

ORIGINAL RESEARCH

Perceptions Regarding Covid-19 Vaccine Among Undergraduate Medical Students In Karachi, Pakistan

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ABSTRACT**BACKGROUND**

Vaccine hesitancy has been one of the significant factors in the uptake of immunization amongst the general population. The perceptions regarding COVID-19 vaccinations among medical students in Karachi, Pakistan were investigated in this study.

METHODS

A 6-item validated questionnaire was distributed amongst 2500 undergraduate medical students of MBBS (Bachelor of Medicine, Bachelor of Surgery) studying in seven different medical colleges in Karachi between December 2020 to May 2021. Results were reported in percentages and frequencies for descriptive items. Pearson's Chi-square test was applied to see for any statistical significance between variables. Ethical approval was taken from the institutional review committee, Poonch Medical College, Pakistan.

RESULTS

Two thousand five hundred students received the survey, and 1464 responded (58.56%). Female

students accounted for more than half of the total respondents (51.7%) with many of the students being in the final year of MBBS (43.2%). About 60% of those who responded said there was no link between vaccines and chronic illnesses. To control COVID-19, all participants said it was critical to vaccinate the general population. Besides, many participants (almost 72%) were optimistic about vaccination safety. Most respondents (99.6%) think it is the top priority to vaccinate the population to control infection spread, whereas 75.48% believed that the COVID-19 vaccine is safe to use. A vast majority (97.20%) were willing to get vaccinated.

CONCLUSIONS

Our findings indicate that MBBS learners have a favourable attitude towards the COVID-19 vaccine, with the majority willing to get vaccinated. Further studies are required to investigate the perceptions of students from other disciplines.

KEYWORDS

Covid-19, Vaccination, Immunization, Perception, Illnesses

Introduction

On December 17, 2019, a pneumonia-like illness was identified in Wuhan, China. Later that month, Chinese government health professionals diagnosed the patient with a novel coronavirus disease generated by the SARS-CoV-2 virus⁽¹⁾. Following twenty countries' reports of confirmed COVID-19 cases, the World Health Organization (WHO) declared the SARS-CoV-2 outbreak a public health crisis of international concern by January 2020^(2,3). By March 11, 2020, when the WHO declared a COVID-19 pandemic, SARS-CoV-2 had swept over the globe in months, causing 118,000 hospitalizations & nearly 4000 fatalities⁽⁴⁾. WHO research on January 11, 2020, shows roughly 45 million confirmed cases worldwide, with over 1.2 million premature deaths⁽⁵⁾. The United States was accountable for over a quarter of all documented incidence and

mortality at the time⁽⁶⁾. Many governments took extraordinary steps to save lives and prevent the spread of sickness since the pandemic, including municipal lockdowns, specialized business closures, and social distancing⁽⁷⁾.

Immunization is among the most successful public health interventions for lowering the mortality rate linked with several infectious illnesses⁽⁸⁾. As a result, a vaccine was considered the best option for restoring normalcy in civilization⁽⁹⁾. Developing a vaccine for a new communicable microbe, on the other hand, can take many years. Clinical trials, regulatory approval, and large-scale manufacturing capacity are the three main stages. To put things in perspective, the current mumps vaccine was previously the quickest immunization ever developed, taking only five years to build⁽¹⁰⁾. At the time of this study, numerous COVID-19

vaccines were in their final phase three trials ⁽⁵⁾. Moreover, 300 million vaccine doses were expected to be accessible in the United States by January 2021 ⁽¹¹⁾.

The general population and healthcare staff worldwide have reacted cautiously to the new COVID-19 vaccines in early trials ⁽¹²⁻¹⁴⁾. The quick pace at which vaccines were created was highlighted as one of the reasons for vaccine reluctance ^(15,16). Furthermore, due to the lack of a unified plan to combat epidemics with different countries adopting different techniques, there has been uncertainty in public about vaccination as well ^(17,18). There have also been contradictory messages from the scientific establishment ⁽¹⁹⁾, and with the easy availability of disinformation, the general population is skeptical of the new product's safety and efficacy ⁽²⁰⁾.

