

## Original Research Article

# Knowledge, attitude and practices of medical students on COVID-19 vaccines

Akhila Puranik<sup>1</sup>, Ameya Puranik<sup>2</sup>, Noopur Priya<sup>3\*</sup>

<sup>1</sup>Department of Physiotherapy, Ravi Nair Physiotherapy College, Sawangi, Maharashtra, India

<sup>2</sup>Department of Pharmacology, JNMC, Sawangi, Maharashtra, India

<sup>3</sup>Department of Oncology, Tata Medical Cancer Hospital, Kolkata, West Bengal, India

**Received:** 05 April 2021

**Revised:** 06 May 2021

**Accepted:** 07 May 2021

### \*Correspondence:

Dr. Noopur Priya,

E-mail: dr.noopur.priya@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Coronaviruses are a group of related RNA viruses that cause diseases in humans and animals. They cause respiratory tract infections which can be mild to severe and can be life threatening. Mild infection includes some symptoms of common cold while severe cases can cause SARS. Coronaviruses can pneumonia and bronchitis. In December 2019, a pneumonia outbreak was reported in Wuhan, China. The outbreak was traced to a novel strain of coronavirus, which was given the interim name 2019-nCoV by the WHO.

**Methods:** A cross sectional study has been conducted for the period of 7 days on students studying MBBS/BDS/BPT. All the students who participated in the study were vaccinated with Covishield vaccine. A multiple choice KAP related questionnaire was developed and students were instructed to fill the appropriate responses with the help of Google forms.

**Results:** 77 students said that Covishield is a live attenuated vaccine. 135 students said that AEFI can be reported on all the above places. 120 students said that Covishield is the most beneficial vaccine in market. 110 students said that intramuscular route of administration is preferred. 69% students have experienced ADR post vaccination. 180 students said they will advise the patient to get vaccinated. 131 students said active immunization is the best preventive strategy. 66% students said vaccination should be made compulsory. 57% students said Government's implementation of vaccination program is very satisfactory.

**Conclusions:** Majority of the students have positive outlook towards vaccination. Knowledge of health science students about COVID vaccines need to be given special focus.

**Keywords:** KAP, COVID-19, Vaccine, COVID-19 vaccine, Covishield, Pfizer vaccine

## INTRODUCTION

The ongoing pandemic of COVID-19 is has taken over our lives and change the world we lived in, it has also changed the direction of R&D in development of drugs and biologics. In last one year we all have also seen the fastest vaccine development trails ever conducted in the history of mankind by one of biggest players in

pharmaceutical industry.<sup>1,2</sup> Currently there are only vaccines candidates who have received approval for emergency use worldwide from WHO. Pfizer and BioNTech (comirnaty) live attenuated vaccine was the first to received approval.<sup>3</sup> Sinopharm vaccine and Gamaleya vaccine (Sputnik V) are still under trial and did not received WHO approval as of February 2021.<sup>4,5</sup>

In India two major vaccine candidates have emerged. First one to receive approval was Oxford-AstraZeneca (Covisheild) adenovirus vector. It is originally developed by AstraZeneca at Oxford institute and manufactured by Serum institute of India.<sup>6,7</sup> Another vaccine is developed by Bharat Biotech in collaboration with ICMR (Covaxin) it is fully developed and manufactured in India, the vaccine has received approval for restricted emergency use and it is still under phase iii clinical trial showing promising results so far.<sup>7,8</sup>

Current study was designed to observe preferences an understanding of medical students on COVID-19 vaccines. The year of pandemic has been tougher on medical students like never before and now when they are vaccinated and finally resumed clinics and ward posting it was necessary to understand student's perspective about vaccines. After all they are our future soldiers in the fight against this pandemic.

## METHODS

A cross sectional questionnaire based study has been conducted for a period of seven days between 02 February 2021 to 08 February 2021, on students of second year to interns studying MBBS/BDS/BPTH at Datta Meghe institute of medical sciences. All the students participating in the study are vaccinated with Covisheild vaccine in mass vaccination program at the institute, no active signs and symptoms related to COVID and willing to participate in study, completed first year of medical education are included, and students who are currently COVID-19 positive, not vaccinated, first year students and who are not willing to participate are excluded from the study.

