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Nurses´ stressors and psychological distress during the COVID-19 pandemic: The mediating role of coping and resilience

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Abstract

Aims: This study analyses the cross-sectional effect of sources of stress during the peak of COVID-19 pandemic on nurses´ psychological distress, focusing on the mediating role of coping strategies, both problem focused and emotion focused and resilience.

Design: Cross-sectional and quantitative analyses.

Methods: Structural equation modelling was performed using survey data obtained during the period between 1 April-25 May 2020 in a sample of 421 nurses from 39 Spanish provinces.

Results: Results confirmed that: (a) All the stressors have a significant, direct, and negative relationship with nurses´ psychological distress; (b) Emotion-focused strategies is negatively related to nurses´ psychological distress directly and indirectly through resilience; and (c) Problem-focused strategies is positively related to nurses´ psychological distress and negatively and indirectly through emotion-focused strategies.

Conclusion: This study identifies an important mediation sequence of stressors on psychological distress through the simultaneous concurrent effect of Problem-focused and Emotion-focused strategies and resilience. It shows that enacting the two coping mechanisms and resilience resources is important to achieve an adaptive effect on nurses´ mental health.

Impact: Nurses with insufficient preparation and those with high levels of fear of contagion do not enact proper coping strategies. Thus, these nurses need special consideration due to their risk of higher vulnerability.

KEYWORDS

coping, nurses, resilience and psychological distress, stressors

1 | INTRODUCTION

The COVID-19 crisis has been characterized as the biggest challenge for the World since the Second World War, due, among other things, to the health crisis it has caused. Frontline healthcare staff are one of the most vulnerable groups because they constantly deal with the threat of COVID-19 infection. In this crisis, nurses play a key role in dealing with complex cases that require hospitalization and often have pre-existing health vulnerabilities and complications or mortality (Choi et al., 2020).

By 10 August 2020, the WHO reported 314.362 cases in Spain, being 21% health staff (more than 52.000 cases) and 28.503 deaths,

being 73 health staff. In addition to the risk of infection, nurses' working conditions during this crisis have been harsh. During this period, nurses had to deal with the anxiety, fear, and other emotional states produced by observing patients' suffering and death. They worked under physical and emotional pressure, putting their lives at risk while fulfilling their duties (Catton, 2020). Kang et al. (2020) pointed out that medical staff often have a variety of psychological problems in a high-pressure and high-risk pandemic situation. Similarly, previous studies after the SARS outbreak showed that healthcare workers feared that they might infect their relatives and colleagues. They felt uncertainty and stigmatization, they reported being reluctant to work or contemplating resignation, and they reported high levels of stress, anxiety, and depression symptoms (Bai et al., 2004; Lee, et al., 2007; Maunder et al., 2003), which could have long-term psychological consequences. The aim of this study is to analyze the complex relationships among stressors, coping strategies, and resilience to predict psychological distress in nurses in an acute crisis. Understanding these relationships may help to provide guidelines to prevent or minimize the detrimental effects of this crisis on health staff.

1.1 | Background

1.1.1 | Nurses´ sources of stress and psychological distress

The WHO conceptualizes mental health as a 'state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community'. According to Lai et al. (2019), healthcare workers exposed to COVID-19 have a high risk of developing unfavourable mental health outcomes and may need psychological support or interventions. In addition, many studies have shown that nursing is one of the most stressful occupations (McGrath et al., 2003; Oyeleye et al., 2013). Chan et al. (2000) studied the intensity of work stress in six professional groups and they found that the level of overall work stress was higher for nurses than the average for the six professional groups. Moreover, stress among nurses has been linked to negative outcomes such as psychological distress, burnout, depression, anxiety, low-back pain, or musculoskeletal symptoms (Farquharson et al., 2013; Gonge et al., 2002) and the quality of patients' care may deteriorate (Leveck & Jones, 1996). Finally, hospitals may also lower their effectiveness and productivity indicators for several reasons, such as staff exhaustion or intention to leave (Coomber & Barriball, 2007).