As per polls, a significant section of the US public may refuse to get COVID-19 vaccines whenever they are accessible ⁽²¹⁾. As per May 2020 poll by Reuters, a third of Americans share this viewpoint that they would refuse vaccination ⁽¹⁶⁾. People indicated grave reservations regarding the new vaccine's safety and efficacy. Immunization adoption may be enhanced among the public if healthcare professionals advocate for vaccines ⁽²²⁾. As a result, understanding the viewpoints of medical students is crucial. Immunization is among the most significant primary preventive measures against COVID-19. Growing herd immunity is the only way to combat the present COVID-19 outbreak. This study aims to determine how the MBBS students feel about the COVID-19 vaccine.

METHODOLOGY

From December 2020 to May 2021, a cross-sectional

Characteristics	Frequency	Percentage
Gender		
Male	707	48.3
Female	757	51.7
Total	1464	100.0
MBBS Year		
1st year	72	4.9
2nd year	360	24.6
3rd year	128	8.7
4th year	271	18.5
5th year	633	43.2
Total	1464	100.0
Age (in years)		
19	129	8.8
20	306	20.9
21	81	5.5
22	209	14.3
23	361	24.7
24	184	12.6
25	185	12.6
26	4	.3
28	5	.3
Total	1464	100.0

Table 1: Demographic data of the respondents

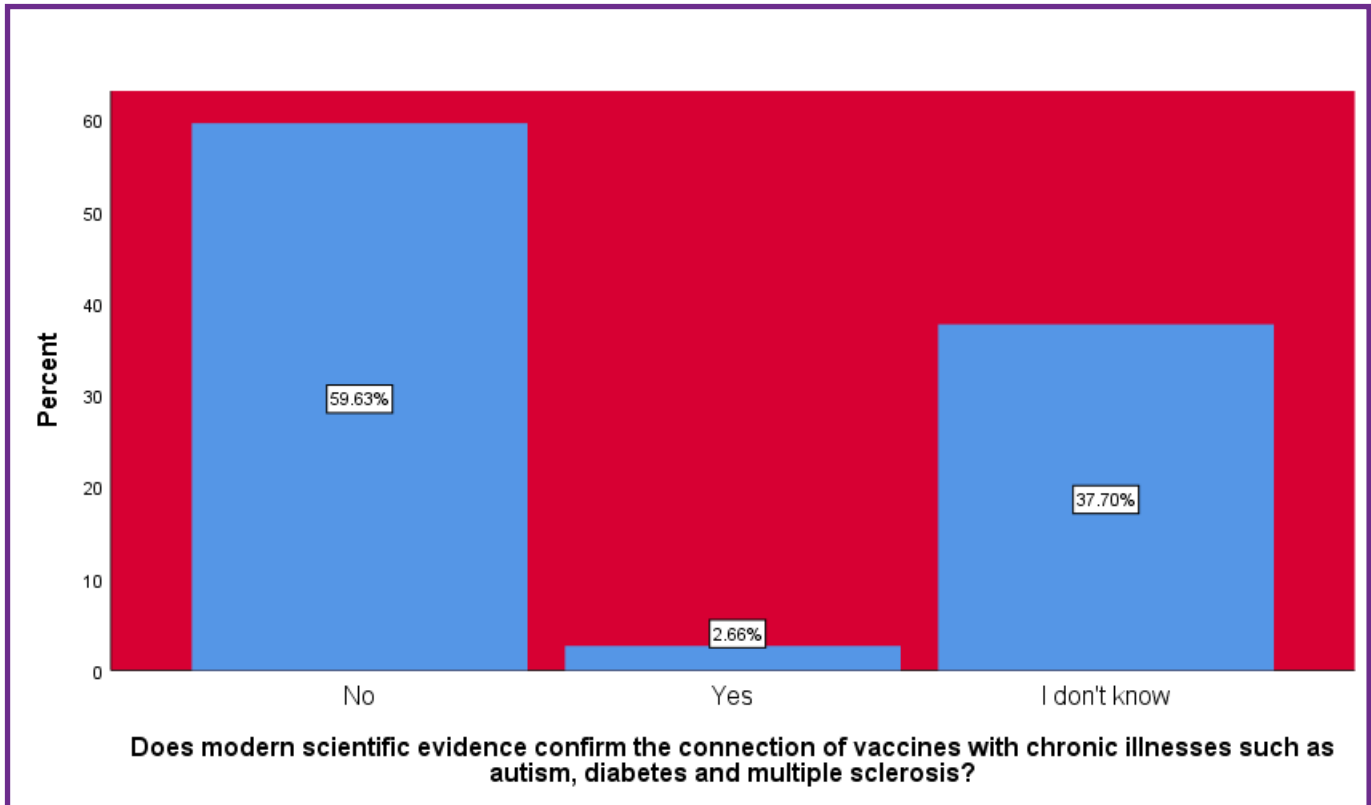


Figure I: Participants' perceptions of the link between vaccines & chronic diseases

