

A Study to Determine the Acceptance and Challenges of COVID-19 Vaccination Among Public in Healthcare Providers Perspective in Mangalore

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ABSTRACT

COVID-19 booster dose vaccination in India was started from 10-April-2022 but its acceptance is low. The present study was a prospective observational study aimed to determine the acceptance and challenges of the COVID-19 vaccine conducted among health care professionals (HCP) as HCP are front-line health workers are the backbone of effective healthcare systems and they played a critical role in providing health solutions during covid-19 pandemic, using a self-administered questionnaire from 30th Jan-11th Sep 2022 in Mangalore, a total of 1000 healthcare professionals participated viz., academicians, interns, Asha workers, Lab Technicians Nurses, pharmacists, and doctors.

Reasons behind skipping booster vaccination in community were adverse experience with prior doses of vaccine 25%, Two doses were enough 24%, Infection was commonly reported among people who had taken the precautionary dose 11%, Concern that mutations have altered the virus since the vaccine was originally made 4.5%, Unknown 4.0%, doubts regarding boosters' effectiveness 3.7%, Lack of enough evidence 3.5%, Waiting for mix-and-match booster vaccines 2.1%, The belief that prior infection would be protective 1.2%

Analyzing about supply chain of vaccine as it is a critical process in management of vaccination drives, even though GOI had successfully managed the vaccination program (78%), it had failed to reach cent percent in booster dose due to predisposing idea of the public assuming confidence in the previous 2 doses (28%) and

being non-compulsion (20%) led to non-acceptance.

This study concludes a high level of COVID-19 booster dose vaccine hesitancy, efforts to provide accurate information on vaccine safety and effectiveness are highly recommended.

Keywords: Covid Vaccine, Booster dose, Acceptance, Challenges

INTRODUCTION

India is recognized for administering the largest number of vaccines i.e., about 20 million doses in a single day. Karnataka has completed administering 10 crore vaccines for this month ^[1]. Vaccination in India was administered since January 16, 2021, with the administration of vaccines to all healthcare workers in the first phase. In February 2021, the vaccination program was expanded to cover frontline workers. The second phase of the program began in March which included citizens above the age of 60 and subsequently, people above the age of 45 with co-morbidities. India managed to maintain the lowest positivity and mortality rates coupled with one of the highest recovery rates globally during the pandemic ^[2].

The booster dose also called a precautionary dose was introduced in India on January 10, 2022. In his address to the nation on December 25, 2021, Prime Minister Narendra Modi announced the rollout of a 'precaution dose' of COVID-19 vaccines

for healthcare, frontline workers, and senior citizens with co-morbidities. Booster doses can further enhance or restore protection that might have decreased over time after your primary series vaccination [3]. According to the MOHFW, over 22 crore booster doses have been administered throughout India and a total of 219 crore vaccines have been administered by the total population^[4]

METHODOLOGY

Study Design and Participants:

The present work was a prospective observational study that was carried out in Mangalore. Data were collected using a convenience sampling method between 30th Jan-11th Sep. The information was gathered from Healthcare Providers (HCP), 1000 participants of HCP participated in the study.

Study criteria: Individuals HCP expressed an interest in participation were included in the study and Subjects not willing to participate are excluded from the study

Source of Data: Data(s) were collected using the pre-validated questionnaires through direct interaction with the subjects in various locations of Dakshina Kannada. The current study included participants from a variety of socio-demographic backgrounds. Each participant took 3mins time to complete the questionnaire.

Study Method: The data were collected by using a prevalidated questionnaire from the study individuals [15]. Inform consent form was prepared in English and Kannada and

the same were used before the selection of subjects. The informed consent form was explained to the participants and consent only participated in the survey. The pre-validated questionnaire was used in the study which was divided into three sections. The collected data(s) were kept confidential. Demographic information about healthcare providers and their opinion regarding the challenges and Management of vaccination programs in India. Covid-19 booster vaccine perception: The present study analyzed the perception and challenges behind covid-19 booster dose acceptance by HCP. The collected data(s) were analyzed using Microsoft Excel and Descriptive statistics were used to characterize the socio-demographic information of the people. Ethical approval was obtained by the Institutional Ethics Committee (IEC) of Srinivas Institute of Medical Science, Mukka, Mangalore.

RESULT

Demographic characteristics of Health care providers: Discussing vaccination against covid-19 with patients is a crucial task for medical providers and public health organizations. Table No. 11 details the services provided by various healthcare professionals during immunization. 90% of the respondents to the study were pharmacists (393). Lab technicians are the least involved participants in our study. Our study includes a variety of healthcare professionals, including academicians, Asha workers, Lab Technicians Nurses, pharmacists, and doctors.

