Attitude towards COVID-19 and its Vaccination among Students

*Deepti Hooda** *Nov Rattan Sharma***

Abstract

The current investigation was designed to assess attitude towards covid-19 and its vaccination. A sample of 100 participants (mean age 23 years) completed an online survey, a Google form, from January to March, 2021. Respondents were contacted through emails and social media platforms like whatsapp, facebook, and messenger. The survey consisted of questions/ items that assessed perception of susceptibility and severity of Coronavirus disease; perception of benefits and barriers related to COVID-19 vaccination; and Cues to action. The intention for COVID-19 vaccination was also assessed and the sample was divided into two groups i.e. willing to get vaccinated and not willing, based on the responses on intention to receive a COVID-19 vaccine. From the analysis of the results, it was observed that 67% expressed unwillingness for vaccination (vaccine hesitancy). The results of t-test suggested that students having willingness for vaccination significantly perceive grater susceptibility and severity related to Coronavirus disease, perceive more benefits of getting vaccinated and perceive less barriers to vaccination, compared to individuals expressing vaccine hesitancy. Thus, addressing health beliefs related to COVID and its vaccination can be helpful in developing and promoting willingness for vaccination. These findings highlight the need for designing interventions programs to change attitude towards COVID and its vaccination.

Keywords: covid-19; attitude towards vaccination, intention for vaccination, health belief model

About Author : **Associate Professor, **Professor*
Department of Psychology, M.D. University, Rohtak, Haryana, India.

Introduction :

Coronavirus disease is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This coronavirus was first detected in Wuhan (China) in December 2019, but it soon spread rapidly around the world. And on 11th March 2020, World Health Organization (WHO) declared COVID-19 a worldwide pandemic. Initially, to slow down the spread of the COVID virus particularly in the absence of any effective treatment or vaccine, governments around the world enacted on physical/ social distancing and quarantine measures in order to protect the most vulnerable in society. Now, with vaccine in hand, low turnout for vaccination has been a concern for all. Success of any vaccine depends on its uptake; if people are reluctant or unwilling to be immunized, uptake will be limited. This hesitancy for vaccine is a serious concern. Chairman of National Expert Group on Vaccine Administration for COVID-19 (NEGVAC) on January 19, 2021 admitted that country is facing COVID-19 vaccine hesitancy.

The Government of India has selected the groups who would be vaccinated on priority bases depending upon their potential risk for infection. The first group to receive vaccine includes healthcare and frontline workers; and second group includes persons over 60 years of age and individuals between 45 and 59 years of age with comorbid conditions. The government at the moment has not yet announced any plan to vaccinate young people. As universities, colleges and school are now reopening, there are concerns of new outbreaks. Around the world, there have been hundreds of reported outbreaks in universities, colleges and schools that shatter the myth that young, adolescents and children do not spread the virus. Thus, opening of educational institutions poses a great risk, if students in the educational

institutes do not follow and adhere to the guidelines related to COVID.

Vaccination process has entered the second phase where persons over 60 years of age and individuals between 45 and 59 years of age with comorbid conditions are being vaccinated. Now government will soon plan to vaccinate the rest of the population and students represent a special subset of the population in it. Students of colleges and universities have greater autonomy and desperate needs to live independently. But they lack life experience. Furthermore, these students are among the most active members of societies. Their perceptions and behaviours could have a massive impact on the spread of a pandemic (Peng, Pei, Zheng, Wang & Zhang, 2020). Therefore, it is important to understand their attitude towards of the COVID-19 and its vaccination.