Nurses especially face stressors related to assuming responsibility for another person's life, caring for a large number of patients suffering from disease and pain (Lee, et al., 2007). During the peak of COVID-19, nurses' stressors were intensified. Regular stressors became acute and exacerbated (i.e., more patients, longer work shifts, risk of infection, etc.), whereas there was a shortage of resources (i.e., lack of protective equipment, insufficient facilities, lack of training or experience for this kind of situation, etc.). According to the Job Demands-Resources Model (Bakker & Demerouti, 2014), high levels of demands and low levels of resources clearly predict higher levels of stress in healthcare staff and the most adverse reactions of psychological distress. In fact, the negative relationship between work stressors and physical and psychological well-being has been well established (Fortes-Ferreira et al., 2006). Psychological distress refers to psychological symptoms an individual has experienced in the past few weeks involving disruptions in normal or healthy functioning (Goldberg, 1978). It encompasses indicators such as psychological feelings of depression, anxiety, and strain (Jex, 1998; Lazarus & Folkman, 1984). The Conservation of Resources (COR) Theory (Hobfoll et al., 2018) also provides a theoretical basis to study nurses' stressful experience. According to this theory, 'stress occurs (a) when central or key resources are threatened with loss, (b) when central or key resources are lost, or (c) when there is a failure to gain central or key resources following significant effort' (p. 103). During the peak of the pandemic, people experienced the loss of key personal and job resources and they were constantly threatened by the risk of being infected and infecting others, (Maldonato et al., 2020). A recent study involving 1563 health professionals in China found that about half of the participants reported depressive and anxiety symptoms, (Li et al., 2020). Therefore, it seems essential to study nurses' work conditions during this health crisis, analysing the factors that could alleviate their negative consequences for nurses´ mental health. The objective of this study is to analyse nurses´ psychological distress, identifying the role of different sources of stress, as well as the mediating role of coping strategies and resilience. Previous studies have shown that, the following stress sources are especially relevant for nurses: work overload, insufficient preparation, lack of support, death, and fear of infection (Maldonato et al., 2020; Moustaka & Constantinidis, 2010). In addition, some hospitals in Spain did not have sufficient or adequate PPE (gloves, surgical masks, goggles, gowns medical, etc.) for fully effective protection during the peak period of the pandemic.

1.1.2 | Nurses´ coping strategies

The transactional model of stress and coping by Lazarus and Folkman (1984) described coping as a phenomenon that involves both cognitive and behavioural responses individuals use in an attempt to manage internal and/or external stressors that are perceived to exceed their personal resources. The different types of coping may be characterized either as direct action or problem-focused coping (PFC) or palliative or emotion-focused coping (EFC). Lazarus (2000) points out that these two strategies are interdependent and work together, one supplementing the other in the overall coping process, with coping being a critical process that mediates the person–environment relationship (Lazarus & Folkman, 1984). PFC refers to one's response of attempting to eliminate a perceived threat. It means reducing the sources of stress at work to improve the situation. In turn, EFC aims to reduce emotional discomfort or other negative effects triggered

by the situation. Previous research has shown that PFC is positively related to well-being indicators, decreasing anxiety, and psychological distress (Grossi, 1999; Wong et al., 2006), whereas EFC presents more inconsistent results about its relationship with well-being (Day & Livingstone, 2003; González-Morales et al., 2010). In any case, coping responses, whether 'fight' or 'flight', are intended to protect people from the negative effects of stressors on psychological and physical health (Lepore & Evans, 1996). In one case, the protection stems from removing the taxing sources of stress and, in the other case, it stems from avoidance or other cognitive or emotional strategies. Nevertheless, not always the positive relation between EFC and well-being has been found (Mayordomo-Rodríguez et al., 2015). Thus, it is also important to clarify how these two coping strategies might reduce the negative effect of stressors on nurses´ mental health by mediating their relationship. Previous research has shown evidence of a partial mediating role of coping in the stress and health relationship (Klainin-Yobas et al., 2014) and in the psychological capital and psychological distress relationship in Chinese nurses (Zhou et al., 2017). This mediation effect has, in some occasions, been shown differentiated for both types of coping (Noda et al., 2018).

