

# Effects of Covid -19 on mental health of positive cases compared with suspected cases

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## ABSTRACT

**Objective:** To assess and compare the effects of Covid 19 pandemics on mental health of diagnosed cases of corona virus with suspected cases and healthy subjects.

**Methodology:** This comparative study was conducted at corona clinic of Pakistan Institute of Medical Sciences, and from April 2020 to Jun 2020. A total of 206 subjects were divided in three groups. Group-I (diagnosed as case of corona virus, n = 95), group-II (suspected cases n = 29) and group-III (healthy subjects, n = 82). They were matched for age, gender and socioeconomic status and were compared for frequency and severity of depression as measured by Hospital Anxiety and Depression Scale (HADS).

**Results:** Some degree of depression was noted in all groups. Frequency of depression was 72.6% in group-I, 58.6% in group-II and 37.8% in group-III (p value < 0.001).

**Conclusion:** Both diagnosed and people who came for screening (suspecting for Covid) had high frequency of some degree of anxiety and depression. Diagnosed patients had more anxiety and depressive features than suspected clients who came for screening. It is worthwhile to do more close mental health observation in them. This can be done by building up mental health interventions for improving their psychological wellbeing during the COVID-19 pandemic.

**Keywords:** Mental Health, COVID-19, Positive cases of corona virus, suspected cases of Corona and Negative for corona virus.

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## Introduction

Covid 19 pandemic is a health emergency worldwide which endangered human life as this left many ailing and deceased. This pandemic overloaded the resources and the population's safety and normal functioning. Epidemic leads to anxiety, fear, denial, stigmatization, and loss in the individuals.

Corona Virus (Covid 19), a novel virus for the world was first emerged in Wuhan, China, in December 2019. This virus developed pneumonia in people.<sup>1</sup> Corona Virus presents with symptoms of flu, sore throat, cough, fever,

chills, nausea, vomiting, and diarrhea. This can be a fatal disease. Serious mental health issues can be developed along with physical manifestations of COVID-19.<sup>2</sup> The rapid spread of virus then turns out to be a worldwide health risk.<sup>3</sup>

In our country the first reported case was on 26th February 2020 and then just in a brief time the cases increased remarkably in numbers. Till the end of April, above 20,000 cases was reported and the death rate was 2%.<sup>4</sup>

Fear related behaviors emerge in people after epidemics and there is often an increased risk of mental health disorders.<sup>5</sup>

Results of previously conducted researches on severe acute respiratory syndrome (SARS) are comparable to this new virus COVID-19 and have found intense psychological burdens among healthcare workers and the general public such as anxiety, depression, panic attacks, or psychotic symptoms.<sup>6,7</sup>

In the early phase of the COVID-19, only reviews from studies published in Asia were included.<sup>8</sup> Later, the researcher conducted in other countries were also published and a sample was taken from the general public to see the psychological impact of covid-19.<sup>9</sup> This included those infected by COVID-19.<sup>10</sup> Results of some past studies revealed that the psychological impact of COVID-19 may be different among healthcare workers, the general public and patients.<sup>11-13</sup>

Being an easily transferable virus, COVID 19 get spread worldwide in a very short time and affected the mental health of people.

During the spread of this virus, an extensive array of mental health issues have been identified at an individual, community, national, and international levels. It was observed that at the individual level, people are more likely to experience fear of getting sick or dying, feeling helpless, and being stereotyped by others.<sup>14</sup>

The harmful impact of the pandemic on public mental health can even lead to psychological crises.<sup>15</sup>

Keeping in mind the effects of Covid 19 on the mental health of our population we conducted this study. We assessed and compared the mental health effects of COVID 19 among diagnosed cases of coronavirus with suspected cases and healthy subjects. Past studies suggest that COVID-19 may affect the mental health of individuals at several layers of society, ranging from the infected patients, and health care workers, to families, children, students, patients with mental illness, and even workers in other sectors.<sup>16</sup>

Our research can be a source for the detection of mental health problems for those at high-risk by formulating the guidelines and strategies about precautions and management. This is of crucial importance in the interest of the community for protecting them from developing mental health issues concerning any future health emergency.

## Methodology

In our comparative study we assess and compare the mental health status of patients who are diagnosed as a positive case of Coronavirus compared with those suspected clients who came for screening and individuals who were not having any sign and symptoms of corona with negative Covid results. The study was carried out on 206 participants. The study was carried out at Corona Clinic of Pakistan Institute of Medical Sciences, Islamabad.

Informed written and verbal consent was obtained from all patients and the study was approved by the Ethics Committee of the Institution. To match the socioeconomic status with the participants, the attendants of the patients were taken as controls. Age and gender were matched with the cases. The study population was divided into three groups: Group-I (diagnosed as a case of coronavirus, n = 95), group-II (suspected cases n = 29) and group-III (healthy subjects, n = 82). Coronavirus cases were diagnosed by the test results done at the approved laboratory by the health ministry.

