Medical Science

pISSN 2321–7359; eISSN 2321–7367

Acceptance and myths regarding covid vaccination among general population

Meenal Kulkarni[1*], **Kartik Khurana**[2]

To Cite:
Kulkarni M, Khurana K. Acceptance and myths regarding covid vaccination among general population. Medical Science, 2022, 26, ms255e2245.
doi: https://doi.org/10.54905/disssi/v26i124/ms255e2245

Authors' Affiliation:
[1]Associate Professor, department of Community Medicine, NKPSIMS & RC and LMH, Nagpur, Maharashtra, India
[2]III rd year MBBS Student, NKPSIMS & RC and LMH, Nagpur, Maharashtra, India

[*]**Corresponding author**
Associate Professor, department of Community Medicine, NKPSIMS & RC and LMH, Nagpur,
Maharashtra, India
Email: meenalkulkarni76@gmail.com

Peer-Review History
Received: 17 April 2022
Reviewed & Revised: 20/April/2022 to 23/June/2022
Accepted: 24 June 2022
Published: 29 June 2022

Peer-review Method
External peer-review was done through double-blind method.

URL: https://www.discoveryjournals.org/medicalscience

ABSTRACT

Introduction: COVID pandemic has led to shut down of societies, cities and even biggest countries of the world. To combat this pandemic, different scientists of many countries have started developing vaccines and they have succeeded in developing vaccines against SARS-CoV2. There are many myths regarding covid vaccination among general population. *Objectives*: to find out acceptance of covid vaccination and myths associated with it in general population. *Methodology*: an online web based cross sectional survey was conducted by using Google forms among 216 adult participants. Statistical analysis was done by using EPI INFO7 statistical software. *Results:* 216 participants were included in the study. 4.63% population was not willing to take covid vaccination. 4% believe that there is no need to get vaccinated if they got the disease previously. For information about the virus or the disease most people either turned to health professionals or social media. Many myths were present in the population regarding side effects and effectiveness of vaccination. *Conclusion:* There is a need to increase awareness regarding covid vaccination among general population. Active efforts should be made at all levels to remove myths regarding vaccination.

Keywords: Myths, COVID-19, vaccination, survey, acceptance

1. INTRODUCTION

Corona viruses (CoV) causes spectrum of illness which includes milder disease such as common cold to more severe disease such as Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS)-CoV (Andrews et al., 2020). Since December 2019, a new type of corona virus called novel corona virus was identified in Wuhan, China. After that COVID-19 has spread rapidly in China and then all over the globe (Zhu et al., 2020). Due to high alarming level; spread of covid across the world, WHO declared it as a pandemic on 11 March 2020 (Narayana et al., 2020). Corona virus disease 2019 (COVID-19) has caused high mortality and morbidity among population. Since the start of the pandemic, many options in treatment and prevention for covid were tried. Many newer virulent strains of corona virus are arising (Paudel et al., 2021). In history of public health vaccines have played a major role in prevention of diseases such as polio, smallpox, rabies,

typhoid, plague etc. and had helped in reducing morbidity and mortality due to diseases (Harrison and Wu, 2020).

Vaccination is the most efficient and cost effective option to tackle covid pandemic. COVID-19 immunizations are viewed as vital for the counteraction and control of COVID-19 (Kishore et al., 2021). There is a rapid development of covid vaccine by scientists. On 16th January 2021 covid vaccine was launched for healthcare workers in phase-1. There are concerns in the minds of people regarding safety and side effects of vaccination. Vaccine hesitancy acts as a barrier for immunization (Dror et al., 2020). Myths are quite popular all the time in all situations. Serious effects of these myths can be like creating panic and life threatening situations in the country (Swetha et al., 2020). In phased manner covid vaccination programme was implemented to adult population and presently it has included 15-18 year age group. Few Studies (Kumari et al., 2021; Bhartiya et al., 2021; Sharun et al., 2020) have shown that there are myths regarding covid vaccination among population. So the present study was conducted to find out acceptance of covid vaccination and myths regarding vaccination among general population.

2. MATERIAL AND METHODS

A descriptive cross sectional study was conducted in the sixth month of year 2021 among adult population. Considering P=86% (Sharun et al., 2021) where P=proportion of vaccine acceptance, Confidence Level =95%, sample size calculated was 185. For better coverage 216 participants were included in study. A google form questionnaire was designed with 13 items in English language. Questionnaire consisted of socio-demographic information, information regarding acceptance of vaccination and sources of information regarding vaccination. In detail questions were planned on various myths regarding effectiveness of vaccination and myths regarding side effects of vaccination. The questionnaire was pre-validated by experts. A pilot study was conducted and questionnaire was pretested.

