

Psychosocial safety climate and supportive leadership as vital enhancers of personal hope and resilience during the COVID-19 pandemic

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Abstract

This study aimed to investigate the effects of supportive leadership and psychosocial safety climate on personal hope and resilience among nurses during the pandemic. Conservation of resource theory was employed to explain the effects of psychosocial safety climate and supportive leadership on nurses' hope and resilience. A cross-sectional design was employed to collect data. Six-hundred and twenty-three nurses across 68 hospitals who were in direct contact with COVID-19 patients during the fifth wave of the pandemic in Iran were recruited. Hierarchical Linear Modelling (HLM) and Structural Equation Modelling using Amos were used to analyze the data. Results revealed that both psychosocial safety climate and supportive leadership improved personal resilience through personal hope. Findings showed that the positive relationship between supportive leadership and personal hope was stronger when the hospital-level psychosocial safety climate was high. To improve personal hope and resilience among nurses during critical times, hospital management must ensure consistent supportive leadership and establish policies, practices and procedures that support nurses' psychosocial health and safety at the hospital level.

KEYWORDS

conservation of resource theory, organizational resource, personal resource, psychosocial resource

1 | INTRODUCTION

During the COVID-19 pandemic, nurses are experiencing high levels of work pressure and are at increased risk of developing physical/mental health problems (Brassington & Lomas, 2021; Sethi et al., 2020). High COVID infection risk, separation from families, inadequate personal protective equipment, extremely high workloads and increased patient mortality are examples of the pressures

associated with fear, depression, insomnia, and anxiety among nurses (Xiong & Peng, 2020). Due to the inordinate impact of the pandemic on nurses, their strength, resilience and ability to continue working are likely to be impacted. As it is not clear how long the COVID-19 pandemic and its impacts will be in our lives, finding ways to create and enhance nurses' personal resilience is vital for hospital managers.

Nurses who work in Iranian hospitals during the pandemic are considered as the context of the study. Iran was ranked second

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among countries for the most deaths proportionally to its' COVID-19 cases or population (Johns Hopkins University & Medicine, 2020). It is also a country known to have one of the highest COVID-19 death rates among nurses (AsrIran, 2022). Since the beginning of the pandemic in Iran, health workers including nurses have shown admirable dedication, although five continuous waves of the pandemic has left many of them exhausted (IRIB News Agency, 2020).

Personal resilience (PR) is 'the capacity to rebound from adversity, uncertainty, conflict, failure or even positive change' (Luthans et al., 2008, p. 222). Higher levels of PR are associated with the prevention of negative outcomes of stressful work situations including depression, stress, and fear. PR is therefore one of the most important factors that enable nurses to cope with adversity and crisis situations such as the COVID-19 pandemic (Cooper et al., 2020).

Factors that have been suggested to improve resilience during the COVID-19 pandemic include mental preparation strategies before the beginning of shifts (Manomenidis et al., 2019), general well-being and good mental health (Gao et al., 2017; Yörük & Acikgoz, 2022), a positive coping style, a healthy lifestyle (Kılınç & Sis Çelik, 2020), and social support (Guo et al., 2017; Lin et al., 2020). As PR is state-like and open to development, increasing resources within the subject can also improve their resilience (Herrman et al., 2011).

Conservation of resource (COR) theory suggests that individuals endeavour to gain, maintain, sustain, and protect resources which enable them to cope with stress and demanding situations (Hobfoll et al., 1990). In adverse and stressful situations like the COVID-19 pandemic when health, well-being and work-family balance of nurses are threatened, resource loss is more salient than resource gain, which can cause anxiety, depression, stress, and other health-related issues. The 'resource investment principle' of COR states that individuals who have lost resources need to invest resources to replenish their resource pool and recover from resource loss. Accordingly, when nurses deal with stressful and high-risk situations, they strive to access and gain resources to recover. Gain paradox, another COR principle suggests that the magnitude of resource loss affects the salience of resource gain. Resource gain becomes more important when powerful resources are lost. During crisis, resource loss is more powerful than other situations; thus having access to resources to replace those lost is necessary.