A multiple choice KAP related online questionnaire has been developed. The study questions are circulated amongst students as Google forms along with the instruction to fill up the form. For the purpose of the study, certain medical terms were explained to the students if they could not understand. 267 responses have been received, out of which 250 valid responses with name and email addresses are selected for the study. Data was collected in a pre-structured format. Collected data were entered in excel sheet and analyzed with proper statistical method name and email-id are also recorded along with the questionnaire to generate authentic results. The study was conducted as an online survey.

## RESULTS

Total 77/250 students think Covisheild is a live attenuated test and 72/250 do not know about type of vaccine. 135/250 i.e. majority of students think all the provided options i.e. Directorate, municipal authorities and adverse drug monitoring centres are available at institute level. Out of 250 students, 120 students have opinion that Covisheild is best available vaccine in market, mixed opinion on Comirnaty and Covaxin but only 1 student

voted for Sputnik. Majority (114/250) of students prefer IM/SC route for vaccine administration. 69% students did not experienced any ADR after vaccination and 39% experienced some adverse reaction.

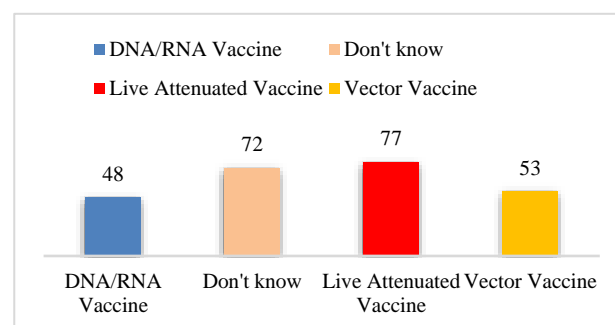


Figure 1: Type of vaccine.

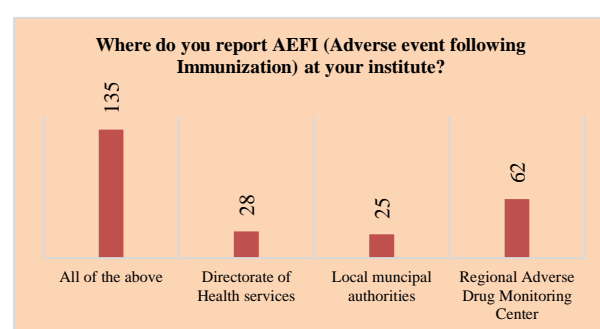


Figure 2: Reporting of ADR.

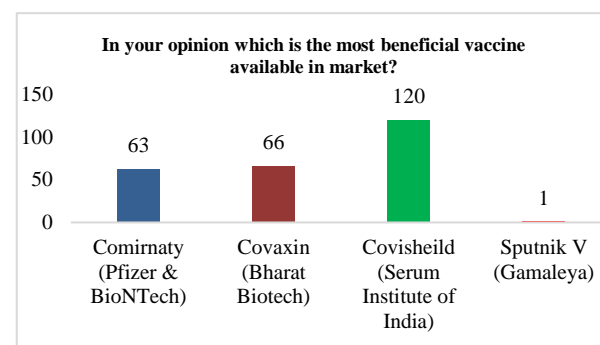


Figure 3: Comparison of available vaccines.

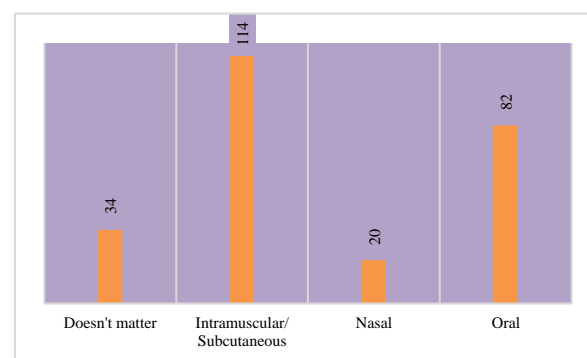
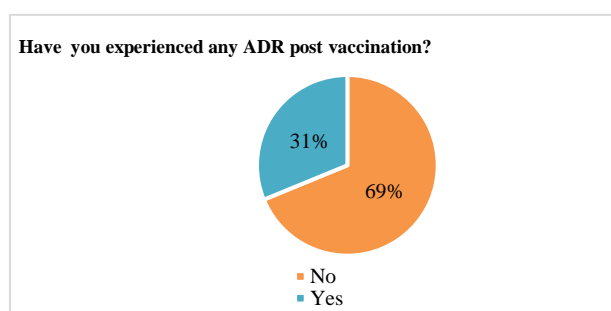
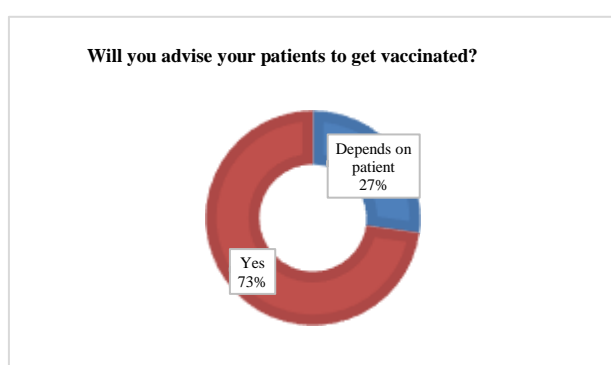