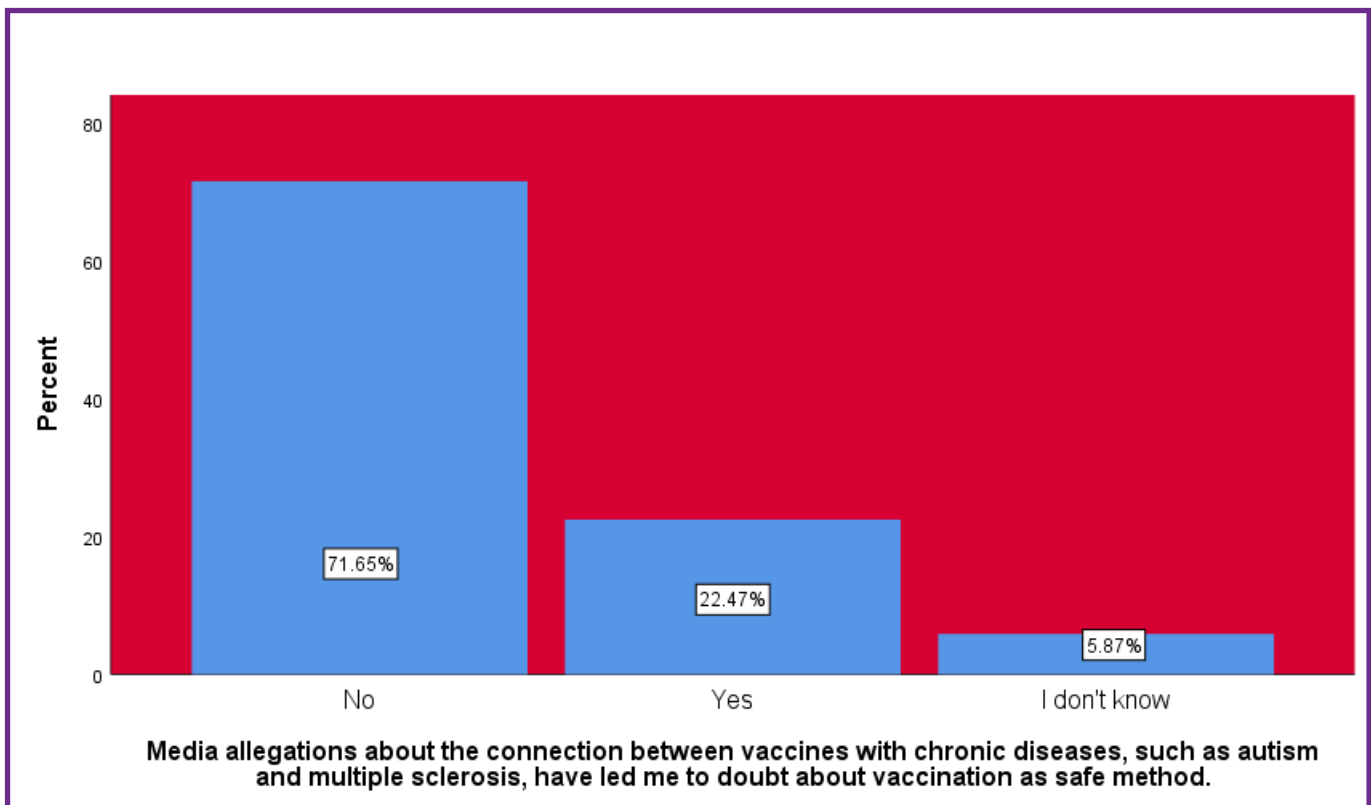


Figure II: Media assertion regarding the safety of vaccinations

