# ASSESSMENT OF DEPRESSION, ANXIETY AND STRESS AMONG COVID-19 PATIENTS BY USING DASS 21 SCALES

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## Abstract

**Objectives:** To determine the level of depression, anxiety and stress with respect to age and gender among COVID-19 patients admitted at Rawalpindi Institute of Urology & Transplantation Pakistan by using DASS 21 scale.

**Subjects & Methods:** A cross-sectional descriptive research was done among conscious COVID-19 patients admitted at Rawalpindi Institute of Urology & Transplantation (RIU&T) Pakistan during May 2020 who were included in this research through consecutive sampling. DASS-21 scales were used to determine the level of depression, anxiety and stress among COVID-19 patients. Apart from age and gender of the patients, their responses were taken pertinent to 21 items of DASS scale through face to face interview. The data was analyzed by means of SPPS version 25.0. Gender based differences in depression; anxiety and stress among COVID-19 patients were determined by applying two sample z-tests. Results were considered significant at P ≤ 0.05.

**Results:** Mean age of COVID-19 patients interviewed in our research was 41.6 ± 10.97 years. About 45 (73.8%) were males while 16 (26.2%) were females. Out of total 61 study subjects, 72.1% had normal score of depression. Anxiety and stress were reported to have normal score among 75.4% of the patients. Females in our study were determined to have significantly higher level of depression, anxiety and stress (P<0.00) in comparison with those of males.

**Conclusion:** Females are in need of adequate counseling pertinent to COVID-19 for mitigation of its psychological impact.

**Keywords:** depression, anxiety, stress, CO VID-19, DASS 21 scales.

## Introduction:

Coronavirus disease 2019 has emerged as Public Health Emergency of International Concern (PHEIC)[1]. Apart from grave challenges to the well being of humans, it has brought serious threat to the mental health of individuals[2]. In addition to fear of death ensuing from this contagious

disease, fatalities among close relatives and consequential anxiety along with depression are some of the crucial effects that should be acutely dealt with[3].

Total 43,966 coronavirus infected cases have been reported in Pakistan up till now, out of which 12,489 have been recovered and 939 have succumbed to death. Approximately 30,538 active cases have been reported[4] that reflects an extremely critical scenario with respect to rapid spread of infection. Psychological stress and other mental illnesses are proved to be markedly connected with COVID-19 pandemic across the world[5]. Contagiousness of COVID-19 has played tremendous role in development of fear, anxiety and depression among our general population primarily among elders and those with chronic health disorders[6].

Despite the acquisition of knowledge about coronavirus, its clinical manifestation and diagnostic criteria, its confirmed treatment is still awaited[7,8]. Although world has already confronted with extensive epidemics of acute respiratory illness like SARS in 2003, but this outbreak was aptly managed by quarantine measures[9]. Apart from ensuing social instability[10], COVID-19 is persistently influencing all aspects of human lives[11]. People all over the world are experiencing harsh emotions due to lockdown scenario when all daily life activities are discontinued including schooling of children and business[2]. Even an alarming situation may occur when our people may stop relying on validity of mental health services due to exacerbation of anxiety and stress among them[12].

The present study is therefore intended to determine the level of depression, anxiety and stress among COVID-19 patients admitted at Rawalpindi Institute of Urology and Transplantation (RIU&T) in May 2020 during COVID-19 pandemic. This study is intended to identify the frequency of psychological disorders in order to estimate the psychological wellbeing of the community. This research would facilitate our strategic planners to much extent in formulating appropriate policies to wisely tackle the current state of affairs.

**Subjects & Methods:**

A cross-sectional descriptive study was carried out during May 2020 among conscious COVID-19 patients admitted in Rawalpindi Institute of Urology & Transplantation (RIU&T) Pakistan. The confirmed COVID-19 patients who were well oriented in time, place and person were enrolled in this research through consecutive sampling. Patients on ventilators or on supplemental oxygen were excluded from this study. In order to determine the level of depression, anxiety and stress among COVID-19 patients DASS-21 scales were used. It is a 21-item short version instrument specifically designed to determine three negative emotional states among people which include depression, anxiety and stress [13]. It is proven to be exceptionally reliable with strong internal consistency[14]. It has been translated in numerous languages to make it usable by various ethnic groups[15]. The doctors interviewed the patients to fill this tool. Data pertinent to age and gender was also gathered in addition to collection of data regarding scales of stress, anxiety and depression. Informed consent was taken from all the respondents. The data was analyzed by means of SPPS version 25.0. Two sample z-tests were applied to determine gender based difference in depression, anxiety and stress among COVID-19 patients. P ≤ 0.05 was considered statistically significant.