We contend that increasing personal resources such as personal hope (PH) and organizational resources of supportive leadership (SL) and psychosocial safety climate (PSC) can improve nurses' PR during the pandemic. According to Snyder (2000), PH reflects individuals' cognitive and motivational states including a sense of willpower or determination to initiate and sustain the efforts required to attain goals (agency), as well as a sense of waypower, or ability to create successful ways and alternatives when meeting obstacles (pathways). Despite some similarities in predicting recovery from stressful events and anxiety, as suggested by Snyder (2000) hope and resilience are considered as two distinct constructs. Norman et al. (2005) and Munoz et al. (2020) studied hope and resilience as two distinct constructs which affect psychological flourishing in an at-risk population.

Following Snyder (2000), in a conceptual paper, Norman et al. (2005) proposed that leaders' hope can affect followers' resilience. Although scholars suggested such an effect, there is a lack of overarching theory to explain the relationship between hope and resilience as well as empirically testing the relationship between these two psychological resources. The 'resource caravan' principle of COR (Hobfoll, 2014) can be used to justify this relationship. The processes of COR during stressful events require people to build resource caravans (Hobfoll, 2014). The resource caravan principle posits that resources do not exist individually, they can be linked and shaped as 'caravans' to compensate resource loss (Hobfoll et al., 2018). Therefore, during the COVID-19 pandemic, when nurses lose their psychological resources of resilience to recover from excessive pressure, drawing on personal hope can improve their resilience. We propose that:

H1 *Personal hope is positively associated with resilience at individual level.*

SL is defined as 'the extent to which leaders support employees through active involvement in resolving difficult situations and being open, honest, and fair in their interactions' (Schmidt et al., 2014, p. 751). It is considered as one of the most important antecedents of individuals' psychological and motivational states (Kim et al., 2021). Although SL has some similarities with perceived organizational support, it is a distinct construct. As defined by Eisenberger et al. (2001), perceived organizational support is employees' perception of the support provided by the organization through its policies, procedures, norms and actions. SL is individual leader support, also particularly important during hard times. Studies have confirmed the importance of SL as an organizational resource in predicting positive work outcomes (Eibl et al., 2020; Hauff et al., 2020). When employees experience strong relationships and receive valuable resources from their leaders, their strength and motivation is likely to increase (Kim et al., 2021). In this regard, researchers have recognized that leaders can help employees to regain hope and successfully deal with dreams that did not come true (Eibl et al., 2020).

According to the resource caravan passageway idea (Hobfoll, 2011) SL can create a passageway that increase followers' personal resources of hope and resilience through the leaders' support. Cooke et al. (2019) argued that when employees receive encouragement and support in a highly demanding work environment through SL their resilience resource would be increased.

In addition to SL, employees' shared perception of organizational policies, practices and procedures such as psychosocial safety climate (PSC) can be a resource at the organizational level (Dollard & McTernan, 2011). According to the COR theory (Hobfoll et al., 1990), individuals experience psychological stress when they lose and/or expect to lose resources and restoring lost resources seems to be difficult. In such a stressful environment, organizational resources such as PSC which concerns employees' psychological health and safety can act as an higher-level, organizationally healthy, conducive resource (Dollard & McTernan, 2011) to reduce psychological stress

and subsequently improve of personal resources such as PH and PR. Managers' support, engagement and commitment to employees' psychological health, involvement of all organizational levels in stress prevention, participation in and consultation with all organizational levels in occupational health and safety issues (Dollard & McTernan, 2011; Hall et al., 2010) are the main characteristics of a high PSC.