The health belief model, HBM, is one of the most accepted models which explain a variety of health behaviors. HBM has been used to understand and explain beliefs and attitude towards COVID and its vaccination (Alhalaseh, Fayoumi, & Khalil, 2020; Barakat, &Kasemy, 2020; Coe, Gatewood, Moczygemba, Goode, & Beckne, 2012; Costa, 2020). The main constructs in health belief model are perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action. HBM in reference to COVID explains perceived susceptibility as perceived vulnerability for COVID infection. Higher the perceived vulnerability, more likely is that the individual would change behaviour to reduce that risk. Perceived severity refers to perceived consequences in case infected with COVID. Perceived benefits are that the perceived value and usefulness of vaccination in regard to minimize the risk of getting COVID. Perceived barriers are obstacles and difficulties that an individual might face when deciding to get vaccinated. Cues to action include information, people and events that guide an individual to be vaccinated.

Given the severity of COVID-19 and the importance of prevention and protection against its spread, the reopening of educational institutes calls for attention of researchers to understand the beliefs and attitude of the students towards COVID-19, under the circumstances where governments are yet to give a vaccination schedule for rest of the population which would include students. Therefore, the primary focus of the current study was to assess beliefs about COVID-19 and attitude towards vaccination among students who express vaccine acceptance (willingness for vaccination) and who express vaccine hesitancy (unwillingness for vaccination).

Objectives:

1. To assess the prevalence of vaccine acceptance and vaccine hesitancy among students.
2. To compare health beliefs related to COVID-19 and its vaccination among vaccine acceptance and vaccine hesitancy groups.

Hypotheses:

1. The prevalence for vaccine acceptance would be higher than vaccine hesitancy.
2. There would be significant difference in health beliefs related to COVID-19 and its vaccination among vaccine acceptance and vaccine hesitancy groups.

Method

Participants

The sample consisted of 100 students (mean age 23 years) who completed an online survey from January to March, 2021. The participants of the study were students of colleges and universities of Haryana and neighboring states. The total sample consisted of 61 females and 39 males. The participation in the study was voluntary and consent was implied through their completion of the online survey and

submitting the responses. The inclusion criteria were that the students should be at least 18 years old.

Measure

Attitude towards COVID-19 vaccination: The items in online survey were derived from the constructs of Health Belief Model. The survey consisted of eleven items, two items each for assessing perceived susceptibility to Coronavirus disease, perceived severity of Coronavirus disease, perceived benefits of getting vaccination against COVID, perceived barriers to getting a vaccination and cues to action. All the items required rating one's attitude on a four point rating scale ('strongly agree', 'agree', 'disagree' or 'strongly disagree'). Intention to receive a COVID-19 vaccine was assessed using a one-item where responds had to express their intention to take vaccine against COVID-19 if/when available, expressing vaccine acceptance or vaccine hesitancy.

Procedure

The online survey was developed on Google form. The link for the online survey (Google form) was shared with participants through emails and social media platforms like whatsApp, facebook, and messenger. After scoring the responses of the respondents, the sample was divided into two groups based on their response on intention or attitude to vaccination i.e. willingness for vaccinate (vaccine acceptance) and unwillingness for vaccination (Vaccine hesitancy). Suitable statistical tools were applied to analyze the data by using SPSS (16.00 version) to test the proposed hypotheses.

Results

The present study aimed to assess (i) prevalence of vaccine acceptance and vaccine hesitancy among students and (ii) to compare health beliefs related to COVID-19 and its vaccination among vaccine acceptance and vaccine hesitancy groups. Descriptive statistics and t-test were applied to analyze the data. From the results of the current study, it was observed that that 67% expressed unwillingness for vaccination indicating vaccine hesitancy and 33% reported vaccine acceptance i.e. they expressed willingness for vaccination. The Table 1, provides the observed frequencies (Observed N) and the expected frequencies (Expected N) of intention to vaccinate i.e. vaccine hesitancy and vaccine hesitancy. Further, from the results of chi-square goodness-of-fit test as depicted in the table , $\chi2(1) = 11.560$ ($p < .01$), it can be inferred that there are statistically significant differences in intention for vaccination. Hence, the first hypothesis, which stated that the prevalence for vaccine acceptance would be higher than vaccine hesitancy, is not true.

