



Covid-19 Vaccination Drive Among Dental Students: A Sweet and A Sour Encounter

Dr. Parul Sharma¹, Dr. Navneet Kour², Dr. Ametesh Dutta³

¹Department of Periodontology and Implantology, Private Practitioner, Himachal Pradesh.

²Department of Periodontology and Implantology, Private Practitioner, Jammu and Kashmir.

³Senior Lecturer, Department of Oral Pathology, Gian Sagar Dental College and Hospital.

Conflicts of Interest: Nil

Corresponding author: Dr. Parul Sharma

DOI: <https://doi.org/10.32553/ijmsdr.v6i9.951>

Abstract

Since 1918 flu pandemic, novel human corona virus diseases has been documented as the fifth pandemic resulting in catastrophic events not only in terms of deaths and increased number of cases but also hampered the workplaces. Dental practitioners, due to the concise area of work are in direct contact and consequently at a higher risk for transmitting or acquiring this diseases. In this COVID era, vaccine hesitancy remains a greater barrier to the population inoculation against this highly dreadful and infectious disease. With the rapid development of the vaccine globally, major concerns about it acceptance and safety still remains a question. Thus the main

Aim of our article was to assess the acceptance and hesitancy rates regarding COVID-19 vaccination among dental student, exploring their experience and creating an awareness program for counseling of hesitant subjects.

Material and Methodology: randomized 100 under and post graduate dental students of Himachal Pradesh were selected and divided into two groups G1 with 50 vaccinated and G2 with 50 non vaccinated students. A well structured, online multiple choice questionnaire was formulated and distributed among them for recording the response. The data obtained was collected, tabulated and analyzed using Chi square test for the experience of subjects regarding vaccine.

Results: when compared around 76% of the vaccinated respondents agreed about the fact of making vaccination mandatory for all while 90% of the non-vaccinated respondents were still confused about the same.

Conclusion: the results of our study highlighted for the need and awareness about the safety and effectiveness to promote the uptake of COVID-19 vaccine. Though made obligatory, there are still a huge number of people who still raise a question regarding the efficacy of the vaccine.

Keywords: Acceptance, Covid-19, Dentist, Hesitancy, Vaccine, Virus.

Introduction

First reported in the Wuhan city, Hubei province of China in December 2019, novel human corona-virus became the fifth pandemic after 1918 flu affecting almost all the

population around the world.¹ Also known as Covid-19, it had a devastating impact on the economy, healthcare, mortality and even social behavior of the world. It became one of the

major topics of discussion and threats amongst the health care providers.² It is caused by novel coronavirus or severe acute respiratory syndrome coronavirus 2 leading to pneumonia with symptoms ranging from mild to severe.¹ Experts have even estimated that the pandemic is merely a tip of the iceberg and the final consequence will only be assessed after many years. The international labour organization announced that around 32% of the world workers were living in the countries where lockdown related workplaces were closed. One among all of the professions which was badly affected was dental and its related alliances.³

Dental professionals in and around the world are in direct contact with patients and are therefore identified at high risk of exposure by CDC.⁴ Dentists and dental students are usually exposed to the environment of increased risk of exposure due to its closeness with that of the patient and even the lengthy procedures; aerosol producing dental procedures and oral fluids further increases the risk.⁵ Thus, early vaccination of healthcare workers including dentist becomes an important factor to ensure a protected and adequate workforce. World health organization plays an integral part in fighting covid-19 pandemic with its global effects of diagnosis, treatment and prevention of the diseases.⁴

One of the promising means of developing normalcy is the discovery of vaccine which in turn helps in restoring the economic and civilian rehabilitation. Though, covid-19 vaccine accessibility doesn't represent the end of the pandemic because of continuous immunization aversion and against inoculation developments. Coronavirus spreads through human transmission through faeco-oral, droplets and direct contact with an incubation period of 2-14 days.⁶ Until now no antiviral treatment or antibody has been unequivocally suggested for COVID-19. Along with this, by applying preventive measures for control of COVID-19 defilement becomes perhaps the

most crucial intervention. The WHO in the year 2019 pronounced that the immunization aversion is one among ten significant dangers to worldwide wellbeing; repeating these apprehensions,⁷ Dror et al. in 2020 viewed as 76% of SARS-Cov2 vaccine hesitancy is only because of the safety concerns.⁸ Thus the main aim of the article was to assess the acceptance and hesitancy rates regarding COVID-19 vaccination among dental student, exploring their experience and creating an awareness program for counseling of hesitant subjects.

