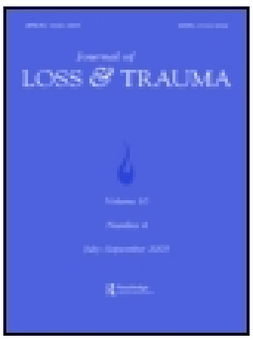

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Impact of Fear of COVID-19 Pandemic on the Mental Health of Nurses in Pakistan

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ABSTRACT

The COVID-19 pandemic significantly impacted the mental, emotional and psychological health of Frontline nurses. This study examines the impact of fear of COVID-19 on nurses' turnover intention, secondary trauma, and psychological distress. Additionally, we explore the possible moderating variable, i.e., leadership support that may compensate for the negative impact of fear of COVID-19 on the nurses' turnover intention, secondary trauma, and psychological distress. Initially, 700 nurses were contacted; however, the response of 380 nurses was received. It is found that fear of COVID-19 significantly affects nurses mental health. We concluded that hospital administrations should support, encourage and motivate Frontline nurses to reduce negative emotional and mental health issues.

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KEYWORDS
COVID-19; secondary trauma; psychological distress; turnover intention; leader support; frontline nurses; Pakistan

Introduction

COVID-19 is a new disease and poses a great challenge to the global health system (Ornell et al., 2020). Like other viruses, this virus has a range of symptoms including sore throat, mild flu, dry cough and fever, to a more hazardous one such as breathing difficulties, pneumonia, and in some cases even death (Cirrincione et al., 2020). The working environment for the healthcare workers is significantly affected and delivering healthcare services has been emotionally difficult for them due to uncertainty, stress and stigmatization (Ramaci et al., 2020). These workers offer their services in extreme situations because of the hasty blowout of COVID-19, lack of specific medication, mortality cases, high levels of infection, no formal operative protocols, lack of personal protection equipment and lockdown. These workers are usually exposed to traumatic events and even witness the death of patients. Still, during the current COVID-19 pandemic, healthcare workers experience intense and enduring exposure to these factors leading to develop the risk of post-traumatic stress disorder (PTSD) or secondary

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trauma. Past researches highlight that healthcare workers can develop secondary trauma or PTSD following events like MERS outbreaks and SARS epidemics after the end of the emergency (Kim 2017; Lee et al., 2018; Lillie et al., 2020; Miller, 2020).

Healthcare Workers serving in emergency departments experience a higher risk as compared to those working in other departments of developing one or more symptoms of secondary traumatic stress or vicarious trauma, a common phenomenon during such calamities (Morrison & Joy, 2016; Ornell et al., 2020; Ratrout & Hamdan-Mansour, 2017; Trzebiński et al., 2020). Secondary trauma is the indirect exposure to trauma, through the firsthand narrative of a traumatic event, resultantly a set of reactions and symptoms like those found in the people with posttraumatic stress disorder (e.g., hyperarousal, avoidance and re-experiencing). Updated research conducted on COVID-19, particularly in China, showed that the psychological health of doctors and nurses is strongly affected by such an epidemic. Some studies explored the stress of healthcare workers operating in COVID-19 and concluded that such workers face anxiety, great depression, distress and insomnia related to stressful experiences (Lai et al., 2020; Zhou et al., 2020). Furthermore, the sternness of the symptoms was influenced by age, role, kind of activity performed, gender, specialization and direct exposure to COVID-19 patients. Labrague and De los Santos (2020) studied the impact of fear of COVID-19 on nurses' job satisfaction, psychological distress and professional and organizational turnover intention. They concluded that an increase in fear of COVID-19 would increase psychological distress, professional turnover and organizational turnover and decrease job satisfaction.

Maintaining their psychological and mental health is essential for nurses to play a useful role during this pandemic. However, recent literature highlighted that COVID-19 significantly impacted nurses psychological and mental well-being (Catton, 2020; Xing et al., 2020). Furthermore, recent research also postulated a significant relation between COVID-19 and adverse mental health issues like anxiety, depression, burnout and stress (Mo et al., 2020; Nemati et al., 2020; Wu et al., 2020; Xing et al., 2020). Ahorsu et al. (2020) argued that vulnerability to disease could create fear and anxiety among nurses that possibly affect their work effectiveness, well-being and psychological health during this pandemic. Furthermore, the mental health of Frontline nurses who directly worked in the coronavirus department is profoundly affected as they are eyewitness of COVID patients suffering and dying (Alharbi et al., 2020; Ahorsu et al., 2020) leading to post-traumatic stress (Kameg, 2020; Zhao et al., 2020). Thus, supporting the nursing workforce in this COVID-19 pandemic is of

paramount importance and essential for a healthy work environment. Therefore, we proposed that:

H_1: Fear of COVID-19 is negatively associated with the nurse's secondary trauma

H_2: Fear of COVID-19 is negatively associated with the nurse's turnover intention

H_3: Fear of COVID-19 is negatively associated with the nurse's psychological distress

Brief history of COVID-19 in Pakistan

In Pakistan, the first two cases of COVID-19 were reported on 26 February 2020 in two big cities, i.e., Karachi and Islamabad. Due to fast transmission and lack of proactive steps, the virus spread in the whole country, and at least one confirmed case was reported in each district. Presently Pakistan has the third-largest number of confirmed cases in Asia and the second largest number of confirmed cases in South Asia and the 12th highest number of confirmed cases in the world. Despite this, the death ratio is comparatively low, i.e., 2.14% compared to the global average of 3.9%. To date, there are 264,082 confirmed COVID cases in Pakistan. Among them, 5000 were healthcare professionals, including doctors, nurses and paramedic staff (Ministry of Health Report, May 2020). According to the National Institute of Health, 65 medics lost their lives while fighting against COVID-19. In Pakistan, the number of confirmed cases in healthcare professionals is increasing day by day due to the non-availability of Corona Kits, PPE, lack of information and non-serious attitudes of healthcare professionals.

The role of supportive leadership

Mitigating the negative effect of COVID-19 on Frontline healthcare workers needs potential mechanisms. One possible way to reduce the associated risk of mental health problems is to properly prepare the workforce for the job and the associated challenges (Iversen et al., 2008). The leaders must fully and frankly assess what the workers will face, delivered without euphemisms and false reassurance (Halcomb et al., 2020). The leaders should help and support the healthcare staff to make a morally challenging decision in the current pandemic. This could be achieved through discussion based on Schwarz rounds (Katz et al., 2020; Maffoni et al., 2020), which allows health-care workers to openly discuss the social and emotional challenges they are facing during patient care. Leaders are human, too, supportive leaders make it possible to protect their follower's mental health (Jones et al., 2012). Thus, to provide a pleasant working environment, leaders need to study the mind of their staff and act accordingly (Wu et al., 2020). Pakistan is one of the influential collectivist cultures (Hofstade, 1983). The role of a leader in a collectivist culture is significant in the organization. All organizations are based

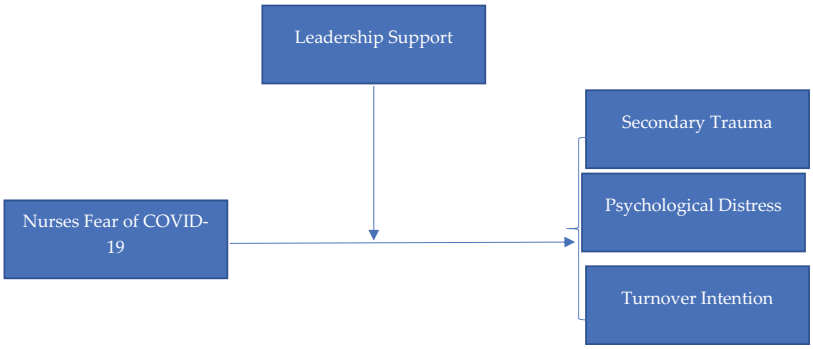

Figure 1. Conceptual framework of the current research.

on a centralized mechanism where higher authority controls the situation. Grounded on social support theory (Amason et al., 1999), past literature found that supervisor support plays a vital role in reducing anxiety, ambiguities and uncertainties facing by employees in the organization. Talking of the impact of the COVID-19 pandemic, the role of leadership support is vital to overcome the level of anxiety, distress, turnover and trauma that employees' experiences in the current turmoil. In the wake up COVID-19 pandemic, like the rest of the world, Pakistan followed the suit of limiting market activities to essential items and medical supplies only. The workers in this sector found itself caught between rock and hard place. In such a situation, the role of leadership support in minimizing the level of fear of COVID-19 in Pakistan has not been investigated among the frontline healthcare workers. Thus, the study in hand as an attempt to explore the moderating effect of leadership support in the relationship between the level of fear of COVID-19 and mental health of Frontline nurses (Figure 1). Hence, we proposed that:

H_4: Leadership support moderate the relationship between fear of COVID-19 and nurses' secondary trauma, such that the effect of fear of COVID-19 is low when leadership support is high

H_5: Leadership support moderate the relationship between fear of COVID-19 and nurses' turnover intention, such that the effect of fear of COVID-19 is low when leadership support is high

H_6: Leadership support moderate the relationship between fear of COVID-19 and nurses' psychological distress, such that the effect of fear of COVID-19 is low when leadership support is high

Materials and methods

Participants

A sample for this study was selected from 10 large hospitals of the Khyber Pakhtunkhwa province of Pakistan. A total of 700 sample size was chosen from these hospitals by using a convenience sampling method.

The cross-sectional research design was used to collect data from the respondents. An English version questionnaire was used to collect data from the respondents. Respondents have a strong English background, as most respondents have a bachelor degree. We contacted nurses who directly involved to deal COVID-19 patients and those who did not directly participate in dealing COVID-19 patients with this notion that the mental health of those nurses that directly engaged with COVID-19 patients is more affected in comparison with others. We received 380 responses from the respondents having a response rate of 54.28%. The majority of the respondents were female staff (320) with 84.21%. Their average age was 31.5 years. Majority of the respondents have a BS nursing degree (81%).

Instruments

Fear of COVID-19

A scale developed by Ahorsu et al. (2020) with seven items for measuring fear of COVID-19 threat was used. A sample item is "how much does your illness affect you emotionally". Previous studies used this scale and found excellent reliability ($\alpha = .86$ and $\alpha = .87$) of the scale (Ahorsu et al., 2020).

Turnover intention

To measure turnover intention, a scale used by Labrague et al. (2020) having two items was used. A sample item of turnover intention is "Given the current situation, I am thinking about leaving nursing as a profession". Previous studies (e.g., Labrague et al. 2020) also used this scale and found excellent internal consistency reliability ($\alpha = .91$).

Psychological distress

To measure psychological distress, a short version scale with five items developed by Cavanagh et al. (2006) was used. An example item is “Please tell me how often you have felt very tired for COVID 19 reason in the past three months.” Past researches found excellent reliability ($\alpha = .87$) of this scale (e.g., Labrague et al. 2020).

Secondary trauma

Secondary trauma was assessed with five items of short version scale developed by Bride et al. (2007) was used. An example item is “My heart started pounding when I thought about my work with CVOID 19 patients.” Ahorsu et al. (2020) also used this scale and found excellent reliability of the scale ($\alpha = .87$).

Table 1. Confirmatory factor analysis.

Name of variable	CMIN	DF	CMIN/DF	CFI	TLI	NFI	GFI	AGFI	RMR	RMSEA	AVE
Fear of COVID 19	10.201	10	1.020	.959	.928	.909	.948	.951	.040	.040	.72
Leadership Support	89.101	47	1.895	.992	.939	.906	.914	.908	.039	.050	.75
Secondary Trauma	19.014	9	2.112	.991	.939	.940	.961	.934	.030	.060	.68
Psychological Distress	80.102	42	1.907	.948	.908	.969	.949	.929	.070	.046	.81
Turnover Intention	40.195	15	2.679	.976	.949	.939	.974	.990	.051	.076	.73

Leadership support

To measure leadership support, a scale developed by Cole et al. (2006) with four items was used. An example item is "My leader cares about my well-being during this pandemic." Past studies also used this scale and found excellent reliability ($\alpha = .81$) (Charoensukmongkol & Phungsoonthorn, 2020).

Results

Table 1 shows the confirmatory factor analysis of each study variable. The results revealed that fear of COVID-19 has a good model fit as all of the model fit values are matching with minimum and a maximum threshold. Leadership support is a moderating variable in this study; it shows a good model fit. Secondary trauma, psychological distress and turnover intention are dependent variables in this study. The results of the one-factor analysis show that all dependent variables have a good model fit. It shows that the data have fit the model. The values of AVE are lies in the suggested range, indicating that the instruments we used have good validity.

To avoid common method bias, we apply Harman's single factor test. The results of Harman's test show that confirmatory factor analysis was done for fear of COVID-19 which is an independent variable, moderating variable (leadership support) and dependent variables (secondary trauma, psychological distress and turnover intention) (Table 2). All variables are loaded on a single factor and then compare it with two factors, three factors and five factors. The results of two factors, three factors and five factors have a good model fit as compared to their one-factor model. The bold values show a good model fit.