Table no. 01: Demographic characteristics of Health care providers (n=1000)

SI No	Profession	Work	Respondents
1	Academician	College	33 (3.3%)
2	Asha workers	Anganwadi Primary health centers Sub centers	24 (2.4%) 20 (2.0%) 11 (1%)
3	Intern	Hospital	77 (7.7%)
4	Lab technician	Hospital	27 (2.7%)
5	Nurse	Hospital	280 (28%)
6	Pharmacist	Pharmacy Hospital	246 (24%) 152(15%)
7	Physician	Hospital	130 (13%)
	Grand Total		1000

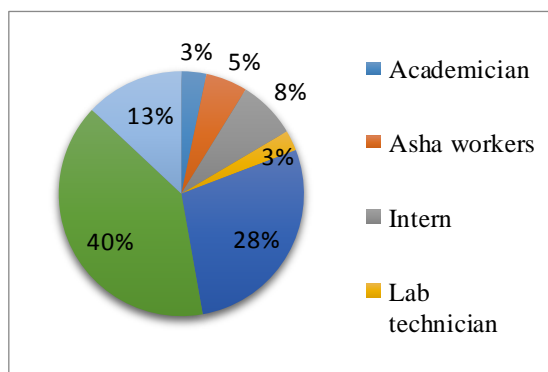


Fig no.01. Demographic characteristics of Health care providers

HEALTHCARE PROVIDERS: Front-line health workers are the backbone of effective healthcare systems and they played a critical role in providing health solutions during covid-19 pandemic.

Reason for not taking the booster dose and Management of vaccination program in India

The study included healthcare providers to ascertain the reason for low vaccination by the public. According to this study, the majority of people (28%) believe that two dosages are sufficient. Followed by adverse experience with prior doses of vaccine

(25%), a minimal number of participants (2.1%) are still waiting for mix-and-match booster vaccinations as FDA authorized the use of mix-and-match booster doses for commonly available covid-19 based on the result of NIAID supported study, according to health professionals' observations. The study can provide information of COVID-19 booster dose vaccination program. 78% of the 1,000 respondents in the study agree that the Indian government handled the distribution of vaccines appropriately also, 75% of the participants argue that government should compel the use of booster dosage in India.

Table no. 02: Reasons for not taking the booster dose and management of vaccination program

SI No	Reasons for not taking the vaccine	Respondents	
1	The belief that prior infection would be protective	12 (1.2%)	
2	Lack of enough evidence	35 (3.5%)	
3	Adverse experience with prior doses of vaccine	255(25%)	
4	Two doses were enough	244 (24%)	
5	Waiting for mix-and-match booster vaccines	21 (2.1%)	
6	Concern that mutations have altered the virus since the vaccine was originally made	45 (4.5%)	
7	Infection was commonly reported among people who had taken the precautionary dose	110 (11%)	
8	Doubts regarding boosters' effectiveness	37 (3.7%)	
9	Unknown	40(4.0%)	
Management of the vaccination program		Yes	No
1	The distribution of vaccines was properly managed by govt	788 (78%)	212 (21%)
2	The compulsion of a booster dose	750 (75%)	250 (25%)

