

# Comparison of knowledge, attitude, anxiety, and behaviours in medical and non-medical students towards COVID-19 vaccination: A need for concern amidst the pandemic

Saima Zehra<sup>1</sup>, Parvez Anwar Khan<sup>2</sup>, Hiba Sami<sup>1,2</sup> and Haris M. Khan<sup>2</sup>

<sup>1</sup> JNMC, AMU, Aligarh, India

<sup>2</sup> Department of Microbiology, JNMC, AMU, Aligarh, India

\*E-mail: hibasamizafar@gmail.com

## Abstract

**Purpose:** COVID-19, a pandemic declared on March 11th, 2020, makes it crucial for the whole world to control and ensure safety measures to control such infections in the future. Fear, worry, and panic remain widespread, especially among healthcare workers. We aimed to compare the knowledge, attitude, anxiety, and behaviours of medical and non-medical students towards vaccination against COVID-19.

**Material and Methods:** We conducted a cross-sectional study for one month on the MBBS/BDS and undergraduate nonmedical students through an online questionnaire which consisted of a multiple choice KAP questionnaire consisting of four sections (i.e., socio-demographic details, knowledge, attitudes, and behavior). Multiple linear regression was performed to determine the variables predicting knowledge and attitudes towards COVID-19 vaccination.

**Results:** Vaccine hesitancy was detected in 17% of Undergraduate Medical Students, while the same was noted in 45% of non-medical students. 48.7% of medical students knew about different vaccines available in India for COVID-19 viz a viz the same in non-medical students was 49.5%. The majority of the students (35.8% medical and 48.6% non-medical) considered Covishield the best currently available vaccine in India. The majority of the students (Medical 86.5% and non-medical 75.2%) thought that the COVID-19 vaccine could reduce the spread of the disease in the community. In the multiple regression model, better socioeconomic status, holding nuclear families, and having a history of essential vaccinations uptake were linked with knowledge, while attitudes were substantially associated with being female and having a previous history of vital vaccines uptake.

**Conclusion:** The results showed that medical students had sufficient knowledge, an optimistic attitude, and moderate levels of concern towards COVID-19. Vaccine hesitancy was much less among medical when compared to non-medical students. Expanding knowledge and regulatory oversight of vaccine research and the public release of safety data may lessen vaccine reluctance among students.

**Keywords:** COVID-19, Vaccine, Hesitancy, Knowledge, Behaviour

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## Introduction

COVID-19, a pandemic declared on March 11th, 2020, makes it crucial for the whole world to control and ensure safety measures to control such infections in the future (Cucinotta & Vanelli, 2020). The 73rd World Health Assembly in May 2020 approved a resolution that recognized the role of comprehensive immunization to prevent, contains, and stop transmission of SARS-CoV-2 as a worldwide public health target ([https://apps.who.int/gb/ebwha/pdf\\_files/WHA73/A73\\_R1-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R1-en.pdf)). The development of vaccines typically takes years of intensive research and trials before reaching the general population, but the race to control and eradicate the surge of Novel Corona Virus has resulted in the unusually rapid development of vaccines (Sharma et al., 2020). Nonetheless, despite the vaccine's alleged safety and efficacy justification, hesitancy to take vaccines among people is still prevalent (Vergara et al., 2021). Many countries were forced to enact and implement exceptional virus-containment measures and closely manage private, public, and working life by restricting people's movement (Han et al., 2020). However, adherence to these behavioral standards and the use of preventative and protective measures such as social distancing and wearing face masks for an extended period is not assured (Dryhurst et al., 2020; Caserotti et al., 2021). Thus, the best strategy to control and gradually silence this pandemic is to develop effective vaccines and implement them effectively among the population by vaccinating them and breaking the chain of transmission (Alagoz et al., 2021; Sami et al., 2021). Over 125 vaccine candidates are currently available globally, with 365 continuing vaccine trials and 18 COVID-19 vaccines licensed by at least one country (<https://covid19.trackvaccines.org/>). Vaccine reluctance may diminish the coverage and impede the development of herd immunity (Saied et al., 2021). We aimed to compare the knowledge, attitude, anxiety, and behaviors of medical and non-medical students towards vaccination against COVID-19.

