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Research Article

THE PSYCHOLOGICAL IMPACT OF COVID-19 PANDEMIC IN CAREGIVERS OF CORONA-POSITIVE PATIENTS ADMITTED IN GURU NANAK DEV HOSPITAL UNDER GOVERNMENT MEDICAL COLLEGE, AMRITSAR

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ABSTRACT

Objective: The objective of the study was to find out the sociodemographic profile and psychological impact of COVID-19 pandemic in the key caregivers of COVID-19 patients.

Methods: The psychological impact of COVID-19 pandemic was measured using DASS-21 scale in a sample of 100 caregivers of corona-positive patients admitted in Guru Nanak Dev Hospital under Govt. Medical College.

Results: In our study, majority of the family caregivers of corona-positive patients in the hospital setting were male (76%), belonged to 21–40 years age group (58%), wedded (64%), Sikh by religion (69%), employed (58%), and from rural region (56%). Caregivers showed extremely severe depression (30.58±6.521), extremely severe anxiety (29.34±7.130), and severe stress (29.14±5694). Participants with increasing age showed higher levels depression, anxiety, and stress scores but significant association was seen only with mean anxiety scores with increasing age ($p<0.05$). A significant association was seen between mean scores of stress and education status ($p<0.05$). A significant association was also seen between mean scores of anxiety and stress scores and nuptial status ($p<0.05$). No significant associations were seen between gender of caregivers, employment status, religion, family type, and mean depression, anxiety, and stress scores ($p>0.05$).

Conclusion: The impact of COVID-19 pandemic on mental health of family caregivers of COVID-19 cases is significant.

Keywords: COVID-19, Caregivers, Depression, Anxiety, Stress, Pandemic.

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INTRODUCTION

Coronaviruses belong to the Coronaviridae family and include numerous viruses from common cold virus to more serious diseases such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and COVID-19. The coronaviruses live naturally in mammals and avians. So far, seven human-transmitted coronaviruses have been identified [1]. The newest species, COVID-19, became widespread in December 2019 in Wuhan, China. The disease has been declared as a pandemic on March 12, 2020, by the World Health Organization. The first case of COVID-19 infection in India was reported from Kerala on January 30, 2020, in a 20-year-old female who returned from Wuhan city, China to India [2]. Depending on the political, sociocultural, and health-care system and the economic conditions of the respective countries, all countries are taking alike measures to combat the disease. The disease has shocked families, socioeconomic agencies, and large economies of the world with numerous conceivably unknown confines [3].

To date, empirical focus on mental health during the coronavirus pandemic (COVID-19) addressed two groups – the general population and health-care providers [4,5]. Nevertheless, verification regarding mental health consequences of hospitalized patients with COVID-19 and their relatives is largely lacking. Patients with COVID-19 and their relatives face a set of major stressors. These include social distancing from their loved ones, which increase a sense of precariousness regarding their health status, and increased family care burdens and economic stressors [6]. The multitasking, uncertainty, and strain that many patients and relatives struggle with, put them at high risk for increased psychological distress. Yet, the mental health aspects of COVID-19 patients and their relatives are being largely overlooked [7].

Caregivers' quality of life is affected during the treatment course of a patient as indicated by research studies. The major psychosocial stresses during COVID-19 pandemic are fear of the disease and its impacts, feelings of helplessness, nebulosity about the future, anxiety, sadness, wrathfulness, grieving reactions, economic worries, psychological stress in interpersonal relationships, and fear of death [8].

A systematic meta-analytic review was conducted to estimate the combined prevalence of anxiety and depression in South Asian countries during the COVID-19 pandemic. A total of 41,402 subjects in 35 studies were included in this review. The combined prevalence of anxiety in 31 studies with a grouped sample of 28,877 was 41.3%. Moreover, the combined prevalence of depression was 34.1% among 37,437 subjects in 28 studies. South Asian countries have high prevalence rates of anxiety and depression, suggesting a heavy psychosocial burden during this pandemic [9].

