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PSYCHOLOGICAL MORBIDITY AND QUALITY OF LIFE IN COVID19 PATIENTS AFTER RECOVERY: A CROSS SECTIONAL STUDY

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Abstract

Background: Covid-19 pandemic has significantly impacted the population's psychological and social well-being. This study was initiated to ascertain the psychosocial impacts of the COVID-19 recovery such as depression, anxiety, and bereavement, as well as to assist in ascertaining the psychosocial repercussions of the pandemic. Long periods of isolation can be costly on the economy, hence impact of the disease on quality of life in people who have recovered from Covid-19 was assessed.

Methods and Material: A cross-sectional study conducted on patients who have recovered from Covid 19 and were visiting a tertiary health care center. Patients consenting for study were interviewed based on the ICD-10 criteria for depression and anxiety. DASS and WHO-QOL questionnaires were used to measure the severity of depressive, anxiety symptoms and quality of life. The data was analysed using SPSS (statistical packages for social sciences) version 20.0 software.

Results: Female population was 36% and male population was 64%. Oxygen support was required by 83% of the subjects. In the participants the severity of depression, anxiety and stress were recorded. There was total 48, 45 and 38 patients who reported to have depression, anxiety, and stress respectively. ICU admission was required by 40% of them. The association of oxygen support, with depression and stress was significant, with higher number of patients requiring oxygen support. While there was no association of anxiety and oxygen support.

Conclusions: Pandemic has had significant psychological sequalae on the participants, not only while they were infected but also chronically in terms of their quality of life.

Key-words: Covid19, mental health, pandemic, quality of life.

Introduction

Coronaviruses are a large family of viruses that cause illnesses ranging from the common cold to more serious conditions like Middle East Respiratory Syndrome and severe acute respiratory syndrome (SARS)[1] A sudden outbreak of a disease always poses a threat to the mental health of those who are affected and those who are in close proximity to them. [2] A pandemic outbreak can have a psychological impact. Depression, anxiety, negative psychological effects, panic attacks, psychomotor excitement, psychotic symptoms, delirium, and even suicidal ideation have all been reported among SARS survivors in previous epidemiological studies. [34]

Individuals who had tested positive for COVID-19 infection, those who had experienced severe financial setbacks, and those who were experiencing alcohol withdrawal syndrome had all committed suicide as a result of the pandemic. Suicide risk might have increased in people who have pre-existing psychosocial stressors, psychological problems, or psychiatric disorders (depression, anxiety, and especially alcoholism). [5]

Certain experiences, such as widespread anxiety, social isolation, unemployment, and financial difficulties, might affect both infected and non-infected people. Other symptoms might be unique to people infected with the virus, such as anxiety about the course of their illness or traumatic memories of severe illness. [6]

This study was initiated to ascertain the psychosocial impacts of the COVID-19 recovery as well as to assist in ascertaining the psychosocial repercussions of the pandemic. Long periods of isolation can be costly on the economy, hence impact of the disease on quality of life in people who have recovered from Covid-19 was assessed. Being healthy encompasses not only physical health but also mental and social well-being, early detection of any psychological effects and burden assessment can aid in providing early support and intervention.

Materials and Methods

This cross-sectional study was conducted on patient who have recovered from Covid-19 and coming to the General Medicine, Pulmonary medicine, and Post Covid Outpatient department at a tertiary care hospital who were fulfilling the inclusion and exclusion criteria. This study was conducted for two years, 2020-2022 after ethics committee approval. The sample was mainly collected among the patients who were affected mainly in the first (August 2020 to January 2020) and second wave (March 2021 to June 2021) of Covid-19 in India.

Sampling

The study included 100 patients who recovered from Covid-19 fulfilling the inclusion and exclusion criteria. We used convenience sampling.

Data collection

The study group comprised of adult patient who have recovered from Covid-19 and are coming to the General Medicine, Pulmonary Medicine, and Post Covid Outpatient department at a tertiary care center. Consent was taken from the subjects for the following study. An information sheet containing all necessary details of the study was provided after which due

written informed consent in local language was taken. All the patients were screened by a general interview along with their informant followed by the inclusion and exclusion criteria and those who were fulfilling the inclusion and exclusion criteria and are consenting to participate in the study were asked to answer a specially designed proforma and relevant scales for assessment. Patients were interviewed based on the ICD-10 criteria for depression and anxiety. DASS and WHO-QOL questionnaires were used to measure the severity of depressive, anxiety symptoms and quality of life. Further evaluation and management were done in the Department of Psychiatry, as required.