The relationship between PFC and EFC and their combined mediating role is important and, to the best of our knowledge, it has not received much attention till present. Recently, Stanisławski (2019) has formulated and integrated circumplex model of coping that considers that PFC and EFC are not exclusive categories but rather two axes corresponding to the two tasks (solving the problem and regulating their emotions) that individuals have to face and that then can be combined. Thus, based on different circumstances, the combination of both tasks may be more or less efficient and effective in coping. In the exceptional and highly stressful circumstances considered in our study, we may expect that both coping tasks need to be enacted. Especially PFC is required but it will only be efficiently enacted if EFC is also in place as it is necessary for effective purposeful behaviour regulation. Thus, although there are no conclusive results about the relationship between PFC and EFC, we hypothesize that in this complex and high-risk situation where the healthcare system is overwhelmed, nursing staff prioritize to control the problem by applying active planning and looking for instrumental support to reduce the negative effects of stressors. This, in turn, is positively related to EFC because reframing, acceptance, and looking for emotional support strategies are also necessary in these circumstances. Thus, we expect that nurses will try to eliminate the perceived threat by using PFC strategies in an attempt to improve the critical situation. These strategies may require extra taxing efforts, which may in turn require high levels of EFC behaviours that will be related to less emotional discomfort. This means that the more frequent their PFC strategies are, the more EFC strategies will be enacted.

1.1.3 | Resilience

Currently, nurses´ work is more severe than usual and the loss of available resources is more likely. Under these circumstances, according to the JD-R and COR models, personal resources such as resilience are essential. Resilience has been conceptualized as the capacity to recover quickly and bounce back from adverse circumstances (Rutter, 2008) and as 'the process of adjusting well to significant adversity' (Theron, 2016, p.636). The protective model of resilience (Bonanno, 2004; Ledesma, 2014) indicates that certain interactions between the risks and protection factors may foster positive health outcomes despite unfavourable or aversive circumstances. Among the protection factors, the theory includes planning skills, problem-solving skills, and emotional management skills. Thus, resilience is an important attribute to survive and adapt to stressful working environments, optimise personal ability, and establish supportive systems (Guo et al., 2019). Moreover, resilience has consistently been found to be a protective factor for nurses in disasters and it helps to transform adversities into positive growth experiences, which contributes to their professional development and better mental and physical health (Hart et al., 2014). Hence, nurses' resilient behaviour in response to an overwhelming workplace has been associated with increased quality of life and better health (Gillespie et al., 2007; Glass, 2009). Recently, Ziarko et al. (2020) found a mediating role of ego-resilience between emotion-oriented coping strategies and general well-being measured as job satisfaction. Thus, resilience is a relevant path to convey part of the effects produced by combining both PFC and EFC. Thus, we expect that the use of both coping strategies, PFC and EFC, will be positively related to nurses' resilience, which in turn will be related to psychological distress.

2 | THE STUDY

2.1 | Aims

Considering the theoretical and empirical rationale described above, the research question of this study is as follows: Which is the effect of sources of stress during the COVID-19 pandemic on nurses´ psychological distress, identifying the mediating role of both problem-focused and emotion-focused coping strategies and resilience?

Therefore, we hypothesize that:

Hypothesis 1 *Stressors perceived by nurses (work overload, insufficient preparation for dealing with work demands, lack of support, death and dying, and fear of infection) will be positive and significantly related to psychological distress.*

Hypothesis 2 *Coping strategies (PFC and EFC) will be negatively and significantly related to psychological distress.*

Hypothesis 3 *Coping strategies (PFC and EFC) will partially mediate the relationships between stressors (work overload, insufficient preparation for dealing with work demands, lack of support, death and dying, and fear of infection) and psychological distress.*

Hypothesis 4 *PFC will be positively and significantly related to EFC.*

Hypothesis 5 *Coping strategies (PFC and EFC) will be positively and significantly related to resilience.*

Hypothesis 6 *Resilience will be negatively and significantly related to psychological distress.*

Hypothesis 7 *Resilience will partially mediate the relationships between coping strategies (PFC and EFC) and psychological distress.*

2.2 | Design

This is a cross-sectional and self-reported study based on quantitative data. Sampling and data collection have been carried out completely online.

2.3 | Sample/Participants

The sample was composed of 421 nurses, 93.6% women and 6.4% men, with a mean age of 36 years (*SD* 10.4). Nurses in the sample had an average work experience of more than 12 years (*SD* 10.1). Moreover, they worked in several hospitals and clinics in 39 different provinces in Spain (mainly in Madrid 28.2%, Castellón 22.3%, Valencia 20.6%, and Barcelona 7%). In addition, 35.5% had a permanent contract, 46.7% had a temporary contract, and 17.8% had another type of contract.