Table 1

Observed frequencies and expected frequencies for Intention to vaccinate (vaccine hesitancy and vaccine acceptance) and Chi-Square value

	Intention to vaccinate		
	Observed N	Expected N	Chi-Square (df)
Vaccine hesitancy	67	50.0	11.560** (1)
Vaccine acceptance	33	50.0	
Total	100		

**p<0.01

The students were divided into two groups based on their responses on intention to receive a COVID-19 vaccine i.e. group having vaccine hesitancy and the second group expressing vaccine acceptance. And t test was applied to compare health beliefs related to COVID-19 and its vaccination among vaccine acceptance and vaccine hesitancy groups. The results in Table 2 depict the mean scores of the two groups (vaccine hesitancy and vaccine acceptance) on the perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action related to COVID. The t test was applied to compare the mean differences between the two groups on the observed health beliefs associated with COVID and its vaccination. The results clearly reveal that the two groups differed significantly on perceived susceptibility of COVID disease/infection (t-value=5.153, $p<0.01$), perceived severity of illness (t-value=3.435, $p<0.01$), perceived benefits of getting vaccinated (t-value=2.577, $p<0.01$) and perceived barriers in getting vaccinated (t-value= 9.049, $p<0.01$). It was observed that the students who were willing to get vaccinated or expressed acceptance for vaccine scored significantly lower on perceived susceptibility of coronavirus, perceived severity and perceived benefits of vaccination than students who were unwilling or having vaccine hesitancy (low score indicates greater perceived susceptibility, higher perceived severity and more benefits of vaccination). The results also pointed out that students who were willing to get vaccinated (vaccine acceptance) scored significantly higher on perceived barriers in getting vaccinated than individuals not willing or having vaccine hesitancy (high score indicates less perceived barriers). The two groups did not differ significantly on cues to action. Thus, the groups significantly differed on four out of five health beliefs i.e. perceived susceptibility, perceived severity, perceived benefits and perceived barriers. This implies that students having vaccine acceptance expressed more perceived susceptibility and severity regarding COVID infection; they also perceived greater benefits and less barriers associated with vaccination as compared to vaccine hesitant group of students. Therefore, the second hypothesis that stated there would be significant difference in health beliefs related to COVID-19 and its vaccination among vaccine hesitancy and vaccine acceptance groups, stands proved.

Table 2
Descriptive Statistics and mean comparisons

	Intention to vaccinate (groups)	N	Mean	S.D	t
Perceived Susceptibility	*Vaccine hesitancy*	67	5.731	1.702	5.153**
	Vaccine acceptance	33	4.030	1.186	
Perceived Severity	*Vaccine hesitancy*	67	4.746	1.627	3.435**
	Vaccine acceptance	33	3.667	1.109	
Perceived Benefits	*Vaccine hesitancy*	67	4.597	1.625	2.577**
	Vaccine acceptance	33	3.788	1.112	
Perceived Barriers	*Vaccine hesitancy*	67	3.940	1.613	9.049**
	Vaccine acceptance	33	7.061	1.638	
Cues to action	*Vaccine hesitancy*	67	4.478	1.699	.067
	Vaccine acceptance	33	4.455	1.416	