## Material and Methods

### 1. Study settings

This descriptive, cross-sectional study was conducted among the students at a tertiary care center in North India for one month from July 1st to July 31st, 2021. Our target population was undergraduate students from both medical and non-medical fields. Medical students included in this study were MBBS and BDS students from first to final year and interns. Non-medical students included undergraduates from various courses like B.Tech, B.Arch., B.Sc., BA, B. Com, BSW, LLB.

### 2. Study tool

Using the evidence from the previous studies, an online structured questionnaire was developed based on COVID-19 vaccine hesitancy among medical and non-medical students and on vaccination hesitancy in general.

The multiple-choice KAP questionnaire had 32 items designed to collect information about the students' knowledge, attitude, anxiety, and behaviors regarding COVID-19 vaccination. An explanatory message was included at the beginning of the online questionnaire, and participants were given a disclaimer and informed consent form to digitally sign ("Agree" or "Disagree") before commencing the survey. Data confidentiality and privacy were assured and were secured from unauthorized access. The students' valid email IDs and college affiliations were also recorded along with the questionnaire

to generate authentic results. The questionnaire items were prepared to gather actual evidence regarding the knowledge and perception of students towards the COVID-19 vaccine. Validation of questionnaire was done using literature review, and content validation was done by expertise available in the department.

The questionnaire was divided into five sections. Part 1 included socio-demographic information such as age, gender, course studying, academic year, college, marital status, type of family, and residential area. In Part 2, the student's knowledge, awareness, and source of information regarding the COVID-19 vaccine were included and Part 3 comprised students' attitudes regarding COVID-19 vaccine and prior vaccination experiences. Part 4 consisted of students' anxiety and apprehension. Part 5 included questions on students' behaviors towards COVID-19.

### **3. Data collection**

This questionnaire was embedded in Google forms, and a shareable link was created, then distributed to medical and non-medical students via WhatsApp, Instagram, Gmail, Telegram, and other social media platforms. The students then distributed it to their contacts both at the same institute where they are studying and outside to different colleges and universities. A respondent-driven sampling method was employed to target all medical and non-medical students who consented and were ready to fill out the survey. Students who completed the survey received no monetary or in-kind compensation.

### **4. Statistical analysis of data**

The data collected through the online questionnaire was used to generate excel charts from which analysis regarding the different aspects of knowledge, attitude, anxiety, and behavior was analysed. Descriptive parameters like counts and percentages made comparisons between medical and non-medical students. Multiple linear regression was performed to determine the variables predicting knowledge and attitudes towards COVID-19 vaccination.

## **Results**

Over the course of 30 days, 417 students from over ten states and union territories of India completed the online questionnaire. Out of which, 312 were medical students, and 105 were non-medical students. The participation of the female gender was slightly less (45.6%) as compared to males (54.4%). The majority of them reside in mid-level cities (45.8) and belong to the nuclear type of family (75.5%) (Table-1). Vaccine hesitancy was detected in 17% of Undergraduate Medical Students, while the same was seen in 45% of non-medical students.

**Table 1:** Demographic details of the participants

Demographic Details		Counts	Percentage
Category	Medical Students	312	74.8%
	Non-Medical Students	105	25.2%
Gender	Female	190	45.6%
	Male	227	54.4%
Residential Area	Rural	56	13.4%
	Small City	96	23%
	Mid-Level City	191	45.8%
	Metropolitan City	74	17.7%
Type of Family	Nuclear	315	75.5%
	Joint	93	22.3%
	Extended	9	2.2%

### 1. Comparison of knowledge towards COVID-19 vaccination between medical and non-medical students

Regarding how many COVID-19 vaccines are currently approved by the Indian government for emergency use, 48.71% of medical students knew the correct answer, while the same was answered correctly by 49.52% of non-medical students. This is an interesting finding as the medical students who are busy with their studies and wards use social media and other media sources less frequently than the non-medical students.

### 2. Comparison of attitude towards COVID-19 vaccination between medical and non-medical students

The students' attitude towards COVID-19 vaccination was assessed using the questionnaire with the 'agree', 'neutral', and 'disagree' scale. Medical and non-medical students have shown varying degrees of positive attitudes towards the COVID-19 vaccination. 86.5% of the medical students agreed that COVID-19 vaccination could help prevent the spread of the diseases in the community, while 75.2% of the non-medical students agreed. 96.5% of the medical students agreed that COVID-19 vaccination could help in reducing the severity of the disease, whereas the same is agreed by 76.2% of the non-medical students (Table 2). Regarding the preference of vaccines from the different vaccines available in India, most of the students (35.8% medical and 48.6% non-medical) considered Covishield the best currently available vaccine in India (Figure 1).