Material and Methodology: randomized controlled 100 undergraduate and postgraduate dental students hailing from Himachal Pradesh were selected for the study. A well formed multiple choice based questionnaires were formulated and distributed among these subjects via emails, texts and social media. Before the initiation of the study approval from the University of Open Learning Punjab University, Chandigarh was taken. The only inclusion criterion of the study was that the half population (50) was vaccinated against novel corona virus and other was non- vaccinated. The subjects were divided into two groups: G1 were vaccinated subjects and G2 were non-vaccinated subjects.

Confidentiality of the information was of prime importance. This electronic survey was circulated over social media for a period of 2 weeks. It consisted of a series of questions with multiple choice based answers. The respondents were allowed to terminate their study at any point of time. A fully fledged complete survey was included in the study. Every question had meticulously prepared options so as to not confuse the participants. All the questions were marked compulsory with closed ended answers on likert scale like yes, no or maybe options.

Statistical Analysis: all the data of the respondents were collected, recorded and transferred to the Microsoft excel sheet and then exported to data editor of SPSS software version 20.0 Inc., Chicago, IL, USA.

Categorical variables were analyzed and summarized using frequencies and percentages while intergroup comparison for the experience of subjects regarding vaccine was done using Chi Square test with two tailed p value ($p \leq 0.05$). The data was then represented graphically.

Results: out of the total 100 dental students selected randomly 50% of them were vaccinated while 50% of them were non-vaccinated. All of the subjects in Group 1 voluntarily made a choice of getting vaccinated with maximum of them 86% opting for covisheild over covaxin. In Group 2, 47% of the non-vaccinated subjects preferred not to comment on the choice made for not choosing to get vaccinated and 54% of them believed that will be vaccinated only and when government will

make it mandatory for vaccination. One of the major concerns regarding vaccine was its safety concern, long term side effects along with genetic effects. 39% of the non-vaccinated subjects had efficiency of the vaccine as a major concern. Though vaccinated still subjects in group 1, 27% of them were concern about the less testing of the vaccine. 80% of the vaccinated subjects were ready to motivate their fellow mates to immunize themselves against the covid-19 virus. When asked about the efficiency of vaccine, 88% of the vaccinated subjects were in favor of the fact that vaccine would be help in reducing the spread of diseases. When compared and analyzed the data using chi-square test, statistically significant results were obtained among the vaccinated and non-vaccinated groups.

TABLE 1: REPRESENTING THE DATA OF THE REPENDENTS					
S.NO	QUESTIONS	GROUPS	FREQUENCY/PERCENTAGE		
			YES	NO	MAYBE/ PREFER NOT TO SAY
1	ARE YOU VACCINATED WITH COVID-19 VACCINE?	G1	50/50%	-	-
		G2	50/50%	-	-
2	IF YES, WAS THIS A VOLUNTARY DECISION?	G1	50/100%	-	-
		G2	-	-	-
3	IF NOT VACCINATED, YOU WILL TAKE THE COVID-19 VACCINE ONLY IF IT IS MADE MANDATORY FOR ME BY GOVERNMENT AUTHORITIES OR COLLEGE AND NOT ON YOUR OWN?	G1	-	-	-
		G2	20/40%	3/6%	27/54%
	SIGNIFICANCE	$X^2=40.56$ $P<0.0001^*$			
4	ARE YOU WILLING TO MOTIVATE THE FELLOW STUDENTS TO TAKE COVID-19 VACCINE?	G1	40/80%	8/16%	2/4%
		G2	34/68%	4/8%	12/24%
	SIGNIFICANCE	$X^2=8.96$ $P<0.011^*$			
5	DO YOU THINK COVID-19 VACCINE CAN REDUCE THE SPREAD OF THE DISEASE IN THE COMMUNITY?	G1	42/88%	2/4%	6/12%
		G2	9/18%	11/22%	30/60%
	SIGNIFICANCE	$X^2=43.59$ $P<0.0001^*$			

6	WILL COVID-19 VACCINE CAN HELP REDUCE SEVERE COVID-19 DISEASE.	G1	30/60%	19/38%	1/2%
		G2	30/60%	11/22%	9/18%
	SIGNIFICANCE	X²=8.54 P<0.01*			
7	DO YOU THINK THAT COVID-19 VACCINE SHOULD BE MADE MANDATORY FOR THE HEALTH CARE WORKERS?	G1	40/80%	7/14%	3/6%
		G2	2/4%	20/40%	28/56%
	SIGNIFICANCE	X²=60.80 P<0.0000*			
8	DO YOU THINK COVID-19 VACCINATION SHOULD BE MADE MANDATORY FOR THE GENERAL PUBLIC TOO AS WELL AS HEALTHCARE PROVIDER?	G1	38/76%	10/20%	2/40%
		G2	5/10%	3/6%	42/90%
	SIGNIFICANCE	X²=65.46 P<0.0000*			

