE THE DILEMMA, HESITANCY AND EXPERIENCE OF THE COVID-19 VACCINATION IN INDIAN POPULATION.

Pediatrics

Dr. Shweta Singh Associate Professor, Department of Pediatrics, Rama Medical College and Hospital, Hapur (UP).

Dr.Abhishek Singh* Assistant Professor, Department of Medicine, Noida International Institute of Medical Sciences, Greater Noida (UP). *Corresponding Author

Dr. Bhawna Kohli Professor & Head of the Department of Pediatrics, Rama Medical College and Hospital, Hapur (UP).

ABSTRACT

Objective: To elucidate the dilemma, hesitancy and experience of the beneficiaries of covid19 vaccine in an Indian Population.

Methodology: This was a cross-sectional online survey of the beneficiary population by a questionnaire pertaining to the immediate post-vaccination experience, dilemma, and hesitancy to covid 19 vaccinations in India. Conducted from **15th April to 15th May 2021**. Total n 3820, male 2215 and female 1604. All responses are coded into an excel sheet and then put into IBM- SPSS Version 25 software for further statistical analysis. The study wear conducted in the Rama Medical College and Hospital, Hapur Uttar Pradesh.

Results: A total of 3820 people participated in the survey involving 52%men and 48%women.43.3% were health professionals, government employee33.3%, police and armed forces10%, business community4.2% and others 8.7%. Maximum adverse events were observed in age group 18-45years with women being predominant in all age groups. The common problems expressed were local reactions (57%), fever (34%), tiredness (45%), headache (28), vomiting (8%), loose motions (3%). There were dilemmas and hesitancy (87%) of vaccination, but there was increasing willingness of population for vaccination. Nearly all appreciated the digital and healthcare association.

Conclusion: The rapid pace of the ever changing COVID-19 pandemic demands multiprong control measures to combat the spread. The quick and wide vaccine coverage could be a game changer to end the pandemic. Dispelling the dilemmas and hesitancies of the beneficiaries could facilitate to achieve the success of vaccination program. A digital technology associated with health care services has become a new norm of wholesome health care.

KEYWORDS

Pandemic, Covid19, Hesitancy, Dilemma, Vaccination, Combat.

INTRODUCTION

The pandemic of covid-19 has increased its toll to 167,667,197 cases world-wide with 26,752,447 cumulative cases in alone from India (1,2). The Covid -19 doesn't respect any border and its variants are adding additional urgency and uncertainty. No one is safe until everyone is safe. A ray of hope during this time is the arrival of vaccines against covid -19. As they are newly formulated and launched before phase 4 trials, people are hesitant about efficacy and safety of the vaccines. With our nation joining the line to administer the vaccine for COVID-19 to safe guard the people of nation we appreciate and try to help such a huge and novel vaccination program.

AIM

To elucidate the dilemma, hesitancy and experience of the beneficiaries of covid19 vaccine and to search the aspects which can further help to make this vaccination program more successful we conducted a cross-sectional online survey of the beneficiary population in India.

METHODS

This was a cross-sectional online survey of the beneficiary population by a questionnaire pertaining to the immediate post-vaccination experience, dilemma, and hesitancy to covid 19 vaccinations in India. Conducted from 15th April to 15th May 2021. Total n 3820, male 2215 and female 1604. All responses are coded into an excel sheet and then put into IBM- SPSS Version 25 software for further statistical analysis. The study wear conducted in the Rama Medical College and Hospital, Hapur Uttar Pradesh.

Questions were formatted in binary fashion to the extent possible, with descriptive features added to the section on symptom profile. Provision was provided to add other outcomes or descriptions that further qualified the experience. The data presented in the study were exclusively obtained through the online survey. Inclusion criteria: People who have taken the vaccine against covid19 and given the consent to participate in the survey, and exclusion criteria: people who refused to participate in the survey.

ETHICAL STATEMENT

Ethical clearance was obtained from an ethical review board from the Rama Medical College and Hospital, Hapur Uttar Pradesh. The case file information was de-identified during data collection and had coded.

DATA COLLECTION AND ANALYSIS

First, the Original response checked and coded into an excel sheet and then put into IBM- SPSS Version 25 software for further statistical analysis. The descriptive analysis had done using frequency and frequency tables and graphs had used for presenting the information.