As discussed by Idris et al. (2012) and Zadow et al. (2017), PSC is conceptually different from related constructs such as safety climate and team psychological climate. Safety climate is a construct reflecting shared perceptions of employees about policies, practices and procedures relating to the physical safety of the work environment (Neal & Griffin, 2006), while PSC is specifically focussed on employees' psychological health. Also, team psychological climate is a work team's shared belief that the team is safe for interpersonal risk taking (Edmondson, 1999, p. 354). This construct is related to psychological health; however, PSC is more concentrated on psychological health because it prevents a wide range of stressors not just those related to interpersonal behaviours (Idris et al., 2012).

PSC and SL are considered as two different antecedents of PH firstly because of their conceptual differences. SL is leader's support from their subordinates in difficult times while PSC is the shared perception of a working team regarding organizational policies and practices that protect team members' psychosocial health and safety. In addition to their conceptual differences, SL and PSC reside at different organizational levels.

During hard times such as the COVID-19 pandemic when there is a lack of personal resources, social resources can help people to replenish their resource reservoir to adapt to the stressors. Individuals use their personal resources such as hope and resilience to cope with psychological challenges like the pandemic (Deichert et al., 2021; Marroquín et al., 2020) but these resources can be exhausted quickly under pressure. Thus, provision of organizational resources such as SL perceived by individual employees and PSC perceived by teams might replenish personal resources. Therefore, we hypothesize that:

H2 *At individual-level, supportive leadership is associated with personal hope.*

H3 *At individual-level, supportive leadership is associated with personal resilience.*

H4 *Psychosocial safety climate at hospital-level is associated with personal hope at individual-level.*

H5 *Psychosocial safety climate at hospital-level is associated with personal resilience at individual-level.*

The model being tested proposes that SL and PSC create a resource caravan passageway that integrates organizational and personal resource (specified in this study as PH) to boost nurses' resilience during the COVID-19 pandemic. Therefore, PH can link other individual and organizational resources from different levels, shaping a resource caravan when nurses are losing their individual

resources (Lin et al., 2020). Although many studies have considered the mediating role of PH in the relationship between social supports and positive outcomes (Satici, 2016; Zhou, et al., 2018), no studies have examined the mediating role of PH in the relationship between organizational resources (i.e., PSC and SL) and resilience. Therefore, we predict that:

H6 *Personal hope at individual-level mediates the relationship between supportive leadership and personal resilience.*

H7 *Personal hope at individual-level mediates the relationship between psychosocial safety climate at hospital-level and personal resilience at individual-level.*

Finally, according to the COR theory (Hobfall et al., 1990) having resources at both organizational (PSC) and individual (SL) levels during stressful and devastating situations can help individuals to replenish their personal resource reservoir. Therefore, the study proposes that the interaction between SL and PSC can enhance PH of nurses:

H8 *The positive relationship between individual-level SL and personal hope is moderated by PSC such that the relationship is stronger when PSC is high.*

2 | METHOD

2.1 | Sample and procedures

The study employed a cross-sectional design with nurses of public and private hospitals who were in direct contact with COVID-19 patients in two provinces. Both provinces were in an emergency state (red zone) between March and June 2021, during the fifth wave of the pandemic. The data were collected using self-administered survey method in two waves with an 8-week time delay. The data related to independent and mediating variables were collected in the first wave and data related to the dependent variable was collected during the second wave. Some explanations about the nature of each variable were provided in the survey. Each hospital was considered as a working team. In 68 hospitals, at least 10 nurses who were in direct contact with COVID-19 patients, have been invited to the study. Finally, 623 nurses from 68 hospitals returned useable questionnaires. The literature suggests a sample size of more than 50 working teams is adequate for team and multi-level analysis (Maas & Hox, 2004). Sample characteristics are presented in Table 1.

