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PREVALENCE OF LONG-TERM PSYCHIATRIC COMPLICATIONS IN COVID-19 SURVIVORS

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Abstract

Background: The coronavirus disease of 2019 (COVID-19) has a significant impact on mental health. The frequency of psychiatric disorders among recovered COVID-19 patients and its related variables are not well understood, despite reports of these issues in the general community and among healthcare professionals.

Aim: The aim of this study was to evaluate the prevalence of psychiatric complications and to assess the effect of Covid-19 on the mental health and sleep of COVID-19 survivors.

Methodology: We conducted a cross-sectional study at a large COVID-19 tertiary reference center. 183 Patients surviving COVID-19 who had been admitted for their symptomatology with PCR-confirmed SARS-CoV-2 infection were included in the study. Psychiatric complications were assessed using standardized screening tools for depression (PHQ- 9) and anxiety (Generalized Anxiety Disorder (GAD-7). For Stress and adjustment disorders Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was used**.** Sleep disorders were assessed by the Insomnia Severity Index (ISI-7).

Results: Amongst the 183 patients included, a total of 157 (85%) had experienced psychiatric complications, 103(56.2%) endorsed symptoms of anxiety,104 (56%) of depression,79(43%) stress, 157(85%) had sleep problems. The psychiatric complications in Covid-19 survivors revealed a sample mean score of 1.54 (SD =0.5). Psychiatric symptoms were more commonly reported in female patients than in male patients. It was discovered that the existence of sleep or stress issues did not substantially correspond with age, comorbidities, or disease severity. In comparison to patients of various ages, older patients made up a considerably greater percentage of those with psychopathological symptoms.

Conclusion: According to the results of the current study, the Prevalence of these psychiatric complications was very high. COVID-19 survivors had symptoms of anxiety, sadness, Post Traumatic

Stress Disorder, and sleep-related issues. These findings may aid in minimizing COVID-19's negative effects on mental health and in developing effective mental health intervention strategies for people who are at risk.

Keywords: COVID-19; patients; psychiatric complications, mental health; depression; anxiety; PTSD; insomnia

INTRODUCTION

One of the worst public health problems the globe has seen recently is the COVID-19 epidemic. The 2019 coronavirus (COVID-19) has spread globally, resulting in a pandemic [1]. The World Health Organization (WHO) consequently declared COVID-19 an international public health emergency, which resulted in a significant global health disaster [2]. On the clinical signs and treatments of the initial stages of COVID-19, there is a sizable and steadily growing body of literature. The acute stage of the disease is frequently characterized by fever, anosmia with or without ageusia, dry cough, dyspnea, gastrointestinal symptoms, and musculoskeletal problems [3].

It has been shown that infectious disease epidemics, such as the SARS epidemic, MERS outbreaks in 2003 and 2012, and other communicable disease epidemics, such as the Ebola outbreak in 2013, have an effect on high-risk populations and the general population's psychological health. [4-7] Evidence from previous coronaviruses showed that infected individuals had a greater chance of developing psychological distress symptoms as well as mental health problems such as depression, anxiety, post-traumatic stress disorder, and sleep irregularities. [8]

A significant body of later investigations has shown that COVID-19 infection has a major psychological impact and that COVID-19 patients may have an excess of neuropsychiatric illnesses and poor psychological consequences. The psychological impact of the virus is also highly substantial, despite the fact that a large portion of early research on COVID-19 focused on the physiological effects of the virus. [4,7,8,9] In both the acute and long-term periods, it is crucial to pay attention to the many ways that the neurological and mental systems manifest. According to a clinical investigation, psychiatric issues were more common in COVID-19 and post-COVID-19 patients and the severity of COVID-19 was strongly connected with the patient's findings.[10,11,12] Patients with COVID-19 frequently experience numerous neurological and psychiatric complications during their acute and post-acute stages, in addition to having a significant morbidity and mortality rate from cardiovascular and pulmonary events. About 40,000 to 200,000 of the 300 million verified COVID-19 infections worldwide are thought to have developed neurological and psychiatric symptoms and neurological consequences. In the acute phase of hospitalized COVID-19 patients, existing clinical investigations have found a prevalence of 50% neurological and psychotic symptoms, raising worries about the possibility of major unfavorable outcomes in the long term, while interests in the long-term impacts on neurological and psychiatric systems are rare.[13] COVID-19 survivors have a markedly increased chance of developing psychiatric problems, such as depression, sleeplessness, and substance use disorders, which are especially prevalent in extended COVID-19 courses. Following the beginning of COVID-19, neurosis and psychosis seem to be common and may linger for six months or more.