Figure 4: Preferred route of administration.

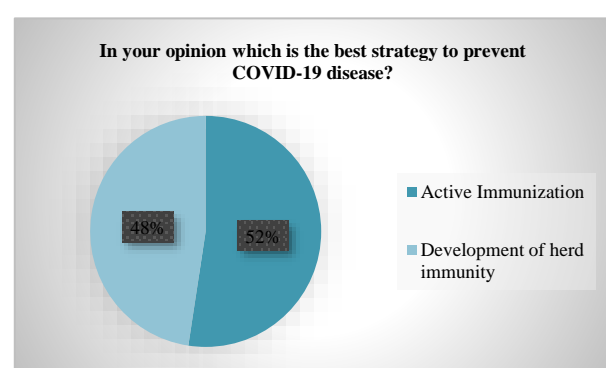
Majority i.e. 73% students will advise their patients to get vaccinated while 27% think it depends on patient's condition and other relevant factors. 52% students think vaccination is best preventive measure; however other 48% think development of active immunity is better. 66% of patients think that vaccines should be made compulsory, while 34% think it is unjustifiable. Out of 250 students 142 are very satisfied with government's vaccination program, while 83 out of 250 think it is too early to say.



**Figure 5: Adverse reaction related to vaccination.**



**Figure 6: Opinion on vaccination.**

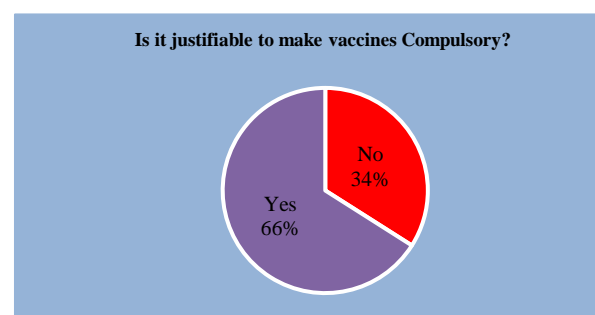


**Figure 7: Best strategy for prevention of COVID-19.**

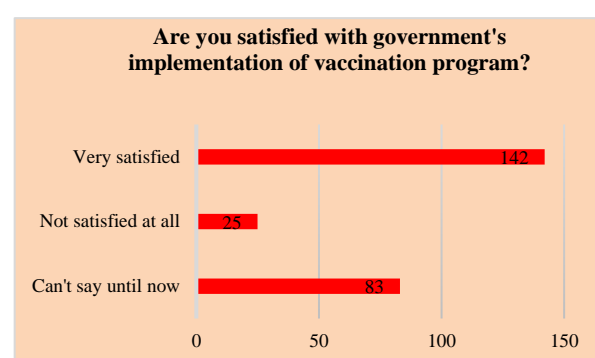
## DISCUSSION

As an ongoing literature search during this study we did not find ample publication of this kind of KAP survey on COVID vaccines worldwide, fewer more at national level in India, especially done on healthcare workers. We will

discuss the results of few notable studies and current study in following paragraphs.



**Figure 8: Opinion on making vaccines compulsory.**



**Figure 9: Opinion on Government's vaccination program.**

It was found that most of the students of healthcare sciences are unaware about composition and pharmacology of recently developed vaccines against COVID-19 and also most of them do not know first point of contact for reporting AEFI. It was a good observation that future healthcare workers have positive attitude towards vaccines as majority of students are in favour of active immunization, will advise their patients to get vaccinated and find it justifiable to make vaccination compulsory. It was also found that many (57%) of them are satisfied with implementation of vaccination program in India but some (33%) think that it is too early to comment.