This study was conducted in accordance with the ethical research regulations of Iran. The survey and a sealed envelope were available in the nurses' lounge. An information sheet was included in each survey highlighting the nature of the study and the instructions for completing and returning the survey. Willing participants were asked to return the surveys in sealed envelopes to a sealed container. Through the information sheet, participants were assured of the

TABLE 1 Sample characteristics

	N	%		N	%
Hospital type			Age		
Public	19	27.9	21–30	131	21
Private	49	72.1	31–40	231	37.1
Level of education			41–50	195	31.3
Diploma	32	5.1	51–60	66	10.6
Bachelor's degree	501	80.4	Job contract		
Master's degree	73	11.8	Full time	477	76.6
Other	17	2.7	Part time	146	23.4
Experience			Gender		
Up to 10	138	22.1	Female	523.3	84
10–20	348	55.9	Male	99.7	16
20–30	137	22			

confidentiality and anonymity of their participation. The contact details of the researchers were provided to participants if they had questions or concerns about the research. The researchers did not receive any complaints on this matter.

2.2 | Survey instrument

The study employed a quantitative survey using measures from previous research which had demonstrated acceptable reliability and validity. The questionnaire was prepared in English and translated into Persian using standard back-translation methods (Brislin, 1980).

2.2.1 | Psychosocial safety climate

PSC was measured with a 12-item measure developed by Hall et al. (2010). Some minor changes were made to adjust the items to the context, for example, nurses were substituted for employees. Psychosocial safety climate items included 'Hospital management clearly considers the psychological health of nurses to be of great importance' and 'Nurses are encouraged to become involved in psychological safety and health matters'. In previous research, the psychosocial safety climate measure demonstrated appropriate team-level attributes using the interclass correlation coefficients (Law et al., 2011). The results of Cronbach's Alpha for psychosocial safety climate showed excellent internal reliability ($\alpha = 0.91$).

2.2.2 | Supportive leadership

Supportive leadership was measured using a 6-item measure adopted from McGilton (2003) and Schmidt et al. (2014). Participants needed to read this sentence 'During the COVID-19 pandemic, I feel supported in my workplace' before providing with the items. Items

included 'Our managers support and empathize with us in difficult situations' and 'Our managers ensure that employees do not assume unnecessary risks when conducting their functions'. The scale demonstrated acceptable internal consistency ($\alpha = 0.91$).

2.2.3 | Personal hope

A five-item measure of personal hope developed by Snyder (2000) was utilized in this study. Participants needed to read this sentence 'When I perceive psychosocial safety climate and supportive leadership in the hospital during the COVID-19 pandemic' before providing with items. Items included 'I can find a way to solve problems without any stress' and 'I hope that I could pass this dangerous situation safely'. The scale demonstrated acceptable internal consistency ($\alpha = 0.83$).

2.2.4 | Personal resilience

Personal resilience was assessed with six items developed by Smith et al. (2008). Participants needed to read this sentence 'When I feel that hospital managers consider creating a psychosocial safety climate and supportive leadership in the hospital, during the COVID-19 pandemic' before providing with items. Items included 'I tend to bounce back quickly after hard times' and 'It is hard for me to snap back when something bad happens (R)'. To measuring resilience some of items are scored by reverse coding. For this construct, the scale demonstrated acceptable internal consistency ($\alpha = 0.86$).

Psychosocial safety climate was analyzed at hospital-level. The hospital-level construct was computed by taking the average of the individual scores in every hospital. Supportive leadership, personal hope and resilience were analyzed at individual level. Scale scores for these constructs were calculated by taking the average of each individual. All measures were rated using a five-point scale, ranging from 'strongly disagree' (1) to 'strongly agree' (5).

2.3 | Data analysis

After assessing the internal consistency of the constructs, the process of data analysis started with examining measurement validity to understand how well the conceptual and operational definitions fit together (Neuman, 2014). Convergent and discriminant validity of the measures was examined. All constructs met the validity criteria suggested by Fornell and Larcker (1981): average variance extracted (AVE) of constructs were greater than 0.50 and composite reliability (CR) estimates all exceeded 0.70. Therefore, both aspects of construct validity (i.e., convergent and discriminant) are satisfactory. Table 2 reports the means, standard deviations, correlations, convergent and discriminant validity for all the study variables. Given the acceptable validity of the constructs, the data was deemed suitable for analysis.

