

ORIGINAL ARTICLE

Correlation of Depression, Anxiety with Perceived Social Support among Nursing Staff Working in COVID-19 PandemicAsif Azeem^{1*}, Sikandar Ali², Suhail Ali¹, Ayesha Shabbir¹, Sidra Usman³**ABSTRACT**

Objective: To determine the correlation between perceived social support, anxiety and depression among nursing staff working in a COVID-19 dedicated hospital setup.

Study Design: Cross-sectional study.

Place and Duration of Study: The study was carried out at the Armed Forces Institute of Mental Health (AFIMH), Rawalpindi, Pakistan, from August 2020 to July 2021.

Materials and Methods: We consecutively sampled 128 subjects. Basic demographic data, including age, gender, ethnicity, and socioeconomic status, were recorded. All participants were requested to complete a brief demographic sheet, the Urdu version of the Depression, Anxiety and Stress Scale 21 (DASS-21) and the Urdu version of the Multidimensional Scale of Perceived Social Support (MSPSS).

Results: The mean age of patients was 30.81 ± 6.56 years with a range of 21-45 years. There were 80(62.50%) male and 48(37.50%) female nurses. The study result shows mean total depression score was 7.90 ± 5.71 . The mean total anxiety score was 8.49 ± 6.23 . The mean multidimensional scale of perceived social support (MSPSS) score was 47.29 ± 22.53 . There was a significant negative correlation between the MSPSS score and the depression score ($r = -0.407$, p -value < 0.001). There was a significant negative correlation between the MSPSS score and anxiety score ($r = -0.365$, p -value < 0.001).

Conclusion: Results of this study highlight that there is a statistically significant negative correlation between perceived social support and depression, anxiety and stress levels found among nursing staff working in a COVID-19 dedicated hospital setup.

Keywords: Anxiety, COVID-19, Depression, Social Support.

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Introduction

The exponential global spread of COVID-19 has brought unprecedented challenges for healthcare services. An immediate and catastrophic burden has

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been laid upon hospitals in different parts of the globe. As compared to the general population Health Care Workers (HCWs) are three to five folds more vulnerable to get infected with COVID-19.¹ Healthcare professionals are particularly more vulnerable to the stress associated with the catastrophic burden of the disease and fear of being at increased risk of transmission of the virus while performing their duties.²⁻³ This exposes them to varying degrees of harmful effects on their mental well-being, including depressive episodes and anxiety spectrum disorders.⁴ In such challenging circumstances, social support, both formal and informal plays vital role in combating the challenges to the mental health of these healthcare workers performing duties in a COVID dedicated set-up. Healthcare workers who have increased perceived

social support have low instances of succumbing to depression and anxiety levels.^{5,6} Initial reports regarding the psychological impact on the frontline HCWs taking part in the immediate screening, assessment and treatment of patients suffering from COVID-19 were described originally from China, with an increased risk of anxiety, insomnia, depression, and distress.⁷ Subsequently, similar data was published from other international sites. Studies have highlighted that individuals exposed to communicable viral infections are more prone to exhibit signs of anxiety which gets precipitated in situations where there is a shortage of protective gear in addition to a lack of continuous medical education and the latest knowledge on the relevant topic.⁸ About 24.4- 29.5% of Pakistani nurses working with COVID-19 affected individuals in various hospital setups in Karachi city reported experiencing moderate - very high degrees of anxiety.⁹ Social support has a 'direct' efficacious effect on a person's psychological well-being, irrespective of whether they are going through a difficult circumstance or not. They also reported that depression presents itself where there is a lack of emotional support and current COVID 19 pandemic has brought their roles into sharp focus and they are functioning as the vanguard in this fight. Therefore, the physical and social protection of nursing staff plays a vital role in maintaining the continuity of health care. These measures play a pivotal role in ensuring effective and efficient healthcare services.¹⁰

Currently, there is a paucity of evidence to suggest that during pandemics like COVID-19 development of depression and anxiety can be averted by ensuring social support for the HCWs working during the COVID-19 pandemic.

Keeping the above in view, this study is designed to determine the correlation between perceived social support, anxiety and depression among nursing staff working in a COVID-19 dedicated hospital setup.

Materials and Methods

After approval of the ethical committee vide IERB certificate No.023/20, this cross-sectional study was done in Rawalpindi, Pakistan at a tertiary care psychiatric facility from 30 Aug 2020 to 2nd March 2021. A total sample size of 128 was estimated by using a formula by Hulley et al. based on the study by Velando-Soriano.^{8,11} where Level of significance (α)

two-tailed = 0.05, B (type II error rate) = 0.2 and r (expected correlation coefficient) were 0.245.¹⁰ We consecutively sampled 128 subjects using convenience non-probability sampling technique. Both genders, age range 20-60 years, Nurses working in COVID-19 dedicated wards, HDUs and ICUs at PEMH, Rawalpindi with working hours of at least two weeks were considered for this study. Doctors and ancillary support staff, COVID-19 infected nurses, and nurses with pre-existing mental health problems were not considered for the study. After taking Informed written consent, participants were requested to complete a brief demographic sheet, Urdu versions of the Multidimensional Scale of Perceived Social Support (MSPSS) and the Depression, Anxiety and Stress Scale 21 (DASS-21) were used.^{12,1}