**Table 2:** Responses of Medical and Non-Medical Students

Survey Items	Medical Students %			Non-Medical Students %			P-value
	Disagree	Neutral	Agree	Disagree	Neutral	Agree	
<b>Attitude</b>							
COVID-19 vaccination is necessary for me to reclaim my personal life	6.7	17.9	75.3	9.5	18.1	72.4	.632
The COVID-19 Vaccine can help to prevent the disease from spreading in the community	5.4	8	86.5	6.7	18.1	75.2	.011
COVID-19 vaccination can assist to lessen the severity of the disease.	1	2.6	96.5	1	22.9	76.2	.000
<b>Behaviour</b>							
I will also encourage my family / friends / relatives to get vaccinated	.3	3.5	96.2	4.8	11.4	83.8	.000
It is not possible to reduce the incidence of COVID-19 without vaccination	12.2	18.9	68.9	12.4	28.6	59	.101
For people travelling overseas, the COVID-19 vaccination should be considered necessary	3.2	6.4	90.4	7.6	8.6	83.8	.108
The COVID-19 Vaccine should be deemed mandatory even for people travelling domestically	5.4	13.8	80.8	7.6	8.6	83.8	.299
If everyone in the society maintains the preventive measures, the COVID-19 pandemic can be eradicated without Vaccination	40.1	25.6	34.3	41.9	28.6	29.5	.650
<b>Anxiety</b>							
I'm worried that the current COVID-19 vaccinations will be ineffective	42.3	35.6	22.1	36.2	50.5	13.3	.017
I'm concerned about the significant side effects of the COVID-19 vaccinations	32.1	38.8	29.2	45.7	32.4	21.9	.039

I'm suspicious that the current COVID-19 vaccinations haven't been thoroughly tested before being released	37.5	34	28.5	29.5	46.7	23.8	.065
I have faith in the government's or public health professionals' knowledge regarding the COVID-19 vaccination	9.3	28.5	62.2	12.4	29.5	58.1	.611