Discussion

This study assessed beliefs about COVID-19 and attitude towards vaccination among students having vaccine acceptance (willingness for vaccination) and vaccine hesitancy (unwillingness for vaccination). From the results of chi-square test, it was inferred that prevalence of vaccine hesitancy is higher than vaccine acceptance among students. This presents vaccine hesitancy as a growing problem among students that needs to be addressed upfront. The results of t-test suggested that students expressing vaccine acceptance significantly perceive greater susceptibility and severity to COVID; and perceive more benefits of vaccination and perceive fewer barriers to vaccination compared to students expressing vaccine hesitancy. It implies that students expressing vaccine hesitancy perceive less susceptibility to COVID and less severity or any serious complication in case they get infected with COVID. Vaccine hesitant students not only perceive fewer benefits associated with vaccination, but they perceive more barriers to vaccination that hampers their conscious acceptance of vaccine. Poor perceived susceptibility, severity and excessive barriers could be the obstacles that can prevent the initiation of desired health promoting behavior of getting immunized against COVID. So, it is important to target these health beliefs among youth to develop acceptance of vaccine and preparing them for vaccination once the opens the door of vaccination for the youth. Moreover, these faulty perceived health beliefs might also make them more vulnerable to COVID infection, as because of poor perceived susceptibility to and severity of the infection they might be less compliant to social/physical distancing and other preventive guidelines. The crucial role of health beliefs in intention for vaccination or willingness for vaccination has also been pointed out in few earlier studies that extend support the findings of the present study (Guidry et al. 2021; Lin, Hu, Zhao, Alias, Danaee & Wong, 2020; Taylor, Landry, Paluszek, Groenewoud, Rachor, & Asmundson, 2020). Studies have also reported a vital role of Health beliefs in adherence to the recommended safety measures of COVID-19 like maintaining physical distance, wearing face masks, hand sanitizing (Shahnazi, Ahmadi-Livani, Pahlavanzadeh, Rajabi, Hamrah, & Charkazi, 2020; Shewasinad Yehualashet et al., 2021; Tong, Chen, Yu, & Wu, 2020). Thus, health beliefs among students need to tackled for dealing effectively with this highly contagious disease, as protecting oneself and others depends on complying with preventive guidelines issued by government and promoting vaccine acceptance or willingness for vaccination to prevent the spreading of the COVID. Therefore, it is important to increase the knowledge about health issues related with COVID infection and healthy habits that would prevent the spread of this disease. Developing health consciousness and encouraging health promoting beliefs and behaviors would help in accurately evaluating the susceptibility and severity of the disease. This would definitely help take control over the barriers to health promoting behavior and also assist in understanding the benefits of preventive health habits and behavior. Peng et al., (2020) have also highlighted the importance of acquiring necessary knowledge, developing positive attitude and proactive practice towards COVID-19 among university students.

Health Psychologists need to develop intervention strategies or health education programs for addressing beliefs related to COVID-19 vaccination and adhering to physical distancing and other preventive guidelines. Role of psychological factors especially cognitive factors in promoting compliance and adherence to (pro)social distancing measure was highlighted in an

earlier study by authors (Hooda, Sharma & Yadava, 2021). In order to do so, psychologists should focus on developing health consciousness and health literacy to bring a change in not only that attitude towards vaccination but also for promoting adherence to preventive behaviors. It is at most important to provide psycho-education to students about the benefits of vaccination and preventive measures of COVID through counseling and psychological interventions strategies to prevent spreading of this contagious and communicable disease. Circulation of effective health communication messages promoting healthy beliefs and habits by health professionals and student leaders on different media platforms may facilitate the process of changing beliefs, as students are the most active members on social media platforms. This approach might prove vital in improving the willingness of a COVID-19 vaccination and adherence to preventive measures. Banik, Rahman, Sikder, Rahman, Rashid Pranta, (2021) had also suggested the need for tailored education programs to improve the level of public knowledge, attitudes, and practices for COVID-19. Singh, Sewda, & Shiv (2020) recommended improving community engagement activities and effective communication for controlling the widespread disease outbreaks by addressing knowledge, attitude and practices of students regarding the COVID-19 pandemic

Conclusion:

Thus, the findings showed that a considerable number of students have vaccine hesitancy that needs to be addressed actively. Psychological interventions targeting perceived barriers and psycho-educating about the benefits would definitely help in reducing vaccine hesitancy and improving willingness for vaccination. This study emphasizes the need for developing psychological interventions and effective health education campaigns aimed at enhancing and promoting health consciousness and literacy among students regarding COVID-19 thereby encouraging students to build a more positive mindset towards vaccination and maintain appropriate preventive health practices.