The study was started after getting permission from Institutional Ethics Committee (Cert no. IEC/4/2021). Informed Consent was included in the google form. Confidentiality of the data was maintained. The survey form was circulated among general population through social media and emails. Responses were recorded in excel sheet. Data was analyzed by using EPI INFO statistical software. Results were calculated in form of mean, standard deviation and percentages.

3. RESULTS

Total 216 participant's responses were recorded to find out acceptance and myths regarding covid vaccination.

Demographics

Out of total 216 participants, 80.56 % (n=174) participants were residing in urban locality and rest were from semi-urban and rural areas. Proportion of males (n=106) and females (n=110) was almost equal (49.53% and 50.47% respectively). Participants were in the age group from 18 to 73 years. Mean age of participants was found to be 27 ±13.9.

Acceptance of vaccination

92 (42.60%) participants were vaccinated, 114(52.77%) were willing to take vaccination and 10(4.63%) were not willing for vaccination. On enquiring about which vaccine if they were to be given, most of them responded with Covishield (61.65%) and 29.13% responded with Covaxin and remaining 9.22% participants responded that they will take any vaccine which is available (table 1). The participants were also divided on the thought for taking vaccine if they ever got infected with the virus before, most of the participants i.e. 89.82 % (n=194) participants accepted the fact that they should get the vaccine if they got Covid in past while 3.70% (n=8) rejected the thought (table 1).

Table 1 Acceptance of Vaccination (n=216)

	Acceptance	No.	%
1	Status of vaccination		
a	Vaccinated	92	42.60
b	Willing to take	114	52.77
c	Not willing	10	4.63
2	Which vaccine did you take/willing to take?		
	Covishield	127	61.65
	covaxin	60	29.13

	Whichever is available	19	9.22
3	If you got covid in past, do you believe in taking vaccine?		
	Yes	194	89.82
	No	8	3.70
	maybe	14	6.48

Sources of information regarding vaccination

Regarding source of information regarding vaccination, 181(83.80%) participants got information from health professional which was followed by social media (45.38%). Participants were asked about the most reliable online source, 12.96% participants thought social media is the most reliable source whereas 61% thought it is moderately reliable, and for news channels 19.44% thought is least reliable and 68% responded for moderately reliable (table 2 and figure 1).

Table 2 Source of information regarding vaccination (n=216)

	Source of information	No.	%
1	Health professional	181	83.80
2	Social media	98	45.38
3	News channels	76	35.18
4	Family friends	68	31.48
5	Print media	55	25.46

**multiple responses were allowed*

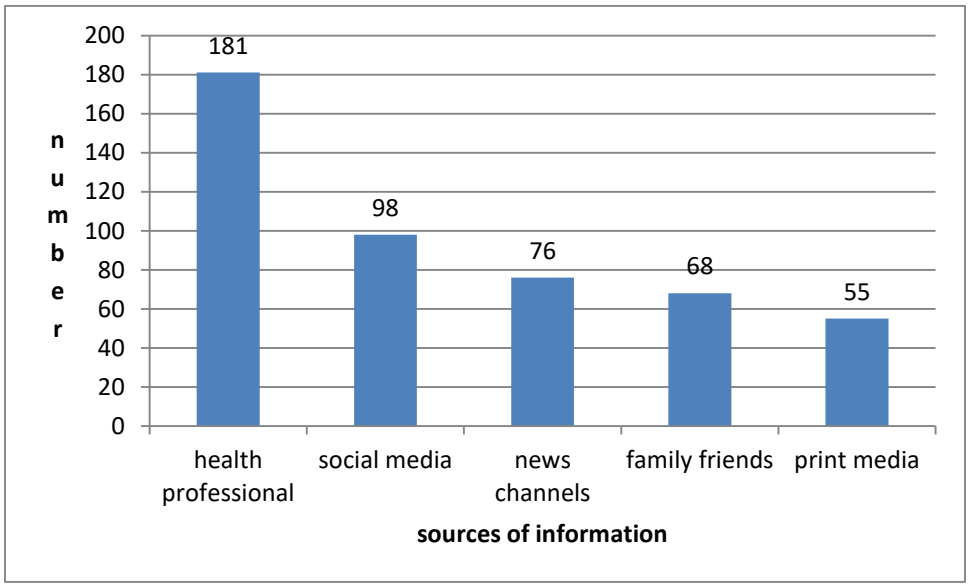

Figure 1 Sources of information regarding vaccination

Myths regarding side effects of vaccination

In this section a total of 8 questions were asked, the first question was about if the vaccine can cause weakness in body to which 18.06 % (n=39) refused (fact). Rest all 81.97% (n=177) were on thought it can cause weakness (myth). Then next question was that if vaccines can transmit the virus, which was rejected by most of the participants (83.33%, n=180). On asking if the vaccines will affect the heart, 41 participants (18.98%) were in favour of it (myth). Very next question which raised the topic of impotency, which was blandly rejected by 77.31% (n=167) participants but still 49 (22.69%) participants thought it will cause impotency (myth). 15.28% (n=33) participants thought fever after vaccination is not good sign (myth). Question on allergy i.e. if allergies could affect the safety of vaccine to which people had mixed thoughts, only 40.28 % (n=87) people rejected the thought while rest were either confused or

accepted the thought. 30% (n=67) participants still believe that vaccines made so fast are unsafe for health. Nine (4.17%) participants thought that vaccine will cause infertility among women (Table 3).