RESULTS

A total of 3820 people responded to the survey over a one-month period from 15th April to 14 May, 2021. Nearly 76% percent of respondents had their 1st health care related surveillance while few of the ladies revealed the participation of breast cancer awareness program (9). Among the respondents 58 % were males and 42% females, most of them belonged to sector of healthcare worker 43.8% followed by government employee33.3%, police and armed forces 10%, business community 4.2% and others 8.7%. The age group with maximum number of vaccinated was between 45 to 60 years (75.5%) and the minimum number (10.8%) were above 60 years. Maximum people were without any comorbid condition (76.4%) with hypertension being at the top of the list of comorbid conditions (22.9%). Most of them were without any allergies (92%) with penicillin drugs being the most common allergy (4.6%).13% of the affected had past history of covid -19. The demographic features are depicted in table 1.

Ironically, 16.2 % people were unaware vaccination earlier than covid19 vaccine. The most common vaccine received in past was influenza vaccine (23.4%) followed by vaccine for cervical cancer (11%). Many of them (74.9%) had idea of time interval of protection imparted by vaccine. They (99.7%) were aware of adverse events following immunization, the most common being pain in the local site. Many were convinced that vaccines are for prevention not treatment (84%). Nearly 40.5% had counseling for vaccination especially from family members. Nearly 97 % of them believed that covid19 vaccine could be a "game changer" for present pandemic. Nearly 91% accepted that there are other measures which decrease the spread of covid19 of which wearing mask was opted by 67.6% closely followed by social distancing and hand hygiene (64.9% each) while 43 % people followed all the measures including vaccination. 87% were having

hesitancy for the vaccination especially regarding side effects along with a few (4.8%) having the myth that vaccine is not going to protect us. About 56% have overcome their hesitancy by self-exploration of scientific literature and scientific evidences ,24% by experience of family members who have previously taken the vaccine,19% used social media while only 5% were motivated by local eminent figures and celebrities.

89% found the experience at the center satisfactory to their expectations of delivery of health services, of those not satisfied complained about lack of proper social distancing, inappropriate arrangement for sitting during the observation and lack of drinking water.

94% of all admitted that they would encourage others for vaccination and nearly 94.6% accepted a sense of security after vaccination. 96.5% people found the Cowin app useful and systematic for vaccination of covid 19(Fig-1).

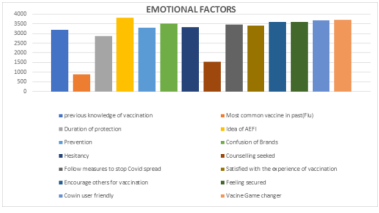

Figure-1: The Emotional Factors of the Participants for COVID-19 Vaccination (n=3820)

56.8% % of people had their 1st jab and 43.2 % had completed both the doses. Covishield was used in 83% while 17% had covaxin. Maximum number of participants had their vaccination in the month of March 2021. Nearly all had identity verification at the vaccination center along with satisfactory user friendly attitude of the healthcare staff and security personals. While 59.5% received the vaccine from Government and 40.5% form private health care center, with immediate proper update of mobile app received in 98.9% of beneficiary.

During the administration of vaccine only 16.2% % experienced out of proportion pain at the vaccination site. 89.2% people had strict observation of 30 minutes in post vaccination period. 72% people reported some kind of problem, with maximum (66.7%) having starting of problems between 30 minutes to 24 hours post-vaccination. Local site reaction involving pain, tenderness and warmth at the vaccination site was the most common problem (57%) followed by tiredness (45%), myalgia (44%), fever (34%), headache (28%), joint pain (12%), nausea (8%) and diarrhea (3%). In nearly 89% of the affected, the symptoms resolved in 3 days.