Ethical consideration

The study was approved by the institutional ethics committee prior to the initiation of the study (Ref–BVDUMC/IEC/65 dated December 15, 2020).

The participants were explained about the nature of the study and informed consent was obtained from all participants before initiation of data collection. They were explained that they were free to suspend or withdraw from the interview if they were uncomfortable or it was negatively affecting their emotional state.

Statistical Analysis

The collected data was coded and entered in Microsoft Excel sheet. The data was analysed using SPSS (statistical packages for social sciences) version 20.0 software. The results were presented in a tabular and graphical format. For quantitative data Mean, SD, Median etc. were calculated. For qualitative data various frequency, rates, ratio, and percentage were calculated. As applicable: (For quantitative data test like t-test and for qualitative data test like chi square test was used for comparison of variables).

Results

In the present study, 100 patients who have recovered from Covid-19 and coming to the General Medicine, Pulmonary medicine, and Post Covid Outpatient department at tertiary care

hospital were included. In the study population, 26 (26%) subjects were below the age of 40 years, 27 (27%) over the age of 60 years and 47 (47%) of them in between. Female population was 36 (36%) and male population was 64 (64%). Considering the marital status, 91 (91%) were married, 5 (5%) were unmarried and 4 (4%) were widowed. When family structure is taken, 6 (6%) belonged to extended family, 43 (43%) belonged to joint families and 51 (51%) belonged to nuclear families. In the education domain, uneducated were 4 subjects (4%), 59 (59%) had either primary, secondary, higher secondary level of education and 37 (37%) had diploma, graduate, or postgraduate level of education. In the occupation aspect, 25 (25%) were unemployed or housewives, 19 (19%) in business, 36 (36%) had a job and 20 (20%) were retired. Oxygen support was required by 83 (83%) of the subjects. ICU admission was required by 40 (40%) of them. There was no significant family history of COVID in 78 (78%) subjects and the remaining 22 (22%) had a family member who was COVID positive. Taking psychosocial stressors into consideration, 16 (16%) subjects had either family issues or worry about family members, 13 (13%) of them had financial stressors, 10 (10%) had lost job due to COVID, 7 (7%) were in isolation, 9 (9%) had no social support, 4 (4%) had reinfection and 41 (41%) subjects had none of the above stressors applicable.

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Table 1: Demographic data

Age category	**Frequency**	**Percentage**
<40	26	26
40-60	47	47
>60	27	27
Gender	**Frequency**	**Percentage**
Female	36	36
Male	64	64
Total	100	100
Personal details		**Frequency**
Marital Status	Married	91
	Unmarried	5
	Widow	4
Family Structure	Extended	6
	Joint	43
	Nuclear	51
Oxygen Support	No	17
	Yes	83
ICU Admission	No	60
	Yes	40
Psychosocial Stressor	**Frequency**	**Percentage**
Family issues/worry about family members	16	16
Financial stressor	13	13
Lost job due to COVID	10	10
Isolation	7	7
No social support	9	9
Reinfection	4	4
Not applicable	41	41

In the participants the severity of depression, anxiety and stress were recorded. There was total 48, 45 and 38 patients who reported to have depression, anxiety, and stress respectively. Among majority of patients the severity of depression was of moderate (21) type, followed by extremely severe (17), severe (8) and 2 with mild severity. Out of total 45 participants, majority had extremely severe anxiety (25), followed by moderate (11), mild (8) and severe

(1). While in total 35 participants with stress, there were 19 participants with moderate severity followed by mild (14), and severe stress in 5 participants.

Table 2: Distribution as per depression, anxiety, and severity findings

	Depression	**Anxiety**	**Stress**
Normal	52	55	62
Mild	2	8	14
Moderate	21	11	19
Severe	8	1	5
Extremely Severe	17	25	0

The association between severity (Normal + mild versus Moderate + severe) of depression, anxiety, and stress with education level (categorized as uneducated, primary to higher secondary and diploma and above), occupation (categorized as Unemployed + housewife, business, job and retired) and psychological stressors (categorized as Nothing significant, family discord, financial stressor, lost job due to COVID, isolation, no social support and reinfection) was evaluated using Chi-square test. No significant association was found between the severity of depression, anxiety, and stress with education level. We found no significant association between the severity of depression, anxiety, and stress with occupation. We found significant (p=0.030) association between psychological stressor and severity of stress only, while there was no association of severity of depression and anxiety. The findings of Chi-square with respective p values and patient distribution are shown in table 3.

