

Effects of Covid-19 Vaccines on Mental Health of an Individual A Cross-Sectional Clinical Study

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ABSTRACT

Objective: The main and objectives of the study was to evaluate the impact of Covid'19 vaccination on mental health status.

Study Design: A Cross-Sectional Clinical Study.

Place and Duration: It is a cross-sectional study which was conducted by the house officers and the faculty of Dow International Dental College from June 2022 to January 2023.

Methodology: This study was conducted by distributing the questionnaire among the patients coming to the Outpatient Department at Dow International Dental College. A total of 280 Questionnaires were filled among the Vaccinated Patients coming to the OPD. Questions were inquired related to demographics, dosage, history, last dose, and benefit of vaccine, depression, sleep deprivation, feeling low, trouble concentrating and suicidal thoughts. The consent to fill this questionnaire by the patient was taken by 'Implied Consent'. It was in English language but was translated in Urdu by the house officers whenever it was needed to ensure the comprehension of the questions to the patients. The filled questionnaire was collected by the house officers of the dental department. A total of more than 280 questionnaires were distributed among the participants out of which 250 questionnaires were filled correctly giving us a response rate of 89.2% and dropouts of 10.8%.

Practical Implications: The results of this cross-sectional clinical study have practical implications for the wider community. Encouraging Covid-19 vaccination can have a positive impact on both physical and mental health, and promoting vaccine uptake may lead to improved mental health outcomes for individuals. Such benefits can reduce the overall burden of mental health issues during the pandemic, which is beneficial to the community. Thus, public health campaigns should focus on the potential positive effects of Covid-19 vaccines on mental health to improve community well-being and promote vaccine acceptance.

Results: Approximately 48% women and 52% male have anxiety, depression or either disorder, respectively. Adults with anxiety and depression were more likely to have low educational attainment, low household income, lack of health insurance and either lack or delay medical care. The filled questionnaire was collected by the house officers of the dental department. A total of more than 280 questionnaires were distributed among the participants out of whom 250 questionnaires were filled correctly giving us a response rate of 89.2% and dropouts of 10.8%. There was a common mental impact that was noticed and brought about people's mental health at stake.

Conclusion: Forceful vaccination has a potential to affect mental health of an individual. Further studies are required to extrapolate the findings of the present study.

Keywords: vaccination, Mental health, Anxiety, Depression

INTRODUCTION

The recurrent waves of Covid'19 have affected billions of lives. As a result, rapid development and approval and these vaccines were made¹. However, the public has expressed vaccine hesitancy and anxiety². As a result of its safety standards, side effects and novelty or fear related to receiving the vaccine. Moreover, social media misinformation and needle phobia also contribute to vaccine hesitancy.³ There are both direct and indirect neurological, cognitive, and emotional deficit that are evident. To control the rapid human-to-human transmission of Covid'19 there had been lockdown enforcement, isolation, and closure of public places, educational institutes, and workplaces which have had an overwhelming impact on global mental health.⁴ Additionally, mask mandates and strict guidelines for social distancing have been implemented. Anxiety, depression, and other psychopathological symptoms prevail in the areas with severe COVID-19.^{5,6}

As a result of the rapid development and approval of these vaccines, the public expressed vaccine safety and efficiency was allowed. The result of its safety standards, side effects and novelty, some people may have anxiety or fear related to receiving the vaccine^{7,8}. In addition to that, social media misinformation and needle phobia also contribute to vaccine hesitancy. Although this research indicates that the pandemic's effects on mental health may be significant, they are not equally distributed. As an example, utilizing information from Understanding Society, medical professionals have good resources and information for their education and research and good health literacy^{9,29,30,31,32,33,34,35}. We contrast the mental health of those who have received the

Covid-19 vaccine with that of those who have not in order to assess the effect of immunization on mental health.^{10,11}

In this paper, we focus on the effects of being vaccinated on mental health in the first few months of the rollout, by estimating fixed-effects models that allow us to compare change over time in the mental health of those who received a vaccine compared to those who did not receive a vaccine.¹² We note that there could be indirect effects too, which we do not study here. Studying how mental health evolves as the country recovers from the pandemic can shed light on the relationship between mental health and pandemic-related stressors.^{13,14}

Rationale of Study: Mental health problems increased during the COVID-19 pandemic. Knowledge that one is less at risk after being vaccinated may alleviate distress, but this hypothesis remains unexplored. Here we test whether psychological distress declined in those vaccinated against COVID-19 in the US and whether changes in perceived risk mediated any association. Study Gap:

MATERIALS AND METHOD

Study Design: It is a cross-sectional study which will be carried out by the house officers and the faculty of Dow International Dental College.