Table-1: Demographic Characteristics of the Participants of COVID-19 Vaccination (n=3820)

DEMOGRAPHIC FEATURES	NUMBER (%)
Gender	
Males	2,215(58)
Females	1,604(42)
Age group(years)	
18 – 45	515(13.5)
45-60	2,884(75.5)
>60	412(10.8)
Occupation	
Health care worker	1,642(43.8)
Government Employee	1,272(33.3)
Police & armed forces	382(10)
Business community	160(4.2)
Others	332(8.7)
Comorbid conditions	2,918(76.4)
Cardiac diseases	279(7.3)
Hypertension	875(22.9)
Renal diseases	172(4.5)
Neurological diseases	92(2.4)
Gastrointestinal diseases	172(4.5)
Diabetes and Metabolic Diseases	657(17.2)
Rheumatological Diseases	76(2)
Cancers	69(1.8)
Allergies	305(8)
Past history of COVID19	496(13)

DISCUSSION

Since their inception vaccines have prevented many serious diseases of mankind. In our country covid vaccine was launched on 16th Jan 2021 with the 1st group including healthcare and frontline workers (3). In a planned manner senior citizens and finally all adults above 18 years of age are being vaccinated with effect from 1st May 2021. So far on the day of compilation of the data 19,42,95,037 people were vaccinated across the nation (4). The vaccination program for covid-19 is among the “New Normal” of use of digital world in healthcare. Under the stewardship of India, Ministry of Health and Family Welfare, in collaboration with state governments and immunization partners, Gavi's Rapid Immunization Skill Enhancement (RISE) project has enabled a lot of health workers through telecommunication about the concept and mechanism of vaccine administration and management of data. The establishment of the National Media Rapid Response Cell (NMRRC) at Ministry of Health and Family Welfare along with the ***Cowin*** app has very smoothly and accurately executed the vaccine drive. Out of the race of nearly 25 vaccines against covid-19, the two vaccines approved by our nation at the time of inception of our study were covishield and covaxin(5,6,7,).

Of the two vaccines, Covishield is the better known. It's a version of the Oxford University-AstraZeneca vaccine that was found to have an average efficacy of 70.4% in a peer reviewed study. Covishield is an Indian version made by the world's largest vaccines manufacturer, the Serum Institute of India. Covaxin is India's first home produced vaccine against covid-19. It was developed by Bharat Biotech in collaboration with the Indian Council of Medical Research and the National Institute of Virology. Both vaccines require two doses and work by priming the immune system with a SARS-CoV-2 spike protein. Covishield uses a weakened version of adenovirus, while Covaxin uses an inactivated SARS-CoV-2 virus extracted from an asymptomatic patient (3,8).

For many respondents it was their 1st health surveillance (76%), a few women have participated in breast cancer awareness survey, more vaccination can be achieved by encouraging people to participate in various health programs and building their confidence and also the data analysis will facilitate to overcome the logistic problems of the vaccination program (9,10). A total of 72% of people were having one or more vaccine related adverse effects which could be because of the more frequency of participation of those who were having adverse events (11). There were 58% men and 42% women but more of the women(38%) were having vaccine related problems (12).Others have also reported that Post-vaccination symptoms were more likely to be reported by women compared to men & this observation was consistent across all age groups. Women were more likely to report symptoms severe enough to prevent working for a day and the need to take pain relievers. Women developed symptoms slightly earlier than men and they had slightly longer duration of symptoms.

The age distribution of those having some problems were comparable with others which could be explained with the variation in immunological response according to age, the elders having a sensile immune response. The findings of the survey correlated with results from published trials of vaccines (13). At least one systemic symptom was reported following vaccination with the standard dose by 82% participants in the 18–45 years group, 67% in the 46-60 years group, and 55% in the >60 years and older group.

Comorbid conditions were present in about (76.4%) with the hypertension being the most common (22.9%), we found no variation in the occurrence of adverse events when compared with those without any comorbidity (14). Approximately 8% people were having history of allergies, mostly to penicillin group of drugs (4.6%) but no association was found to drug allergy and vaccine induced side effects (14, 15,16).13% had past history of covid19. Annual influenza vaccine turned out to be the most common vaccine taken by people in recent past as this has gained popularity across the people by patient education and reinforcement of protection imparted (17). The concept of protection period imparted by a vaccine was there in 74.9% of population, it varied from a single season to life long (18). In our study 99.7% were aware of vaccine induced adverse effects with maximum number having the insight of local symptoms and systemic symptoms. 84%People were aware that vaccination is for prevention not cure. Nearly 40.3%% percent had some form of counselling regarding the advantages and disadvantages of the vaccination. Being a new vaccine and with a target of adult population which is away from the normally