2.4 | Data collection

Nurses were contacted through several social media soon after the state of alarm was declared in Spain (14 March 2020). They were invited to fill in the questionnaire during the period between 1 April-25 May 2020. This period falls within the state of alarm and includes the maximum peaks of contagion and deaths due to COVID-19. During this period, Spanish government imposed several restrictions such as meeting and mobility. Thus, face-to-face contact with nurses was not possible.

The text that accompanied the questionnaire link included the presentation of the researchers, the informed consent for participation, the time required to answer, a short explanation of the study objective, and a message of encouragement. Finally, the confidentiality and anonymity of their answers were ensured. The questionnaire was created with LimeSurvey and could be answered by computer, tablet, mobile phone, or any other electronic device.

2.5 | Ethical considerations

Participants received the invitation for the online survey via their work email or mobile phone. Informed consent was obtained at the beginning of the survey. This study was approved by the Ethics Committee on Research in Humans of the Ethics Commission in Experimental Research of the University of Valencia (approved on 2 April 2020).

2.6 | Data analysis

First, we performed descriptive analyses, internal consistencies (Cronbach's alpha), and correlations among the study variables using the IBM-SPSS 26.0 program. Moreover, Harman's one-factor test was conducted (Podsakoff et al., 2003) to confirm that common method variance was not a threat in our data set.

Second, structural equation modelling (*SEM*) was computed with AMOS 26.0 (Arbuckle, 2005) to test the hypothesized model with the maximum likelihood estimation methods. The input for each analysis was the covariance matrix of the items. The goodness-of-fit of the model was evaluated using absolute and relative indices: the $\chi 2$, RMSEA, GFI, AGFI, IFI, and CFI (Jöreskog & Sörbom, 1986). As a rule of thumb, values near 0.08 for RMSEA are considered to indicate an acceptable model fit (Cudeck & Browne, 1993). Relative fit index values greater than 0.90 are considered to indicate a good fit (Hoyle, 1995).

2.7 | Validity and reliability/Rigour

Stressors were assessed through the Spanish validation (Escribà et al., 1999) of the Nursing Stress Scale (NSS) by Gray-Toft and Anderson (1981). The five factors studied were as follows: (a) Work overload was measured with eight items (e.g., 'Not enough staff to adequately cover the work demands of the unit'); (b) Insufficient preparation for dealing with work demands was measured with five items (e.g., 'I do not feel prepared to help with the emotional needs of a patient'); (c) Lack of support was measured with two items (e.g., 'Lack of opportunity to share experiences and feelings with other personnel in the unit'); (d) Death and Dying was measured with five items (e.g., 'I have suffered the death of a patient'); and (e) Fear of infection was measured with three items (e.g., 'I have been afraid of improperly using protective equipment'). This factor is not from the original scale, but, as noted above, during the COVID-19 pandemic the fear of being infected or infecting others (i.e., family, friends, colleagues, etc.) was crucial in nurses´ work (Maldonato et al., 2020). Therefore, this scale was designed ad hoc and obtained adequate levels of reliability. All items were rated on a six-point Likert scale ranging from 0 (never) to 5 (always). Original alphas are 0.77 for Work overload, 0.76 for insufficient preparation for dealing with work demands, 0.65 for lack of support, and 0.78 for Death and Dying. High scores imply a high perception of stress.

Coping strategies were measured using the scales from the brief COPE by Carver (1997). PFC includes six items corresponding to active planning and instrumental support coping (e.g., 'I have been taking action to try to make the situation better'); EFC includes 6 items focusing on acceptance, positive reframing, and emotional support coping (e.g., 'I've been learning to live with it'). All items were measured with a six-point Likert scale ranging from 0 (never) to 5 (always). Original alphas were 0.68, 0.73, and 0.64 for active, planning, and instrumental support coping; and 0.57, 0.64, and 0.71

TABLE 1 Means, Standard Deviations, and Correlations for stressors and coping ($N = 421$)