TABLE 2: IF GIVEN OPTION, WHICH VACCINE WILL, YOU CHOOSE OUT OF THESE?			
GROUPS	FREQUENCY/PERCENTAGE		
	COVAXIN	COVISHIELD	NONE
G1	6/12%	43/86%	1/ 2%
G2	15/30%	30/60%	5/10%
SIGNIFICANCE	X²=8.83 P<0.01*		

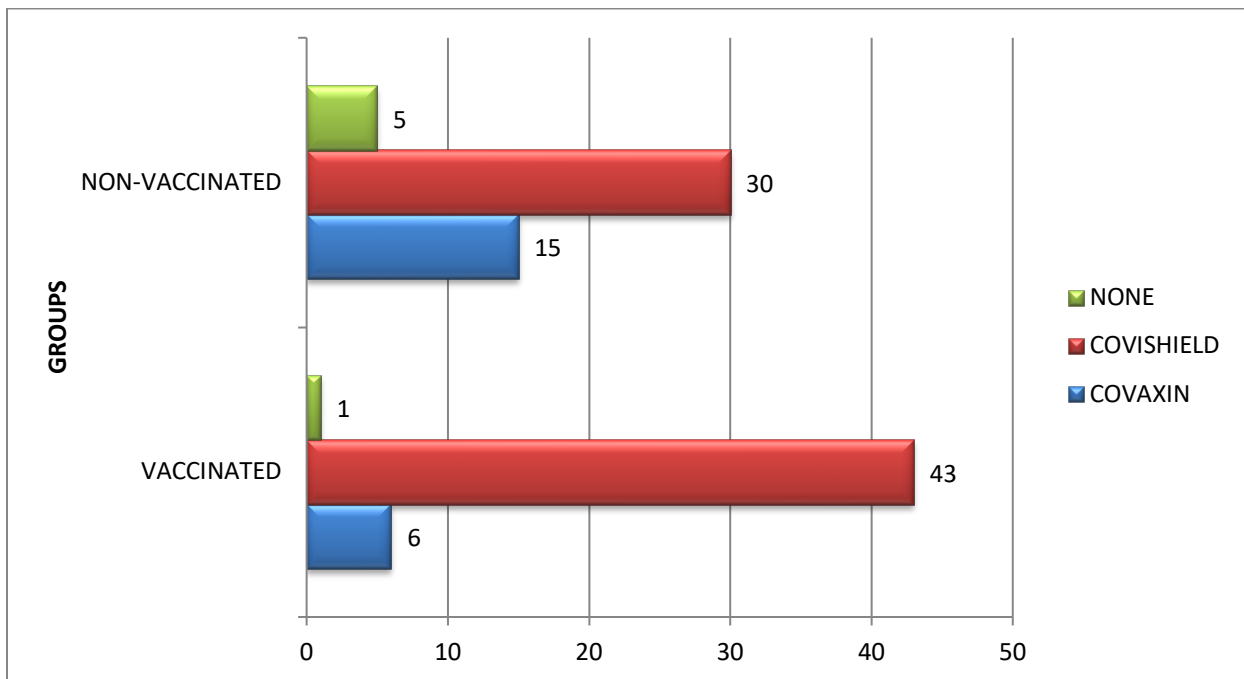


TABLE 3: REPRESENTS THE OTHER CONCERNS OF THE RESPONDENTS				
GROUPS	FREQUENCY/PERCENTAGE			
	EFFICIENCY	SIDE EFFECTS	LONG TERM EFFECTS	LESS VIGOROUS TESTING OF VACCINE
G1	11/22%	7/14%	5/10%	27/54%
G2	39/78%	7/14%	3/6%	1/2%
SIGNIFICANCE	X ² =40.32 P<0.0001*			

Discussion:

Over the past many years, vaccination was known to be effective in preventing, reducing and eradicating the number of viral diseases. Alongside with providing direct immunity and arresting diseases among the vaccinated individuals, herd immunity is acquired when a sufficient proportion of the population is immunized. With the evidence of promoting vaccination in general is usually useful in settling of the current pandemic, the acknowledgement and uptake of covid vaccine present an exceptional challenge.⁹ In expansion to absolute magnitude of the available vaccination effort, the immunizations are new and are probably going to viable to some extent yet for an obscure period of time. There might be purported antagonistic occasions properly or mistakenly credited to the new immunizations, and nations will set different safety thresholds prior to offering the immunizations to their population.¹⁰