**Results:**

Mean age of COVID-19 patients interviewed in our study was 41.6 ± 10.97 years. Of the total 61 respondents, 45 (73.8%) were males while 16 (26.2%) were females. Gender of respondents along with their age groups is depicted below in Figure 1.

*Fig 1: Gender based distribution of COVID-19 patients with respect to age (n = 61)*
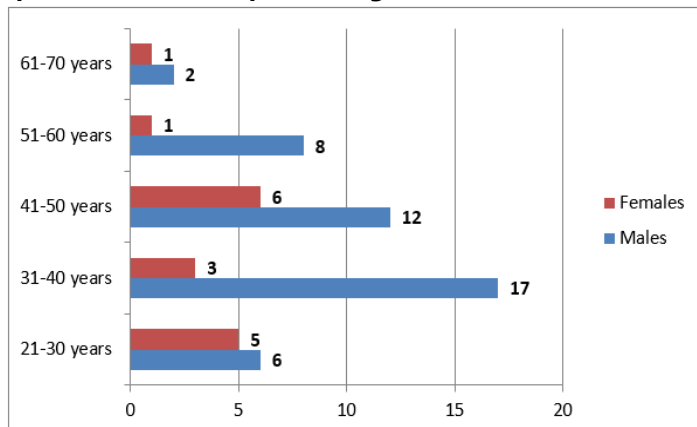
Most 44 (72.1%) of study subjects were determined to have normal score of depression predominantly those who were 31-40 years old while only 02 (3.3%) respondents in age group above 40 years had severe depression amid COVID-19 pandemic as shown below in Table 1.

*Table 1: Level of depression among different age groups of COVID-19 patients (n = 61)*

| Age groups | Depression | | | | | Total |
|---|---|---|---|---|---|---|
| | Normal (0-9) | Mild depression (10-13) | Moderate depression (14-20) | Severe depression (21-27) | Very severe depression (28+) | |
| 21-30 years | 07 | 02 | 01 | 0 | 01 | 11 |
| 31-40 years | 16 | 04 | 0 | 0 | 0 | 20 |
| 41-50 years | 13 | 03 | 0 | 01 | 01 | 18 |
| 51-60 years | 07 | 01 | 01 | 0 | 0 | 09 |
| 61-70 years | 01 | 0 | 01 | 01 | 0 | 03 |
| Total | 44 | 10 | 03 | 02 | 02 | 61 |

Similarly majority 46 (75.4%) of our respondents had normal score of anxiety with high propensity belonging to 41-50 years age group while only 01 COVID-19 patient found to be severely depressed in response to pandemic as depicted in Table 2.

*Table 2: Age-wise frequency of anxiety among COVID-19 patients (n = 61)*

| Age groups | Anxiety | | | | | Total |
|---|---|---|---|---|---|---|
| | Normal (0-7) | Mild anxiety (8-9) | Moderate anxiety (10-14) | Severe anxiety (15-19) | Very severe anxiety (20+) | |
| 21-30 years | 07 | 01 | 02 | 01 | 0 | 11 |
| 31-40 years | 18 | 02 | 0 | 0 | 0 | 20 |
| 41-50 years | 14 | 0 | 03 | 0 | 01 | 18 |
| 51-60 years | 06 | 01 | 02 | 0 | 0 | 09 |
| 61-70 years | 01 | 01 | 01 | 0 | 0 | 03 |
| Total | 46 | 05 | 08 | 01 | 01 | 61 |

Most 46 (75.4%) of our study subjects revealed normal score of stress especially those who were 31-40 years old and able to cope up with the prevailing scenario attributed to COVID-19 pandemic. However only 02 respondents reflected extremely severe stress as illustrated in Figure 3.

*Fig 3: Stress among different age groups of COVID-19 patients (n = 61)*
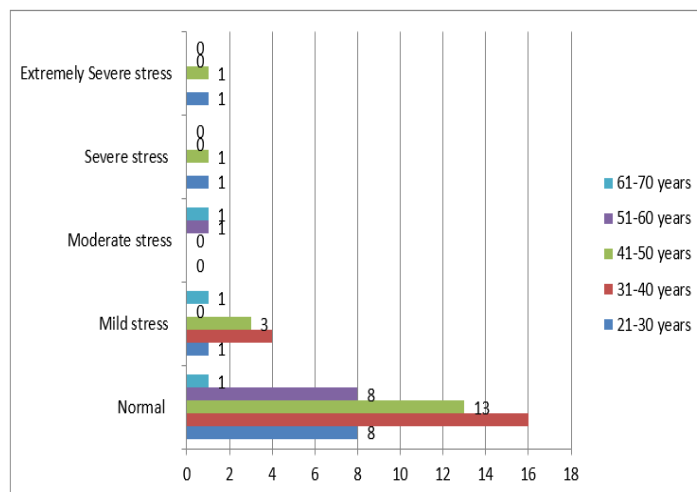


Female patients in our research were found to be comparatively more depressed, anxious and stressed on suffering from COVID-19 with statistical confirmation (P 0.000) as shown below in Table 3.