A study was done in Brazil in 2020 to study anxiety and depression in COVID-19 isolated patients and their relatives. The quantitative measures included the anxiety and depression modules of the Patient-Reported Outcomes Measurement Information System (PROMIS) and pandemic-related stress factors. The results of the study reveal that both patients and relatives suffer from high levels of anxiety and related pandemic worries, with lower levels of depressive symptoms [10].

An online research was conducted to examine the situations of psychological distress, anxiety, depression, and stress during the COVID-19 outbreak in a Mexican sample using Impact of Event Scale-Revised (IES-R) and depression, anxiety, and stress scale (DASS-21). An aggregate of 1105 persons from 32 states in Mexico were included in the study. The psychological distress was rated as moderate-severe by 50.3% of repliers, moderate-severe depressive symptoms were reported by 15.7%, moderate-severe anxiety symptoms were reported by 22.6%, and 19.8% reported moderate-severe stress grade [11].

Aims and objectives

The objectives of the study were as follows:

1. To find out the sociodemographic profile of key caregivers of COVID-19 patients.
2. To study the psychological impact of COVID-19 pandemic in the form of depression, anxiety, and stress in the key caregivers of COVID-19 patients.

METHODS

Type of study

The present study was cross-sectional study, descriptive in nature.

Procedure of study

After taking authorization from Institutional Ethical Committee, a total of 100 key caregivers of COVID-19 patients admitted in various COVID wards of Govt. Medical College, Amritsar, were selected and studied. Precise objective of interview and nature of study were explained to the enrolled key caregivers and they were comforted about the confidentiality of the information given. All the selected key caregivers were administered the pro forma containing sociodemographic profile. The key caregivers were interviewed using depression, anxiety, and stress scales (DASS-21) to probe the prevalence of depression, anxiety, and stress among the key caregivers. SPSS version 23.0 was used to analyze the results. One-way analysis of variance (ANOVA) was used to find the association of mean scores of depression, anxiety, and stress scores with sociodemographic variables.

Selection criteria for caregivers

Inclusion criteria

The following criteria were included in the study:

1. Identified as the current key caregivers of COVID-19 patients admitted in corona wards.
2. Aged more than 18 years.
3. Having no chronic illness for the past 1 year.
4. Providing written informed consent.

Exclusion criteria

The following criteria were excluded from the study:

1. Caregivers who had a cognitive impairment or an intellectual disability.
2. Children and young people <18 years.
3. Caregivers not giving consent.

Instruments

Depression, anxiety, and stress scale-21

The depression, anxiety, and stress scale-21 (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. Scores for depression, anxiety, and stress are calculated by summing the scores for the applicable items [12].

RESULTS

The participant's sociodemographic characteristics are presented in Table 1. The caregivers of COVID-19 patients were distributed over a range of demographic subgroups. Fig 1 shows that majority of caregivers were males (76%). Majority of caregivers were male (76%). The most of caregivers belong to 21–40 years age group followed by 41–60 years age group. About 56% of caregivers belong to rural region. Predominant of caregivers was married (64%). About 33% of caregivers were studied up to middle class followed by illiterate group (21%). Majority of patients were employed (58%). About 51% of caregivers belonged to nuclear families while 48% of caregivers belonged to joint families. Fig 2 shows that about 81% of caregivers of patients who were admitted in hospital were without oxygen mask while 10% were on non-rebreather mask (NRB). About 81% of caregivers of patients who were admitted in hospital were without oxygen mask while 10% were on non-rebreather

Table 1: Distribution of caregivers on sociodemographic variables

Category	Variables	Frequency	Percentage
Age	0–20 years	5	5.0
	21–40 years	58	58.0
	41–60 years	34	34.0
	>60 years	3	3.0
Religion	Sikh	69	69.0
	Hindu	30	30.0
	Muslim	0	0.0
	Christian	1	1.0
Area	Rural	56	56.0
	Urban	44	44.0
Marital status	Never married	33	33.0
	Married	64	64.0
	Divorced	0	0.0
	Widow/widower	2	2.0
	Separated	1	1.0
Education	Illiterate	21	21.0
	Literate	10	10.0
	Primary (up to 5th)	15	15.0
	Middle (up to 8th)	33	33.0
	Up to 10th and 12th	17	17.0
	Graduation	4	4.0
	Postgraduate	0	0.0
Employment	Employed	58	58.0
	Unemployed	39	39.0
	Student	3	3.0
Family type	Joint	48	48.0
	Nuclear	51	51.0
	With friends	0	0.0
	Any other	1	1.0
	Alone	0	0.0