### Vaccine preferences among students

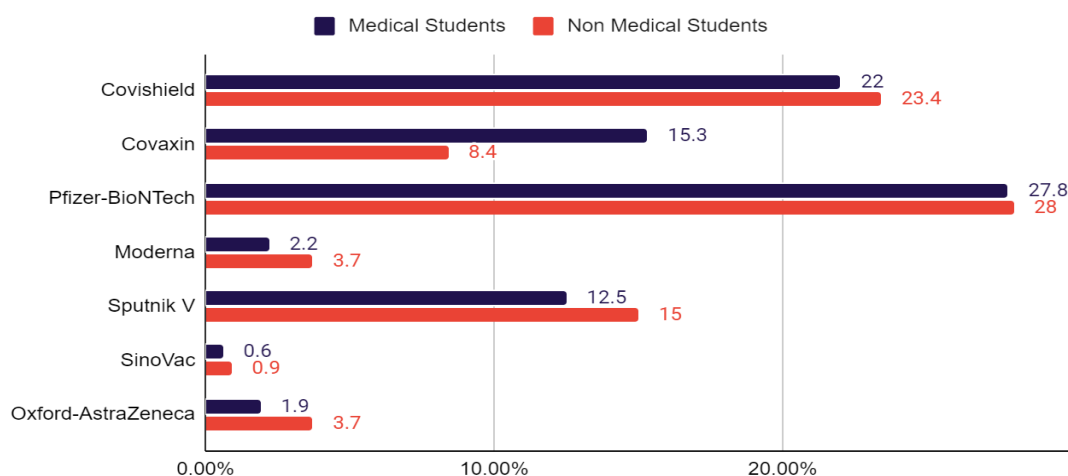


Figure 1. Vaccine Preference among students

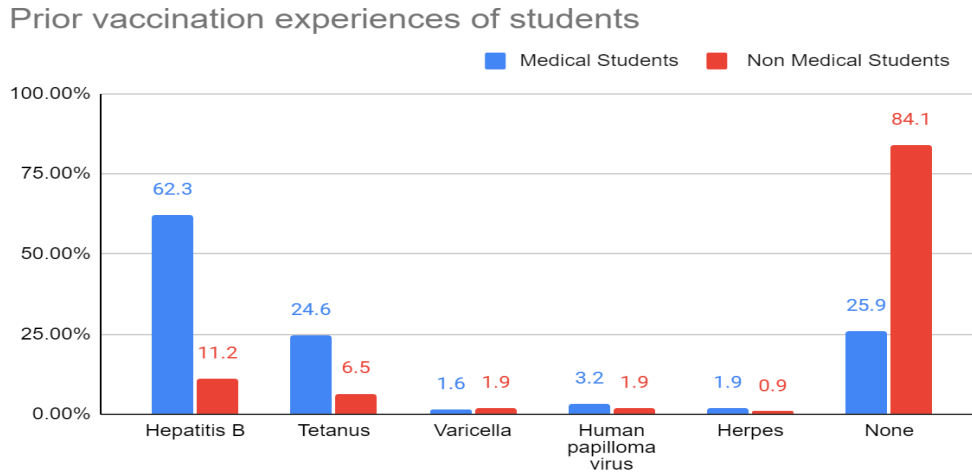
### 3. Comparison of behaviour towards COVID-19 vaccination between medical and non-medical students

Students' preventive behaviour towards COVID-19 vaccination was assessed by five items, requiring answers in terms of 'agree,' 'neutral,' and 'disagree'. Two items related to the necessity of COVID-19 vaccination while traveling abroad and domestic inter-state travel, to which (80.8%) medical students agreed whereas 83.8% of non-medical students agreed for the same. 96.2% of medical students agreed to encourage their family, friends, and relatives to get vaccinated, whereas 83.8% of non-medical students agreed. 68.9% of medical students and 59% of non-medical students agree that even if everyone in the society maintains the preventive measures, the COVID-19 pandemic cannot be eradicated without vaccination (Table-2).

### 4. Comparison of anxiety towards COVID-19 vaccination between medical and non-medical students

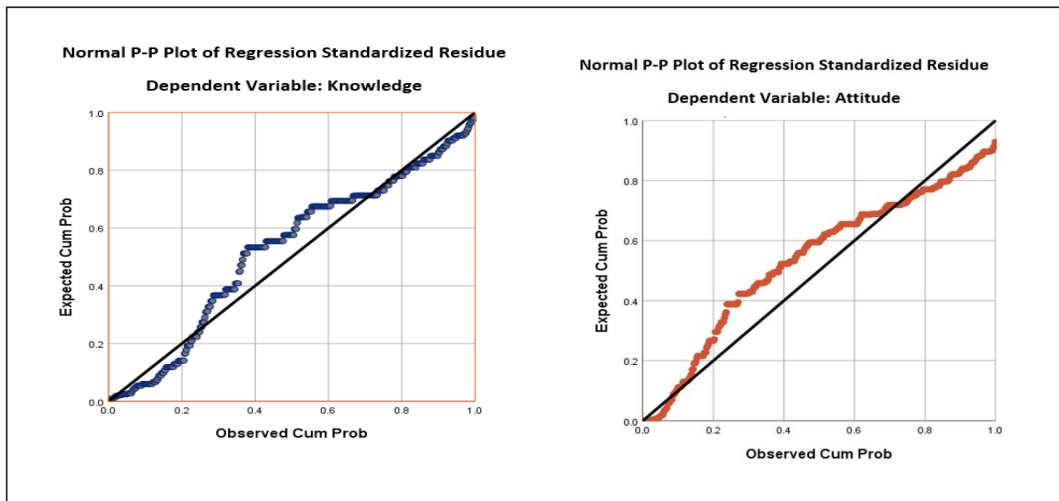
The anxiety levels of medical and non-medical students were measured using four aspects relating to the COVID-19 vaccine's safety, effectiveness, adverse effects, and trust concerns. 29.2% of medical students are concerned about the serious adverse effects of the Vaccine, while 38.8% were neutral. The same concern shown by medical

students is 21.9%, while 32.4% were neutral. (Table-2) About 62.2% of medical students have shown their trust in vaccines' information and safety data released by the government and health experts, while the same as noted in non-medical students was about 58.1% (Table 2). On comparing, the prior vaccination history among students, most of the medical students were vaccinated for HBV (62%) and Tetanus (24.6%) as compared to the non-medico students where only 11.2% and 6.5% had taken the HBV and Tetanus vaccines, respectively (Fig 2).



**Figure 2.** Prior Vaccination experience of Students

In the multiple regression model (Fig 3), higher socioeconomic status, belonging to nuclear families, and history of taking essential vaccinations were linked with knowledge. At the same time, attitudes were substantially associated with being female and having a previous history of vital vaccines uptake.



