

## Correlation of Depression, Anxiety and Stress with Quality of Life in COVID-19 Pandemic

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### Abstract

Due to Covid-19 pandemic the psychological health of individuals is disturbed globally. There is a dire need of looking into details about the effects of mental health issues on quality of life (QOL).

**Objectives:** To determine correlation between depression, anxiety, stress, and quality of life among young adults in Covid-19 and evaluate the impact of demographics on quality of life.

**Methods:** It was a cross-sectional study carried out at a tertiary care hospital. Patients presenting in the psychiatry outdoor of age 18 to 60 years, of both genders and scoring  $\geq 21$  on Depression, Anxiety, and Stress Scale (DASS) were enrolled in the study and depression, anxiety and stress severity was assessed and Quality of Life Scale (QOLS) was applied on all to assess their quality of life. All findings were then subjected to statistical analysis.

**Results:** The mean age of the patients was  $21.78 \pm 3.204$ , mean depression score on DASS was  $8.58 \pm 4.510$ , mean anxiety score on DASS was  $11.68 \pm 4.160$  and the mean stress score on DASS was  $14.84 \pm 3.192$ . There were 63.5% males and 36.5% females. Depression, anxiety and stress had a negative correlation with quality of life. Depression and stress were significantly correlated negatively with quality of life ( $p=0.000$ ). No demographical factor was significantly associated with poor quality of life.

**Conclusion:** Depression, anxiety and stress were negatively correlated with poorer QOL and depression and stress had significant association with poor QOL.

**Key words:** Anxiety, Depression, Covid-19, Quality of life

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### Introduction

During the pandemic of COVID-19, more than 100,000 deaths have been reported in United States till date<sup>1,2</sup>. Besides prevailing fears of having the virus, the level of stress has been raised because of other factors as well, such as confinement and social isolation in order to reduce the spread of virus.<sup>3,4</sup> The adaptation to this whole new lifestyle made people

uncertain and confused and it made it difficult for them to maintain their psychological well-being as many individuals had been grieving over losing their loved ones during this pandemic, losing their job and other opportunities professionally and had difficulty as well as delay in achieving the major goals in life.<sup>5,6,7</sup>

Evidence from previous literature suggests that worldwide among different populations, the prevalence of depression and anxiety rapidly rose in the initial time of the pandemic,<sup>8</sup> with an estimated prevalence rate of 20% and 35% respectively.<sup>9</sup> Furthermore, fearfulness, worry and stress as well as stigma and fear towards people who are being suspected to have Covid-19 infection have been reported to have negative effect on an individual's life.<sup>10,11</sup> Additionally, because of limited social access and restricted activities, that usually help in maintaining psychological health, psychiatric distress may get exacerbated, thus affecting

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functioning and quality of life of people<sup>12,13</sup>. In a study by Salman M, (2020) on university students of Lahore, it was found that during Covid-19 pandemic moderate to severe anxiety and depression was found in 34% and 45% participants respectively. Similar study revealed that the major cause of psychological distress among the participants was the negative affect of ongoing pandemic on their daily life ( $p < 0.001$ ).<sup>14</sup> In another study, Amin F (2020) revealed that 43% of the Pakistani frontline physicians suffered from anxiety/ depression during this pandemic.<sup>15</sup> Ashraf F (2021) revealed that during Covid-19 pandemic in Pakistan, psychological distress was less common in people who had high level of satisfaction with life and had a meaning in life ( $z = -3.507$ ,  $p < 0.0001$  and  $z = -2.632$ ,  $p < 0.001$ , respectively)<sup>16</sup>. In a study, it was revealed that patients who were diagnosed to have mental health problems during Covid-19 were more prone to have impaired quality of life i.e. in terms of physical and mental functioning and this association was found to be significant ( $P < 0.001$ ).<sup>17</sup> In another study by Zhang Y, (2020) assessed the effect of Covid-19 on mental health and quality of life of patients and it was found that 52.1% participants had mental health related issue and 7.6% had negative impact on the quality of life of the patients and the association between these two was significant ( $p < 0.05$ ).<sup>18</sup>

Majority of the international and local researches conducted so far focused on adverse outcome related to this pandemic and shifted their attention towards evaluating more positive and preventive outcomes of this pandemic, such as quality of life. However, there is still a need of conducting further local research for confirmation of the psychological factors as well as demographical factors that can affect quality of life of patients during this pandemic in order to confirm the reliability of the aforementioned results. In light of this, the current study aimed to determine the relation between depression, anxiety, stress and quality of life of individuals in Pakistan during this COVID-19 pandemic and determine the effect of demographical profile on quality of life of individuals. This study will provide guidance about emerging psychological issues and their effect on quality of life of individuals, which if addressed earlier and properly can help in reducing morbidity associated with the condition and can improve the overall quality of life of people.

### **The aim of the study**

The study aimed to examine the correlation between depression, anxiety, stress, and quality of life among young adults during the COVID-19 pandemic and the association of demographical factors with quality of life.

