

Psychological Impact of COVID-19 Pandemic on Mental Health of General Population of Islamabad, Pakistan

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ABSTRACT

Background: Most of the ongoing research on COVID-19 is related to development of an effective vaccine and treatment for this illness, while psychological impact on mental health remains underexplored. The objective of this study was to determine the psychological impact of COVID-19 pandemic on the mental health of the general population of Islamabad.

Material and Methods: This cross-sectional study was conducted among the general population of Islamabad, during a period of two months from 15th May to 15th July 2020. A total of 278 participants were given a structured questionnaire based on Hospital Anxiety and Depression Scale (HADS) scoring system to calculate depression and anxiety. The possible scores for depression and anxiety ranged 0-21. A cut off value of 8 and above was used to identify anxiety and depression with higher scores indicating increased severity.

Results: The mean age of the participants was 33.42 ± 9.67 years and 148 (53.2%) were males. Among these, 238 (85.6%) were residents of urban area, and 167 (60.1%) were married. Most of the participants were graduate 102 (36.7%). Thirty-six (12.9%) participants had a known patient of COVID-19 in their family or friends. Most of the participants 196 (70.5%) had no comorbidity. The mean anxiety score was noted to be 6.47 ± 5.51 and mean depression score was 6.65 ± 4.17 . Presence of any comorbidity showed a highly significant association with anxiety and depression score ($P < .01$).

Conclusions: There was no significant psychological impact of COVID-19 on mental health of the population of Islamabad. However, people with comorbidities showed a significantly raised anxiety and depression status on the HADS score.

Key words: Anxiety, COVID-19, Depression, General population, Mental health

Authors' Contribution:

¹Conception; Literature research; manuscript design and drafting; ^{2,3} Critical analysis and manuscript review; Data analysis; Manuscript Editing.

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Introduction

COVID-19 is a global public health challenge now a days. It has emerged as a pandemic with growing number of cases worldwide. Due to rapid spread, it has become a critical challenge for health systems

world over, which are failing in prevention, identification and proper management of this infection.¹

Various countries have minimized the spread of COVID-19 infection through lock down and social distancing policies. However, in many developing countries like Pakistan people are not taking these measures seriously.² Since the mode of spread is mainly droplet infection through person-to-person contact, so the compliance with social distancing interventions is vital to the control of spread. Many studies have reported a significant reduction in COVID-19 spread by strictly following social distancing measures.^{3,4}

This infectious disease has many physical as well as mental health implications.⁵ People around the world have many fears and worries associated with it. People start fearing from falling sick or dying and helplessness.⁶ These feelings worsen due to closure of business and schools compounding the situation. Thus, it is not only due to lack of effective treatment or unavailability of vaccine but also due to adverse socioeconomic consequences linked with it. People are affected by unemployment and shortage of necessary commodities as a result of lockdowns or quarantine. These kinds of psychological impacts have also been observed in non-infected community during previous pandemics like SARS outbreak.⁹ All these factors may have adverse impact on mental health, requiring special attention of health practitioners and researchers around the globe.^{7,8}

The studies conducted during previous pandemics showed that some factors are significantly associated with stress, anxiety. The factors include older age, female gender, people having higher education level, history of contact with positive cases and individuals having symptoms of disease. The information on impact of COVID-19 on mental health of general population is lacking in our country. This information is specially required during a pandemic of such unparalleled magnitude.^{9,10}

The research work on examining the psychological impact of COVID-19 on the general population of Pakistan is very limited. Therefore, this study was

planned to investigate the psychological impact and mental health in the general population during the COVID-19 outbreak. This may assist government agencies and healthcare professionals in safeguarding the psychological wellbeing of our community in the face of COVID-19 outbreak.

Material and Methods

This cross-sectional study was conducted in Islamabad, Pakistan over a period of two months from 15th May to 15th July, 2020. Throughout this period a smart or full lock down was enforced by Government of Pakistan in the country and the number of new and confirmed cases were at a peak.