TABLE 2 Validity and correlation coefficient of the variables

Constructs	Mean	SD	AVE	CR	PSC	SL	PH	PR
PSC	5.12	2.24	0.71	0.93	1	0.24*	0.31**	0.26**
SL	5.23	1.16	0.77	0.96	0.06	1	0.42**	0.44**
PH	3.68	4.15	0.63	0.89	0.16*	0.33**	1	0.37**
PR	1.79	3.77	0.58	0.82	0.09	0.29**	0.37**	1

Note: Correlations between aggregated constructs are showed above the diagonals.

Abbreviations: AVE, Average variance extracted; CR, Composite reliability; PH, Personal hope; PR, Personal resilience; PSC, Psychosocial safety climate; SL, Supportive leadership.

* $p < 0.05$, ** $p < 0.01$.

In this study hypotheses were tested following procedures outlined by Mathieu and Taylor (2007). First, a structural equation modelling analysis was conducted to test direct and mediating hypotheses (H1, H2, H3 and H6) at the individual level using AMOS v.23. Second to test the cross-level direct, mediating and moderating effects of hypotheses (H4, H5, H7 and H8), the effects of psychosocial safety climate at the hospital level on individual level outcomes were examined using Hierarchical Linear Modelling (HLM).

3 | RESULTS

3.1 | Individual level hypotheses testing

For individual level analysis, findings indicated acceptable model fit ($\chi^2 538 = 987.43$, $\chi^2/df = 1.84$, $p < 0.001$, $IFI = 0.91$, $TLI = 0.91$, $CFI = 0.93$, $RMSEA = 0.05$). A bootstrapping technique with 95% bias-corrected confidence intervals and 5000 sample iterations was used to test the direct and indirect effects (Jones et al., 2008) and mitigate statistical problems of sampling distributions (Cheung & Lau, 2008). The findings are presented in Table 3.

The proposed direct effects of personal hope on personal resilience (H1), and supportive leadership on personal hope (H2) are statistically significant, however this relationship for the effect of supportive leadership on personal resilience (H3) was not supported (see Table 3a). The study findings showed that personal hope was positively related to personal resilience ($\beta = 0.44$, $p < 0.001$), supporting Hypothesis 1 (see Table 3a). The findings also clarified a significant effect, as indicated in Table 3a, supportive leadership was positively related to personal hope ($\beta = 0.42$, $p < 0.001$), supporting Hypothesis 2, but it was not related to personal resilience, not supporting Hypothesis 3. In addition, the mediation analysis result is provided in Table 3b. Following Shrout and Bolger (2002) and Cheng et al. (2018), the mediation relationship was also tested using Amos mediation model with a bootstrapping technique. The indirect effect of supportive leadership on personal resilience was positively and statistically significant and did not include zero, as evidenced by a 95% bias-corrected bootstrap confidence for H6 ($\beta = 0.55$; $CI = [0.39, 0.65]$). The findings confirmed that higher levels of supportive

leadership lead to higher levels of personal hope, and higher levels of personal hope lead to higher level of personal resilience. These results supported Hypotheses H1 and H2. Moreover, the findings confirmed that personal hope mediated the effect of supportive leadership on personal resilience, supporting Hypothesis H6.