Table 3 myths regarding vaccine side effects (n=216)

	Myths regarding side effects of vaccine	no.	%
a	People not taking vaccine fear that vaccine will cause weakness		
	Yes	61	28.24
	No	39	18.06
	maybe	116	53.70
b	Vaccine will cause heart related disorders in body		
	Yes	6	2.78
	No	175	81.02
	maybe	35	16.20
c	Vaccines are mode of transfer of virus		
	Yes	12	5.56
	No	180	83.33
	maybe	24	11.11
d	Women won't be able to bear children after getting vaccine		
	Yes	6	2.78
	No	207	95.83
	maybe	3	1.39
e	Vaccine will cause impotency		
	Yes	14	6.48
	No	167	77.31
	maybe	35	16.21
f	Fever after vaccination is not good		
	Yes	13	6.02
	No	183	84.72
	maybe	20	9.26
g	Allergy will affect safety of vaccine		
	Yes	35	16.20
	No	87	40.28
	maybe	94	43.52
h	Vaccines made so fast are unsafe for health		
	Yes	6	2.78
	No	149	68.98
	maybe	61	28.24

Myths regarding effectiveness of vaccines

There were two questions which concern the effectiveness of the vaccines. 45 (21%) still confused whether vaccine will be effective on people with co-morbidities such as diabetes, hypertension. The second question if the vaccine gives 100% protection from the SARS-CoV2 to which 26.39% participants thought that vaccines gives 100% protective shield against infection (myth) (table 4).

Table 4 Myths regarding effectiveness of vaccine (n=216)

a	Vaccine will not be effective on people with co-morbidities such as diabetes, hypertension	No.	%
	Yes	9	4.17
	No	171	79.17
	maybe	36	16.67
b	Vaccine gives 100% protection from covid 19		
	Yes	18	8.33
	No	159	73.61
	maybe	39	18.06

4. DISCUSSION

Acceptance of vaccination

Out of total 216 participants, proportion of acceptance of vaccination was found to be 95.37% and 4.63% were not willing for vaccination. A study was conducted among health care workers in Nepal in Jan-Feb 2021 (Paudel et al., 2021) and found only one third respondents were willing for vaccination. A cross sectional web based study conducted among general population during October-November 2020 found that 30% population was hesitant regarding vaccination (Kishore et al., 2021). A study conducted in Israel among 1941 participants in March 2020 including general poulation and health care staff found only 70% population ready for vaccination (Dror et al., 2020). Proportion of vaccine acceptance was better in the present study. As present study was conducted in June 2021 (6 months after starting of vaccination)may be the reason for better acceptance for vaccination .

In a study conducted in an urban slum in Mumbai among 1342 participants, 2% refused for covid vaccination (Bhartiya et al., 2021). A survey was conducted in seven European countries among 7662 participants in April 2020 found 7.2% not willing for vaccination (Neumann et al., 2020). A study was conducted to find out covid -19 acceptance in general population and found 13.7% were hesitant in getting vaccination (Sharun et al., 2020). The findings matches with present study findings. A qualitative study (Kumari et al., 2021) was conducte by using eight FGDs among poulation in India found mixed perceptions among people. Few were accepting vaccination while others not.

Myths regarding side effects due to vaccination

In present study, there were many myths among poulation regarding side effects and safety of vaccination such as weakness after vaccination,modes of transfer of virus, heart related disorders, impotency, infertility etc. Few studies have found fear of side effects and safety of vaccination was the main concern among population (Paudel et al., 2021; Kumari et al., 2021; Bhartiya et al., 2021; Sharun et al., 2020; Neumann et al., 2020). This is similar to present study findings.

Myths regarding effectiveness of vaccination

Myths were present in minds of population regarding effectiveness of vaccine .Few authors have mentioned about doubts in people's mind regarding effectiveness of vaccination (Dror et al., 2020; Sharun et al., 2020).

5. CONCLUSIONS

According to present study findings aproximately 5% population were not willing for vaccination. Many myths were present among population regarding side effects and effectiveness of vaccination. Vaccination is one of the important way to prevent morbidity , mortality and disability due to covid. There is need to increase awareness regarding covid vaccination. Active efforts should be made to remove myths and to motivate population to take vaccination. Awareness programmes shuold be conducted actively by health care workers and volunteers.

