

Factors Associated with Psychiatric Morbidity among Patients who tested Positive and Isolated for COVID-19

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ABSTRACT

Objective: To look for the psychiatric morbidity and associated socio-demographic factors among patients who tested positive and isolated for COVID-19.

Study Design: Cross-sectional study.

Place and Duration of Study: Combined Military Hospital, Malir Pakistan, from Mar to May 2020.

Methodology: All patients who tested positive for COVID-19 and were admitted to the COVID-19 Ward without complications were included in the study. General Health Questionnaire-12 (GHQ-12) was administered to look for the presence of psychiatric morbidity.

Results: Out of 61 patients included in the study, 45(73.7%) showed the presence of psychiatric morbidity, while 16(26.3%) did not show psychiatric morbidity when screened with GHQ-12. 43(70.4%) were male, while 18(29.6%) were female. The mean age of the patients was 35.21±2.355 years. The advanced age and female gender have a statistically significant relationship (p -value<0.05) with the presence of psychiatric morbidity among patients of COVID-19.

Conclusion: Many patients had psychiatric morbidity after being tested positive for COVID -19 and were isolated in the health facility. Female patients and patients aged more than 40 years were found to be more at risk of developing psychiatric morbidity among the patients admitted to COVID -19 ward.

Keywords: COVID-19; psychiatric morbidity; socio demographic factors.

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INTRODUCTION

This novel coronavirus started in China in December 2019 and reached almost all parts of the world till March 2020.^{1,2} The number of new cases, patients requiring ICU admissions and deaths have been rising in most affected areas.³ In this crisis, when everybody has been emphasizing preventive measures, screening, early recognition and provision of necessary equipment,⁴ less emphasis has been laid on the mental health of the sufferers who have been listening to news and following social media reporting catastrophe linked with this disease.⁵

A study by Coughlin concluded that anxiety and depression had been commonly linked with viral diseases like influenza A (H1N1) and other influenza viruses, varicella-zoster virus, herpes simplex virus, human immunodeficiency virus/acquired immune deficiency syndrome and hepatitis-C.⁶ The situation may worsen in case of a pandemic, and that too by a novel strain with no treatment or vaccine. Patients fear impending complications, death, transmitting it to

loved ones, and uncertainty. These all fears have also been linked with COVID -19 and prone the patients to psychiatric morbidities.⁷ Huang *et al.* summarized that the overall prevalence of GAD, depressive symptoms, and sleep quality of the public were 35.1%, 20.1%, and 18.2%, respectively. Young people reported a significantly higher prevalence of GAD and depressive symptoms than older people.⁸ Compared with other occupational groups, healthcare workers were more likely to have poor sleep quality.^{9,10}

The situation has been getting worse in Pakistan with each passing day as the number of new cases has increased. Limited work has so far been published focusing on the psychiatric morbidity of the patients who have tested positive and have been bound to get isolated in the COVID-19 ward of our hospital. Therefore, we planned this study to look for the psychiatric morbidity and associated socio-demographic factors among patients who tested positive and isolated for COVID-19.

METHODOLOGY

This cross-sectional study was conducted at Combined Military Hospital Malir between March and May 2020. Ethical approval was taken from the Ethical

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Committee (Letter No 33/2020/TRG/ERC). The sample size was calculated using the WHO sample size calculation by using the population prevalence of stress among COVID patients as 94.5%.¹¹ Non probability consecutive sampling was used to gather the sample.

Inclusion Criteria: Patients aged 18 to 60 years who tested positive (routine PCR in a tertiary care teaching laboratory under a consultant virologist) with confirmed exposure in less than a week with COVID-19 and admitted to the COVID-19 Ward without any complications were included in the study. All such patients, either asymptomatic or with mild symptoms like fever, sore throat and body aches, were included in the study.

