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COVID-19 vaccine – Knowledge, Attitude and practices among medical students in Hyderabad

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ABSTRACT

Today as a lot of COVID 19 vaccines are available and are currently used, we conducted a study to assess the knowledge, attitudes and perceptions of medical students in our college. An online survey was conducted through GOOGLE forms. In this study total participants are 155 medical students of which 28.4% (n=44) males and 71.6% (n=111) are females. Effectiveness of vaccine as perceived by participants in our study is 65.2%. The safety of the vaccine as considered by participants in this study is 55.5% In this study it was also noticed that when gender is compared with effectiveness and safety of vaccine both males and females felt equally it is effective as well as safe to take vaccine.

There is a need to increase trust among our medical students. The elements that define and build trust must be understood and interventions like health awareness programs as role plays, talks on social media involving known personalities can be undertaken and crafted accordingly to improve the knowledge regarding COVID 19.

Most of the seniors shared their readiness to take the vaccine than junior students. It was also found that seniors felt that they do not get enough information about vaccines when compared to juniors. The main source of information regarding COVID 19 vaccine for majority of the participants i.e., 71% (n=110) was through internet and social media and 16.8% (n=26) get from health care workers and the least number of participants got information from family and friends. Hence social media and internet can be used in a more appropriate way to remove vaccine hesitancy.

KEYWORDS: Covid 19 vaccine, Medical students, knowledge

INTRODUCTION

The recent COVID 19 pandemic has enormous burdens of morbidity and mortality, disrupting severely the societies and economies worldwide. [1] In order to control the spread several COVID 19 vaccines are being produced and some are already in use. Inspite of the potential threat of COVID 19 to public health, vaccine hesitancy has been seen all over the world. [2] The amount and variety of news have led to a massive informative overload generating a real infodemic and misconception regarding COVID 19 disease and vaccine. Therefore, now it is very essential to provide the people evidence based scientific data with respect to COVID 19 vaccine. Several concern regarding safety, efficacy and effectiveness of the COVID 19 vaccine are to be captured and addressed.

Several vaccines to control COVID 19 disease has led to a heightened interest in general public as well as in medical students. We have done this study to encompass several diverse questions related to COVID 19 vaccine knowledge, attitude and practices in medical students to get a general idea about their views as they are the one who are going to provide awareness and educate a lot many of the general population.

METHODOLOGY

A cross-sectional study design was used in this study and it is undertaken in a medical college in Hyderabad. The study populations are medical students of MBBS from this college.

The study included all the students who were willing to participate and given their consent.

The method used for sampling was snow ball sampling. The draft questionnaire was pilot tested. A pre-tested, semi-structured questionnaire which included questions on knowledge, attitude and practices regarding COVID19 vaccine was created using "GOOGLE FORMS". The questionnaires were shared with randomly selected students in each batch and were asked to roll-out further among their batch mates after responding it. On receiving and clicking the link, the other participants got auto directed to the informed consent page, followed by survey questionnaires. Data collection of this study was done in the month of February 2021. Results were done by SPSS using statistical test Chi square and "p" value was given.

Ethical approval was granted by institutional ethics committee and respondent's participation was completely consensual, anonymous and voluntary.

RESULT

Variables		Frequency	Percent
Gender	Male	44	28.4
	Female	111	71.6
Batch	first year	42	27.1
	second year	54	34.8
	third year	59	38.1

Table 1: Demographic characteristics of study population (N=155)

In this study total participants are 155 medical students of which 28.4% (n=44) males and 71.6% (n=111) are females. Most of them are unmarried 98.1 % (n=152) and only 1.9% (n=3) are married. Majority of the students belong to third professional year that is 38.1% (n=59), some of them from second professional year that jis 34.8% (n=54) and few from first professional year that is 27.1% (n=42).Majority of the participants in this study are still not vaccinated that is 96.8% (n=150) whereas only 3.2% (n=5) are vaccinated.

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The willingness to take COVID 19 vaccine was, shared as 20% (n=31) are willing to take the vaccine, 48.4% (n=75) of the students shared that they may take the vaccine whereas about 31.6% are against taking the vaccine.