Group comparison

Table 3 highlights the independent sample t-test for group comparison. We generate two groups, i.e., one including nurses who are directly involved to deal COVID-19 patients, and the second group includes those nurses who have no direct interaction with COVID-19 patients and work in other departments. As the mean scores of nurses dealing with COVID-19 and those working in the other department have almost the same indicating that fear for COVID-19 for nurses fighting directly with COVID-19 and

Table 2. Paired comparison CFA.

Name of variable	CMIN	df	CMIN/ df	CFI	TLI	NFI	GFI	AGFI	RMR	RMSEA
2 Factor (COVID 19 + LS)	110.317	56	1.969	.964	.909	.987	.940	.985	.050	.067
1 Factor (COVID 19 + LS)	610.126	59	10.341	.501	.420	.501	.597	.601	.315	.191
3 Factor (ST + PD + TI)	377.279	261	1.445	.947	.929	.918	.968	.958	.070	.060
1 Factor (ST + PD + TI)	1498.796	259	5.786	.331	.310	.302	.599	.601	.307	.200
5 Factor (CVOID19 + LS + ST + PD + TI)	799.699	660	1.211	.949	.937	.976	.969	.938	.041	.049
1 Factor (CVOID19 + LS + ST + PD + TI)	2688.019	410	6.556	.501	.403	.407	.591	.619	.109	.128

Table 3. Group comparison.

Designation	N	Mean	Std. Deviation	Std. Error Mean
Dealing with COVID-19 patients	305	3.14	1.062	.080
Worked in other departments	75	3.24	1.054	.134

Table 4. Correlations and reliabilities.

	Mean	SD	1	2	3	4	5
1. FC	3.16	1.06	**(.82)**				
2. ST	3.26	1.02	.879**	**(.86)**			
3. PD	3.32	1.04	.856**	.917**	**(.78)**		
4. TI	3.38	.985	.857**	.894**	.872**	**(.81)**	
5. LS	3.54	.787	−.057	−.067	−.102	−.079	**(.83)**

Note: *$p < .05$; **$p < .01$; reliabilities are in parentheses; (n) = 380.

working in the other department is the same. So, no significant difference was observed.

Correlation and reliability statistics

Table 4 highlights descriptive statistics, bivariate correlations and reliabilities of the scales. Reliabilities values are in parentheses in the right diagonal.

Direct and moderating effect

The direct effect of fear of COVID-19 on secondary trauma, turnover intention and psychological distress are reported in Table 5. The results of the regression analysis show that fear of COVID-19 has a positive and significant effect on secondary trauma (β= .84, $p < 0.05$), psychological distress (β= .83, $p < 0.05$) and turnover intention (β= .79, $p < 0.05$). The moderating role of leadership support on fear of COVID-19 on the mental health of nurses is also reported here. As seen in the table, the interaction effect of all three models are significant, and LLCI and ULCI do not contain any zero, confirming that leadership support moderates the relationship of fear of COVID-19 with secondary trauma, psychological distress and turnover intention such that the level of psychological distress,

Table 5. Moderating effect of leadership support.

	Coeff	SE	t	p	LLCI	ULCI
DV: Secondary trauma						
Constant	3.27	.03	103.37	.00	3.20	3.33
LS	.00	.04	−.07	.94	−.09	.08
FC	.84	.03	30.65	.00	.79	.90
int_1	.12	.04	3.07	.00	.04	.19
DV: Psychological distress						
Constant	3.32	.03	98.92	.00	3.26	3.39
LS	−.04	.04	−1.01	.32	−.13	.04
FC	.83	.03	28.59	.00	.77	.89
int_1	.17	.04	4.65	.00	.10	.24
DV: Turnover intention						
Constant	3.39	.03	101.24	.00	3.32	3.45
LS	−.02	.04	−.66	.51	−.10	.05
FC	.79	.03	27.71	.00	.74	.85
int_1	.08	.03	2.54	.01	.02	.15