seen childhood vaccination there were a lot of myths, hesitation and skepticism (87%) regarding the Covid19 vaccines. The common dilemmas were doubt regarding the duration of immunity from vaccination, fear of anaphylactic reaction, fear of SARS-CoV-2 infection, Skeptical of the studies done so far, did not believe in the quality of the vaccine and fear of long-term complications. Dispelling them appeared to be a big challenge to the vaccination drive (20). In present scenario digital world has too much impact on the faith and behavior of people from all the backgrounds. Putting positive aspects on them could be a great force for successful vaccination drive.

Nearly 97% believed that rapid vaccination could be a game changer for the present pandemic (21). Other measures to reduce the spread of covid 19 were appreciated (91%) which reflects the impact of continuous enforcement of the ideas of social and physical distancing, hand hygiene and wearing mask (22). About 56.8% had their single, 43.2% % both doses. Maximum had taken covishield (83%). People have shown faith to Government's health initiative as reflected by greater number of beneficiaries at the government setup (59.5%). The most common symptoms which were reported were similar as found by others (6,8,11,14). Most of the symptoms started within day 1 after vaccination and persisted for about 3 days. Individuals with evidence of past SARS-CoV-2 infection were also more likely to have adverse effects than those without evidence of past infection with both vaccines. It is possible, that this increased reactogenicity relates to increased immunogenicity. It has been shown that vaccines have increased immunogenicity in individuals with past infection and these people have higher antibody titres than those without previous infection. Many have taken paracetamol as the only remedy while nearly equal number only opted for icing (23). Although the use of paracetamol to alleviate postvaccination discomfort is considered acceptable, routine prophylactic use of pain relievers is not recommended as there is evidence of blunted immune response as a result.

89% found the experience at the center satisfactory to their expectations of delivery of health services, of those not satisfied complained about long ques lack of proper social distancing, inappropriate arrangement for sitting during the observation and lack of drinking water. In contrast to the perceived high level of uncertainty about the safety of currently available COVID-19 vaccines, there is an elevated willingness to get vaccinated among people as found in our study (24). 94% of all admitted that they would encourage others for vaccination and nearly 94.6% accepted a sense of security after vaccination. 96.1% people found the Cowin app useful and systematic for vaccination of covid 19(25).

CONCLUSION

The rapid pace of the ever-changing COVID-19 pandemic demands multiprong control measures to combat the spread. The quick and wide vaccine coverage could be a game changer to end the pandemic. Dispelling the dilemmas and hesitancies of the beneficiaries could facilitate to achieve the success of vaccination program. Digital technologies associated with health care services has become a new norm of wholesome health care.

LIMITATIONS

Any survey is more likely to be taken by those with an interest in the topic. For instance, a survey on side effects of a medication is more likely to be answered by someone who had a problem with that medication. Greater awareness and anticipation of potential adverse effects among healthcare workers as a group could also get reflected in the reporting rate. Hence, the reported 72% incidence of post-vaccination symptoms could be an overestimation. The new association of Information technology and health care system is a challenge to both the providers and beneficiaries of the facilities, further improvement of skills from either side will improve the outcome.

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CONFLICT OF INTEREST- The authors declare that they need no conflict of interest.