**Figure 3.** Multiple regressions were run to predict Knowledge and Attitude as a function of Gender, Residential Area, socioeconomic status, type of family, and having a history of essential vaccinations uptake. Greater socioeconomic status, holding nuclear families, and having a history of essential vaccinations uptake were linked with knowledge ( $F(4, 412) = 2.906, p < .022, R^2 = .027, CI=95$ ) [Graph-A]; whilst attitudes were associated with being female and having a previous history of vital vaccines uptake ( $F(4, 412) = 1.82, p < .07, R^2 = .017, CI=90$ ) at Confidence Level of 90 only [Graph-B].

## Discussion

A safe and efficient vaccine is a crucial weapon to fight the ongoing pandemic of COVID-19 (Alrubaiee et al., 2020), but people's attitude towards its acceptance is also a key component in the success of the COVID-19 vaccination program, as emphasized by other studies (El-Elimat et al., 2021; Khasawneh et al., 2020). COVID 19 immunization is a global public health initiative implemented in many places of the world (Kapoor et al., 2021). This study aimed to evaluate and compare the Covid-19 vaccine apprehension among medical and non-medical students. Understanding these perspectives in medical and non-medical students is critical since they are the country's future leaders.

According to this study, there is sufficient knowledge about COVID-19 and positive attitudes towards vaccination among the participants. Their appropriate level of knowledge might be linked to their educational level since all of them were either pursuing MBBS or other bachelor's degrees.

Vaccine hesitancy may be defined as people's unwillingness to take a vaccine that has been demonstrated to be safe and effective and made available to them for the prevention of an infectious disease (MacDonald, 2015). Various studies have analyzed vaccine hesitancy against COVID-19 prevalent in different parts of the world. A study of COVID-19 vaccination acceptance rates in different parts of the world found high acceptance rates in Malaysia, Indonesia, and China, whereas low acceptance rates were found in Italy, Russia, the United States, and France (Sallam, 2021). A study on COVID-19 vaccination uptake among Indian medical students reported that vaccine hesitancy was found among 10.6% of students. They concluded that lack of awareness regarding vaccination eligibility, concern regarding the vaccine's adverse events and efficacy, and lack of trust in government was independently predictive of vaccine reluctance (Jain et al., 2021). In a study from Wuhan, China (Gao et al., 2021), where the virus first originated, 58.2% of medical students indicated hesitation in taking the COVID-19 vaccine. The most common causes for this hesitation were the associated adverse effects of vaccines, vaccine safety uncertainties, and underestimating the chances of exposure to COVID-19. In our study, vaccine hesitancy was detected in 17% of Undergraduate Medical Students, while the same was seen in 45% in non-medical students. It is promising to see from this study that future doctors have a positive attitude towards COVID-19 vaccination. Nevertheless, the degree of acceptability observed in the non-medical students (55%) indicates the necessity to urgently boost the acceptance of COVID-19 vaccination among the general population through new public health policies.

Previous vaccination experiences have been shown to play a role in enhancing COVID-19 vaccine uptake, as demonstrated in other studies (Fisher et al., 2020; Pastorino et al., 2021). In recent research, participants who had previously been vaccinated against influenza were more inclined to adopt the COVID-19 vaccine (Alqudeimat et al., 2021). In our study, most of the medical students were vaccinated for HBV and Tetanus compared to the non-medico students. This might be attributed to vaccination regulations in medical colleges that make the aforementioned vaccinations mandatory, or it could be due to their believes that vaccines protect against infectious diseases, making them more willing to accept a potential COVID-19 vaccine. Non-medical students, on the other hand, who believed vaccinations posed a health risk were less inclined to receive the COVID-19 vaccine, as demonstrated by their response towards the vaccination.

The Oxford-Astra Zeneca vaccine, locally known as Covishield, the Bharat Biotech-



ICMR indigenous vaccine known as Covaxin, and the Russian Sputnik V vaccine, which is imported, are the three primary vaccinations which are now available in India (Kumar et al., 2021). Most of the students considered Covishield the best currently available Vaccine in India. In another study from India (Jain et al., 2021), Covishield was the chosen Vaccine, although many people thought they did not have enough information to make an informed decision. Covaxin was shown to be less prevalent in general and much less so among people who were hesitant to obtain the vaccination at all. This scenario may change in the future when more evidence on vaccine safety and efficacy becomes accessible due to continuing research and the publication of data from vaccination trials.