References

Alhalaseh, L., Fayoumi, H., & Khalil, B. (2020). The Health Belief Model in predicting healthcare workers' intention for influenza vaccine uptake in Jordan. Vaccine, 38(46), 7372–7378. https://doi.org/10.1016/j.vaccine.2020.09.002

Banik, R., Rahman, M., Sikder, M.T., Rahman, Q. M., Rashid Pranta, M.U (2021). Knowledge, attitudes, and practices related to the COVID-19 pandemic among Bangladeshi youth: a web-based cross-sectional analysis. Journal of Public Health (Berl.): From Theory to Practice. Retrived from (https://doi.org/10.1007/s10389-020-01432-7

Coe, A. B., Gatewood, S.B., Moczygemba, L.R., Goode, J.V., & Beckner, J.O. (2012) The use of the health belief model to assess predictors of intent to receive the novel (2009) H1N1 influenza vaccine. Innovations in pharmacy, 3(2): 1–11. https://doi.org/10.24926/iip.v3i2.257

Guidry, J., Laestadius, L. I., Vraga, E. K., Miller, C. A., Perrin, P. B., Burton, C. W., Ryan, M., Fuemmeler, B. F., & Carlyle, K. E. (2021). Willingness to get the COVID-19 vaccine with and without emergency use authorization. American journal of infection control, 49(2), 137–142. https://doi.org/10.1016/j.ajic.2020.11.018

Hooda,D., Sharma, N.R.,& Yadava, A. (2021). Cognitive Flexibility as predictor of Intolerance of Uncertainty, Worry

and (Pro)Social Distancing compliance during COVID-19. Social Action, 71, 13-27.

Lin, Y., Hu, Z., Zhao, Q., Alias, H., Danaee, M., & Wong, L. P. (2020). Understanding COVID- 19 vaccine demand and hesitancy: A nationwide online survey in China. PLoS neglected tropical diseases, 14(12), e0008961. https://doi.org/10.1371/journal.pntd.0008961

Peng, Y., Pei, C., Zheng, Y., Wang, J., & Zhang, K. (2020). Knowledge, attitude and practice associated with COVID19 among university students: A cross-sectional survey in China. BMC Public Health, 127, 1–24. https://www.researchsquare.com/article/rs-21185/v1

Shahnazi, H., Ahmadi-Livani, M., Pahlavanzadeh, B., Rajabi, A., Hamrah, M.S., & Charkazi, A. (2020). Assessing preventive health behaviors from COVID-19: a cross sectional study with health belief model in Golestan Province, Northern of Iran. Infectious Diseases of Poverty 9, 157 (2020). https://doi.org/10.1186/s40249-020-00776-2

Shewasinad Yehualashet, S., Asefa, K.K., Mekonnen, A.G., Gemeda, B.N., Shiferaw, W.S., Aynalem YA, et al. (2021). Predictors of adherence to COVID-19 prevention measure among communities in North Shoa Zone, Ethiopia based on health belief model: A cross-sectional study. PLOS ONE, 16(1): e0246006. https://doi.org/10.1371/journal.pone.0246006

Singh, J.P., Sewda, A., & Shiv, D.G. (2020). Assessing the Knowledge, Attitude and Practices of Students Regarding the COVID-19 Pandemic. Journal of Health Management, 22, 281 - 290.

Taylor, S., Landry, C. A., Paluszek, M. M., Groenewoud, R., Rachor, G. S., & Asmundson, G. (2020). A Proactive Approach for Managing COVID-19: The Importance of Understanding the Motivational Roots of Vaccination Hesitancy for SARS- CoV2. Frontiers in Psychology, 11, 575950. https://doi.org/10.3389/fpsyg.2020.575950

Tong, K. K., Chen, J. H., Yu, E. W., & Wu, A. (2020). Adherence to COVID-19 Precautionary Measures: Applying the Health Belief Model and Generalised Social Beliefs to a Probability Community Sample. Applied psychology. Health and well-being, 12(4), 1205–1223. https://doi.org/10.1111/aphw.12230