Table 3: Association of education level, occupation and psychological stressors with depression, anxiety, and stress

Severity→	**Depression**		**Anxiety**		**Stress**	
	Normal + mild	Moderate + Severe	Normal + mild	Moderate + Severe	Normal + mild	Moderate + Severe
Education level						
Uneducated	1 (25%)	3 (75%)	2 (50%)	2 (50%)	2 (50%)	2(50%)
Primary to higher secondary	23 (39%)	36 (61%)	28 (47.5%)	31 (52.5%)	37 (62.7%)	22 (37.3%)
Diploma and above	21 (56.8%)	16 (43.2%)	18 (48.6%)	19 (51.4%)	26 (70.3%)	11 (29.7%)
p value	0.167		0.99		0.162	
Occupation						
Unemployed + housewife	8 (32%)	17 (68%)	11 (44%)	14 (56%)	14 (56%)	11 (44%)

Business	7 (36.8%)	12 (63.2%)	9 (47.4%)	10 (52.6%)	13 (68.4%)	6 (31.6%)
Job	22 (61.1%)	14 (38.9%)	18 (50%)	18 (50%)	26 (72.2%)	10 (27.8%)
Retired	8 (40%)	12 (60%)	10 (50%)	10 (50%)	12 (60%)	8 (40%)
p value	0.102		0.969		0.566	
Psychosocial Stressor						
Nothing significant	24 (58.5%)	17 (41.5%)	28 (68.3%)	13 (31.7%)	33 (80.5%)	8 (19.5%)
Family discord	6 (37.5%)	10 (62.5%)	3 (18.8%)	13 (81.3%)	8 (50.0%)	8 (50.0%)
Financial stressor	6 (46.2%)	7 (53.8%)	6 (46.2%)	7 (53.8%)	10 (76.9%)	3 (23.1%)
Lost job due to covid	2 (20.0%)	8 (80.0%)	2 (20.0%)	8 (80.0%)	4 (40.0%)	6 (60.0%)
Isolation	1 (14.3%)	6 (85.7%)	4 (57.1%)	3 (42.9%)	2 (28.6%)	5 (71.4%)
No social support	4 (44.4%)	5 (55.6%)	4 (44.4%)	5 (55.6%)	6 (66.7%)	3 (33.3%)
Reinfection	2 (50.0%)	2 (50.0%)	1 (25.0%)	3 (75.0%)	2 (50.0%)	2 (50.0%)
p value	0.195		0.011		0.030*	

The association between education level and domains of WHOQOL-BREF scoring were compared, significant (p=0.019) differences in the means of psychological domain was found only with education level, while other domains did not differ significantly. The association between occupation and domains of WHOQOL-BREF scoring were compared. We found no significant differences in the means of any domain with occupation. The mean ± SD values of various domains with respective p values are shown in table 4.

Table 4: Association of education level and occupation with domains of WHOQOL-BREF scoring

Scores→	**Physical** (Mean±SD)	**Psychological** (Mean±SD)	**Social relationship** (Mean±SD)	**Environment** (Mean±SD)
Education level				
Uneducated	41.00±18.129	37.50±15.242	50.00±20.992	39.25±21.329
Primary to higher secondary	44.17±13.281	46.44±12.602	55.59±17.931	50.64±21.340
Diploma and above	48.03±11.644	52.49±12.427	62.62±17.571	57.92±20.437

P value	0.285	0.019*	0.120	0.112
Occupation				
Unemployed + housewife	43.88±13.42	47.64±14.14	59.20±17.62	53.88±21.22
Business	42.84±14.17	46.47±13.91	59.47±17.62	48.32±25.25
Job	49.03±11.57	51.14±12.47	61.44±17.22	56.53±20.31
Retired	43.55±12.89	45.85±11.61	48.75±18.96	49.40±19.06
p value	0.229	0.419	0.078	0.477

The association between oxygen support and ICU admission, with mental illness was compared. The association of oxygen support, with depression and stress was significant, with higher number of patients requiring oxygen support. While there was no association of anxiety and oxygen support. Depression and stress was significantly associated with more ICU admissions, but it is not associated in anxiety. The distribution of patients is shown in table 5.