Governments should be more explicit about vaccination availability and COVID-19 response strategies and reveal how important decisions are taken. The reporting of adverse events following immunization is a critical element in monitoring vaccination programs, and while documenting and reporting such incidents is necessary, extensive coverage in the media could also prevent vaccinations (Danabal et al., 2021). Therefore, the media should report responsibly and transparently to provide their audiences with transparent and fair information. It is also vital to monitor the vaccination programs. The globe has collective responsibility in combating this COVID-19 pandemic, so further study on the acceptance and hesitation of COVID-19 vaccination is a priority. Furthermore, reliable medical search engines should be used for the information of COVID-19, and less reliable social media platforms should be discouraged. This study could then be employed to develop contextualized advertising and information sharing that ultimately lead to greater trust in and utilization of the vaccines available.

Furthermore, Scientists and Clinicians are advised to use appropriate statements to avoid disclosure or misinterpretation of words on social media platforms that could potentially increase the vaccination hesitancy.

## Limitations

There were certain limitations in our survey. Firstly, it was conducted during the mass vaccination of COVID-19. As a result, it could have underestimated the initial vaccine hesitancy of those who eventually converted to the vaccine acceptance group and were vaccinated. Secondly, the study used an online self-reporting method that may be subjected to peer-to-peer communication, social media influence, and memory biases.

## Conclusions

The results have shown that medical students have sufficient knowledge, an optimistic attitude, and moderate levels of concern towards COVID-19 vaccination compared to non-medical students. Vaccine hesitancy was much less among medical when compared to non-medical students, which can be ascertained by their affiliation to the medical profession. Expanding knowledge and regulatory oversight of vaccine research and the public release of safety and efficacy data may lessen vaccine reluctance among students.

## References

Alagoz, O., Sethi, A. K., Patterson, B. W., Churpek, M., Alhanaee, G., Scaria, E., & Safdar, N. (2021). The Impact of Vaccination to Control COVID-19 Burden in the United

- States: A Simulation Modeling Approach. *MedRxiv: The Preprint Server for Health Sciences*, 2021.03.22.21254131. <https://doi.org/10.1101/2021.03.22.21254131>
- Alqudeimat, Y., Alenezi, D., AlHajri, B., Alfouzan, H., Almokhaizeem, Z., Altamimi, S., Almansouri, W., Alzalalah, S., & Ziyab, A. H. (2021). Acceptance of a COVID-19 Vaccine and Its Related Determinants among the General Adult Population in Kuwait. *Medical Principles and Practice*, 30(3), 262–271. <https://doi.org/10.1159/000514636>
- Alrubaiee, G. G., Al-Qalah, T. A. H., & Al-Aawar, M. S. A. (2020). Knowledge, attitudes, anxiety, and preventive behaviours towards COVID-19 among health care providers in Yemen: An online cross-sectional survey. *BMC Public Health*, 20(1), 1541. <https://doi.org/10.1186/s12889-020-09644-y>
- Caserotti, M., Girardi, P., Rubaltelli, E., Tasso, A., Lotto, L., & Gavaruzzi, T. (2021). Associations of COVID-19 risk perception with vaccine hesitancy over time for Italian residents. *Social Science & Medicine* (1982), 272, 113688. <https://doi.org/10.1016/j.socscimed.2021.113688>
- Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. *Acta Bio-Medica: Atenei Parmensis*, 91(1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>
- Danabal, K. G. M., Magesh, S. S., Saravanan, S., & Gopichandran, V. (2021). Attitude towards COVID 19 vaccines and vaccine hesitancy in urban and rural communities in Tamil Nadu, India – a community based survey. *BMC Health Services Research*, 21(1), 994. <https://doi.org/10.1186/s12913-021-07037-4>
- Dryhurst, S., Schneider, C. R., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., Spiegelhalter, D., & van der Linden, S. (2020). Risk perceptions of COVID-19 around the world. *J. Risk Res.* <https://doi.org/10.1080/13669877.2020.1758193>
- El-Elimat, T., AbuAlSamen, M. M., Almomani, B. A., Al-Sawalha, N. A., & Alali, F. Q. (2021). Acceptance and attitudes toward COVID-19 vaccines: A cross-sectional study from Jordan. *PLOS ONE*, 16(4), e0250555. <https://doi.org/10.1371/journal.pone.0250555>
- Fisher, K. A., Bloomstone, S. J., Walder, J., Crawford, S., Fouayzi, H., & Mazor, K. M. (2020). Attitudes Toward a Potential SARS-CoV-2 Vaccine: A Survey of U.S. Adults. *Annals of Internal Medicine*, 173(12), 964–973. <https://doi.org/10.7326/M20-3569>
- Gao, X., Li, H., He, W., & Zeng, W. (2021). COVID-19 Vaccine Hesitancy Among Medical Students: The Next COVID-19 Challenge in Wuhan, China. *Disaster Medicine and Public Health Preparedness*, 1–22. <https://doi.org/10.1017/dmp.2021.291>
- Han, E., Tan, M. M. J., Turk, E., Sridhar, D., Leung, G. M., Shibuya, K., Asgari, N., Oh, J., García-Basteiro, A. L., Hanefeld, J., Cook, A. R., Hsu, L. Y., Teo, Y. Y., Heymann, D., Clark, H., McKee, M., & Legido-Quigley, H. (2020). Lessons learnt from easing COVID-19 restrictions: An analysis of countries and regions in Asia Pacific and Europe. *The Lancet*, 396(10261), 1525–1534. [https://doi.org/10.1016/S0140-6736\(20\)32007-9](https://doi.org/10.1016/S0140-6736(20)32007-9)
- Jain, J., Saurabh, S., Kumar, P., Verma, M. K., Goel, A. D., Gupta, M. K., Bhardwaj, P., & Raghav, P. R. (2021). COVID-19 vaccine hesitancy among medical students in India. *Epidemiology and Infection*, 149, e132. <https://doi.org/10.1017/S0950268821001205>