*Table 3: Gender based comparison of depression, anxiety and stress by using DASS 21 Scale*

| Subscales of DASS 21 scale | Mean Scores (mean ± SD) | | | P-value |
|---|---|---|---|---|
| | Overall | Males | Females | |
| Depression | 3.65 ± 7.52 | 2.8 ± 0.71 | 6.12 ± 8.75 | 0.000 |
| Anxiety | 4 ± 4.9 | 2.9 ± 4.32 | 7.1 ± 5.26 | 0.000 |
| Stress | 7.65 ± 9.1 | 5.84 ± 8.1 | 12.8 ± 10.12 | 0.000 |
| Sample mean score on DASS 21 item scale = 5.1 ± 7.2 | | | | |

**Discussion:**

Due to contagiousness of COVID-19 and consequent lockdown situation, mental health of the people is deemed to be drastically affected. No doubt, researchers across the globe are rigorously searching for the genetics of the coronavirus, its epidemiological features and clinical manifestations but the impact of COVID-19 pandemic on the psychology of people is a neglected facet and should be brought to the attention of stakeholders for timely intervention[17].

In current study, on assessing the degree of depression, anxiety and stress level among confirmed COVID-19 patients admitted at RIU & T it was revealed that sample mean score on DASS 21 item scale was 5.1 ± 7.2. There was highest score on stress scale (7.65 ± 9.1), followed by anxiety (4 ± 4.9) and depression (3.65 ± 7.52) among COVID-19 admitted patients. Moreover, 72.1% respondents were found to have normal

score on depression subscale with only 6.5% people revealing severe to very severe depression. Approximately 75.4% respondents seemed to have normal score of anxiety and stress. Severe to very severe anxiety and stress were reflected among 3.3% and 6.5% of the study subjects respectively. On the other hand, use of DASS 21 scale among Chinese population amid COVID-19 pandemic showed sample mean score of 20.16 ± 20.42. About 69.7% of Chinese populates had normal score of depression with only 4.3% illustrating severe to very severe depression. Approximately 63.6% Chinese inhabitants had normal score of anxiety with 8.2% people suffering from severe to very severe anxiety. Likewise stress score among Chinese citizens was 67.9% with only 2.6% depicting severe stress[18]. Although there was higher frequency of depression, anxiety and stress among Pakistanis in comparison with those of Chinese but scores of severe and very severe depression along with stress were more among our population were comparatively high. Greater score of depression and stress among Pakistanis might be the conduction of research on COVID-19 patients while Chinese general population without coronavirus infection was enrolled in research. This might probably be due to the short sample size. This attribute should be studied in depth to reach the right conclusion.

The female patients in our research were determined to have higher score of depression, stress and anxiety in comparison with those of males (P< 0.00). Likewise females of Israel were found to have higher rates of fear associated with COVID-19[19]. Apart from COVID-19, higher level of stress among female medical students was also attributed to Middle East Respiratory Syndrome Coronavirus (MERS-CoV) epidemic during 2020[20]. This aspect reflects the need of counseling especially among females either belonging to general public or from health profession pertinent to COVID-19 in order to reduce psychological impact resulting from contagious infectious disease among them.

The severe psychological impact among our COVID-19 patients was reported to be 3.3%. Contrary to this, the severe mental outcome was determined among 53.8% Chinese populates out of 1210 respondents amid COVID-19 pandemic[2].

The underlying reason for this much diversity in results might be the extensive study population enrollment in the research from China. The other reason could be the confirmed COVID-19 patients included in our research who were admitted and getting treatment in Rawalpindi Institute of Urology & Transplantation. Their degree of satisfaction with treatment and other facilities should be assessed in order to rule out the cause for less psychological impact of Coronavirus infection among them.

## Conclusion & Recommendations:

Ample counseling and psychotherapy of female COVID-19 patients of Pakistan is promptly required to normalize the situation. Involvement of psychologists and psychiatrists for this purpose at COVID-19 treating healthcare facilities is the need of time.

**Conflict of Interest:** None

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