Sample Collection Method: This study was conducted by distributing the questionnaire among the patients coming to the Outpatient Department at Dow International Dental College. A total of 280 Questionnaires were filled among the Vaccinated Patients coming to the OPD. Questions were inquired related to demographics, dosage, history, last dose, and benefit of vaccine,

depression, sleep deprivation, feeling low, trouble concentrating and suicidal thoughts. The consent to fill this questionnaire by the patient was taken by 'Implied Consent'. It was in English language but was translated in Urdu by the house officers whenever it was needed to ensure the comprehension of the questions to the patients. The filled questionnaire was collected by the house officers of the dental department. A total of more than 280 questionnaires were distributed among the participants out of which 250 questionnaires were filled correctly giving us a response rate of 89.2% and dropouts of 10.8%.

Inclusion Criteria: People who are at least 18 years old and have had at least one dose of the COVID-19 vaccine. Those who are prepared to give their informed consent in order to take part in the study. People who are fluent in the study language and can converse in it.

Exclusion Criteria: Those who have already serious mental illnesses including schizophrenia, bipolar disorder, or major depressive disorder. Those who have abused alcohol or drugs in the past. Anyone who have had any other vaccination within the last 14 days. Those who are nursing or pregnant right now. Those people whose health would preclude them from taking part in the study.

Bio- statistical Analysis: It was made on Microsoft word and printed copies were distributed among the participants. The patient's personal information was kept confidential. The data was entered in the spread sheet for analysis into the percentage method for evaluation. Mean and Standard deviation for continuous data, frequencies and percentages of categorical data were tabulated. Chi-square was used to find the association between the variables.

RESULTS

Approximately 48% women and 52% male have anxiety, depression or either disorder, respectively. Adults with anxiety and depression were more likely to have low educational attainment, low household income, lack of health insurance and either lack or delay medical care. The filled questionnaire was collected by the house officers of the dental department. A total of more than 280 questionnaires were distributed among the participants out of whom 250 questionnaires were filled correctly giving us a response rate of 89.2% and dropouts of 10.8%. There was a common mental impact that was noticed and brought about people's mental health at stake.

Table-1: Getting Vaccinated

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	197	78.8	78.8	78.8
	no	52	20.8	20.8	99.6
	3	1	.4	.4	100.0
	Total	250	100.0	100.0	

Table-2: Ratio of Sleep and Not Being Able to Sleep

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not at all	125	50.0	50.0	50.0
	several days	95	38.0	38.0	88.0
	more than half the days	19	7.6	7.6	95.6
	nearly everyday	11	4.4	4.4	100.0
	Total	250	100.0	100.0	

Table-3: Difficulty in Concentration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not at all	153	61.2	61.2	61.2
	several days	64	25.6	25.6	86.8
	more than half the days	24	9.6	9.6	96.4
	nearly everyday	9	3.6	3.6	100.0
	Total	250	100.0	100.0	

Moreover, it was also evident that the individuals who faced problems with the concentration after they got their COVID 19 vaccination done. The results, however, concluded that 3.6% individuals experienced it almost every day. The percentage of people who faced it more than half of the days was 9.6%. Other than this almost 25.6% of individuals had trouble concentrating for several days and 61.2% never faced.

Table-4: Suicidal Thoughts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not at all	208	83.2	83.2	83.2
	several days	29	11.6	11.6	94.8
	more than half the days	9	3.6	3.6	98.4
	nearly everyday	4	1.6	1.6	100.0
	Total	250	100.0	100.0	

The result of present research showed that 83.2% of individuals never had any thought of suicide or hurting themselves in any way but 1.6% of people had these thoughts nearly every day. Some people had suicidal thoughts for several days and some had them for more than half the days. Our present study showed their results as 11.6% and 3.6% respectively.