A total of 278 participants were selected for this study by non-probability consecutive sampling technique from the general population of Islamabad. Both males and females, between 18 to 65 years of age, were enrolled for the study. Sample size was calculated with the help of WHO sample size calculator using confidence level of 95%, anticipated population proportion (rate of depression among general population) of 23.6% and absolute precision of 5%.¹¹ This study was approved by the Ethics Review Board of Shaheed Zulfiqar Ali Bhutto Medical University dated June 4, 2020.

A questionnaire with a statement regarding informed consent, was distributed amongst the participants for documenting demographic information (i.e., age, gender and marital status) in addition to questions related to anxiety and depression, which were part of HADS scoring. HADS consists of 14 questions, each of which is scored 0–3. Anxiety and depression are evaluated with seven questions each. The lowest possible scores for depression and anxiety are 0, and the highest possible scores are 21. A cut off value of 8 and above was used with higher scores indicating increased severity of anxiety or depression.

All the collected data was entered in Statistical Package for Social Sciences (SPSS version 21.0) for analysis. Quantitative data was presented in the form of mean and SD and qualitative data was presented with the help of frequency and percentages. Independent sample t-test was applied to compare HADS score on the basis of age and gender. One-way ANOVA test was applied to compare mean values of HADS score on the basis of education levels, profession, and comorbid diseases. Chi-square test was applied to compare qualitative variables like gender, marital status, education level, profession, income loss and comorbid disease. *P*-value $\leq .05$ was taken as statistically significant.

Results

A total of 278 participants were enrolled in this study. The mean age of the study participants was 33.42 ± 9.67 years and the majority were males 148 (53.2%). Most of the participants 238 (85.6%) were residents of urban area, and 167 (60.1%) were married. Maximum number of the participants were graduates ($n=102$; 36.7%) followed by with Higher Secondary School Certification (Matriculation) only ($n=93$; 33.5%). Majority of the participants were running their own business ($n=99$; 35.6%) followed by government employees ($n=51$; 18.3%). At the time of inclusion in the study, 84 (30.2%) respondents were jobless, mostly due to lockdown (Table I).

The results of our study showed that 81 (29.1%) participants had anxiety symptoms and 119 (42.8%) respondents appeared to have positive symptoms of depression on the basis of HADS scoring system. The mean anxiety score was 6.47 ± 5.51 and the mean depression score was 6.65 ± 4.17 as shown in table II.

Table I: Distribution of demographic characteristics		
Characteristics	Frequency	Percentage
Age of the participant (years)		
Mean \pm SD	33.42 \pm 9.67	
Gender of the participant		
Male	148	53.2
Female	130	46.8
Place of residence		
Urban	238	85.6
Rural	40	14.4
Marital Status		
Married	167	60.1
Single	111	39.9
Education Level		
Illiterate	18	6.5
Matric	93	33.5
Graduation	102	36.7
Post-graduation	65	23.4
Profession		
Business	99	35.6
Private Job	44	15.8
Govt. Job	51	18.3
Jobless	84	30.2

The comparison of anxiety and depression score on the basis of gender, marital status, education level, profession and income loss during pandemic showed that no variable had any significant relationship with anxiety or depression score ($P > .05$). However, presence of comorbidities like diabetes mellitus, hypertension or both had a highly significant association with anxiety and depression score ($P < .01$) (Table III).

Discussion

Epidemics and pandemics have extreme influences on psychological wellbeing of a given population and the behaviors of the community are influenced by the fear and anxiety of being affected.¹² During an infectious pandemic like the COVID-19, various preventive measures are adopted to reduce the spread of disease. These measures include self-isolation, social distancing and lockdowns, although

Table II: Descriptive statistics of different variables		
Characteristics	Frequency	Percentage
Income lost due to Pandemic		
Yes	131	47.1
No	147	52.9
Known patient of COVID-19 in family and friends		
Yes	36	12.9
No	242	87.1
History of contact with COVID-19 patient in the last week		
Yes	48	17.3
No	230	82.7
Comorbidities		
None	196	70.5
Diabetes Mellitus	39	14
HTN	24	8.6
DM and HTN	19	6.8
Anxiety Status on the basis of HADS score		
No Anxiety Symptoms (< 8)	197	70.9
Anxiety Symptoms (≥ 8)	81	29.1
Depression Status on the basis of HADS score		
No Depression Symptoms (< 8)	159	57.2
Depression Symptoms (≥ 8)	119	42.8