The MSPSS has 12 items (a 7-point Likert scale) with three subscales for family, friends and significant other and each subscale contains 4 items.¹³ Each item has following responses 1 = very strongly disagree, 2 = strongly disagree, 3 = disagree, 4 = neutral, 5 = agree, 6 = strongly agree, 7 = very strongly agree. The sum of all items was calculated to get the mean of perceived social support scores (in the range of 1 to 84). The mean and standard deviation for the mean perceived social support scores (PSSS) was described. The DASS 21 has 21 items (a 4 item Likert scale) with three sub-scales for stress, anxiety and depression.¹⁴ Response for each item range from 0 to 3, where 0 denotes did not apply to me at all, one represents that it applied to me to some degree, or some of the time, 2 denotes that it applied to me a considerable degree or a good part of the time while three represents that it applied to me very much or most of the time. The scores for the anxiety and depression subscale were added and then multiplied by 2 to ascertain the severity level of anxiety and depression.¹⁵

SPSS version 23.0 was used for analysis. Numerical variables like age, duration inward and PSSS were represented by Mean and standard deviation, while Frequency and percentages were projected for variables such as gender and proportion of nurses in the various categories of perceived social support and stress. The Outcome variable for the study was the Perceived social support score (PSSS). The Dependent variables for the study were Anxiety

Score (AS) and Depression Score (DS). Pearson's coefficient was used to assess the correlation between the PSSS and depression score DS. Stratification and post-stratification correlation were used to control the effect modifiers such as age, gender duration of work/stay in ward. To ascertain the significance of obtained results, chi-squared test was used ($p \leq 0.05$).

Results

Participants of this study had a mean age of 30.81 ± 7.56 years, ranging from 20-43 years of age; 80 (62.50%) were male and 48 (37.50%) female nurses with a higher male to female ratio. The mean duration of stay of nursing staff in the ward was 4.86 ± 2.28 with duration ranging from 2 to 8 weeks, 62 (48.44%) nurses had duration of 2 to 4 weeks while 66 (51.56%) nurses had duration of more than 4 weeks of stay in the ward (table 1).

Table 1: Demographic variables (N =128)

S.no	Category	
1	Age (Mean ± SD)	30.81 ± 6.65
2	Level of severity of Depression	N (%)
	Normal severity	39 (30.47)
	Mild severity	16 (12.50)
	Moderate severity	31 (24.22)
	Severe level	20 (15.62)
	Extremely Severe level	22 (17.19)
	Mean ± SD	7.90 ± 5.71
3	Level of severity of Anxiety	N (%)
	Normal severity	35 (27.34)
	Mild severity	9 (7.03)
	Moderate severity	11 (8.59)
	Severe level	20 (15.62)
	Extremely severe level	53 (41.41)
	Mean ± SD	8.49 ± 6.23
4	Duration of time spent in wards	N (%)
	2-4 weeks	62 (48.44)
	> 4 weeks	66 (51.56)
	Mean ± SD	4.86 ± 2.28
5	Perceived Social support	
	Mean ± SD	47.29 ± 22.53

The mean total depression score was 7.90 ± 5.71 ; 39(30.47%) nurses had normal scores, 16(12.50%) had mild depressive symptoms, 31(24.22%) had moderate, 20(15.62%) had severe symptoms while 22(17.19%) experienced extremely severe depression (table 1 and figure 1).

The mean total anxiety score was 8.49 ± 6.23 . There were 35(27.34%) with normal scores, 9(7.03%) had mild anxiety, 11(8.59%) had moderate, 20(15.62%) scored severe while 53(41.41%) experienced

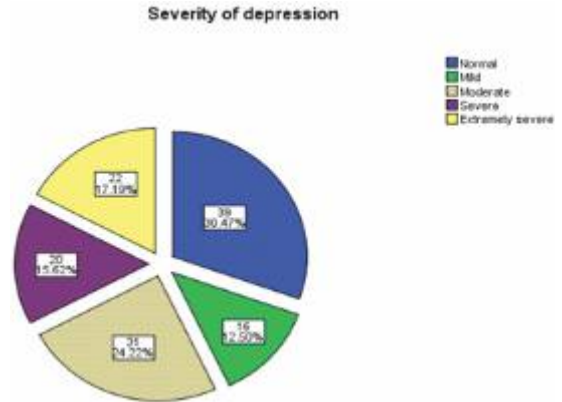


Fig 1: Depression levels among nursing staff working in COVID setup

extremely severe anxiety (table 2 and figure 2). On multidimensional scale of perceived social support (MSPSS) participants had mean score of 47.29 ± 22.53 . When depression and anxiety was compared with MSPSS there was significant negative correlation (for depression $r -0.407, p < 0.001$ and for anxiety $r -0.365, p < 0.001$). Furthermore, when data was stratified for age, gender and duration of time spent in ward significant negative correlation was observed between MSPSS, depression and anxiety scores (table 2).