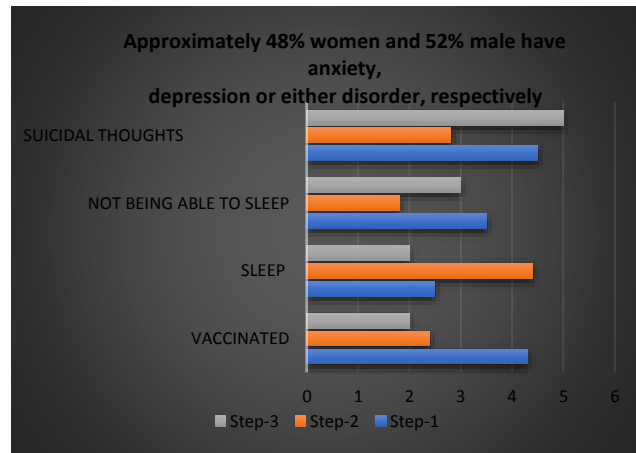


Fig-1: Approximately 48% women and 52% male have anxiety, depression or either Disorder, respectively

DISCUSSION

As this research was conducted in a developing country, there were people of different status that included individuals having private jobs, government jobs; housewife and some were jobless too as well^{13,15}. Out of all these individuals, few were forced to have the COVID 19 vaccination because they were not willing to do on their own and most of them were self-motivated to get the vaccination done. This was their thinking process, and it affected their mental health in various ways^{15,16,19,20}. The COVID 19 pandemic persisted for more than a year. When the vaccination was introduced to the people there were many doubts about it in their minds¹⁻⁴. There were some people who were totally against the vaccination while others were in favor of it. In the present research we have calculated the percentage of people who agreed that getting vaccination was beneficial for them.^{21,22,25,27}

However, some people still thought it was useless. Around 78.8% people found COVID 19 vaccination was valueless giving them no benefits. According to a study that took place in the United States on Covid'19 vaccination hesitancy^{24,26,28}. The results were: Very much interested to get vaccinated were 25%, somewhat interested in getting to get vaccinated were 27%, Not very much interested were 15% and who were definitely not wanting to get vaccinated

were around 7% according to their study^{1,11,16}. According to another study which was done to evaluate the global survey of potential acceptance of the Covid'19 vaccine was done in which there was a Survey of a random sample of the populations of 19 countries that were around 55% of the global population. It was seen that there were around 53.5% of women in the study population, and 63.3% of all participants earned more than \$32 per day. More than a third of the respondents (36.3%) had a university degree, and 62.4% were between 25 and 54 years old^{20,21,23}.

After the vaccination, one thing that people complained about was disturbance in their sleep cycle^{10,12}. Many women and men were not able to sleep at all but there were some people who didn't complain about it at all. In the present research we have been able to calculate the number of people who were not able to sleep and had trouble sleeping. The results showed that 4.4% of people had trouble sleeping nearly every day²⁵. Around 7.6% and 38% of people complained about trouble in sleeping for more than half days and several days respectively. There were around 50% of people who had no issue with their sleep cycle¹⁷. As in a study it was concluded that chronic insomnia and sleep deprivation could be a side effect of the Covid'19 vaccination¹⁹. In another study, we read that vaccination may have left an impact of the sleep of the individual; it could be minor or major side effect of the Pfizer Bio-Tech Covid'19 vaccination.^{27,28}

The result of the present study was compared with the previous study¹⁸. According to one study, there was a huge difference that was witnessed, and it was evaluated¹⁴. There could be a chance that the patients who got vaccinated had memory impairment and confusion too. In another study, it was also seen that a major component of memory impairment which is also known as brain fog, carries a list of things like anxiety, depression, difficulty concentrating, fatigue etc.^{26,29}

Lastly, it was seen through the results that few people were affected to the core, so much so that there were survival thoughts. It was seen that people were thinking more about their loved ones and it was bothering them^{8,9}. So much so, that some were petrified as well. It really did change their way of looking at the importance of getting vaccinated and may benefit from increased social and economic opportunities if the vaccine rollout results in more social and economic activities due to lower disease risk^{21,27}. There are, however, some limitations to this study, one can interview one patient in the longer run to know the exact reason why the person was having such thoughts. We leave that for further studies.

CONCLUSION

Forceful vaccination has a potential to affect mental health of an individual. Further studies are required to extrapolate the findings of the present study.

Conflict of Interest: There was no conflict of interest.

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