Question	response	Frequency	Percent
Are you willing to take COVID 19 vaccine	no	49	31.6
	yes	31	20.0
	may be	75	48.4
	Total	155	100.0

Table 2: Question regarding attitude of participants towards COVID 19 vaccine.

Majority of the students that is 43.9% (n=68) felt that they were discouraged to take vaccine because of the fake information they get from social media whereas other factors that discourages them to take vaccine are family 26.5% (n=41) ,self-fear 26.5% (n=41)and by friends 3.2% (n=5).

The effectiveness of the vaccine as considered by most of the participants was "moderately effective" at 65.2% (n=101) whereas 24.5% (n=38) believe it as just effective and 3.9% (n=6) feel that it is highly effective. Whereas 6.5% (n=10) think it as not effective. When asked whether the COVID 19 vaccine strengthens the immune system of a person taking it, around 82.6% (n= 128) agreed whereas 17.4% (n=27) disagreed. On inquiring literacy about safety of vaccine majority of the students that is 55.5% (n=86) think it is moderately safe whereas 24.5% (n=86) think it is not safe, 18.7% (n=29) shared it as just safe and 1.3% (n=2) thought it as highly safe. According to medical students when asked about importance of COVID 19 vaccine 44.5% (n=69) thought it is important whereas 20% (n=31) say it is not so important and the remaining 35.5% (n=55) didn't know the importance of COVID 19 vaccine. The source of information about COVID 19 vaccine for majority of the participants i.e., 71% (n=110) was through internet and social media and 16.8% (n=26) get from health care workers and the least number of participants got information from family and friends. On questioning do they get enough information on COVID 19 vaccines 79.4% (n=123) shared that they do not get enough information whereas only 20.6% (n=32) felt that they got. When asked how important is COVID 19 vaccine for everyone, 52.9% (n=82) thought it was very important whereas only 9.7% (n=15) thought not at all important and the others thought it was of little importance.When enquired about the type of vaccine COVISHEILD is, around 57.4% (n=89) think it as live attenuated whereas 5.8% (n=9) think it as killed vaccine and the others 36.8% (n=57) don't know exactly.

Gender	Do you think is COVID 19 vaccine effective	
	Not effective	Effective
Male	3(6.8%)	41(93.2%)
female	7(6.3%)	104(93.7%)
Total	10	145

p=.90, chi square=0.01

Table 3: Comparing gender with knowledge regarding effectiveness of COVID 19 vaccine.

Comparing gender with knowledge regarding effectiveness of COVID 19 vaccine.

When asked whether the COVID 19 vaccine strengthens the immune system of a person taking it, around 82.6% (n= 128) agreed whereas 17.4% (n=27) disagreed.

It is seen in table no. 3 that majority of the participants 41(93.2%) of males and 104(93.7%) of females share that the vaccine is effective whereas around 7 females (6.3%) and 3 males (6.8%) shared the vaccine it is ineffective. This association was found to be statistically not significant.

It has been noticed in table no. 4 that majority of participants are not, vaccinated that is 42 (95.5%) of males and 108(97.3%) of females and only 3(2 .7%) females and

2(4.5%) males have been vaccinated. This association was found to be statistically not significant.

It is seen that majority of the participants 33(75%) of males and 84(75.7%) of females shared that the vaccine is safe whereas 11(25%) males and 27(24.3%) females shared that this vaccine is not safe. This association is found to be statistically not significant**.**

Gender	Do you feel you get enough information on vaccines and their safety	
	No	Yes
Male	30(68.2%)	14(31.8%)
female	93(83.8%)	18(16.2%)
Total	123	32

Pvalue=0.03* Chi square= 4.68

Table 4: Comparing gender in respect of information they get regarding COVID 19 vaccine

It has been observed in the table no. 6 that 30 (68.2%) of males and 93(83.8%) of females share that they do not get enough information whereas 14(31.8%) of males and 18(16.2%) of females shared that the get enough information regarding COVID 19 vaccines . This association is found to be **statistically significant**.