REFERENCES

1. Aarogya Setu Mobile App|MyGov.in; Available at-https://mygov.in>aarogya-setu-app. Accessed on24.5.2021.
2. WHO Coronavirus (COVID19) Dashboard; Available at-https://covid19.who.int. Accessed on 24.5.2021.
3. Information Regarding COVID-19 Vaccine; Available at-https:// www.mohfw.gov.in> vaccin. Accessed on 24.5.2021.
4. CoWIN; Available at-https://www.cowin.gov.in.Accessed on 24.5.2021.
5. Sultana J, Mazzaglia G etal. Potential effects of vaccinations on the prevention of COVID-19: rationale, clinical evidence, risks, and public health considerations; EXPERT REVIEW OF VACCINES 2020, VOL. 19, NO. 10, 919–936. https://doi.org/ 10.1080/14760584.2020.1825951
6. ChAdOx1 nCoV- 19 Corona Virus Vaccine (Recombinant). COVISHIELD. Available at-https://www.seruminstitute.com>product-covishield.
7. WHO. Draft landscape and tracker of COVID-19 candidate vaccines. Jan 21, 2021. https://www.who.int/publications/m/item/draftlandscape-of-covid-19-candidate-vaccines (accessed on 24.5.2021).
8. COVID-19 Vaccines: A Review of the Safety and Efficacy of Current Clinical Trials. Zhi-Peng Yan Ming Yang *Pharmaceuticals* **2021**, *14*(5), 406; https://doi.org/ 10.3390/ ph14050406
9. Sandra W. Analysis of Surveillance data,(Chapter 20) Vaccine Preventable Diseases Surveillance Mnual: Analyzing Data,_CDC; Available aththps://www.cdc.gov>surv-manual
10. Sameul L. Groselose, David l. Buckeridge . Public Health Surveillance Systems:Recent Advances in Their Use and Evaluation.Annual review of Public Health 2017,Vol.38; 57-79. Available at-https://doi.org/10.1146/annurev-pubihealth-031816-044348
11. Jaya devan R, Shenoy R, Anithadevi TS.Survey of symptoms following COVID-19 vaccination in India. Available at Medrxiv doi: https://doi.org/ 10.1101/ 2021. 02.08. 21251366.
12. *Menni 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. The Lancet Infectious Diseases; 2021.* https://doi.org/10.1016/S1473-3099(21)00224-3 .
13. Hervé, C., Laupèze, B.,Del Giudice, G. et al. The how's and what's of vaccine reactogenicity. npj Vaccines 4, 39, 2019 https://doi.org/10.1038/s41541-019-0132-
14. Safety and immunogenicity of ChAdOx1 nCoV-19 vaccine administered in a primeboost regimen in young and old adults(COV002): a single-blind, randomised, controlled, phase 2/3 trial Lancet 2020; 396: 1979–93 November 19, 2020 https://doi.org/10.1016/S0140-6736(20)32466-1 3.
15. Polack FP et al. Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine December 31, 2020. N Engl J Med 2020; 383:2603-2615 DOI: 10.1056/ NEJ Moa 203 4577 4.
16. Colloca L, Miller FG. The nocebo effect and its relevance for clinical practice. Psychosom Med. 2011;73(7):598-603. doi:10.1097/PSY.0b013e3182294a5Dhar R etal.
17. Clinical practice guidelines 2019: Indian consensus-based recommendations on influenza vaccination in adults. Lung India:2020;37, Suppl S1:4-18.
18. Plotkin S. Plotkin's Vaccine: Vaccine Immunology. Elseivier; 2017.7th ed,251-260.
19. Ella R et al. Safety and immunogenicity of an inactivated SARS-CoV-2 vaccine, BBV152: interim results from a double-blind, randomised, multicentre, phase 2 trial, and 3-month follow-up of a double-blind, randomised phase 1 trial - The Lancet https://www.thelancet.com › laninf › article › fulltex
20. SV Praveen, Ittamalla R, Gerard D. Analyzing the attitude of Indian citizens towards COVID-19 vaccine e A text analytics study. Diabetes & Metabolic Syndrome: Clinical Research & Reviews: 2021;15(2):595-599.
21. Stanley SL, Schlissel MS, Wilson MR. opinion: COVIC-19 vaccine is a game -changer that can stop the pandemic. The Detroit News. Jan23, 2021.
22. Preventing the spread of the coronavirus- Harvard Health. Available at-https://www. health Harvard.edu> pr..
23. Jennifer S. Chen et al.. Non-steroidal anti-inflammatory drugs dampen the cytokine and antibody response to SARS-CoV-2 infection. Journal of Virology Jan 2021, JVI.00014-21; doi: 10.1128/JVI.00014-21
24. Eibensteiner et al. High willingness to vaccinate against COVID-19 despite safety concerns: a Twitter poll analysis on public health opinion. Available at -https:// preprints.jmir.org/preprint/28973
25. Can technology increase COVID-19 vaccination rates? The Lancet Digital Health:2021;3(5): E274;doi:https://doi.org/10.1016/S2589-7500(21)00061-3.