Although prevalence rates vary widely between studies and the literature on the subject is still developing, there is growing evidence that psychological and neuropsychiatric symptoms frequently linger after an active infection and/or after leaving the hospital. [14] Taquet et al. [15] found that the incidence of neurological or psychiatric diagnoses at 6 months after COVID-19 infection was approximately 33%, of which 13% received a first diagnosis during this time. They did this by using electronic health records of 236,379 patients, and their findings were published in the Lancet. Furthermore, compared to individuals with influenza or other respiratory illnesses, those with COVID-19 had a higher prevalence of these.[15]

With a population of almost 220 million, Pakistan ranks as the sixth most populated nation in the world [16]. Of this number, over 24 million people have a mental illness of some kind [17]. It has also been reported that COVID-19 has aggravated the situation of those with pre-existing mental

illnesses and has added to the suffering of the affected individuals [18]. The current COVID-19 epidemic has made it impossible for existing mental health patients to receive maintenance treatment.

This has sparked relapses and caused uncontrollable behavior, self-harm, and some type of mental disease. In addition, a lack of awareness, disregard, and stigma around mental health issues added to the load.

In Pakistan, psychological problems represent more than 4% of all disease burden, with the impact on women's mental health significantly high. According to estimates, 24 million Pakistanis require mental health care. To meet the growing demands, however, there are not enough resources set aside for the treatment and diagnosis of psychological health disorders.

According to WHO data, Pakistan has one of the lowest ratios of psychiatrists per 100,000 people in both the WHO Eastern Mediterranean Region and the whole globe at 0.19. The current COVID crisis and its compounding repercussions have increased the psychological and social stress already present. With these issues in mind, the current study's goals were to describe common psychiatric symptoms and contributing variables in COVID-19 patients admitted to a hospital-designated COVID-19 treatment facility in order to aid in the development and delivery of patient-centered psychiatric treatments. In view of the present crisis, our study intended to demonstrate the pressing need for psychological therapies for COVID-19 hospitalized patients in low- and middle-income nations.

MATERIAL AND METHODS:

A cross-sectional study was conducted at a large COVID-19 tertiary reference center i-e Ayub Teaching Hospital Abbottabad, KPK, Pakistan.183 Patients surviving COVID-19 who had been admitted for their symptomatology with PCR- confirmed SARS-CoV-2 infection were included in the study. The study was conducted from March 2020 until August 2020 and patients were assessed in the outpatient clinic before hospital discharge. Participants completed a questionnaire on their appointment after informed consent.

Sampling technique:

Convenience sampling technique was implied for sample collection.

Inclusion/Exclusion criteria

Patients getting discharged after being admitted to the Covid-19 ward and willing to take part in the study were included in the study. Patients who were younger than 18, and had a history of any previous psychiatric illness, were excluded from the study. Patients with critical illnesses were also excluded from the study.

Questionnaire for Demographics and disease severity:

Sociodemographic data, smoking history, comorbidities, and psychometric scales measuring levels of anxiety, fear, sadness, sleeplessness, traumatic stress, and quality of life were all included in a self- administered questionnaire. From the patients' medical records, information on the intensity, length,and kind of hospitalization brought on by SARS-CoV-2 infection was gathered.

According to standards established by the National Institutes of Health, disease severity was evaluated as follows:

- Mild Illness: Patients having any of the various signs and symptoms of COVID-19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, loss of taste and smell) but who do not have shortness of breath, dyspnea, or abnormal chest imaging.
- Moderate Illness: Patients showing evidence of lower respiratory disease during clinical assessment or imaging and who have an oxygen saturation ($SpO2$) $\geq$ 94% on room air at sea level.
- Severe Illness: Patients with $SpO2 < 94\%$ on room air at sea level, a ratio of arterial partial pressure of oxygen to fraction of inspired oxygen ($PaO2/FiO2$) < 300 mm Hg, a respiratory rate > 30 breaths/min, or lung infiltrates > 50%.

Anxiety and Depression Assessment Scale:

Anxiety was assessed using the Generalized Anxiety Disorder (GAD-7) 7-item questionnaire. Higher

than a 7 indicates the presence of anxiety symptoms. Total scores on the scale range from0 to 21.