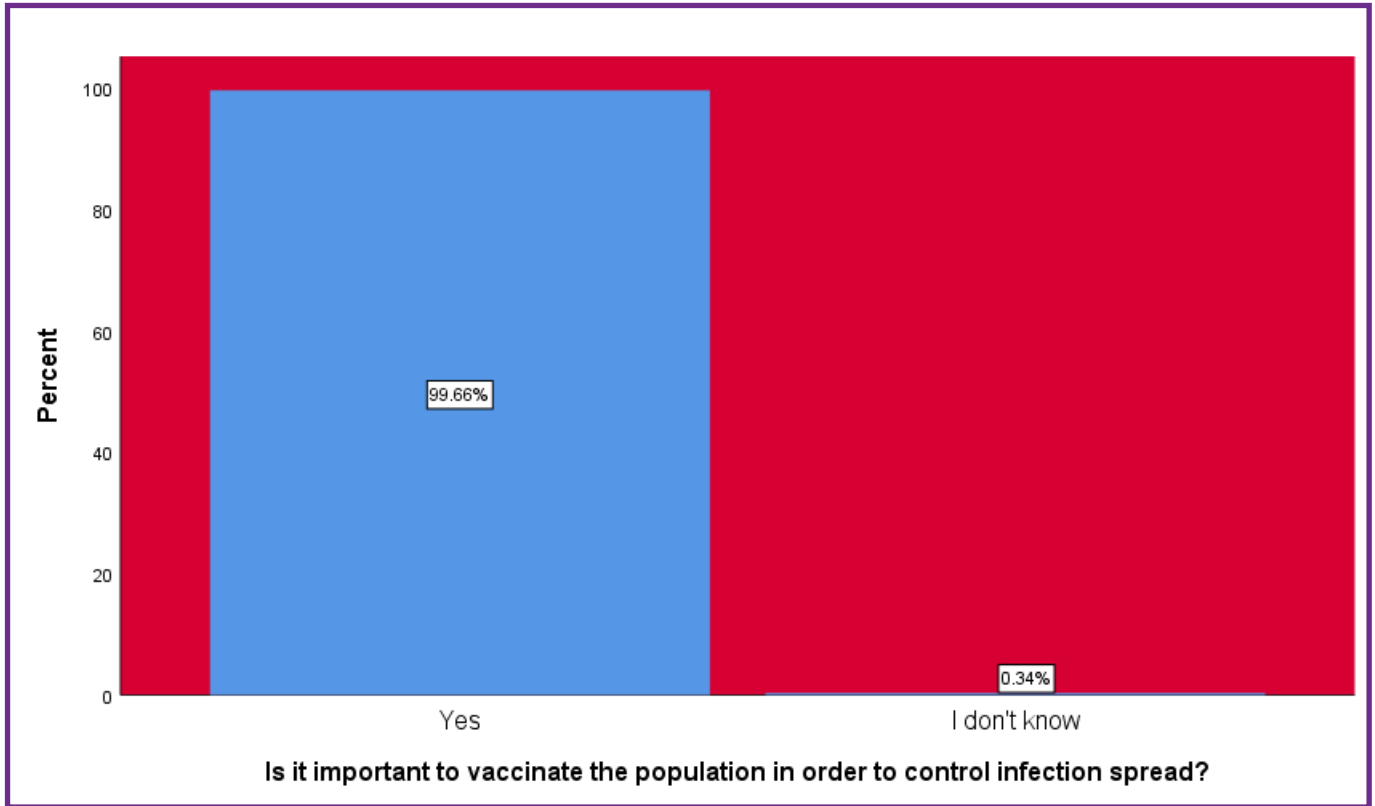


Figure III: Perception regarding the importance of vaccines for controlling infection spread.