	M	SD	α	1	*p*	2	*p*	3	*p*	4	*p*	5	*p*	6	*p*	7	*p*	8	*p*
1. Work overload	2.19	0.83	0.82																
2. Insuf. prep.	2.08	0.90	0.79	0.38	<0.001														
3. Lack support	1.43	1.06	0.86	0.35	<0.001	0.34	<0.001												
4. Death	2.45	0.81	0.75	0.57	<0.001	0.32	<0.001	0.25	<0.001										
5. Fear infec.	3.10	1.08	0.63	0.43	<0.001	0.39	<0.001	0.23	<0.001	0.28	<0.001								
6. PFC	3.32	0.81	0.81	0.10	0.034	−0.06	0.187	−0.07	0.131	0.07	0.135	0.15	0.002						
7. EFC	3.08	0.81	0.72	−0.04	0.408	−0.11	0.022	−0.14	0.004	−0.04	0.433	−0.10	0.051	0.49	<0.001				
8. Resilience	3.79	0.83	0.80	−0.05	0.279	−0.19	<0.001	−0.10	0.051	−0.09	0.081	−0.12	0.016	0.28	<0.001	0.43	<0.001		
9. Psychol. distress	2.07	0.82	0.94	0.43	<0.001	0.49	<0.001	0.38	<0.001	0.39	<0.001	0.46	<0.001	0.07	0.162	−0.23	<0.001	−0.35	<0.001

for acceptation, positive reframing, and emotional support coping, respectively. High scores imply high use of coping strategies.

Resilience was measured using the resilience scale from Stephens et al. (2013). It is composed of five items (e.g., I find ways to handle unexpected situations'). All items were measured with a six-point Likert scale ranging from 0 (totally disagree)-5 (totally agree). Original alpha was 0.87. High scores imply high resilience.

Psychological distress. Anxiety, depression, and strain were measured using the Spanish validation (Daza et al., 2002) of DASS-21 (Antony et al., 1998). Strain includes seven items (e.g., 'I found myself getting upset by quite trivial things'); Depression includes seven items (e.g., 'I felt sad and depressed'); and Anxiety includes seven items (e.g., 'I experienced breathing difficulty'). All items were measured with a six-point Likert scale ranging from 0 (never)-5 (always). Original alphas were 0.87 for Stress, 0.94 for Depression, and 91 for Anxiety. High scores imply high psychological distress.

3 | RESULTS/FINDINGS

Means, standard deviations, Cronbach's alphas, and correlations between all the study variables are presented in Table 1. All the measures used presented good reliability. Regarding average values, the highest score among the stressors was for fear of infection, followed by death and dying, whereas the lowest score was for lack of support. Coping strategies also reached moderate-high average values. Nurses presented moderate negative symptoms of psychological distress. Regarding correlations, the variables performed as expected, with some exceptions. Only work overload and fear of infection significantly correlate with PFC, whereas insufficient preparation, lack of support, and fear of infection present negative and significant correlations with EFC. Death and dying does not significantly correlate with coping strategies or resilience. Finally and contrary to our expectations, PFC does not correlate with psychological distress. Results of Harman's single-factor test revealed a significant poor fit of the one-factor model [Delta $\chi 2 = 2{,}251.11(9)$ $p < .001$], which indicates that common method variance is not a serious deficiency in this study.

Regarding the model testing, the *SEM* computed to test our hypotheses showed that all the fit indices meet the criteria ($\chi 2$ (570, $N = 421$) = 1553.38; RMSEA = 0.064; GFI = 0.83; AGFI = 0.80; CFI = 0.84; IFI = 0.84). Figure 1 shows the path coefficients.

As the model shows, H1 is confirmed because all the stressors appraised by nurses (work overload, insufficient preparation for dealing with work demands, lack of support, death and dying, and fear of infection) have a positive and significant relation with psychological distress. H2 is partially supported because the two coping strategies (PFC and EFC) have a significant relationship with psychological distress, but whereas EFC presents the expected relationship, PFC unexpectedly shows a positive direct relationship. Thus, it seems that more frequent use of PFC is related to higher levels of nurses´ psychological distress. With regard to the mediation of each coping strategy between stressors and psychological distress, H3