There are four categories for severity: normal (0–4), mild (5–9), moderate (10–14), and severe (15–21). To determine the degree of depression, the 9-item Patient Health Questionnaire (PHQ-9) was utilized; results ranged from 0 to 27. (14). No depression (0–4), mild depression (5–9), moderate depression (10–14), and severe depression were considered different levels of depression severity (15–27). The threshold for the presence of symptoms of depression on the PHQ-9 was a total score of 8 points.

Stress and adjustment disorder assessment tool:

The modified version of the Stress Reactions Checklist was utilized to assess stress disorders. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was used to assess adjustment disorders in participants.

Insomnia Assessment Tool:

A reliable screening tool for sleep issues" the Insomnia Severity Index (ISI-7)" was used. The total score is between 0 and 28. It offers scores for sleepiness that is normal (0–7), subthreshold (8–14), moderate (15–21), and severe (2–28). The threshold for identifying insomnia symptoms was 15.

Statistical Analysis

SPSS, version 20.0 was used for data analysis. Sociodemographic data and other continuous outcome variables, such as anxiety, depression, traumatic stress, adjustment disorder, and insomnia, were analyzed using descriptive statistics; categorical variables were reported as percentages, and continuous variables as mean values (standard deviation). In order to investigate the relationship between continuous variables, Welch's t-test and chi-square test were utilized. Statistical significance was determined by two-tailed p values less than 0.05.

RESULTS

Demographic and Participant Characteristics

The study included a total of 183 individuals of which 112(61.1%) were males and 71(38.8%) were females. The mean age of the participants was 45 (SD:12). Of the total respondents, 73 (39.8%) had a university degree or higher, and 97 (53%) were employed.

The demographic and clinical characteristics are illustrated in the table.1 The severity of the majority of patients' diseases caused lengthy hospital stays, and 8.2% of them required admission to an ICU. The mean duration of stay in Covid-19 hospital was 14.9 (SD 3.2) days.

Parameter	**N**	**Mean ± SD**
Age		
Female/Male	183	45.19 12.33
Gender	N	%
Male	112	61.2
Female	71	38.8
Education		
Graduate and above	73	39.8
Undergraduate	44	24
Higher secondary and secondary	66	36
Employed	97	53
Unemployed	86	46.9
Severity Of COVID-19		
Mild	142	77.6
Moderate	25	13.7
Severe	16	8.7

Comorbidities	63	
Diabetes mellitus	15	64.5
Hypertension	15	8.2
Coronary disease	6	8.2
COPD	3	3.3
Asthma	4	1.6
Obesity	9	2.2
DM+ HTN	13	4.9
Hospitalization		
COVID-19 ward	168	91.8
Intensive Care Unit	15	8.2
Duration of hospital stay		
less than 15 days	142	77.6
16 to 20 days	25	13.7
longer than 20 days	16	8.7

Psychometric complications Outcomes in Covid-19 Patients:

According to the psychiatric screening assessment by the researchers, Patients with COVID-19 had severe cases of anxiety, traumatic stress, depression, and sleep disturbances. The psychiatric complications in Covid-19 survivors revealed a sample mean score of 1.54 (SD =0.5). As can be seen, female patients had much greater rates of depression, anxiety, stress, adjustment disorder and sleep issues than male patients did. The presence of depression, anxiety, stress, fear, or sleeplessness was not observed to substantially connect with age, smoking, comorbidities, or disease severity.

Table.2 Psychometric scales outcomes: Differences in severity of psychological complications among Genders.

Category	**Male N (%)**		**Female N (%)**		**Total N (%)**		**P value**
Depression							
Normal	52	46.4	27	38.0	79	43.2	=0.102
Mild	29	25.9	19	26.8	48	26.2	
Moderate	19	17.0	17	23.9	36	19.7	
Severe	12	10.7	8	11.3	20	10.9	
Anxiety							
No Anxiety	55	49.1	25	35.2	80	43.7	=0.01
Mild	34	30.4	17	23.9	51	27.9	
Moderate	17	15.2	16	22.5	33	18.0	
Severe	6	5.4	13	18.3	19	10.4	
Adjustment disorder					62	33.9	=0.06
Yes	29	25.9	33	46.5	121	66.1	
NO	83	74.1	38	53.5			
Insomnia							
No insomnia	22	19.6	15	21.1	37	20.2	=0.04
Subthreshold	23	20.5	13	18.3	36	19.7	
Moderate	58	51.8	41	57.7	99	54.1	
Severe	9	8.0	2	2.8	11	6.0	
Acute stress Disorder							=0.324
Yes	42	37.5	37	52.1	79	43.2	
No	70	62.5	34	47.9	104	56.8	