Gender	Covishield is of which type		
	live attenuated	killed	don't know
male	25 (56.8%)	6 (13.6%)	13 (29.5%)
female	64 (57.6%)	3 (2.7%)	44 (39.6%)
Total	89	9	57

P value=0.02* Chi square= 7.36

Table 5: Comparing gender in respect to knowledge regarding the type of Covisheild vaccine

It is seen in that 25(56.8%) of males and 64(57.6%) of females share that it is live attenuated vaccine and 6(13.6%) of males and 3(2.7%) of females shared it as killed vaccine, whereas 13(29.5%) of males and 44(39.6%) of females share that they don't know what type of vaccine it is. This association is found to be statistically significant.

DISCUSSION

The most outstanding public health intervention today is vaccinations but still there is lot of apprehension on its acceptance. This study is done in the very early stages of vaccine initiation in our country and therefore not many studies are there to compare with it. Strategies to build vaccine literacy and its acceptance should be based on the misconceptions prevailing in the community.

There are very few studies done to explore the intention of willingness to take COVID19 vaccine in the current crisis. The willingness to take vaccine in our study is found to be 20% in contrast with the studies done in Saudi Arabia which reported 64.7% [2] Chinese study showed 72.5% and the United States study reported 80% [2] This might be due to lot of misconceptions and various other factors in our region.

The present study is online survey to assess knowledge and attitude among medical students towards COVID-19 vaccination is in line with the observation of Luigi et al. [3] that rapid online surveys are a practical method to assess and trail perceptions and attitudes during rapidly evolving infectious disease outbreaks, especially when face-to-face research is restricted due to infection control measures such as lockdowns.

The higher trust in the health system can be estimated by the utilization of preventive health services such as vaccination. Some qualitative comparisons can be made with studies similar to our study like the effectiveness of vaccine as perceived by participants in our study is 65.2% is similar to the study done by Muqattash et al., [4] in Emirates 47.97%.

The safety of the vaccine as considered by participants in this study is 55.5%. Lazarus et al. [5] observed instilling public confidence in regulatory agency reviews of vaccine safety and effectiveness will be important.

In this study, when gender is compared with effectiveness and safety of vaccine both males and females felt equally that it is effective as well as safe to take vaccine. In a study by Padureanu et al. [6] observed that Gender did not influence the opinion of acceptance of COVID-19 vaccination.

The next variable which was compared was the perception of importance of the vaccine by our study participants, that is 44.5% think it as important which was also similar to the study conducted in Emirates 43.19% [4] Baldolli et al. [7] suggest that vaccine education should start early in health care studies.

According to Khasawneh et al., [8] 75.0% of students believed that an effective vaccine would halt COVID-19 spread. Lucia et al., [9] observed need for an educational curriculum designed to enhance student knowledge about the COVID-19 vaccine and to teach vaccine counseling skills.

In our study the source of information for vaccine related knowledge is internet and social media 71% which is also similar in the study done in Emirates which was 41.66%. [4] Jyothi Jain et al. [10] concluded for reducing the COVID-19 vaccine hesitancy among medical students focus should be on promoting official sources of information to counter apprehension generated through social media use.

When compared on the knowledge and information the participants are getting from whatever means is enough, in this study around 79.4% shared that it's not enough which was slightly higher to the study done in Emirates-58.61%. [4]

CONCLUSION

This study found low level of knowledge and acceptance of COVID 19 vaccine due to several factors such as fake information from social media, misconceptions and inadequate authentic information from the social media. Many more similar studies are needed including larger and more representative groups of the population, with the aim of improving knowledge about the relevance of health literacy in our medical students. Vaccine literacy is the need of hour for all the health care workers to enhance their knowledge and prevention of disease.

Government and societies must gauge current levels of willingness (hesitancy and acceptance) to receive potentially safe and effective COVID 19 vaccine. The factors leading to vaccine hesitancy can be incorporated by improvising immunization programs of our country.

LIMITATIONS:

Our study also has limitations as this study is web based survey and all the responses are snapshots taken at a point. This method was adopted as this study was conducted during pandemic to restrict face to face contact due to lockdown.

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