Exclusion Criteria: Patients with exposure to COVID-19 for more than a week or unclear exposure time or those who developed complications and needed oxygen or shifted to the intensive care unit were excluded from the study. The study did not include patients already diagnosed with psychiatric illness or illicit substance use. Pregnant females, patients on any steroid or cytotoxic therapy, or those over 60 years of age were excluded from the study.

General Health Questionnaire-12 (GHQ-12) is a standardized psychometric test for assessing the general health status of individuals and was used as a screening test.¹² It is a 12-item rating screening instrument. The cut-off score is four or more by Likert scoring i.e., patients with a score of more than four were classed as having significant psychiatric morbidity. In contrast, patients with scores of 4 or less were considered negative for psychiatric morbidity.^{13,14} Validated Urdu version was used to include the maximum number of patients.

Patients who tested positive for COVID-19 admitted to the COVID-19 ward of our hospital were included in the study after written informed consent. General Health questionnaire-12 was administered to them along with the socio-demographic proforma, and they were told to answer according to their condition in the last week.

Statistical Package for Social Sciences (SPSS) version 24.0 was used for the data analysis. Frequency and percentage were calculated for the qualitative variables, whereas mean and standard deviation were calculated for the quantitative ones. The Chi-square test was used to look for the relationship between age, gender, ethnicity, duration in isolation, another family member being positive for COVID-19 and the smoking

status of the individuals with the presence of psychiatric morbidity among patients of COVID-19. The *p*-value less than or equal to 0.05 was considered significant.

RESULTS

After the application of inclusion and exclusion criteria, 61 patients were included in the final analysis. Out of 61 patients included in the study, 45(73.7%) showed the presence of psychiatric morbidity, while 16(26.3%) did not show psychiatric morbidity when screened with GHQ-12. In addition, 43(70.4%) were male, while 18(29.6%) were female. The mean age of the patients was 35.21±2.35 years. The Chi-square test (Table) revealed that age and gender have a significant association with the presence of psychiatric morbidity (*p*-value<0.05). In contrast, ethnicity, duration of isolation, family history of COVID positivity and smoking had no relationship with the presence of psychiatric morbidity (*p*-value. 0.05).

Table: Factors Associated with Psychiatric Morbidity among COVID-19 Patients (n=61)

Factors Studied	No Psychiatric Morbidity (n=16)	Presence of Psychiatric Morbidity (n=45)	<i>p</i> -value
Age			
18-40 years	12(75%)	16(35.5%)	0.007
>40 years	04(25%)	29(64.4%)	
Ethnicity			
Punjabi	08(50%)	17(37.7%)	0.549
Sindhi	01(6.25%)	07(15.5%)	
Pathan	04(25%)	08(17.7%)	
Muhajir	03(18.75%)	13(28.8)	
Gender			
Male	15(93.75%)	28(62.22%)	0.047
Female	01(6.25%)	17(37.77%)	
Family Member Positive for COVID-19			
No	13(81.25%)	42(93.3%)	0.188
Yes	03(18.75%)	03(6.66%)	
Smoking			
No	02(12.5%)	02(4.44%)	0.293
Yes	14(87.5%)	43(95.5%)	
Duration in Isolation			
<1 week	02(12.5%)	04(25%)	0.684
>1 week	14(87.5%)	41(91.1%)	

DISCUSSION

Studies done in the recent past among various viral pandemics, or epidemics suggest that various types of psychological responses could be seen among the sufferers of these infections.^{15,16} Media may it be print, electronic or social, have been passing processed or unprocessed information to the masses which may sometime make the sufferers more apprehensive and

prone them to psychiatric problems in addition to other biological, psychological and social aspects of the illness. We, therefore, planned this study to look for the psychiatric morbidity and associated socio-demographic factors among patients tested positive and isolated for COVID-19.

Rohr *et al.* revealed that across 13 identified studies, quarantine measures were consistently associated with negative psychosocial outcomes, including depressive symptoms, anxiety, anger, stress, post-traumatic stress, social isolation, loneliness and stigmatization.¹⁷ Our data from isolated patients in the COVID-19 ward showed similar results. However, we did not study the psychiatric diagnosis but just screened them for any psychological problems with a very basic psychometric tool; still, more than 70% of our patients were screened positive for psychiatric morbidity.