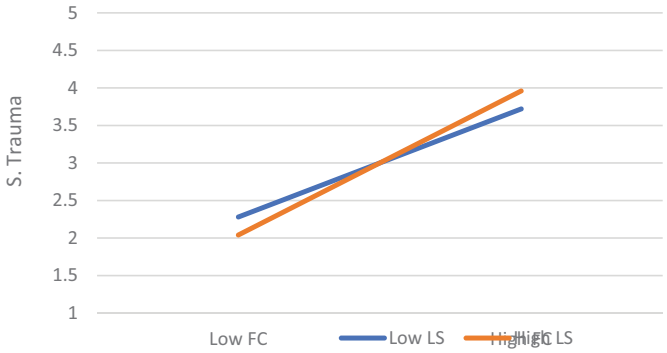

Figure 2. Interaction plot.

secondary trauma and turnover intention is low when leadership support is high. Thus, we concluded that hospital management should facilitate and support their nursing staff in this current pandemic to reduce their level of stress, trauma and distress. The interaction plots of all three relationships were also produced (Figures 2–4).

Discussion

The current research was an attempt to empirically examine the impact of fear of COVID-19 on nurses' psychological health, i.e., Secondary trauma, psychological distress and turnover intention. Furthermore, up to the authors' knowledge, the current research firstly introduces a mechanism that how the impact of COVID-19 fear is reduced among nurses by introducing leadership support as a possible moderator that may play a remedial

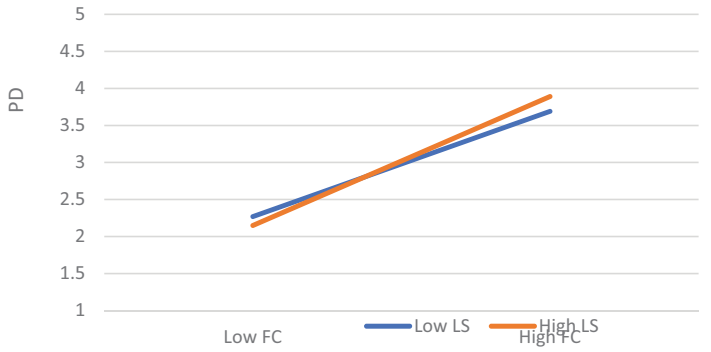

Figure 3. Interaction plot.

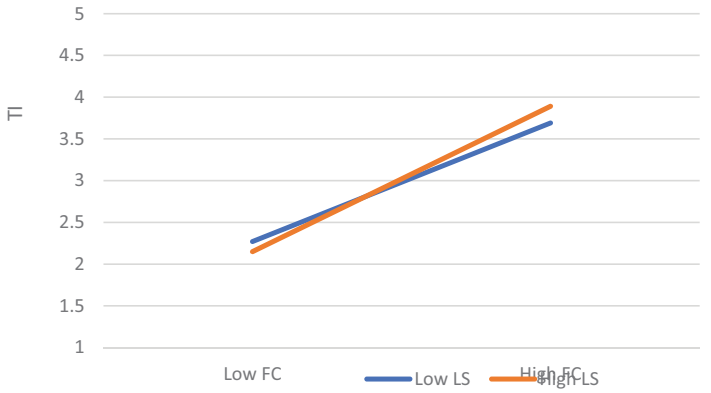

Figure 4. Interaction plot.

role. As we found that fear of COVID-19 has a significant impact on nurse's secondary trauma, psychological distress and turnover intention and leadership support moderates this relationship indicating that the relationship is weak when there is higher support from leaders. Thus, the current research contributes a pivotal finding to nursing management and leadership. We also compare the level of fear among nurses who directly involved in dealing with COVID-19 patients and those working in other departments. No significant difference was found in the level of concern between the two groups. Generally, the fear of COVID-19 among nurses is high (mean = 3.14) in comparison with the general public, i.e., mean = 2.87 (e.g., Li et al., 2020), leading to their feelings of fear to be infected or unknowingly infected others, including their beloved ones. Furthermore, factors like easy transmission, an increase in the number of cases per day and workload, death ratios, quarantine, social distancing, work-related COVID precautions and non-availability of personal protection equipment's deepen the fear among nurses and strongly affect their emotional and psychological health and job performance. The dominant factor that

increases nurses fear is the risk of being infected as well as unknowingly infected their family members.