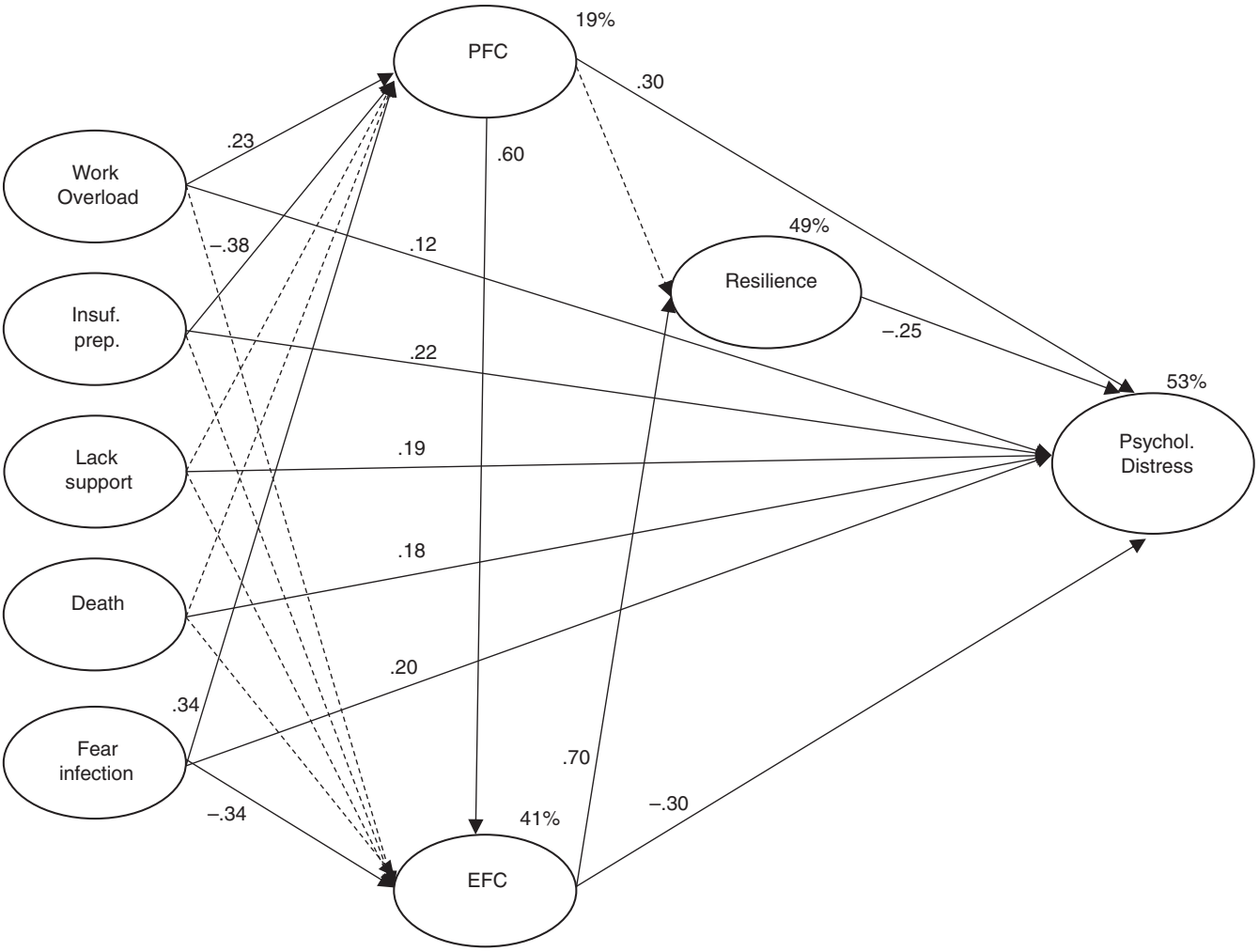

FIGURE 1 Model tested

is only partially supported. PFC partially mediates the relationships between work overload, insufficient preparation and fear of infection, and psychological distress and EFC only partially mediates the relationship between fear of infection and psychological distress. H4 is fully supported because PFC is positively and significantly related to EFC. H5 is partially supported. EFC is positively and significantly related to resilience, but PFC does not present a direct relationship with resilience. In addition, H6 is supported because resilience is negatively and significantly related to psychological distress. Finally, resilience partially mediates the relationship between EFC and psychological distress, but not between PFC and psychological distress; thus, H7 is partially confirmed. In sum, we can conclude that expectations are fully met for EFC, but less for PFC.