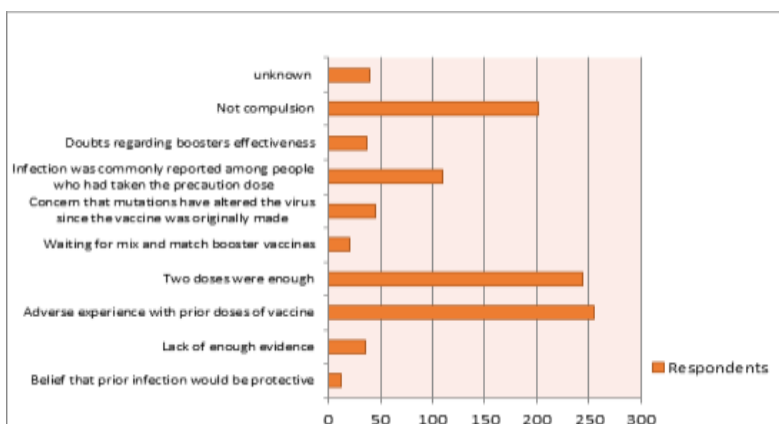


Fig no. 02. Reasons for not taking the booster dose

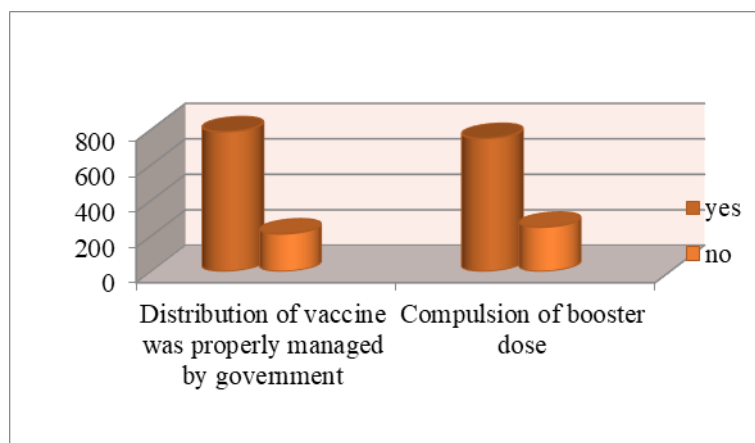


Fig no: 03. Management of vaccination program in India

DISCUSSION

The present study provided valuable information regarding covid-19 vaccine booster dose hesitancy and potential variables influencing it. The relatively high booster vaccine non-acceptance resulted from earlier covid-19 vaccine experience, regarding safety. Pharmacists can play a major role in promoting confidence in the effectiveness and safety through effective communication, as well as treating their ability to procure and distribute them efficiently and equitably.

The reasons for not receiving the booster dose were that the participants were confident in the first doses, afraid of short-term side effects, and unknown or unsure about the decision. Certain studies also supported that due to lack of enough evidence, two doses were enough, adverse experience with prior doses of vaccine, not compulsion^[18]. Several studies suggest that the reasons for vaccine reluctance, participants showed vaccine hesitation due to safety concerns. In the current study, participants also showed the same reluctance as mentioned above.

Supply and delay in the interval of vaccination influenced vaccination administration of doses of multiple vaccines using intervals that are shorter than recommended might be necessary for certain circumstances such as impending international travel or when a person is behind schedule on vaccination but needs rapid protection, in this situation an

accelerated schedule can be implemented for routine vaccination. However, intervals between doses that are longer than recommended typically do not reduce final anti-body concentration, although protection might be attained until the recommended number of doses have been administered. The present study reveals that the majority of participants received the vaccine in intervals that are longer as recommended by govt.

HCP has a central role in vaccination against covid-19 and can provide reliable information about vaccines so HCP has the data about the vaccination program against covid-19. The present study also attempted to utilize data knowledge of vaccination from HCP it also suggests that the distribution of vaccine was properly managed by the government according to HCP and that non-compulsion of booster hindered its administration.

Under usage of booster dose had an Impact of non-vaccination, vaccine wastage, and destruction A major reason for the wastage of vaccines in India was because of the mis-anticipation of demand. Experts say companies were unclear about the purchase orders from the Centre and ramped up capacity in a big way. Approximately 100 million doses of vaccine had been squandered due to their shelf life expiring. These booster doses either failed to reach the needy or no one took them.

Nonvaccination can increase transmission, and the likelihood of more variants

emerging; nobody is safe until vaccinated, to be protected against the virus while vaccine coverage is increasing

Therefore, compulsion of booster doses should be made by govt for added protection regarding the severity of the coronavirus.

CONCLUSION

The study concludes that Concerns about vaccine safety, vaccine efficacy, lack of enough evidence, two doses were enough, adverse experience with prior doses of vaccine, not compulsion were possible underlying causes of vaccine hesitancy. The present study may serve as a tool for building future policies and public health actions designed to increase the covid vaccination booster dose rate.