### **Methods**

It was a cross-sectional study. After taking approval from the ethical review committee, a total of 274 patients of both genders, aged 18 to 60 years who presented to the outdoor of Psychiatry Department in a tertiary care hospital were enrolled if they fulfilled the inclusion criteria i.e. on Depression, Anxiety and Stress scale their overall score was 21 and the symptoms specifically started during the Covid-19 pandemic in Pakistan i.e. from March, 2020 onwards. They were ensured that their data will be kept confidential and that data is only used for current research. Participants had the right without penalty to leave this study. Written informed consent was taken from all the patients. Patients with other mental health related issues such as schizophrenia, obsessive-compulsive disorder, drug abuse or organicity were excluded from the study.

Demographical detail, clinical history and details according to DASS scale were enquired from all patients and findings were noted down on a predesigned performa. All patients were then given Quality of Life Scale (QOLS) for assessing quality of life.<sup>2</sup> In QOLS, the seven responses were (7=delighted), (6=pleased), (5=mostly satisfied), (4=mixed), (3=mostly dissatisfied), (2=unhappy), (1=terrible). The QOLS scores ranged from 16 to 112. The QOLS scores were summed and higher score indicated a higher quality of life with a cut off of 80 representing good quality of life.<sup>2</sup>

DASS scale has 7 domains each divided into subscales to assess depression, anxiety and stress<sup>2</sup>. Using DASS, the severity of depression was categorized as no depression (0-9), mild (score 10-12), moderate (13-20), severe (21-27) and extremely severe (>28 score). The severity of anxiety was categorized as no anxiety (0-6), mild (score 7-9), moderate (10-14), severe (15-19) and extremely severe (>20 score). The severity of stress was categorized as no stress (0-10), mild stress (score 11-18), moderate stress (19-26), severe stress (27-34) and extremely severe stress (>34 score). All findings were noted down on a predesigned performa and was subjected to statistical analysis.<sup>2</sup>

Data was analyzed using SPSS version 24.00. Quantitative variables such age, DASS score for depression,

**Table 1:** Showing Mean of Quantitative Variables

Quantitative Variables	N=274	
	Mean ±Standard Deviation	
Ag	45.72±19.2	
<b>DASS Score:</b>		
Depression	8.58±4.510	
Anxiety	11.68±4.160	
Stress	14.84±3.192	
Quality of life Scale Score	75.08±21.049	

**Table 2:** Showing Frequency Distribution of Qualitative Variables

Qualitative Variables	N=274	
	Frequency (Percentage)	
<b>Age groups:</b>		
Young age (18 to 30 years)	53 (19.3%)	
Early middle age (31 to 45 years)	148 (54%)	
Late middle age (46 to 60 years)	73 (26.6%)	
<b>Gender:</b>		
Male	174 (63.5%)	
Female	100 (36.5%)	
<b>Family system:</b>		
Nuclear	163 (59.5%)	
Joint	111 (40.5%)	
<b>Place of living</b>		
Urban	168 (61.3%)	
Rural	106 (38.7%)	
<b>Depression:</b>		
Mild depression	50 (18.3%)	
Moderate depression	116 (42.3%)	
Severe depression	53 (19.3%)	
Extremely severe depression	55 (20.1%)	
<b>Anxiety:</b>		
Mild anxiety	23 (8.4%)	
Moderate anxiety	92 (33.6%)	
Severe anxiety	70 (25.5%)	
Extremely severe anxiety	89 (32.5%)	
<b>Stress:</b>		
Mild stress	22 (8%)	
Moderate stress	11 (4%)	
Severe stress	47 (17.2%)	
Extremely severe stress	194 (70.8%)	
<b>Quality of Life:</b>		
Poor	144 (52.6%)	
Good	130 (47.4%)	

anxiety and stress and QOLS score was presented as mean and standard deviation. Qualitative data such as gender, family system, place of living, profession, severity of depression, severity anxiety, severity of

stress and quality of life were presented as frequency and percentage. Data was stratified for age, gender, family system and place of living. Post-stratification chi square test was applied and a p value of 0.05 was considered significant. The relationship between depression, anxiety, stress, and quality of life among young adults during the COVID-19 pandemic was determined by Pearson correlation test and a p value of 0.05 was considered significant.