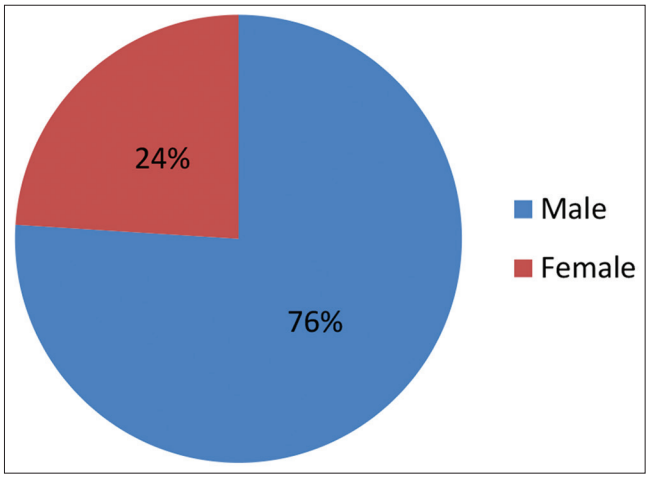

Fig. 1: Gender-wise distribution of caregivers

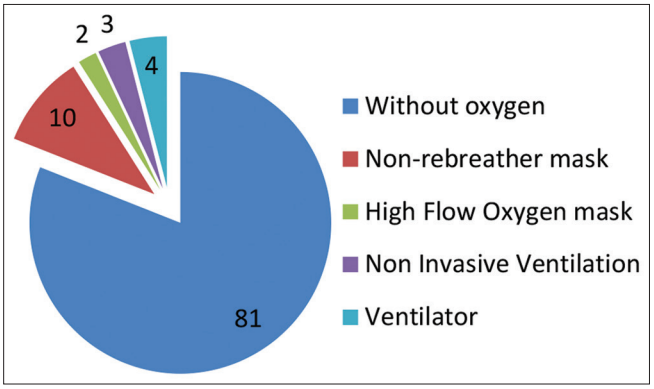

Fig. 2: Type of oxygen support

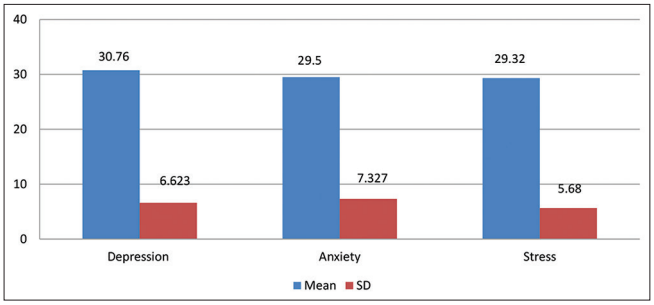

Fig. 3: Mean scores of depression, anxiety, and stress

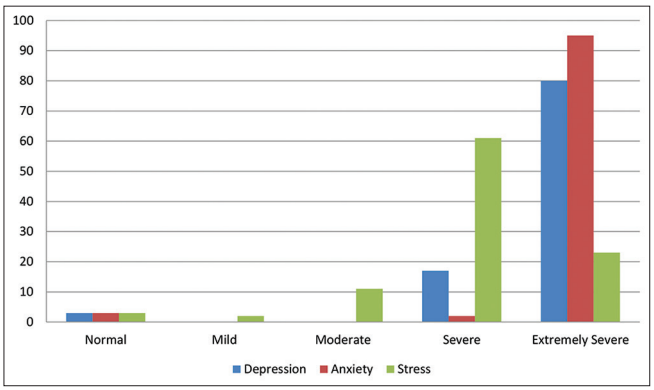

Fig. 4: Severity levels of depression, anxiety, and stress

mask (NRB). About 4% of patients were on ventilator support while 3% of patients were on non-invasive ventilation (NIV). About 2% of patients were on high-flow (HF) oxygen mask.