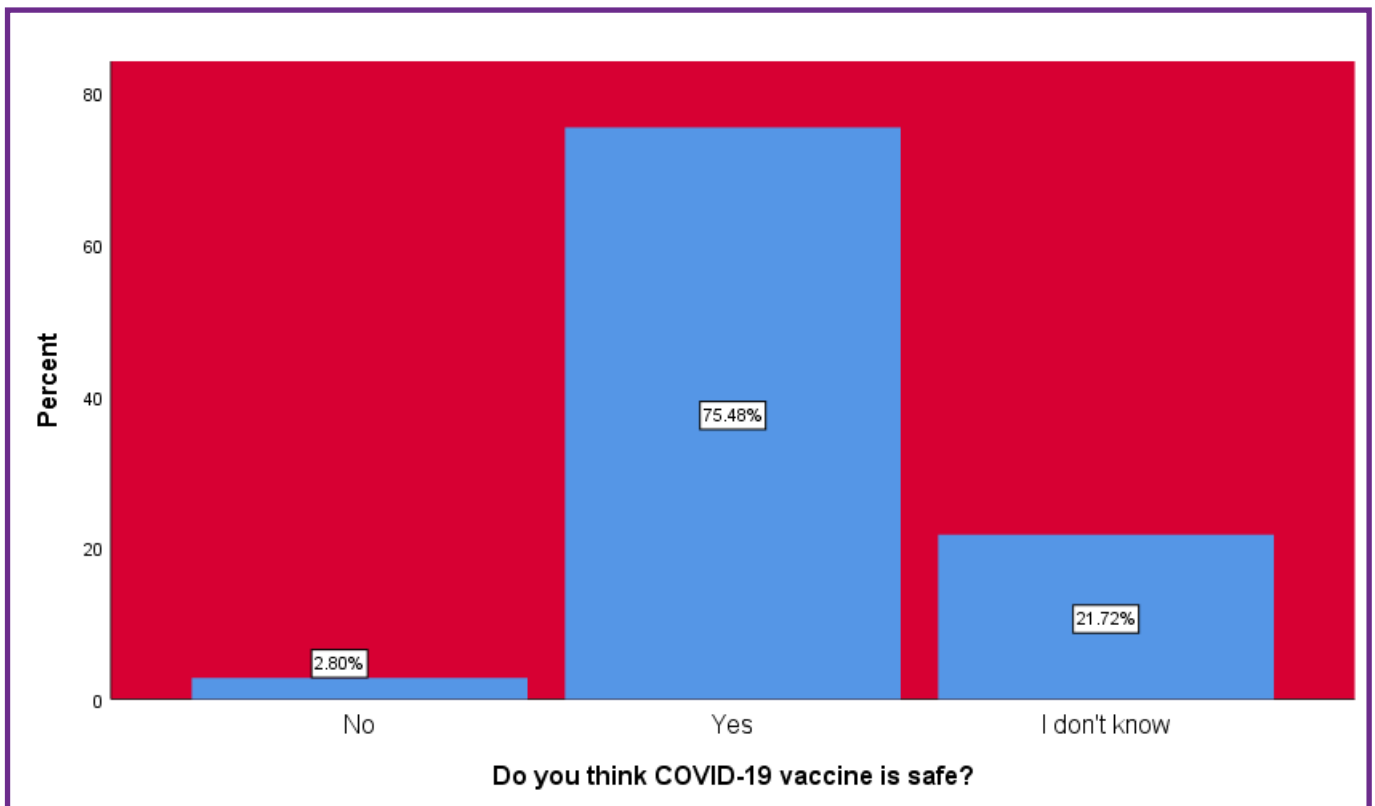


Figure IV: The public's view of vaccine safety

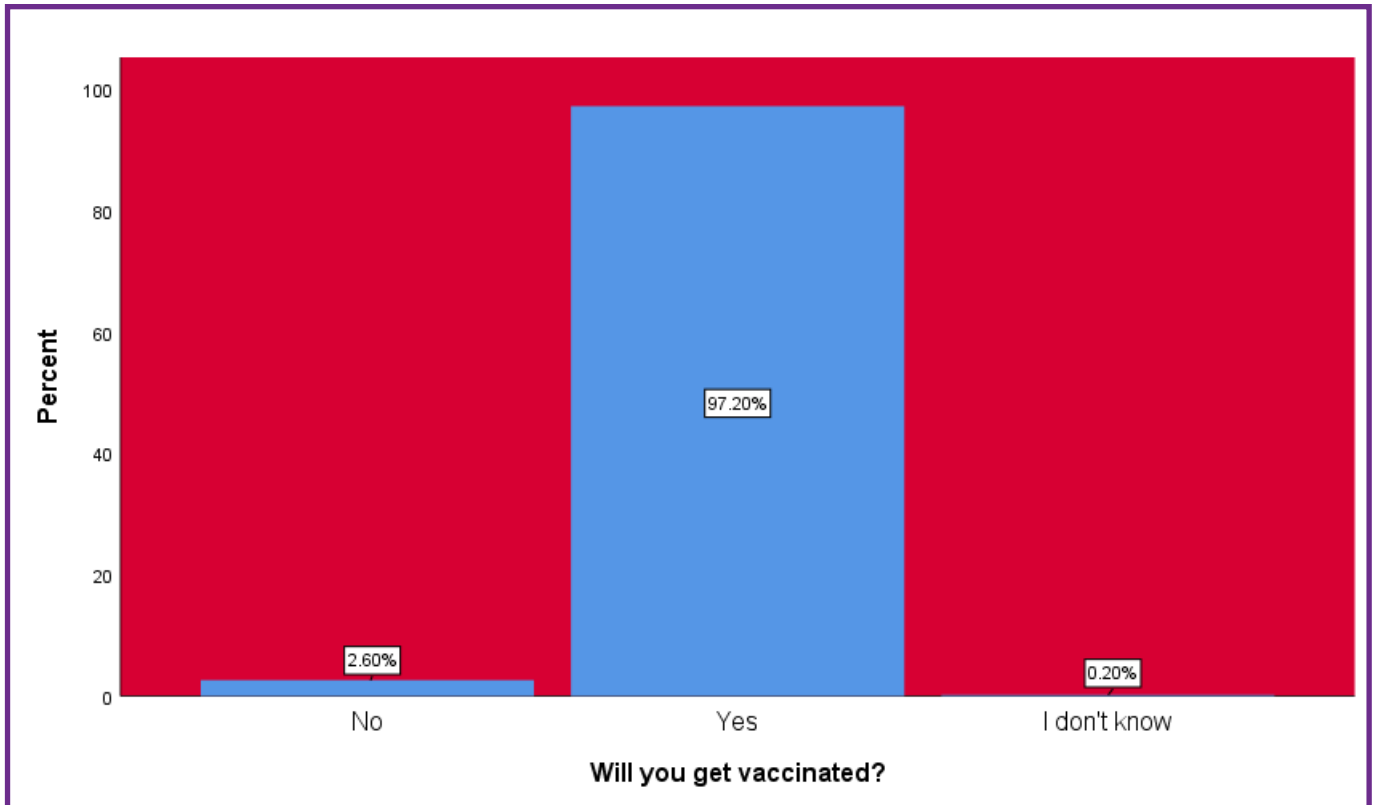


Figure V: Willingness of members to get vaccinated

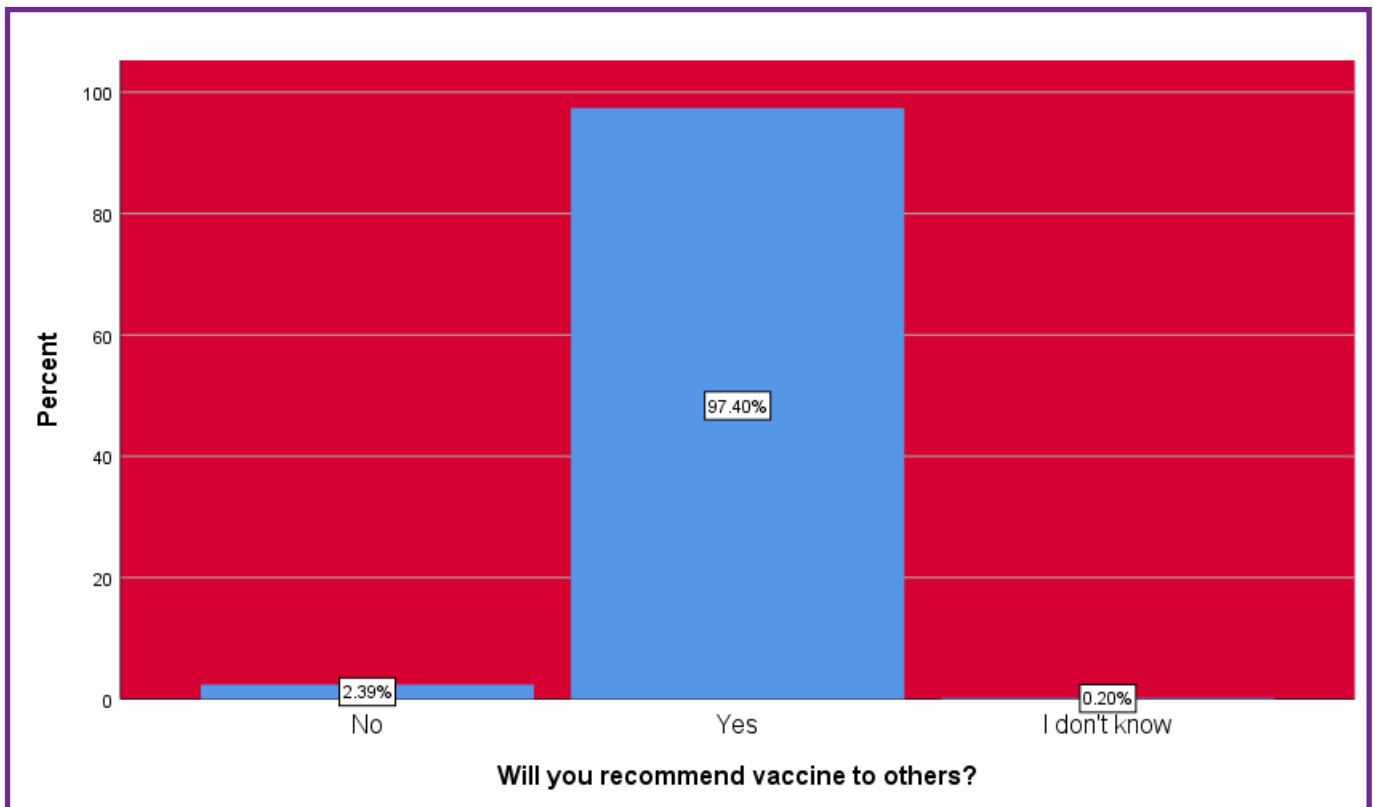


Figure VI: Participants' willingness to promote the vaccine to others

study was conducted. A 6-item validated questionnaire was distributed amongst undergraduate medical students of MBBS (Bachelor of Medicine, Bachelor of Surgery) studying in seven different medical colleges in Karachi, Pakistan to assess their perceptions regarding COVID-19 vaccines. Each participant gave their informed consent. Results for descriptive items are reported in frequency and percentages. Pearson's Chi-square test was applied to see for any statistical significance between variables. Ethical approval was taken from the institutional review committee, Poonch Medical College, Pakistan.