Limitations of study

Present study was a web based cross sectional study. Ideally a community based cross study is required to find out exact prevalence of acceptance of covid vaccination. Present study findings cannot be generalized to the whole population.

Author's contribution

Dr. Meenal Kulkarni- definition of intellectual content, statistical analysis, manuscript preparation, manuscript editing and manuscript review.

Kartik Khurana- concept, design, literature search, data acquisition, data analysis

Ethical approval

The study was approved by Institutional Ethics Committee (IEC) of NKPSIMS &RC and LMH Nagpur (ethical approval code- NKPSIMS & RC and LMH/IEC/4/2021) on 24.6.21.

Acknowledgement

We are thankful to all participants who contributed for the study.

Funding

This study has not received any external funding.

Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

REFERENCES

1. Andrews MA, Areekal B , Rajesh KR, Krishnan J, SuryakalaR, Krishnan B, Muraly CP and Santhosh PV. First confirmed case of COVID-19 infection in India: A case report. Indian J Med Res 2020; 151(5):490–2. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23144490
2. Bhartiya S, Kumar N, Singh T, Murugan S, Rajavel S, Wadhwani M. Knowledge, attitude and practice towards COVID-19 vaccination acceptance in West India. Int J Community Med Public Health 2021; 8:1170-6.
3. Dror AA, Eisenbach N, Taiber S, Morozov NG, Mizrachi M, Zigron A, Srouji S, Sela E. Vaccine hesitancy: the next challenge in the fight against COVID-19. Eur J Epidemiol 2020; 35(8):775-779. doi: 10.1007/s10654-020-00671-y. Epub 2020 Aug 12. PMID: 32785815; PMCID: PMC8851308.
4. Harrison EA, Wu JW. Vaccine confidence in the time of COVID-19. Eur J Epidemiol 2020; 35(4):325-330. doi: 10.1007/s10654-020-00634-3. Epub 2020 Apr 22. PMID: 32318915; PMCID: PMC7174145.
5. Kishore J, Venkatesh U, Ghai G, Heena, Kumar P. Perception and attitude towards COVID-19 vaccination: A preliminary online survey from India. J Family Med Prim Care 2021; 10(8):3116-3121. doi: 10.4103/jfmpc.jfmpc_2530_20. Epub 2021 Aug 27. PMID: 34660456; PMCID: PMC8483144.
6. Kumari A, Ranjan P, Chopra S, Kaur D, Kaur T, Kalanidhi KB, Goel A, Singh A, Baitha U, Prakash B, Vikram NK. What Indians Think of the COVID-19 vaccine: A qualitative study comprising focus group discussions and thematic analysis. Diabetes Metab Syndr 2021; 15(3):679-682. doi: 10.1016/j.dsx.2021.03.021. Epub 2021 Mar 26. PMID: 33813241; PMCID: PMC7997146.
7. Narayana G, Pradeepkumar B, Ramaiah JD, Jayasree T, Yadav DL, Kumar BK. Knowledge, perception, and practices towards COVID-19 pandemic among general public of India: A cross-sectional online survey. Curr Med Res Pract 2020; 10(4):153-159. doi: 10.1016/j.cmrp.2020.07.013. Epub 2020 Jul 21. PMID: 32839725; PMCID: PMC7372279.
8. Neumann-Böhme S, Varghese NE, Sabat I, Barros PP, Brouwer W, van Exel J, Schreyögg J, Stargardt T. Once we have it, will we use it? A European survey on willingness to be vaccinated against COVID-19. Eur J Health Econ 2020; 21(7):977-982. doi: 10.1007/s10198-020-01208-6. PMID: 32591957; PMCID: PMC7317261.
9. Paudel S, Palaian S, Shankar PR, Subedi N. Risk Perception and Hesitancy toward COVID-19 Vaccination among Healthcare Workers and Staff at a Medical College in Nepal. Risk Manag Healthc Policy 2021; 14:2253-2261. doi:

10.2147/RMHP.S310289. PMID: 34104016; PMCID: PMC8179809.

10. Sharun K, Faslu Rahman CK, Haritha CV, Jose B, Tiwari R, Dhama K. Covid-19 vaccine acceptance: Beliefs and barriers associated with vaccination among the general population in india. J Exp Biol Agric Sci 2020; 8(Special Issue 1):210-218.
11. Swetha G, Geetha RV, Leslie R. Myths Vs Facts – Covid-19-Questionnaire Survey. Palarch's J Archaeol Egypt/Egyptology 2020; 17(7):1068–81. Available from: https://archives.palarch.nl/index.php/jae/article/view/1342
12. Zhu H, Wei L, Niu P. The novel coronavirus outbreak in Wuhan, China. Glob Health Res Policy 2020; 5:6. doi: 10.1186/s41256-020-00135-6. PMID: 32226823; PMCID: PMC7050114.