In general, the results confirm a partial mediation model with several paths between the stressors and psychological distress, where both coping strategies and resilience play partial mediator roles. It is important to distinguish the relationships between the two types of coping and resilience because PFC is related to EFC and this relationship, in turn, is related to resilience in a multiple mediation avenue. The results suggest that, to be effective in keeping their levels of distress low, nurses need to enact both PFC and EFC together. On the one hand, the enactment of PFC has a positive relationship with psychological distress, but when this relationship is mediated by EFC, the effects on psychological distress are negative. In addition, emotional coping is positively related to resilience. Thus, our data show that EFC is the mediator that conveys all the positive effects of coping on psychological distress, either directly or through resilience. The model explained 19% of the variance in PFC, 41% of the variance in EFC, 49% of the variance in resilience, and 53% of the variance in psychological distress.

4 | DISCUSSION

This study analysed the effects of stressors appraised by nursing staff on their psychological distress, considering the mediating role of coping strategies and resilience, during the peak of the Spanish health system crisis produced by the COVID-19 pandemic. Fear of infection was the highest appraised stressor, followed by death and dying of patients, and work overload. Previous studies in similar situations such as the SARS pandemic also found fear of infection to be one of the main stressors (Bai et al., 2004; Lee, et al., 2007; Maunder

et al., 2003). Whereas work overload and fear of infection are related to active strategies of planning and looking for instrumental support, insufficient preparation makes nurses avoid these types of strategies. Interestingly, PFC is positively related to strain, thus, the mediation role between stress and strain is confirmed but contrary to the expected sign. The effort made to control the problems concerning workload and fear for infection is related to higher strain experiences.

Regarding EFC, it only partially mediates the relations between fear of infection on psychological distress. Again, unexpectedly, fear of infection is related to lower levels of EFC, suggesting than the higher the fear of infection the fewer of emotion-focused coping behaviours. Nevertheless, the EFC is negatively related to distress. Together, these results would support Lazarus' suggestion that the two coping strategies usually occur together and complement each other (Lazarus, 2000). Following the circumplex model of coping, (Stanisławski, 2019) different types of coping may be more efficient and effective than others depending on the context and the conditions of occurrence. In the case of some stressors, people would apply both types of coping strategies to deal with the situation and each would be more effective depending on the stressor and the context. To better understand the process, we have considered the relationship between the two coping strategies. As hypothesized (H_4), PFC is positively and significantly related to EFC and this relationship opened up new fruitful paths to better explain the sequence of the mediated relationship of stress on psychological distress. Our results make clear that the double mediation between stressors and psychological distress through the sequential avenue of PFC and EFC, shows that the effects of PFC are beneficial to reduce strain when also concurs, while they increase strain when directly influences it. Our results are consistent with Britt et al. (2016), who studied soldiers in critical situations. They stated that, although PFC may not be effective in low autonomy work environments, a particularly adaptive coping strategy might be EFC, accepting the demands that arise. According to our results, one coping strategy does not substitute the other; instead, it is the combination of both that form the most adaptive mediating pathway and, thus, alleviate the negative effects of stressors on mental health.

Furthermore, the benefits of concurrently using these two coping strategies is beneficial because they are related to (through EFC) higher levels of resilience. Results also show that resilience partially mediates the relationship between EFC and psychological distress, but this is not true for PFC (H_7 partially supported). Thus, the role of resilience in conveying part of the effects produced by combining the two coping strategies is significant. We can summarize our findings by pointing out that the indirect effects of stressors that induce coping strategies in the aforementioned sequence only lead to higher levels of mental health when both types of strategies are present. However, the concurrence of resilience may play a significant role in improving mental health, but it will only be a relevant mediator in the stressors–psychological distress relationship when the stressors have induced PFC complemented by EFC. To the best of our knowledge, these results have not been previously identified in the literature and it is possible that they only emerge in rather extreme situations, such as the one experienced by nurses during the COVID-19 crisis.

Our results uncovered two special situations that need consideration due to the risk of higher vulnerability. Firstly, nurses suffering from stress due to their insufficient preparation do not show adaptive actions (PFC) to overcome the situation and they do not search for instrumental or emotional support from others (EFC). Secondly, nurses with high fear of contagion reduced their EFC strategies, even though they would benefit from them.