Assessment of depression, anxiety, and stress

The mean scores for each subscale of the DASS are presented in Fig. 3. Caregivers showed extremely severe depression (30.76±6.623), extremely severe anxiety (29.5±7.327), and severe stress (29.32±5.68) (Fig. 3).

Fig. 4 shows the distribution of participants across five levels of severity of depression, anxiety, and stress. About 80% of caregivers showed extremely severe depression while 17% showed severe depression. About 95% of caregivers showed extremely severe anxiety. About 61% of caregivers showed severe stress and 23% of caregivers showed extremely severe stress.

Table 2 illustrates the association between age of caregivers and mean scores of depression, anxiety, and stress. Participants with increasing age showed higher levels depression, anxiety, and stress scores but significant association was seen only with mean anxiety scores with increasing age (p**<0.01).

Table 3 shows the association of mean scores of depression, anxiety, and stress scores with education status. A significant association was seen between mean scores of stress and education status (p*<0.05). No significant association was found between mean scores of depression and anxiety scores with education status (p>0.05).

Table 4 shows the association of mean scores of depression, anxiety, and stress scores with marital status. A significant association was seen

Table 2: One-way ANOVA for sociodemographic variables (age) regarding depression, anxiety, and stress

Outcome variable	Age group (years)	Independent variable	Mean	Standard deviation	Fisher value	p value
Depression	0–20	5	28.40	3.847	0.632	0.596
	21–40	58	30.21	7.793		
	41–60	34	31.24	4.264		
	>60	3	34.00	2.000		
Anxiety	0–20	5	23.20	2.280	4.421	0.006
	21–40	58	28.00	8.174		
	41–60	34	32.24	4.200		
	>60	3	32.67	2.309		
Stress	0–20	5	29.60	4.336	1.738	0.164
	21–40	58	28.07	6.553		
	41–60	34	30.71	3.966		
	>60	3	31.33	1.155		

Table 3: One-way ANOVA for sociodemographic variables (education) regarding depression, anxiety, and stress

Outcome variable	Education	Independent variable	Mean	Standard deviation	Fisher value	p value
Depression	Illiterate	21	32.48	3.995	2.170	0.064
	Literate	10	33.40	2.836		
	Primary (up to 5th)	15	31.60	5.082		
	Middle (up to 8th)	33	30.18	6.583		
	Up to 10th and 12th	17	26.71	9.973		
	Graduation	4	29.50	3.786		
Anxiety	Illiterate	21	31.52	3.683	2.167	0.064
	Literate	10	29.40	5.582		
	Primary (up to 5th)	15	30.53	4.809		
	Middle (up to 8th)	33	26.61	6.680		
	Up to 10th and 12th	17	29.41	11.742		
	Graduation	4	35.50	1.000		
Stress	Illiterate	21	29.90	2.998	3.113	0.012
	Literate	10	30.20	3.938		
	Primary (up to 5th)	15	30.40	4.548		
	Middle (up to 8th)	33	28.55	4.280		
	Up to 10th and 12th	17	25.88	9.835		
	Graduation	4	36.50	1.915		

Table 4: One-way ANOVA for sociodemographic variables (marital status) regarding depression, anxiety, and stress

Outcome variable	Marital status	Independent variable	Mean	Standard deviation	Fisher value	p value
Depression	Never married	33	29.15	7.985	1.159	0.330
	Married	64	31.13	5.667		
	Widow/widower	2	36.00	0.000		
	Separated	1	32.00	.		
Anxiety	Never married	33	26.55	8.621	2.978	0.035
	Married	64	30.69	5.944		
	Widow/widower	2	34.00	0.000		
	Separated	1	26.00	.		
Stress	Never married	33	26.79	6.836	3.489	0.019
	Married	64	30.28	4.712		
	Widow/widower	2	28.00	0.000		
	Separated	1	36.00	.		