Mazza *et al.* did a nationwide survey of psychological distress among Italian people during the COVID-19 Pandemic. They concluded that Female gender, negative affect, and detachment were associated with higher levels of depression, anxiety, and stress. Having an acquaintance infected was associated with increased levels of both depression and stress. In contrast, a history of stressful situations and medical problems was associated with higher levels of depression and anxiety.¹⁸ female gender was also significantly associated with psychiatric morbidity in our study. The reason may be a general predisposition of females to develop anxiety and mood-related disorders or maybe social disadvantage in developing countries like ours.

Lei *et al.* published an interesting study in China and studied depression and anxiety in both the affected and non-affected patients with COVID-19. By using psychometric tools, they found out that among 1593 participants, the prevalence of anxiety and depression was approximately 8.3% and 14.6%, respectively, and the prevalence in the affected group 12.9% (22.4%) was significantly higher than that in the unaffected group 6.7%(11.9%). In addition, lower average household income, lower education level, having a higher self-evaluated level of knowledge, being more worried about being infected, having no psychological support, greater property damage, and lower self-perceived health condition were significantly associated with higher scores on the anxiety and depression scales.¹⁹ We did not perform a case-control

study. However, psychiatric morbidity was high among the affected people kept in isolation.

A recent qualitative study was done in our neighbouring country Iran to look for the psychological sequel of COVID-19 concluded that people with COVID-19 disease experience many psychosocial consequences, and this will reduce their quality of life; therefore, the use of psychologists and counsellors in the therapeutic setting can be effective in reducing these consequences.⁷ Our screening results emphasize same that these patients have high levels of psychological morbidity due to various reasons. Therefore, it may be important to identify the high-risk population and provide them with help in time.

LIMITATIONS OF STUDY

Our study had multiple limitations. GHQ-12 is a self-reporting tool; participants may apply under or over-report the symptoms. Many confounding factors may be related to the presence of psychological factors among the patients of COVID-19, which may be catered for in future studies.

CONCLUSION

Many patients had psychiatric morbidity after being tested positive for COVID-19 and were isolated in the health facility. Female patients and patients older than 40 years were found to be more at risk of developing psychiatric morbidity among the patients admitted to the COVID -19 ward.

Conflict of interest: None.

Author's Cotribution

Following authors have made substantial contributions to the manuscript as under:

MHA & UBZ: Study design, drafting the manuscript, data interpretation, critical review, approval of the final version to be published.

MSS & HBZ: Conception, drafting the manuscript, approval of the final version to be published.

MY & MI & NZ: Data acquisition, data analysis, data interpretation, critical review, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

REFERENCES

1. Pike BL, Saylor KE, Fair JN, Lebreton M, Tamoufe U, Djoko CF, et al. The origin and prevention of pandemics. *Clin Infect Dis* 2010; 50(12): 1636-1640. doi: 10.1086/652860.
2. Wind TR, Rijkeboer M, Andersson G, Riper H. The COVID-19 pandemic: The 'black swan' for mental health care and a turning point for e-health. *Internet Interv* 2020; 20(1): 100317. doi:10.1016/j.invent.2020.100317.