RESULTS

A total of 2500 questionnaires were distributed randomly, out of which 1464 questionnaires were returned, making a response rate of 58.56%. The demographic data of the respondents is shown in Table 1. Female students account for more than half of the total respondents (51.7%). Many respondents (24.7 percent) are between the ages of 23 and 20, with a second more substantial number of persons between 20 and 23. (21 percent). MBBS 5th Year students made up a large number of the total respondents. (43.2 percent).

Nearly 60% of respondents believe there's no link between vaccines and chronic diseases such as autism, diabetes and multiple sclerosis (Fig 1). Aside from that, almost 38% did not know of the association. Figure 2 reveals that roughly 22.47 percent of participants believed that media reports linking immunizations to chronic diseases had sparked their worries. To manage the COVID-19 outbreak, all respondents think it was critical to vaccinate the public. Besides, almost 72% of participants were optimistic about the safety issue of vaccination.

According to participants' opinions in figure 3, almost 99.66% think it is of topmost importance to vaccinating the population to control infection spread. Figure 4 shows that most respondents (75.48 percent) agree that the COVID-19 vaccination is safe, while 2.80 percent believe it is not.

It was seen that practically all volunteers (97.20 percent) were willing to receive the vaccine, whereas 2.60 percent were apprehensive. (Photo 5)

Figure 6 shows that over 97.40 percent of the respondents believe the vaccination greatly depends on suggestions from others. In contrast, only 2% of respondents said they would not indicate the immunization to others.

Gender perceptions of the link between vaccination & chronic illnesses such as autism, diabetes, and multiple sclerosis were compared using a chi-square test for independence with a significance level of .05. X^2 (2, N=1464) = 92.605, $p < 0.05$, was statistically significant in the chi-square test. As a result, we can conclude that male and female perceptions of the link between immunization & chronic diseases vary.

DISCUSSION

Our study demonstrates that undergraduate medical students positively perceive COVID vaccination. As per a CDC report released in August 2020, people aged 18–29 seemed to have the lowest rates of hospitalization & mortality among all age – groups⁽²³⁾. Another effect is the number of acquaintances that have previously been vaccinated, which was strongly related to vaccine acceptability ($p = 0.015$) in our research. This discovery is also in line with previous research. A recent study in China examining personal choices for the corona vaccination originated that greater vaccine adoption is linked to a higher number of immunized acquaintances due to peer influence. When the percentage of immunized family members went from 30% to 90%, the chance of acquiring a new COVID-19 vaccination rose from 0% to 12.38 percent⁽²⁴⁾. According to Leng et al.'s study, participants' anticipated vaccine uptake was significantly predicted by adequate vaccine testing ($p 0.001$)⁽²⁴⁾. COVID-19 immunizations are more likely given to students who believe they have undergone sufficient testing. Our findings are in line with previous research. In a cross-sectional study of French healthcare workers' attitudes toward upcoming vaccinations, the perception of vaccine safety issues stemming from the vaccine's fast evolution was more detrimental than the imagined damage done by the current epidemic⁽¹⁴⁾. Another study found that more extensive testing is favourably associated with vaccine acceptability among Americans⁽²⁵⁾. Adoption of COVID-19 vaccinations was also influenced by learners' willingness to receive many vaccine doses to achieve a sufficient layer of safety ($p 0.001$); those who favour more vaccination doses are much more likely to receive the first doses. Our findings are consistent with the limited available literature at the research time. According to Pogue et al., accepting the annual COVID-19 vaccine did not indicate the entire attitude toward planned vaccination coverage [25]. Vaccine-induced immunity requires additional immunization doses to sustain long-term protection, which medical students are more aware of than the public.

CONCLUSION

Nevertheless, MBBS learners had a favourable opinion of the COVID-19 vaccination, with the plurality of them preferring to encourage people to vaccinate. Nearly two-thirds agreed to be immunized themselves.

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