Table 5: One-way ANOVA for sociodemographic variables regarding depression, anxiety, and stress

Outcome variable	Independent variable	Frequency	Mean	Standard deviation	Fisher value	p value
Depression	Male	76	30.61	6.084	0.005	0.945
	Female	24	30.50	7.896		
Anxiety	Male	76	29.34	7.173	0.000	0.996
	Female	24	29.33	7.142		
Stress	Male	76	28.74	5.795	1.597	0.209
	Female	24	30.42	5.274		
Depression	Employed	58	30.90	6.672	0.617	0.541
	Unemployed	39	30.41	6.492		
	Student	3	26.67	3.055		
Anxiety	Employed	58	29.83	7.505	1.015	0.367
	Unemployed	39	29.03	6.710		
	Student	3	24	2		
Stress	Employed	58	28.76	5.605	0.576	0.564
	Unemployed	39	29.85	5.954		
	Student	3	27.34	4.163		
Depression	Sikh	69	31.13	6.476	0.876	0.420
	Hindu	30	29.27	6.654		
	Christian	1	32.00	.		
Anxiety	Sikh	69	29.65	6.842	0.280	0.756
	Hindu	30	28.73	7.922		
	Christian	1	26.00	.		
Stress	Sikh	69	29.45	5.508	0.816	0.445
	Hindu	30	28.27	6.142		
	Christian	1	34.00	.		
Depression	Joint	48	30.71	7.420	0.045	0.956
	Nuclear	51	30.43	5.689		
	Any other	1	32.00	.		
Anxiety	Joint	48	29.21	7.727	0.134	0.875
	Nuclear	51	29.53	6.652		
	Any other	1	26.00	.		
Stress	Joint	48	28.71	5.842	0.920	0.402
	Nuclear	51	29.41	5.561		
	Any other	1	36.00	.		
Depression	Without oxygen mask	81	31.36	5.271	2.158	0.080
	NRB	10	28.40	10.276		
	HF oxygen mask	2	28.00	2.828		
	NIV	3	28.67	4.163		
	Ventilator	4	23.00	14.652		
Anxiety	Without oxygen mask	81	29.83	6.101	2.108	0.086
	NRB	10	29.20	10.031		
	HF oxygen mask	2	24.00	2.828		
	NIV	3	32.00	7.211		
	Ventilator	4	20.50	14.457		
Stress	Without oxygen mask	81	29.14	4.700	0.538	0.708
	NRB	10	30.40	9.606		
	HF oxygen mask	2	29.00	4.243		
	NIV	3	30.00	2.000		
	Ventilator	4	25.50	13.102		
Depression	Rural	56	30.14	6.842	0.569	0.452
	Urban	44	31.14	6.121		
Anxiety	Rural	56	28.36	7.044	2.454	0.120
	Urban	44	30.59	7.121		
Stress	Rural	56	28.46	5.566	1.807	0.182
	Urban	56	30.00	5.803		

between mean scores of anxiety and stress scores and marital status (p*<0.05). No significant association was found between mean scores of depression scores with marital status (p>0.05).

Table 5 describes the association between gender of caregivers, employment status, religion, family type, locality of caregivers, type of oxygen support of patient, and mean depression, anxiety, and stress scales. No significant association was seen between gender of caregivers, employment status, religion, family type, locality of caregivers, type of oxygen support of patient, and mean depression, anxiety, and stress scores (p>0.05).

DISCUSSION

The mental health of family caregivers of the corona-positive patients is often ignored while focusing on the care of patients. To the best of our knowledge, this is one of the first few studies emphasizing the importance of mental well-being in family caregivers of corona-positive patients [7]. Till date, majority of the studies focus on mental health of patients and health-care staff [5,13,14]. Only few studies have been conducted on family caregivers of corona-positive patients [15-17].