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3. Ge H, Wang X, Yuan X, Xiao G, Wang C, Deng T, et al. The epidemiology and clinical information about COVID-19. *Eur J Clin Microbiol Infect Dis* 2020; 39(6): 1011-1019. doi:10.1007/s10096-020-03874-z.
4. Lee IK, Wang CC, Lin MC, Kung CT, Lan KC, Lee CT. Effective strategies to prevent coronavirus disease-2019 (COVID-19) outbreak in hospital. *J Hosp Infect* 2020; 105(1): 102-103. doi:10.1016/j.jhin.2020.02.022.
5. Troyer EA, Kohn JN, Hong S. Are we facing a crashing wave of neuropsychiatric sequelae of COVID-19? Neuropsychiatric symptoms and potential immunologic mechanisms. *Brain Behav Immun* 2020; 2(1): S0889-1591(20)30489-X. doi:10.101546113236/j.bbi.2020.04.027.
6. Coughlin SS. Anxiety and Depression: Linkages with Viral Diseases. *Public Health Rev* 2012; 34(2): 7-10. doi:10.1000007/BF03391675.
7. Eisazadeh F, Aliakbari dehkordi M, aghajanbigloo S. Psychological consequences of patients with coronavirus (COVID- 19): A Qualitative Study. *Iran J Health Psychol* 2020; 2(2): 9-20. doi: 10.30473/ijohp.2020.52395.1074.
8. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry Res* 2020; 288(1): 112954. doi:10.1016/j.psychres.2020.112954.
9. Kong X, Zheng K, Tang M, Kong F, Zhou J, Diao L, et al. Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19. *medRxiv* 2020; 3(24): 20043075. doi:10.1101/2020.03.24.20043075.
10. Qasim M, Ahmad W, Zhang S, Yasir M, Azhar M. Data model to predict prevalence of COVID-19 in Pakistan. *medRxiv* 2020; 4(6): 20055244. doi:10.1101/2020.04.06.20055244.
11. Balkhi F, Nasir A, Zehra A, Riaz R. Psychological and Behavioral Response to the Coronavirus (COVID-19) Pandemic. *Cureus* 2020; 12(5): e7923. doi:10.7759/cureus.7923.
12. Rana W, Mukhtar S, Mukhtar S. Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. *Asian J Psychiatr* 2020; 51(3): 102080. doi:10.1000016/ j.ajp.-2020.102080.
13. Udugama B, Kadhiresan P, Kozlowski HN. Diagnosing COVID-19: The Disease and Tools for Detection. *ACS Nano* 2020; 14(4): 3822-3835. doi:10.1021/acsnano.0c02624.
14. Zubair UB, Mansoor S, Rana MH. Prevalence of depressive symptoms and associated socio-demographic factors among recruits during military training. *J R Army Med Corps* 2015; 161(2): 127-131. doi:10.1136/jramc-2014-000253.
15. Masumbuko Claude K, Unterschultz J. Social resistance drives persistent transmission of Ebola virus disease in Eastern Democratic Republic of Congo: A mixed-methods study. *PLoS ONE* 2019; 14(9): e0223104. doi:10.1371/journal.pone.0223104.
16. Mendoza C, Jaramillo G-I, Ant TH, Power GM, Jones RT, Quintero J, et al. An investigation into the knowledge, perceptions and role of personal protective technologies in Zika prevention in Colombia. *PLoS Negl Trop Dis* 2020; 14(1): e000-7970. doi:10.1371/journal.pntd.0007970.
17. Röhr S, Müller F, Jung F, Apfelbacher C, Seidler A, Riedel-Heller SG. Rapid Review [Psychosocial Impact of Quarantine Measures During Serious Coronavirus Outbreaks: A Rapid Review]. *Psychiatr Prax* 2020; 47(4): 179-189. doi:10.1055/a-1159-5562.
18. Mazza C, Ricci E, Biondi S, Colasanti M, Ferracuti S, Napoli C, et al. A Nationwide Survey of Psychological Distress among Italian People during the COVID-19 Pandemic: Immediate Psychological Responses and Associated Factors. *Int J Environ Res Public Health* 2020; 17(9): E3165. doi:10.3390/ijerph17093165.
19. Lei L, Huang X, Zhang S, Yang J. Comparison of Prevalence and Associated Factors of Anxiety and Depression Among People Affected by versus People Unaffected by Quarantine During the COVID-19 Epidemic in Southwestern China. *Med Sci Monit* 2020; 26(1): e924609. doi:10.12659/MSM.924609.