PHQ-9 = 9-item Patient Health Questionnaire. GAD-7 = 7-item Generalized Anxiety Disorder. ISI = 7-item Insomnia Severity Index. *P-value < 0.05

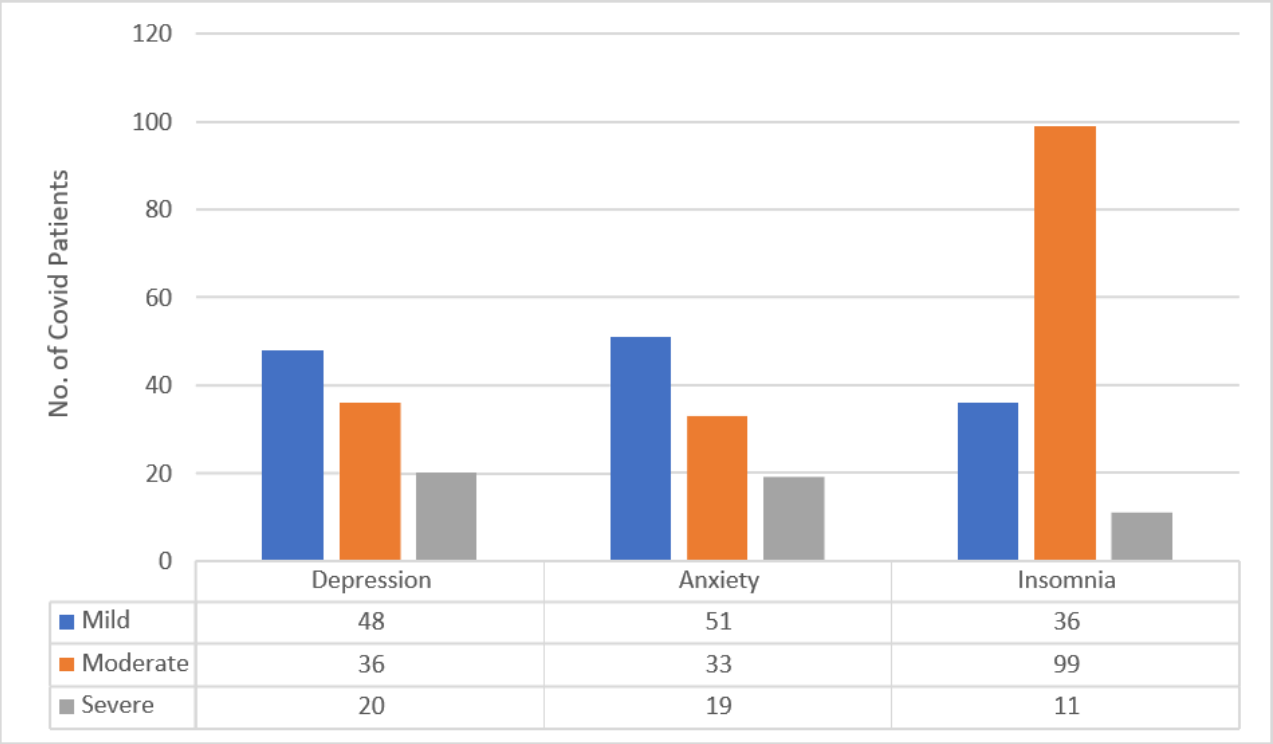

Figure 1. The number of COVID-19 patients with mild, moderate, and severe symptoms of depression, anxiety, and insomnia.