Table 5: Association of requirement of oxygen support and ICU admission with mental illnesses

Mental illness domains	**Depression**		**Anxiety**		**Stress**	
	N + mild	**Mod to Sev**	**N + mild**	**Mod to Sev**	**N + mild**	**Mod to Sev**
Oxygen support						
No	14 (82.4%)	3 (17.6%)	10 (58.8%)	7 (41.2%)	15 (88.2%)	2 (11.8%)
Yes	31 (37.3%)	52 (62.7%)	38 (45.8%)	45 (54.2%)	50 (60.2%)	33 (39.8%)
P value	0.001*		0.327		0.029*	
ICU Admission						
No	34 (56.7%)	26 (43.3%)	29 (48.3%	31 (51.7%)	43 (71.7%)	17 (28.3%)
Yes	11 (27.5%)	29 (72.5%)	19 (47.5%	21 (52.5%)	22 (55.0%)	18 (45.0%)

Discussion

Covid-19 pandemic brought about innumerable changes, leading to psychological consequences like stress, loneliness, depression, anxiety hampering the quality of life. The present study evaluated psychological morbidity and quality of life in COVID-19 patients after recovery, with respect to depression, anxiety, and stress. A total of 100 COVID-19 positive patients were included, with most patients were between the ages of 40 and 60, with a male predominance.

Our study considered the socio demographic factors, presence of psychosocial stressor, ICU stay during Covid-19 infection, time since the infection. Our study found obvious presence of

stress, anxiety, and depression among the participants and effects on quality of life. In the current study, stress was one of the key psychological effects of COVID-19 and was reported by 38% of participants. However, Samadarshi SCA [7] et al. reported an incredibly high prevalence of stress, 82%, with symptoms ranging from moderate to high stress.

We also considered if demographic factors affected the presence of depression, anxiety, stress, and quality of life. Hawlader MDH [8] et al. discovered that the physical domain had the highest mean scores, followed by the social, psychological, and environmental domains, in contrast to the current study, where educational status was only associated with the psychological domain and not with others.

Patients with COVID-19 have been under a great deal of psychological stress during the treatment against severe acute syndrome coronavirus 2 (SARS-CoV-2), which may cause them certain mental health issues like anxiety, depression, insomnia, and fear. This is because of their isolation and lack of knowledge about the effects of the novel coronavirus. [9] Numerous stressors affect patients with infectious diseases, including longer quarantine periods, fear, boredom, insufficient supplies and information, financial loss, and stigma associated with the infection. [10]

In the current study, 59 people had one or more psychosocial stressors. Most respondents reported financial stress, followed by familial stress, a job loss due to COVID-19 and a lack of social support, family discord and isolation, and reinfection.

Our study also found severity of stress significantly associated with the psychosocial stressors like familial discord, loss of family members due to Covid-19, isolation, no social support, and loss of job. When the psychological stressors were compared with the severity of depression, anxiety, and stress, there was a significant association between the psychological stressor and the severity of anxiety and stress. There were a significantly higher number of participants in the moderate to severe group with anxiety who had family discord, job loss due to COVID, and reinfection as psychological stressors. Isolation was reported as the most important psychological stressor causing moderate to severe stress.

Patients with COVID-19 who were hospitalised had to deal with a challenging situation that could be extremely stressful. As is well known from other infectious pandemics, patients were subjected to several stressors, including isolation, uncertainty about their condition and prognosis, fear of dying and spreading the disease to loved ones, and a lack of support from family members. [11] We also found significant association between presence of depression and stress among people who were admitted in ICU; 62.7 % reported depression and 39.8% reported stress among the ones admitted in ICU.

According to a study by Park H. [12] et al, the most frequent psychological stressors during the quarantine were being diagnosed with COVID-19, worries about recovering from COVID-19, stress related to the quarantine, problems with the treatment environment, and a lack of information and communication. After being released from quarantine, the most frequent psychological stressors were worries about complications and financial hardships.

According to an observational study by Srivastava A [13] et al, COVID-19 patients continued to have a very negative emotional state even after their recovery when reminded of the stressful event. The participants tried to block out any ideas, emotions, or bodily sensations that brought back their stressful experience.

Through the present study, we could understand that how impactful the pandemic has been, in terms of demographic factors, presence of psychosocial stressors, severity of infection. These sequelae have not only been acute but also have impacted a great deal on the quality of life post the infectious state. Participants in our study, have reported various aftermaths of the pandemic, across the physical, psychological, social, and environmental aspects. Thus, dealing with the same, with a novel approach becomes the need of the hour.

Limitations

This study's limitations include that it was a hospital-based study, that samples were taken from patients who were admitted to the hospital or who visited the post-COVID OPD, and that the sample collection was completed before the third wave of COVID 19 and did not consider vaccination status.

Conclusion

Our study concludes that this novel pandemic has had significant psychological sequalae on the participants, not only while they were infected but also chronically in terms of their quality of life. Thus, screening the infected and adequate referrals to the psychiatry department will aid in managing the exponentially rising psychiatric co-morbidities.

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Conflicts of interested

There are no conflicts of interest.

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