To effectively manage such pandemic, well-planned work-related procedures and protocols should be in place, including sets of actions related to the disease outbreak such as guidelines about how to care affected patients, relevant training, safety practices, response plans and mutual collaboration with other units. As nurses are directly involved in dealing with COVID patients, they need to be aware of safety and workplace protocols and practice it in their work environment to perform better their services (Labrague & De los Santos, 2020; Labrague et al., 2018). The government of Pakistan initiates a considerable media campaign about awareness regarding workplace protocol to prepare the hospital administration as well as the general public for the COVID-19 pandemic. This makes hospital administration, including doctors, nurses, paramedic and emergency staff to manage the situation effectively.

Limitations and future directions

Although, regarding the novel contributions of the current research, there are several important limitations as well that must be addressed. First, the results are based on data collected from hospitals operated in one city, i.e., Peshawar and exclude nurses working in other hospitals in the country. This may affect the generalizability of the findings. To avoid this limitation, future research is needed to include nursing staff from diverse areas. Second, using a cross-sectional research design limits us to examine the causal relationship and lead to common method bias. Thus, for better results and to avoid common method bias, future researchers should use longitudinal or time lag research design. Third, we only study few variables and their link with COVID-19 fear and fail to consider other personal and organizational variables like work environment, hospital resources, personal nurse competency, staff adequacy, patient's volume and acuity that may also affect nurse's perception of fear. Lastly, we only select nurses' staff and ignore other emergency workers who are also directly involved in dealing with COVID-19 patients. Future researchers may conduct a similar nature of research by selecting a diverse sample that includes nurses, paramedic staff and emergency workers.

Implications for nursing management

The results of our study highlight that in the current phase, nurses are facing immense pressure that affects their mental, psychological and emotional health. In such a scenario, the mental health of nurses requires a

preservative approach. It is suggested that a safe and efficient work environment is provided as it may increase a personal sense of control and maximize nurse's resilience during the pandemic. The hospital's administration must provide psychological support, financial support, on the job training and supportive supervision of nurses and other emergency workers who directly fight against COVID-19 patients. Additionally, it is also appropriate for healthcare management to share accurate and valid information about managing stress, reducing burnout and increasing the resilience of nursing staff during a crisis of this magnitude. Ensuring that nurses are updated about the recent and correct information related to COVID-19 may reduce their fear and negative emotions associated with this disease. Information that should be shared with nurses includes the proper utilization of available resources, the nature of the virus, precautionary measure to avoid transmission, number of new cases reported per day, number of recovered cases, hospital protocols and the new trend of managing COVID patients. Moreover, through mental health training, resilience can be attained, and through this personal sense of self-efficacy and self-confidence can be improved (Yoon et al., 2013). Buselli et al. (2020) also argued that encouraging healthcare workers in such a pandemic may empower their emotional and cognitive skills.

As the findings of the current research as well as recent past studies (Labrague & De los Santos, 2020) show that excessive fear may severely affect mental health, leading to provoke anxiety and then finally affect their job outcomes (e.g., turnover intention, job performance, job satisfaction). Thus, hospital administrators must give due attention to the nurses, mental, emotional and psychological health. Therefore, proactively taking these measures may improve job performance, job satisfaction, enhance perceived health, reduce professional and organizational turnover and psychological distress among nurses. During pandemic situations, mental health professionals are instrumental in supporting and caring about the mental health of Frontline nurses.

Several important factors may help to reduce nurses fear. These factors are support from supervisors, colleagues, family and friends, adequate break time, sharing work experiences and on the job training. These factors may create a sense of safety, boost their morale and motivate them to perform their assigned duties and responsibilities better. As we empirically tested that supervisor support may reduce nurses' psychological distress, secondary trauma and turnover; thus, support from peers makes them able to take proactive decisions confidently. Supervisors may help nurses by providing them training opportunities related to the current pandemic, provide personal protection equipment, share accurate information, give appreciation and motive them through certain financial and career advancement rewards.

Conclusion

The current research sheds light on how fear of COVID-19 impact mental, emotional and psychological health of Pakistani nurses. Further, we also explore and empirically examined how the fear of COVID-19 among nurses should be reduced. Our findings suggest that leader support may use as a remedy for a low level of fear among nurses. Understanding the factors that contribute toward nurses' fear of COVID-19 and its impact on their mental and psychological health and job outcomes is essential when designing strategies related to effective nursing management.

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Ethical approval

The hospital administrations and nurses who participated in this study were informed about the aim and scope of the study. They were ensured that their responses were only used for research purpose, and the results will be shared with them for the purpose to adopt policies and practices that help them in their professional career.

Disclosure statement

The authors declare no conflict of interest regarding the authorships and contributions.

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