## Results

The mean age of the patients was 21.78±3.204, mean depression score on DASS was 8.58±4.510, mean anxiety score on DASS was 11.68±4.160 and the mean stress score on DASS was 14.84±3.192 (Table 1). The mean QOLS score was 75.08±21.049 (Table 1). Frequency distribution of qualitative variables is presented in table 2. Association between quality of life and

**Table 3:** Showing Association Of Demographical Factors And Depression, Anxiety And Stress With Quality Of Life

Variables	Quality of Life		Test Value	Significance (p value)
	Poor	Good		
Age Groups	Young Age	30 (10.9%) 23 (8.4%)	4.856	0088
	Middle Age	69 (25.2%) 79 (28.8%)		
	Old Age	45 (16.4%) 28 (10.2%)		
Gender	Male	95 (34.7%) 79 (28.8%)	0.798	0.372
	Female	49 (17.9%) 51 (18.6%)		
Family Type	Nuclear	86 (31.4%) 77 (28.1%)	0.007	0.934
	Joint	58 (21.2%) 53 (19.3%)		
Place of living	Urban	90 (32.8%) 78 (28.5%)	0.18	0.671
	Rural	54 (19.7%) 52 (19%)		
Depression	Mild	50 (18.2%) 0 (0%)	0.659	0.000*
	Moderate	74 (27%) 35 (12.8%)		
	Severe	12 (4.4%) 21 (7.7%)		
Anxiety	Extremely severe	8 (2.9%) 74 (27%)	0.095	0.117
	Mild	0 (0%) 23 (8.4%)		
	Moderate	53 (19.3%) 39 (14.2%)		
Stress	Severe	51 (18.6%) 19 (6.9%)	0.292	0.000*
	Extremely severe	40 (14.6%) 49 (17.9%)		
	Mild	5 (1.8%) 17 (6.2%)		
	Moderate	3 (1.1%) 8 (2.9%)		
	Severe	14 (5.1%) 33 (12%)		
	Extremely severe	122 (44.5%) 72 (26.3%)		

\*p value ≤0.05 was considered significant

demographical factors, depression, anxiety and stress are presented in **table 3**.

## Discussion

The current study revealed that depression, anxiety and stress were negatively correlated with quality of life i.e. presence of these mental health issues were associated with a poor quality of life. However, only correlation of depression and stress with quality of life was found to be statistically significant. Demographical factors such as age, gender, family type and place of residence were not found to be significantly associated with poorer quality of life.

Globally, concerns have been expressed deeply by the researchers about a high prevalence of issues related to mental health in both general and vulnerable population.<sup>14,15</sup> It is necessary to determine these problems in order to plan things accordingly.<sup>16,17</sup> The current research was in accordance with the call of the researchers to provide an overview of prevailing mental health issues in COVID-19 pandemic in Pakistan and to see the impact on quality of life of people. It is difficult to make comparison of findings of this research with the previous ones carried out during non-pandemic era owing to the fact that the difficulties faced by individuals during COVID-19 are inconsistent in comparison to the non-pandemic times. The study revealed that depression and stress had significant correlation with poorer quality of life. Thus, higher scores of depression and stress were associated with low scores on quality of life scale thus denoting that these mental health issues lead to poor quality of life in participants during COVID-19 pandemic. In a study by Zhang et al. in 2020, it was found that mental issues related to Covid-19 had only mild impact on the quality of life of individuals and only 7.6% had poorer quality of life as assessed by Impact of event scale (IES), however, this association was found to be significant ( $p < 0.005$ ).<sup>18</sup> Our study revealed a higher percentage of poorer quality of life in individuals who had mental health issues i.e. 52.6%. In another study Algahtani et al. showed that patients with depression (OR=5.70), anxiety (OR=5.47) and stress (OR=6.57) had scored on the lower side of the QOL scale and thus were associated with poorer quality of life. An important component of overall QOL is psychological dimension. Study by Algahtani et al. validated the relationship between quality of life and psychological health of patients<sup>2</sup>. Similar findings were reported by another study con-

ducted in Saudia Arabia, which revealed that individuals who were highly distressed reported to have poor health related quality of life.<sup>23</sup> These findings were in line with the findings of current study which too revealed that poor quality of life was associated with depression and stress, however, anxiety was not significantly linked up.

The situation of COVID-19 has not changed much and still uncertainty exists about its effects and outcomes.<sup>18,19</sup> Looking at the results of current research, mental health issues specially related to depression and stress must be addressed properly, as these mental health issues can have serious consequences and thus necessitates that measures should be taken adequately and promptly to reduce mental health issues and improve quality of life of individuals during this pandemic.

The study had certain limitations. Firstly, it was carried out at a single center and the sample size was small, so the results cannot be generalized. Secondly, the effect of providing treatment to the patients presenting with depression, anxiety and stress was not assessed in terms of improvement in quality of life. Thirdly, besides pandemic and demographical details, other factors leading to depression, anxiety, stress and poorer quality of life were not assessed.

## Conclusion

COVID-19 pandemic is associated with significant mental health issues such as depression and stress that lead to poor quality of life. Adequate attention should be given to these mental health issues to ensure proper functioning and quality of life of individuals by screening individuals earlier and provision of prompt psychological services to those in need.

**Conflict of Interest:** None

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#### Authors Contribution

**A.R:** Conceptualization of Project

**U.M:** Statistical Analysis

**I.T:** Writing of Manuscript

**A.Z:** Data Collection

**M.I:** Literature Search

**N.M:** Drafting, Revision Authors