

# Comparison of Psychological Disorders between Vaccinated and Non-Vaccinated Covid-19 Patients

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## ABSTRACT

**Objective:** To compare the psychological disorders between vaccinated and unvaccinated patients with covid-19 disease.

**Study Design:** Retrospective/observational

**Place and Duration:** The study was conducted at Psychiatry department of Qazi Hussain Ahmed Medical Complex, Nowshera during the period of six months from December 2020 to May 2021.

**Methods:** Total 120 patients of both genders presented with covid-19 were included in this study. Patients' detailed demographics including age, sex, BMI, vaccination status, and clinical presentation were recorded after taking written informed consent. Patients were aged between 15-60 years. Patients were equally divided into two groups. Group A (Vaccinated) had 60 and group B (Unvaccinated) contains 60 patients with covid-19 disease. Prevalence of depression and anxiety were measured by DASH-21 scale among both groups. Complete data was analyzed by SPSS 24.0 version.

**Results:** There were 40 (66.67%) males and 20 (33.33%) patients were females in group A. In group B 42 (70%) were males while 18 (30%) were females. Mean age of the patients in group A was 40.66 ±10.22 years with mean BMI 27.28±2.34 kg/m<sup>2</sup> and in group B, mean age was 41.16 ±9.42 years with mean BMI 28.14±2.48 kg/m<sup>2</sup>. Frequency of depression and anxiety were high in unvaccinated patients 35 (58.33%) and 19 (31.67%) as compared to vaccinated patients, found in 20 (33.33%) and 10 (16.67%) patients. A significant difference was observed regarding depression and anxiety between vaccinated and unvaccinated patients. (P-value <0.05)

**Conclusion:** Psychological disorders such as depression and anxiety were significantly associated with unvaccinated patients with covid-19 disease.

**Keywords:** COVID-19, Anxiety, Depression, Illness

## INTRODUCTION

Several aspects of people's lives have changed as a result of the COVID-19 outbreak, including their employment and financial situation, health risks, and socializing opportunities. Patients on COVID-19 experienced psychological side effects [1], but mental health problems appeared in the general public as well. In many countries around the world, several studies show elevated levels of psychological distress, including anxiety and suicidal thoughts [2]. Mental health problems spiked early in the pandemic in the United States, but have since leveled off. In April, the level of mental health distress peaked, but it has since dropped to a level similar to that of early March by August [3].

Mental illness was on the rise due to a variety of factors. According to some research, economic worries were the most closely linked to deteriorating mental health, while worries about one's own health and social isolation were also linked, albeit less closely [4]. Unemployment insurance benefits and stimulus checks, both of which have been made available since April 2020, may have played a role in people's improved mental health since then. During the COVID-19 crisis, sleep problems were common, and these were linked to depression in the general public [5].

More and more research is being done on vaccine hesitancy and vaccination readiness [6–8]. A person's age [9], information sources [10], fear of COVID-19 [11], and perception of the severity of COVID-19 [12] all affect their

willingness to get vaccinated. Fear of the COVID-19 has been linked to increased future career anxiety and reduced job satisfaction in previous studies [13]. There was a positive correlation between vaccine hesitancy and negative affect according to Kejrival and Shen's [14] research (in particular, those reporting more worry and anxiety reported more willingness to vaccinate). The vaccine rollout may have improved mental health by reducing anxiety in those who were more concerned about the COVID-19 outbreak. By increasing vaccination rates, it is possible that people will be able to resume previous activities, become more socially active, or return to the workforce.

We conducted present study to compare the psychological disorders such as depression and anxiety between vaccinated and non-vaccinated covid-19 patients.

## MATERIAL AND METHODS

This retrospective/observational was conducted at Psychiatry department of Qazi Hussain Ahmed Medical Complex, Nowshera during the period of six months from December 2020 to May 2021. The study consisted of 120 patients. Patients' ages were ranging between 25 to 75 years. Confirmed cases of RT PCR were included. After taking written informed consent from all the patients, detailed demographics including age, sex, BMI, sign and symptoms, and vaccination status were recorded. Patients

who did not report an RT-PCR or LFAT test and those with no written consent were excluded.

Patients were randomly divided into two groups. Group I (vaccinated) comprised of 60 patients and group II (non-vaccinated) comprised of 60 patients. Prevalence of depression and anxiety were measured among both groups. DASH-21 scale was used to measure the psychological disorders. Descriptive statistical procedures were utilized to estimate the prevalence. Complete data was analyzed by SPSS 24.0 version. Chi-square test was applied to compare the psychological disorders between vaccinated and unvaccinated patients. P-value <0.05 was taken as statistically significant.

**RESULTS**

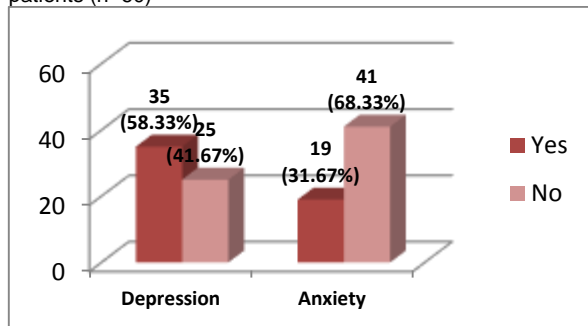
There were 40 (66.67%) males and 20 (33.33%) patients were females in group A. In group B 42 (70%) were males while 18 (30%) were females. Mean age of the patients in group A was 40.66 ±10.22 years with mean BMI 27.28±2.34 kg/m<sup>2</sup> and in group B, mean age was 41.16 ±9.42 years with mean BMI 28.14±2.48 kg/m<sup>2</sup>. According to the symptoms, 35 (58.33%) and 32 (53.33%) patients in group A and B had fever, 26 (43.33%) and 27 (45%) patients in group A and B had cough, dyspnea found in 20 (33.33%) and 22 (36.67%) patients in group A and B, 8 (13.33%) and 10 (16.67%) patients in group A and B had myalgia, 5 (8.33%) and 7 (11.67%) patients in group A and B had vomiting. (Table 1)