While asking question about personal preferences and experience most of them prefer intramuscular vaccination and majority have experienced any ADRs post vaccination. The latest article about "vaccine hesitancy" published in recent new England journal of medicine by Dr. Rosenbaum shows mistrust of common people and also that of some healthcare workers towards COVID-19 vaccines.<sup>9</sup> People are questioning the reliability of prematurely developed vaccines most likely due to political pressure.<sup>9</sup>

A cross-sectional study conducted by Al-Qerem et al on Middle Eastern population also shows that 36.8 % high to medium risk subjects are not willing to take pre-maturely

developed vaccines and 26.1% are not sure about acceptance.<sup>10</sup> On the contrary the exclusive survey conducted on healthcare workers of France, Belgium and Canada in October and November 2020 by Verger et al published in Euro-surveillance journal has demonstrated that approx. 75% HCWs are in favour of administering vaccine themselves and 79% are in favour of advocating vaccine use to the patients.<sup>11</sup>

## CONCLUSION

Majority of students have positive outlook towards vaccination and have favourable opinion towards vaccination program conducted by Government. Knowledge of health science students about COVID vaccine and related ADRs need to be given special focus. Confidence of HCWs and public health officials will help in allaying fear and uncertainty about vaccination amongst general population. Healthcare community should take this opportunity to decrease polarization of views about medical science, increase transparency and to wipe-out myths and fears about allopathy in general population

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. COVID-19 vaccine by year-end to be fastest for novel pathogen in history: White House. Available at: <https://www.businesstoday.in/sectors/pharma/covid-19-vaccine-by-year-end-to-be-fastest-for-novel-pathogen-in-history-white-house/story/416976.html>. Accessed on 20 February 2021.
2. Ball P. The lightning-fast quest for COVID vaccines and what it means for other diseases. *Nature*. 2020;589(7840):16-8.
3. WHO issues its first emergency use validation for a COVID-19 vaccine and emphasizes need for equitable global access. Available at: <https://www.who.int/news/item/31-12-2020-who-issues-its-first-emergency-use-validation-for-a-covid-19-vaccine-and-emphasizes-need-for-equitable-global-access>. Accessed on 20 February 2021.
4. Pinho AC. Clarification on Sputnik V vaccine in the EU approval process. European Medicines Agency. Available at: <https://www.ema.europa.eu/en/news/clarification-sputnik-v-vaccine-eu-approval-process>. Accessed on 20 February 2021.
5. Namibian T. Sinopharm vaccine awaits WHO approval. Available at: <https://www.namibian.com.na/index.php?page=read&id=99577>. Accessed on 20 February 2021.
6. WHO lists two additional COVID-19 vaccines for emergency use and COVAX roll-out. Available at: <https://www.who.int/news/item/15-02-2021-who-lists-two-additional-covid-19-vaccines-for-emergency-use-and-covax-roll-out>. Accessed on 20 February 2021.
7. DCGI approves Covishield and Covaxin for restricted emergency use in India. Available at: <https://www.expresspharma.in/covid19-updates/dcgi-approves-covishield-and-covaxin-for-restricted-emergency-use-in-india/>. Accessed on 20 February 2021.
8. BBV152. Available at: <https://en.wikipedia.org/w/index.php?title=BBV152&oldid=1011901015>. Accessed on 20 February 2021.
9. Rosenbaum L. Overcoming Covid vaccine hesitancy. *New Eng J Med*. 2021;384:1367-71.
10. Al-Qerem WA, Jarab AS. COVID-19 vaccination acceptance and its associated factors among a Middle Eastern Population. *Front Public Health*. 2021;5:9.
11. Verger P, Scronias D, Dauby N, Adedzi KA, Gobert C, Bergeat M, et al. Attitudes of healthcare workers towards COVID-19 vaccination: a survey in France and French-speaking parts of Belgium and Canada, 2020. *Eurosurveillance*. 2021;26(3):2002047.

**Cite this article as:** Puranik A, Puranik A, Priya N. Knowledge, attitude and practices of medical students on COVID-19 vaccines. *Int J Community Med Public Health* 2021;8:2958-61.