Several factors such as uncertainty regarding length of isolation, risk of infection of oneself or others, physical separation from family members, increased family care burden, and sudden deterioration of health status of patients are some of the factors responsible for depression, anxiety, and stress in caregivers of corona-positive patients [6,10].

In our study, majority of the family caregivers of corona-positive patients in the hospital setting were males (76%), belong to 21–40 years age group (58%), married (64%), Sikh by religion (69%), employed (58%), and belong to rural region (56%). In a descriptive cross-sectional study conducted by Abasat Mirzaei *et al*. in 2020 in Iran with 210 family caregivers of COVID-19 inpatients and outpatients, most of the family caregivers of inpatients were male (60%), belong to 31–40 years age group (46.3%) [17]. A study was done in Spain to assess the psychological impact of COVID-19 pandemic and anxiety, stress, and depression in 3055 adults. Most participants were women (75.1%), of young adults age (mean age 32.15 years), married (38%), employed or self-employed, and well educated [16]. It was a community-based study in general population while our study included participants who were family caregivers in hospital-based corona-positive inpatients, which may be the reason for different demographic characteristics of participants.

In our study, we found that caregivers of corona-positive patients suffer from extremely severe depression (30.58±6.521), extremely severe anxiety (29.34±7.130), and severe stress (29.14±5.694). A study was done in Israel to assess anxiety and depression using Hebrew versions of the anxiety and depression modules of the Patient-Reported Outcomes Measurement Information System (PROMIS) Adult and Child versions, in 90 COVID-19 isolated patients and their 125 1st degree relatives during the initial stage of hospitalization. The results of this study showed that both patients and relatives suffer from high levels of anxiety and related pandemic worries, with lower levels of depressive symptoms [10]. Another descriptive phenomenological study was done in Iran to explore the experience of family caregivers of COVID-19 patients who had experience in home caring. The 13 study participants described the experience as difficult and terrifying. The most common experiences described were worry, fear, anxiety, sadness, hopelessness, powerlessness, and pre-occupation about the disease outcome, similar to the findings of our study [15].

A study was conducted in Spain in general population where moderate-to-severe psychological impact was reported in 36%, mild-to-severe levels of anxiety were reported in 25%, depressive symptoms were reported in 41%, and stress was reported in 41% of participants. The results of this study concluded that participants consider COVID-19 health crisis as fairly severe and it greatly impacted their daily life which is quite similar to the findings in our study [16].

In another study, psychological experience of family members of COVID-19 patients was explored. Significant psychological distress, feelings of powerlessness, anxiety, and concerns about patients discharge were significant in participants [18].

In our study, a significant association was seen with depression, anxiety, and stress scores with increasing age. Similar results were shown in a study done in Israel in which child relatives had low anxiety compared to adult relatives because adult relatives face additional objective burden in addition to subjective burden [10].

This study has several limitations. First limitation is that it was a cross-sectional study which is an inferior study design as compared to longitudinal study design therefore limiting the implications of the study. Second, due to voluntary nature of the participation, it is possible that caregivers of corona-positive patients, who were more stressed, may have not participated in the study, resulting in selection bias, thus affecting generalizability of findings. Third, in our study, we did not compare the levels of depression, anxiety, and stress in caregivers of corona-positive patients to caregivers of patients with other medical and surgical illnesses.

CONCLUSION

The impact of COVID-19 pandemic on mental health of family caregivers of COVID-19 patients is significant. Further, future follow-up of the same population will enable us to identify risk and protective factors for the persistent evolution of mental health consequences in patients with COVID-19 and their relatives.

AUTHORS' CONTRIBUTIONS

All the authors have actively participated in research and formulating manuscript.

Dr. Khushbinder Singh, Dr. Manmeet Sidhu, and Dr. Raminder Sidhu participated in the literature search, conduct of the study, data collection and analysis, and draft manuscript preparation. The concept of the study was by Dr. Rajiv Arora who designed the study, reviewed, edited, and approved the final manuscript.

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