Table 2: Correlation of Perceived Social Support with other variables

S.no	Category	Variables	MSPSS		P value	
			Depression Pearson correlation	Anxiety Pearson correlation	Depression	Anxiety
1.	Age (years)	20-40	-380	-292	0.002	0.017
		> 40	-428	-424	<0.001	0.001
2.	Gender	Male	-465	-399	<0.001	<0.001
		Female	-330	-321	0.022	0.026
3.	Duration weeks	2-4	-382	-361	0.002	0.004
		>4 weeks	-430	-368	<0.001	0.002
4.	MSPSS		-470	-365	<0.001	<0.001

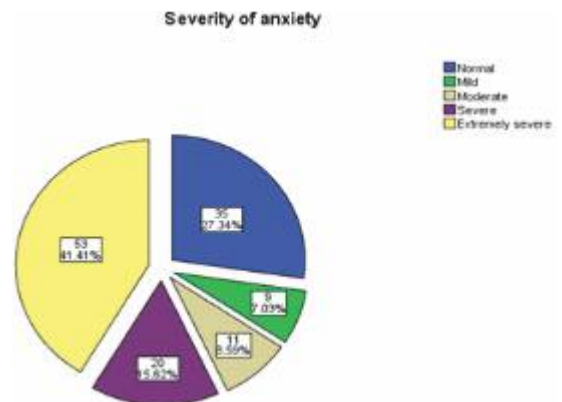


Fig 2: Anxiety levels among nursing staff working at COVID setup

Discussion

Results of our study correlate with the study of Liang Y et al which documented that healthcare professionals who were younger than 30 years had more depressive symptoms as compared to the staff members aged more than thirty years but it is important to highlight that the results were not statistically significant.¹⁴ On the other hand, study done by Cai H et al. has shown that health care workers aged between 41 to 50 years were more worried of getting infected themselves but health care workers with age of 31 to 40 years had more apprehensions of transmitting infection to their close relatives.¹⁶ In our study majority of participants 80 (62.50%) were males but It is interesting to note that female health care workers show greater degree of predisposition towards development of depression and anxiety as comparison to their males colleagues similar to the results highlighted by Lai J et.al where rates of anxiety were found to be 29.06% for women and 20.92% for male healthcare workers.¹⁷ Study results by Panagiota point out that Health care professionals exhibit apprehensions about the possibility and danger of not only getting infected themselves but also of their loved ones. This unique sense of vulnerability predisposes health care workers to developing anxiety and depression especially in pandemic situations.¹² Health care workers who spend more than four weeks in ICU experience immense workload, and exhaustion in addition to difficulty dealing with the loss of patients whom they attend leading to anxiety and or depression. Although in our study, 83 (57.03%) exhibited symptoms of moderate to severe depression, we did not notice severe depression with suicidal thoughts as was noted by Y Liang et al that severe cases may culminate in suicide.¹⁴ When Pappa compared anxiety between doctors and nurses, it was noted that 21.73% of doctors exhibited anxiety. In comparison, 25.80 nurses experienced anxiety showing a higher propensity among nurses, with 6.88% showed moderate levels of anxiety.¹⁸ Alwani found that 24.4- 29.5% of Pakistani nurses working with COVID-19 affected individuals exhibited moderate to very high degrees of anxiety; these results differ from the results of our study, where we have noted that 84 (65.62%) of the health care worker experienced moderate to severe level of

anxiety. Similar to the results of our study Shanafelt has highlighted that perception about the quality of assistance from administration, adequate training and guidance, working hours, logistics and care of children while they are at work protect healthcare workers from anxiety. In addition, Shechter et al. highlighted the vital role of a conducive work environment, living standards, and support of family and friends as formal social support from supervisors and managers can protect nurses from different mental health issues at the workplace.¹⁹⁻²¹

It is thus highlighted in this study that depression, anxiety and stress was seen in number of nursing staff. Social support, whether formal or informal, has the capacity to has positive impact on the efficiency of nursing staff. Health care administrators'/policy makers need to be sensitive to the needs of the nursing staff to safeguard their mental well-being and enhance their productivity. Hence, social support must be improved to reduce the depression, anxiety and stress levels among the nurses who are playing a critical role in spearheading the fight against COVID-19.

Conclusion

Results of this study highlight that significant negative correlation was found between perceived social support and stress, anxiety and depression among nursing staff working in a COVID-19 dedicated hospital, and perceived social support can enhance the mental well-being of Nursing staff in a COVID set up.

Limitation of Study

The authors acknowledge the limitations of this study as being Cross-sectional design doesn't help in determining the reasons why a perceived sense of social support is correlated with mental health and the development of Depressive symptoms and anxiety among nurses in a stressful COVID environment.

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