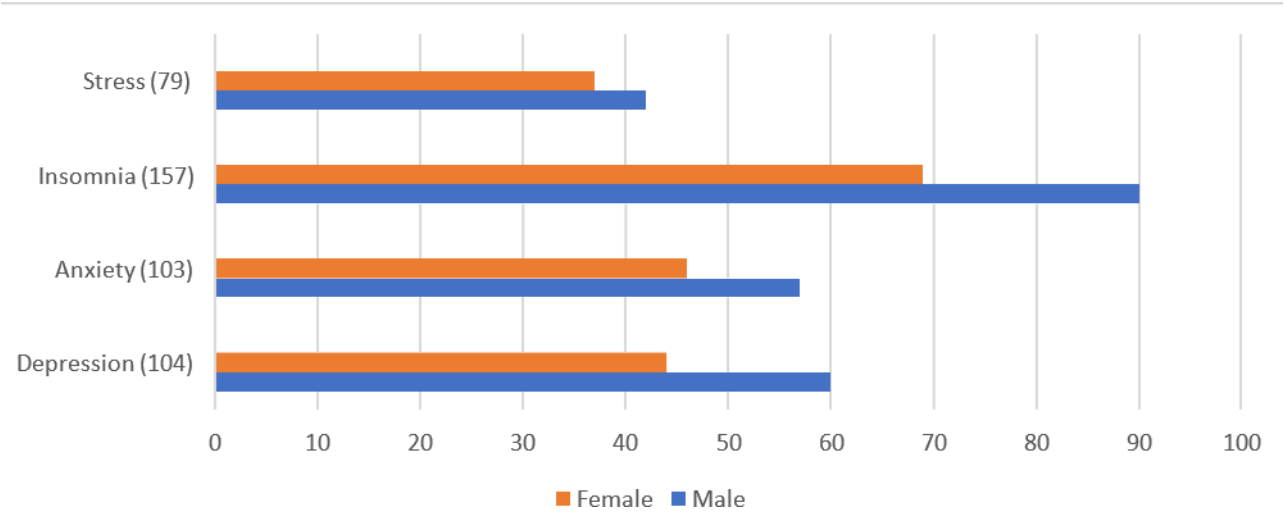

Figure 2. Gender differences in psychiatric complications

DISCUSSIONS:

The present study investigated the prevalence of psychiatric complications in Covid-19 patients admitted to Ayub Teaching Hospital. The substantial rate of psychiatric symptoms in our sample suggests. that the pandemic's effects on mental health should be treated as a public health emergency. Infectious illnesses continue to pose a serious hazard to human health, endangering not just the affected person's bodily well-being but also their psychological and social well-being. According to our knowledge, this study is the first to examine psychological issues in hospitalized patients in Pakistan who have COVID-19 suspicions or confirmations utilizing in-depth, thorough interviews to address the immediate mental health effects of isolation and quarantine in hospitals. Our research adds to the body of knowledge already available on the psychological effects of communicable diseases. Patients were shown to have poor psychological health either soon after contracting the illness or shortly after being released from the hospital in studies conducted in the wake of past

outbreaks of illnesses that were comparable to MERS and severe acute respiratory syndrome (SARS-CoV) [24,25,26]. Compared to healthy controls, SARS patients were substantially more likely to experiencepoor sleep, nightmares, weepiness, a gloomy mood, and difficulty concentrating [24]. According to a2018 survey, 40% of MERS patients who were given a diagnosis also displayed psychiatric symptomsand were isolated in a hospital [25]. Even though these differences were not statistically significant, women in our sample had higher mean scores on all psychometric tests. During infectious illness epidemics, the female sex is linked to higher sensitivity to psychological issues; females have been reported to be three times more likely to develop mental morbidity. [26,27]

Our research has important clinical and useful ramifications. We established a patient-centered consultation program and provided mental health services to all confirmed or suspected COVID- 19 hospital patients, regardless of whether they were diagnosed with psychiatric disorders, in light of the nature of the detrimental psychological impact of COVID-19-related admissions. The focus of current research is on identifying psychiatric signs early in hospitalized patients. Finally, it was urged that everyone who was taking part get counseling after discharge from the hospital. This was much valuedsince it brought comfort and stability during a period of intense psychological turmoil. Online psychological first aid training was made available to medical teams caring for COVID-19 patients in order to provide them with the knowledge and abilities to reduce their own and their patients' signs of distress. The development of a comprehensive approach to patient treatment, including the provision of psychological first aid through tele psychiatry services, was made possible by the baselinedata. Many patients need assistance with social problems and financial aid, and they were connectedwith the proper agencies.

CONCLUSION

In the resource-constrained environment of a low- or middle-income nation, the current study sheds light on the possible psychological consequences among COVID-19 patients. According to our findings, hospitalized COVID-19 patients exhibit disturbingly high levels of stress-related symptoms, sleeplessness, fear, and anxiety. The fact that these psychological problems might result in adherence to infection control procedures and decreased quality of life is a significant practical aspect of these results. Our findings point to the necessity of including psychological therapies at an early stage of the illness acute phase. Some of the crucial elements in decreasing the long- and short-term negative effects in COVID-19 patients include providing for basic requirements, putting an emphasis on spirituality, and encouraging tight social relationships within the established safety limitations. As we continue to struggle with the expanding COVID-19 pandemic, it is important to keep an eye on the long-term psychological requirements of these vulnerable individuals.

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