4.1 | Theoretical and practical implications

The main contribution of our study is that it clarifies the approaches to the interplay between different resources, such as the different types of coping (problem and emotion focused) and resilience. Our results suggest that simultaneous concurrence of these three main individual resources may effectively show adaptive role between the stressors and mental health, through the sequential mediation of PFC-EFC and resilience. This is in line with Gloria and Steinhardt's (2016) results. They found coping to affect resilience which in turn protect from developing clinical levels of anxiety and depression. In a similar way, Ziarko et al. (2020) found the mediating role of resilience between coping and subjective well-being. Thus, it is important to study the concurrence of the coping strategies and its combination with resilience, in their effects on mental health.

Unfortunately, the crisis caused by COVID-19 is still a threat and nurses' work is not over yet. We think it is essential to address the following aspects to help them in their daily work. First, reducing workload, a continuous request among nurses (i.e., Moloney et al., 2018), becomes especially important. One way to reduce the workload and increase support would be through an efficient reorganization of tasks and it most probably will need to be supplemented with additional nurses. Now that a collapse has already occurred, hospital managers should analyse lessons learned and prepare for a better and clearer work system organization and role distribution. Moreover, because we now have more information about the virus and its behaviour, nurses will need to receive additional information and training to alleviate their perception of insufficient preparation. This training, together with the necessary PPE resources to avoid contagion, will make coping strategies more effective, not only EFC but also PFC. Finally, and according to our results, building resilience is essential for nurses. They must be psychologically prepared to mitigate the devastation of COVID-19 on the health system and face other possible public health crises. Resilience has already been shown to be essential among nurses during the COVID-19 (i.e., Labrague & De los Santos, 2020). Interventions to promote psychological well-being in nurses exposed to COVID-19 need also to be implemented (Smith et al., 2020), although their design must ensure their effectiveness, taking into consideration previous experiences (Chen et al., 2020; Kang et al., 2020; Shah et al., 2020). Other ways to improve nurses' adaptation have been explored (Newby

et al., 2020). By applying the insights described in the current study, we hope management and public health experts will be better informed about effectively training healthcare staff.

To conclude with practical implications and taking into account our results, it is important to draw attention to two special situations that need special consideration due to the risk of higher vulnerability. Firstly, nurses suffering from stress due to their insufficient preparation do not show adaptive actions (PFC) to overcome the situation and they do not search for instrumental or emotional support from others (EFC). Secondly, nurses with high fear of contagion reduced their EFC strategies. These two vulnerable groups should receive special attention in the circumstances described in this study, to prevent those psychosocial risks that may hamper their health and safety.

4.2 | Limitations

Regarding the study limitations, although the nurses come from different Spanish regions, our sample is a convenience sample, and its size and composition is not representative of the nursing population. Participation was voluntary and anonymous, and the study was carried out for a period of about 2 months during the greatest hospital collapse. Therefore, the nurses had a lot of work and little free time to answer the questionnaire (for this reason, we included shorter scales). In fact, 779 nurses started the questionnaire, but only 421 finished it. Therefore, the response rate in this study was 54% and response bias may exist if the non-respondents were too stressed to respond. Moreover, and due to the mobility and meeting restrictions imposed during the state of alarm that took place in Spain throughout the data collection process, sampling, and data collection have been carried out online. This could affect the reliability of the study. Finally, the study is cross sectional, and all the measures are self-reported. As the study is cross-sectional we cannot assure any causality between variables under study, thus, future research should test these relationships using representative samples and longitudinal designs that may further clarify the changes in stressors and coping strategies over time (i.e., Rodriguez et al., 2019). It also may allow for causal interpretations over psychological distress. Moreover, it would be interesting to include face-to-face interviews with nurses that allow obtaining qualitative information.

5 | CONCLUSIONS

The COVID-19 crisis, in the broader context of the Spanish healthcare system, has increased the psychological distress of nurses and other healthcare workers. This study is one of the first in Spain to deal with stressors experienced during the health system crisis and analyse the complex interplay of personal resources to cope with stress to avoid mental health impairment in this difficult crisis situation. Results highlighted the importance of a proper combination and concurrence of PFC-EFC and resilience to preserve nurses´ mental health. Moreover, some important stressors were identified that would require special psychosocial risk prevention strategies because they did not 'naturally' trigger effective personal ways of preventing health impairment.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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