Table 1: Baseline details of enrolled cases

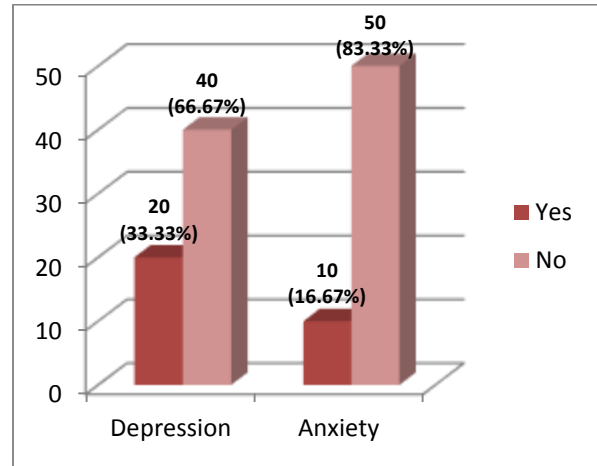
Variables	Group A (Vaccinated)	Group B (Unvaccinated)
Gender		
Males	40 (66.67%)	42 (70%)
Females	20 (33.33%)	18 (30%)
Mean age	40.66 ±10.22	41.16 ±9.42
Mean BMI	27.28±2.34	28.14±2.48
Symptoms		
Fever	35 (58.33%)	32 (53.33%)
Cough	26 (43.33%)	27 (45%)
Dyspnea	20 (33.33%)	22 (36.67%)
Myalgia	8 (13.33%)	10 (16.67%)
Vomiting	5 (8.33%)	7 (11.67%)

Among unvaccinated patients, Depression and anxiety were found in 35 (58.33%) and 19 (31.67%) patients while 25 (41.67%) and 41 (68.33%) patients had no depression and anxiety. (Figure 1)

Figure 1: Frequency of depression and anxiety among Vaccinated patients (n=60)



Among vaccinated patients, Depression and anxiety were found 20 (33.33%) and 10 (16.67%) patients. (Figure 2)



Frequency of depression and anxiety were high in unvaccinated patients 35 (58.33%) and 19 (31.67%) as compared to vaccinated patients, found in 20 (33.33%) and 10 (16.67%) patients. A significant difference was observed regarding depression and anxiety between vaccinated and unvaccinated patients. (P-value <0.05)

Table 2: Comparison of psychological disorders between vaccinated and unvaccinated patients

Psychological Disorders	Group A (Vaccinated)	Group B (Unvaccinated)	P-value
Depression	20 (33.33%)	35 (58.33%)	0.003
Anxiety	10 (16.67%)	19 (31.67%)	0.034

**DISCUSSION**

The COVID-19 pandemic has raised concerns about the increased risk of neurological and mental health conditions for survivors since it began [15]. After receiving a COVID-19 diagnosis, survivors had a higher risk of developing mood and anxiety disorders for the next three months, according to a UK observational study published in November 2020 [16].

Mental distress was found to be most prevalent between mid-April and early May 2020, and then declined. These declines varied by demographic group [13, 17]. As documented in this paper, there has been a significant disparity in mental health distress between those who received the vaccine and those who did not (or at least not yet). We can see how vaccination affects mental health in the short term by comparing the trajectories of the two groups.

In present study, frequency of depression and anxiety were high in unvaccinated patients 35 (58.33%) and 19 (31.67%) as compared to vaccinated patients, found in 20 (33.33%) and 10 (16.67%) patients. A significant difference was observed regarding depression and anxiety between vaccinated and unvaccinated patients (P-value <0.05). A study conducted by Perez-Arce F et al [18] regarding short-term changes in mental distress following the receipt of the first dose of the COVID-19 vaccine, and they reported that first dose of COVID-19 resulted in significant improvements

in mental health, beyond improvements already achieved since mental distress peaked in the spring of 2020.

In Pakistan, some people think that vaccination of covid-19 may have severe side effects, but majority of people had opinion that vaccination may help to reduce the risk of coronavirus disease. This belief of people resulted lesser rate of mental health problems as compared to unvaccinated people. In order to give acquired immunity against SARS-CoV-2, the COVID-19 vaccine is being developed. GISAID released the viral genetic sequence data on the 10th of January 2020, and since then, there has been an increase in the amount of work being done on the production of vaccines [19]. COVID-19 vaccinations have showed efficacy in avoiding symptoms of COVID-19 infections of up to 95 percent in many studies conducted to date. The purpose of this immunization, as with any other vaccination, is to reduce the risk of serious and life-threatening infections, hospitalization, and fatality. As of April 2021, thirteen vaccines have been approved for use in the general public by national regulatory agencies in a variety of countries [20].

A study conducted in the United Arab Emirates demonstrated that higher GAD-7 scores were associated with higher levels of anxiety, and that being female, high levels of worry associated with COVID-19, intention to take the COVID-19 vaccine, and smoking were all associated with higher levels of anxiety [21].

It is anticipated that 70 to 80 percent of the population should be immunized in order to acquire herd immunity and prevent the spread of the virus within the community [21, 22]. Vaccine refusal, on the other hand, is considered to be one of the most serious global public health threats, even before the development of further cases and deaths as a result of COVID-19 was discovered [23].

## CONCLUSION

In this study, we found that the incidence of anxiety and depression among unvaccinated patients of covid-19 was significantly higher than the frequency of anxiety and depression among vaccinated patients.

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