- Kapoor, D. S., Bhardwaj, D. A., Bhatnagar, D. A., VidushiSheokand, D., & Sharma, D. A. (2021). Post Covid Vaccination Survey among Health Professionals- A 72 Hours Observational Study. *Annals of the Romanian Society for Cell Biology*, 25(6), 17701–17711.
- Khasawneh, A. I., Humeidan, A. A., Alsulaiman, J. W., Bloukh, S., Ramadan, M., Al-Shatanawi, T. N., Awad, H. H., Hijazi, W. Y., Al-Kammash, K. R., Obeidat, N., Saleh, T., & Kheirallah, K. A. (2020). Medical Students and COVID-19: Knowledge, Attitudes, and Precautionary Measures. A Descriptive Study From Jordan. *Frontiers in Public Health*, 8, 253. <https://doi.org/10.3389/fpubh.2020.00253>
- Kumar, V. M., Pandi-Perumal, S. R., Trakht, I., & Thyagarajan, S. P. (2021). Strategy for COVID-19 vaccination in India: The country with the second highest population and number of cases. *Npj Vaccines*, 6(1), 1–7. <https://doi.org/10.1038/s41541-021-00327-2>
- MacDonald, N. E. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 33(34), 4161–4164. <https://doi.org/10.1016/j.vaccine.2015.04.036>
- McGill COVID19 Vaccine Tracker Team. <https://covid19.trackvaccines.org/>
- Pastorino, R., Villani, L., Mariani, M., Ricciardi, W., Graffigna, G., & Boccia, S. (2021). Impact of COVID-19 Pandemic on Flu and COVID-19 Vaccination Intentions among University Students. *Vaccines*, 9(2), 70. <https://doi.org/10.3390/vaccines9020070>
- Saied, S. M., Saied, E. M., Kabbash, I. A., & Abdo, S. A. E.-F. (2021). Vaccine hesitancy: Beliefs and barriers associated with COVID-19 vaccination among Egyptian medical students. *Journal of Medical Virology*, 93(7), 4280–4291. <https://doi.org/10.1002/jmv.26910>
- Sallam, M. (2021). COVID-19 Vaccine Hesitancy Worldwide: A Concise Systematic Review of Vaccine Acceptance Rates. *Vaccines*, 9(2), 160. <https://doi.org/10.3390/vaccines9020160>
- Sami, H., Shahid, M., Khan, P. A., & Khan, H. M. (2021). Transmission and Transmissibility of SARS-CoV-2: What We Know and What We Not. *The Open COVID Journal*, 1(1). <https://doi.org/10.2174/2666958702101010112>
- Sharma, O., Sultan, A. A., Ding, H., & Triggle, C. R. (2020). A Review of the Progress and Challenges of Developing a Vaccine for COVID-19. *Frontiers in Immunology*, 11, 2413. <https://doi.org/10.3389/fimmu.2020.585354>
- Vergara, R. J. D., Sarmiento, P. J. D., & Lagman, J. D. N. (2021). Building public trust: A response to COVID-19 vaccine hesitancy predicament. *Journal of Public Health (Oxford, England)*, 43(2), e291–e292. <https://doi.org/10.1093/pubmed/fdaa282>
- World Health Organisation. [https://apps.who.int/gb/ebwha/pdf\\_files/WHA73/A73\\_R1-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R1-en.pdf) (May 19th 2020)