Table III: Association of Anxiety and Depression Score with different variables						
Characteristics	Anxiety Score		P-value*	Depression Score		P-value*
	Mean	SD		Mean	SD	
Gender of the participant						
Male	6.40	5.368	.806	6.71	4.208	.804
Female	6.56	5.684		6.58	4.150	
Marital Status						
Married	6.63	5.65	.554	6.71	4.209	.786
Single	6.23	5.305		6.57	4.138	
Education level						
Illiterate	5.06	4.721	.239	6.94	4.556	.989
Matric	5.95	5.378		6.58	4.079	
Graduation	7.27	5.880		6.68	4.191	
Post-graduation	6.37	5.222		6.63	4.267	
Profession						
Business	7.01	5.618	.310	6.32	4.522	.420
Private Job	5.30	5.083		6.14	3.968	
Govt. Job	5.98	5.210		6.82	3.871	
Jobless	6.76	5.741		7.20	4.026	
Income lost due to Pandemic						
Yes	6.92	5.559	.200	6.73	4.188	.780
No	6.07	5.451		6.59	4.174	
Comorbidities						
None	4.87	4.200	.001	5.84	3.889	.001
Diabetes Mellitus	10.28	5.987		9.05	4.365	
Hypertension	7.29	6.203		7.04	4.048	
DM and HTN	14.16	5.336		9.63	3.715	

at the same time number of patients with the disease and death rates increases significantly. Mental health of the society gets adversely affected by all these factors. The psychological effects of the pandemic may be expected in terms of high depression and anxiety levels.^{13,14}

In our study, although 47.1% participants reported loss of income due to pandemic, but there was no statistically significant association with anxiety or depression. This is quite contrary to the findings of Holmes et al. in their comparative study between Israel and US respondents. They found a significant association between losing income due to COVID-19 and anxiety and depression symptoms.¹⁵ There may be a chance that the difference in findings is due to difference in sample size as we had a limited sample size of 278 participant and Holmes et al. compared two independent studies with a collective sample of around 6500 participants. We cannot ascertain that the use of different scales (HADS in our study and GAD-7 in other) for measuring anxiety and depression could have been responsible for different findings because both scales are termed equally reliable for the purpose. However, we believe that the magnitude of the disaster and sensitivity to its fatalness might have been one of the causes of difference in results.

According to Cao and colleagues, the chance of anxiety and depression increased three times (OR = 3.00) if the participant had a positive case of infection in family or friends.¹⁶ In our study, we had a limited number of people (12.9%) having a patient of COVID-19 in relatives and friends and this was not significantly associated with the symptoms of anxiety and depression. We think that this may be due to the limited spread of the disease in Islamabad at the time of data collection (May to July, 2020).

An important finding of our study was that the presence of comorbidities like diabetes mellitus and hypertension is the most significant risk factor of developing anxiety and depression. These

observations are in-line with results of Ozdin and coworkers.¹¹ They reported similar findings in their study using the HADS. In addition, they found that being females and residents of urban areas was also significantly associated with symptoms of anxiety and depression. In our study however, the mean scores of males and female participants of urban and rural areas was within the normal range of HADS.

Psychological aspect of pandemic has equal importance in terms of proper management as the physical health.¹⁷ To minimize the effect of COVID-19 pandemic on mental health of the general population, attention should be given to the vulnerable groups like unemployed individuals and people with chronic comorbidities, like diabetes mellitus and hypertension.

This study was conducted on the population of a single city; therefore, the results cannot be generalized. This became a major limitation of our study. More studies on a larger scale should be conducted to ascertain the exact impact of COVID-19 pandemic on mental health of the general population of Pakistan.

Conclusion

There was no significant psychological impact of COVID-19 on mental health of the population of Islamabad. However, people with comorbidities showed a significantly raised anxiety and depression status on the HADS score.

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