Anxiety and Depression was assessed by the Hospital Anxiety and Depression Scale<sup>17</sup> (HAD-S) questionnaire. This questionnaire included 14 questions. Each question had 4 choices (0 – 3). The maximum score of depression in this questionnaire was 21. Scores from 0 – 7 were taken as no depression, 8 – 11 as mild depression while 12 – 21 were taken as moderate to severe depression. The study employed a translated and validated Urdu version of this scale. Basic demographic data was taken included age, gender, etc. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17. Data was expressed in the form of frequencies and percentages. Age, gender and severity of depression were categorized separately for all groups. For statistical analysis, the significance of age difference, gender and severity of depression in three groups was assessed by chi-square test. For all tests, significance was defined as  $p < 0.05$

## Results

Table 1 presents basic demographics of our sample. Table 2 showed that our sample scored above the clinical cut-offs on anxiety and depression scale (HAD-S) as: Group-I (diagnosed as case of corona virus = 95) scored 72.6%, group-II (suspected cases = 29) scored 58.6% and group-III (healthy subjects = 82) scored 37.8%, measures respectively. Table 2 depicts that these rates are notably

**Table I: Age and gender distribution of study population (n = 206)**

	Groups			p-value
	Group-I Diagnosed COVID cases (N = 95)	Group-II Suspected for COVID (N = 29)	Group-III Healthy & Negative for COVID (N = 82)	
<b>Age</b>				
25-35	14 (14%)	5 (17%)	17 (20%)	0.431
36-46	48 (50%)	16 (55%)	47 (57%)	
47 and above	33 (34%)	8 (27%)	18 (22%)	
<b>Gender</b>				
Male	54 (56%)	18 (62%)	43 (52%)	0.644
Female	41 (43%)	11 (38%)	39 (47%)	

**Table II: Incidence of depression in three groups**

Degree of Anxiety & Depression	Groups			p-value
	Group-I (N = 95)	Group-II (N = 29)	Group-III (N = 82)	
<b>Negative</b>	26 (27.36%)	12 (41.37%)	51 (62.19%)	< 0.001
<b>Mild</b>	50 (52.6%)	11 (37.9%)	27 (32.9%)	
<b>Moderate – Severe</b>	19 (20%)	06 (20%)	04 (4.87%)	
<b>Total</b>	69 (72.6%)	17 (58.6%)	31 (37.80%)	

P-value showing significant anxiety & depression in group-I as compared to other groups

elevated in group 1 and 2 compared to group 3. Even among individuals suspected for corona virus, without a diagnosis of covid19, the rates remained elevated well above levels.

## Discussion

The results of this study reveal that in the first group, 46% were diagnosed with Corona virus, group 2 were 14% suspected for coronavirus and came for screening while in group 3, 39% were of a control group without any symptoms and with negative Covid report. Results of our study reveals that 56.7% of participants had shown some degree of anxiety and depression, more belonging to mild and some to moderate to severe level. Comparing three groups, the percentage of anxiety and depression was greater in first group, as compared to second and third group. In first group, 72.6% had symptoms of anxiety and depression. In second group, 58.6% individuals had symptoms of anxiety and depression, while in third group, 37.8% were found to have anxiety and depression.

These results are following a previous study that demonstrated that the prevalence of anxiety and depression was significantly higher among patients with COVID-19 compared to healthy controls.<sup>18</sup>

In our research, we have observed that the subjects in the first two groups were anxious and depressed due to the fear of COVID-19 being a novel virus with no available vaccine for its treatment. This formed the sensitivity, psychological responses like panic state about adherence to precautionary measures. Following our study, another study explained that people were more worried and anxious, had thought about the disease, perceived it as more severe and assessed the chances of containing the disease as worse than before the first confirmed Slovenian case of COVID-19.<sup>19</sup>

Results of previous pandemic conditions pointed out about the risk of developing symptoms of PTSD or Depression in COVID-19 patients, who recover.<sup>20</sup>

Outcome of previously conducted studies on epidemic emergencies showed that such situations do increase stress levels and have negative psychiatric effects. This affects the general public, sufferers of COVID-19, their families and friends, persons with pre-existing mental health conditions and healthcare workers.<sup>21</sup>

The fear of developing or having COVID-19 was associated with the labels and negative perceptions of society about this virus. Generally, people were scared that society will discriminate them and they will be in quarantine and withdrawn from functioning normally.

This aggravated anxiety in populations worldwide, leading to psychological issues.

Therefore, this is of prime importance to evaluate and identify the psychological issues in this pandemic situation.

Further work is needed on this subject as previously there was no experimental data existed on the effects of COVID 19 on mental health.

## Conclusion

Both diagnosed and people who came for screening (suspecting for Covid) had high frequency of some degree of anxiety and depression. Diagnosed patients had more anxiety and depressive features than suspected clients who came for screening. It is worthwhile to do more close mental health observations in them. This can be done by building up mental health interventions for improving their psychological wellbeing during the COVID-19 pandemic.

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