Declaration by Authors

Ethical Approval: Approved

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REFERENCES

1. Lai C.-C. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *Int. J. Antimicrob. Agents.* 2020; 55:105-924.
2. Haas EJ. Infections, hospitalizations, and deaths averted via a nationwide vaccination campaign using the Pfizer-BioNTech BNT162b2 mRNA COVID-19 vaccine in Israel: a retrospective surveillance study. *Lancet*, 2021; 22: 357-366
3. Watson, Oliver J. "Global impact of the first year of COVID-19 vaccination: a mathematical modeling study". *The Lancet Infectious Diseases.* 2022;22 (9): 1293–1302
4. Harapan, Coronavirus disease 2019 (COVID-19): A literature review. *J. Infect. Public Health* 2020;13: 667–673.
5. Paterson P., Meurice F., Stanberry L.R., Glismann S., Rosenthal S.L., Larson H.J. Vaccine hesitancy, and healthcare providers. *Vaccine.* 2016; 34:6700–6706
6. Hollmeyer H., Hayden F., Mounts A., Buchholz U. Review: Interventions to increase influenza vaccination among healthcare workers in hospitals. *Influenza Other Respir. Viruses.* 2013; 7:604–621
7. Da Costa V.G., Saivish M.V., Santos D.E.R., de Lima Silva R.F., Moreli M.L. Comparative epidemiology between the 2009 H1N1 influenza and COVID-19 pandemics. *J. Infect. Public Health.* 2020; 13:1797–1804.
8. Anderson RM, May RM. *Nature.* Vaccination and herd immunity to infectious diseases.1985;318:323–329.
9. Wang Z, Fu Y, Guo Z, et al. *Biochem Soc Trans.* Transmission and prevention of SARS-CoV-2.2020;48:2307–2316.
10. Umakanthan S, Sahu P, Ranade AV, et al. Origin, transmission, diagnosis and management of coronavirus disease 2019 (COVID-19). 2020; 96:753–758.
11. Alsubaie SS, Gosadi IM, Alsaadi BM, Albacker NB, Bawazir MA, Bin-Daud N, et al. Vaccine hesitancy among Saudi parents and its determinants. *Saudi Med J.* 2019; 40:1242–50.
12. Al-Mohaithef M, Padhi BK. Determinants of covid-19 vaccine acceptance in saudi arabia: a web-based national survey. *J Multidiscip Healthc.* 2020; 13:1657–63.
13. Dror AA, Eisenbach N, Taiber S, Morozov NG, Mizrahi M, Zigran A, et al. Vaccine hesitancy: the next challenge in the fight against COVID-19. *Eur J Epidemiol.* 2020; 35:775–9.
14. Nguyen KH, Srivastav A, Razzaghi H, Williams W, Lindley MC, Jorgensen C, et al. COVID-19 Vaccination intent, perceptions, and reasons for not vaccinating among groups prioritized for early vaccination: United States, September and December 2020. *MMWR Morb Mortal Wkly Rep.* 2021; 70:217–22.
15. K.M. Corace, J.A. Srigley, D.P. Hargadon, D. Yu, T.K. MacDonald, L.R. Fabrigar, et al.
16. Using behavior change frameworks to improve healthcare worker influenza

- vaccination rates: a systematic review, 34 (28) (2016), pp. 3235-3242
17. Ghinai I, Willott C, Dadari I, Larson HJ. Listening to the rumors: what the Northern Nigeria polio vaccine boycott can tell us ten years on. *Glob Public Health*. 2013;8(10):1138–50
 18. von Elm E, Altman DG, Egger M, Pocock SJ, Gotsche PC, Vandenbroucke JP. The strengthening of the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *J Clin Epidemiol*. 2008;61(4):344–9
 19. Malik AA, McFadden SM, Elharake J, Omer SB. Determinants of COVID-19 vaccine acceptance in the US. *EClinicalMed*. 2020; 26:100495.
 20. Lazarus JV, Ratzan SC, Palayew A, et al. A global survey of potential acceptance of a COVID-19 vaccine. *Nat Med*. 2021; 27:225–8
 21. Wheeler, M.; Buttenheim, A.M. Parental vaccine concerns, information source, and choice of alternative immunization schedules. *Hum. Vaccines Immunother*. 2013, 9, 1782–1789. Salmon, D.A.; Moulton, L.H.; Omer, S.B.; Dehart, M.P.; Stokley, S.; Halsey, N.A. Factors Associated with Refusal of Childhood Vaccines among Parents of School-aged Children. *Arch. Pediatr. Adolesc. Med*. 2005, 159, 470–476.
 22. Omer, S.B.; Salmon, D.A.; Orenstein, W.A.; Dehart, M.P.; Halsey, N. Vaccine Refusal, Mandatory Immunization, and the Risks of Vaccine-Preventable Diseases. *N. Engl. J. Med*. 2009, 360, 1981–1988.
 23. Likert, R. A technique for the measurement of attitudes. *Arch. Psychol*. 1932, 22, 55.
 24. Malik, A.A.; McFadden, S.M.; Elharake, J.; Omer, S.B. Determinants of COVID-19 vaccine acceptance in the US. *EClinicalMedicine* 2020, 26, 100495.
 25. Pogue, K.; Jensen, J.L.; Stancil, C.K.; Ferguson, D.G.; Hughes, S.J.; Mello, E.J.; Burgess, R.; Berges, B.K.; Quaye, A.; Poole, B.D. Influences on Attitudes Regarding Potential COVID-19 Vaccination in the United States. *Vaccines* 2020, 8, 582.
 26. Fontanet, A.; Cauchemez, S. COVID-19 herd immunity: Where are we? *Nat. Rev. Immunol*. 2020, 20, 583–584.

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