# مقارنة بين المعرفة والمواقف والقلق والسلوكيات لدى طلاب الطب وطلاب غير الطب تجاه COVID-19: دعوى للاهتمام وسط الوباء

سايمة زهرة<sup>1</sup>، برفيز أنور خان<sup>2</sup>، هبة سامي<sup>2\*</sup> وحارس م خان<sup>2</sup>

<sup>1</sup> كلية طب جواهر لال نهرو، جامعة عليكرة الإسلامية، عليكرة، الهند

<sup>2</sup> قسم الأحياء الدقيقة، كلية طب جواهر لال نهرو، جامعة عليكرة الإسلامية، عليكرة، الهند

\* بريد الكتروني: hibasamizafar@gmail.com

## المستخلص

الهدف: COVID-19 وهو جائحة أُعلن عنه في 11 مارس 2020 يجعل من الضروري للعالم بأسره السيطرة على تدابير السلامة وضمانها للسيطرة على مثل هذه العدوى في المستقبل. لا يزال الخوف والقلق والذعر منتشرًا على نطاق واسع، خاصة بين العاملين في مجال الرعاية الصحية، بما في ذلك طلاب الطب. لقد هدفتنا إلى مقارنة المعرفة والمواقف والقلق وسلوكيات طلاب الطب وغير الطبيين تجاه التطعيم ضد.

طرق البحث: لقد أجرينا دراسة مقطعية لمدة شهر واحد من 1 يوليو إلى 31 يوليو 2021، على MBBS / BDS والطلاب الجامعيين غير الطبيين من خلال استبيان عبر الإنترنت متعدد الخيارات (التفاصيل الاجتماعية والديموغرافية، والمعرفة، والمواقف، والسلوك) وتم توجيه الطلاب لملاء إجاباتهم. تم إجراء الانحدار الخطي المتعدد لتحديد المتغيرات التي تتنبأ بالمعرفة والمواقف تجاه لقاح COVID-19.

النتائج: تم الكشف عن التردد من اخذ اللقاح لدى 17% من طلاب الطب الجامعيين، بينما لوحظ نفس الشيء لدى 45% من طلاب غير الطب. كان 48.7% من طلاب الطب يعرفون عن اللقاحات المختلفة لـ COVID-19 المتوفرة في الهند وكذلك نفس الشيء لدى الطلاب غير الطبيين حيث كان بمعدل 49.5%. اعتبر غالبية الطلاب (35.8% طبيون و48.6% غير طبيين) أن كوفيد-19 هو أفضل لقاح متوفر حاليًا في الهند. يعتقد غالبية الطلاب (طبي 86.5% وغير طبي 75.2%) أن لقاح COVID-19 يمكن أن يقلل من انتشار المرض في المجتمع.

الاستنتاجات: أظهرت النتائج أن طلاب الطب لديهم معرفة كافية، وموقف متفائل، ومستويات معتدلة من الاهتمام تجاه التطعيم ضد COVID-19 مقارنة بطلاب غير الطب. كان التردد من اخذ اللقاح أقل بكثير بين الأطباء مقارنة بطلاب غير الطب، وهو ما يمكن أن يعزى إلى انتمائهم إلى مهنة الطب. قد يؤدي توسيع المعرفة والإشراف التنظيمي على أبحاث اللقاحات والإصدار العام لبيانات السلامة والفعالية إلى تقليل إجماع الطلاب عن استخدام اللقاحات.

مفاتيح الكلمات: كوفيد-19، لقاح، تردد، معرفة، سلوك.

تاريخ استلام البحث: 2021/12/21  
تاريخ تعديل البحث: 2022/01/10  
تاريخ قبول البحث: 2022/02/02