Being the first study of its type to evaluate and assess the hesitancy of dental students towards Covid-19 vaccination in Himachal Pradesh exact results were inconsistent. Dental student are known to be healthcare providers and thus, their perspective about the risk and role of covid-19 virus play a fundamental role. In the prevailing pandemic situation, dentist plays their role not only by educating patients but also help in assisting in various vaccination camps organized for communities and patients. From the study, a surprising result was obtained were 60% of the non vaccinated students accept the fact that they would get vaccinated only and when approved and made mandatory by the government. These results

were in accordance with the study conducted on US population. The results of our study suggest a number of possible reasons for the hesitancy against the vaccine. 78% of the non-vaccinated subjects were concerned about the efficiency of vaccine followed by side-effects (14%), long term effects (6%) and the less testing of vaccine (2%). The widespread use of personal protective equipments in the persuading conditions of this pandemic has also diminished the students concern regarding contraction of the virus. One of the study conducted by Estrich et al in the year 2020 revealed that only 0.9% of the dentist are known for become ill due to proper following of covid protocols.¹¹ Thus, making lack of trust on the vaccine as one of the factor for hesitancy among them.

Like general population, trust on the information issued by the public health experts was known to play a key factor in the acceptance of the vaccine by the students. It was still not surprising that those who are took vaccine were also concern about the serious side effects (14%) of the same. Not only this, a disappointment factor still remained that oral health providers had similar opinions and lower acceptance of covid-19 vaccine due to accreditation standards.¹² Many of the researchers have proved that whenever a physician recommended vaccine to their patients it usually increased their acceptability. A similar response was accepted from the dentist which was only possible when a dentist himself/herself was vaccinated.

Limitations:

Generalizability was one of the most important limiting factors of our study, followed by a

small sample size and time period of the study. The data of the study was self reported thus depended partly on the participants' honesty and their recall ability subjecting to recall bias.

Conclusion:

within the limitations of our study, it can be concluded that vaccine acceptability and lack of efficiency has become of the major issues for hesitancy. As the development of vaccine is still under process, its acceptability also becomes an important factor to be monitored. These findings will help in guiding the plan of developing future public health efforts to increase the acceptability of covid-19 vaccine.

References:

1. Liu YC, Kuo RL, Shih SR. COVID-19: The first documented coronavirus pandemic in history. *Biomedical journal*. 2020 Aug 1;43(4):328-33.
2. Zigron A, Dror AA, Morozov NG, Shani T, Haj Khalil T, Eisenbach N, Rayan D, Daoud A, Kablan F, Marei H, Sela E. COVID-19 vaccine acceptance among dental professionals based on employment status during the pandemic. *Frontiers in Medicine*. 2021:13.
3. ILO Monitor. COVID-19 and the World of Work. 5th ed. International Labour Organization (2020). Available online at: https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_749399.pdf
4. Mascarenhas AK, Lucia VC, Kelekar A, Afonso NM. Dental students' attitudes and hesitancy toward COVID-19 vaccine. *Journal of Dental Education*. 2021 Sep;85(9):1504-10.
5. National Academies Release Framework for Equity Allocation of a COVID-19 Vaccine for Adoption by State, Tribal, Local, and Territorial Authorities. National Academies website. <https://www.nationalacademies.org/new/2020/10/nationalacademies-release-framework-for-equitable-allocation-of-a-covid-19-vaccine-for-adoption-by-hhs-state-tribal-local-andterritorial-authorities> Updated October 2, 2020. Accessed January 22, 2021.
6. Dubé E, Vivion M, MacDonald NE. Vaccine hesitancy, vaccine refusal and the anti-vaccine movement: influence, impact and implications. *Expert Rev Vaccines*. (2015) 14:99–117. doi: 10.1586/14760584.2015.964212
7. Ten threats to global health in 2019. Available online at: <https://www.who.int/vietnam/news/feature-stories/detail/ten-threats-to-global-health-in-2019>(accessed Sep 23, 2020).
8. Dror AA, Eisenbach N, Taiber S, Morozov NG, Mizrachi M, Zigron A, et al. Vaccine hesitancy: the next challenge in the fight against COVID-19. *Eur J Epidemiol*. (2020) 35:775–9. doi: 10.1007/s10654-020-00671-y.
9. WHO SAGE values framework for the allocation and prioritization of COVID-19 vaccination, 14 September 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/334299>, accessed 18 November 2020).
10. World Health Organization. Behavioural considerations for acceptance and uptake of COVID-19 vaccines: WHO technical advisory group on behavioural insights and sciences for health, meeting report, 15 October 2020.
11. Estrich CG, Mikkelsen M, Morrissey R, et al. Estimating COVID-19 prevalence and infection control practices among US dentists. *JADA*. 2020;151(11):815-824.
12. Commission on Dental Accreditation. Accreditation Standards for Dental Education Programs. Chicago, IL: American Dental Association; 2020.