3.2 | Hospital (cross-level) hypotheses testing

In addition to analysis of hypotheses at individual level, the present study investigated the effect of cross level hypotheses of psychosocial safety climate on individual-level variables (i.e., H4, H5, H7 and H8). The data for psychosocial safety climate was collected at individual level then was aggregated to the hospital-level. Accordingly, the possibility of aggregating the individually assessed psychosocial safety climate to the hospital-level should be investigated. To confirm aggregation of psychosocial safety climate assessments to the hospital-level, a within-group agreement index ($rwg(j)$) (Bliese, 2000) of the scores from the individual-level was computed using (LeBreton & Senter, 2008) syntax for SPSS to represent within-group consensus. Psychosocial safety climate mean $rwg(j)$ was 0.94 ($SD = 0.04$); thus, high level of agreement within hospital-level was confirmed as suggested by LeBreton and Senter (2008). Moreover, ICC (1) as an indicator of between-organizational variance was 0.16 for psychosocial safety climate, meaning that hospital-level factors represent 16% of the variance in psychosocial safety climate. Therefore, as ICC (1) values ranging from 0.05 to 0.20 are considered acceptable for the aggregation procedure (Bliese, 2000), psychosocial safety climate assessments were aggregated to the hospital-level. Results for cross level hypotheses using HLM analysis are shown in Table 4.

In relation to the effect of psychosocial safety climate on personal hope, the findings indicated a significant cross-level effect ($\hat{\gamma} = 0.25$, $p < 0.01$), supporting Hypothesis H4 (see Hospital level of Model two in Table 4). In addition, as predicted, the study showed that psychosocial safety climate positively and significantly affected personal resilience ($\hat{\gamma} = 0.29$, $p < 0.01$) (see Hospital level of Model 1 in Table 4), supporting Hypothesis H5. In relation to Hypothesis H7, that personal hope mediates the effect of psychosocial safety climate on personal resilience, the findings supported the effect of psychosocial safety climate on personal resilience. A four-step procedure for mediation suggested by Kenny et al. (1998) was employed. At the first step, psychosocial safety climate should be related to personal hope, which was supported in testing Hypothesis H4. The second step requirement was also met as psychosocial safety climate was significantly related to personal resilience which was supported in testing Hypothesis H5. In testing steps 3 and 4, model 3 (which included both psychosocial safety climate and personal hope in the regression) was used. Results showed that personal hope was significantly related to personal resilience, and the effect of psychosocial safety climate remained significant and was increased in magnitude (see Hospital level of Model 3 in Table 4) compared with the effect in step 2. Thus, personal hope fully mediated the effect of psychosocial safety climate on personal resilience, suggesting support for Hypothesis H7.

(a) Direct relationships						
Hyp	Relationships	β	CI 95%		t-Value	Conclusion
			Lower	Upper		
H1	Personal hope \rightarrow PR	0.44	0.23	0.54	7.27***	Supported
H2	SL \rightarrow Personal hope	0.42	0.38	0.77	6.88***	Supported
H3	SL \rightarrow PR	0.18	0.22	0.58	1.34	Not supported

(b) Standardized indirect effects: bias-corrected					
Hypothesized mediated relationship	β	CI 95%		Conclusion	
		Lower	Upper		
H6: SL \rightarrow Personal hope \rightarrow PR	0.55	0.39	0.65	Supported	

TABLE 3 Results for direct relationships and simple mediation effects

Abbreviations: β , Coefficient; CI, Confidence interval; PR, Personal resilience; SL, Supportive leadership.

*** $p < 0.001$.

Level and Variables	Models			
	1(PR)	2(PH)	3(PR)	4(PH)
Individual level				
Intercept (γ_{00})	4.49*** (0.02)	4.49*** (0.02)	4.49*** (0.02)	4.49*** (0.02)
SL (γ_{10})	0.16 (0.06)	0.20*** (0.05)	-	0.21*** (0.06)
Personal hope (γ_{20})	-	-	0.42** (0.08)	-
Hospital level				
PSC (γ_{01})	0.29** (0.09)	0.25** (0.07)	0.36** (0.08)	0.26** (0.07)
Cross-level interaction				
PSC * SL (γ_{11})	-	-	-	0.34*** (0.08)
Variance components				
Within-team (L1) variance (σ^2)	0.05	0.05	0.05	0.05
Intercept (L2) variance (τ_{00})	0.037	0.035	0.036	0.035
-2 log likelihood	124.55**	120.27***	119.15***	116.63***
Number of estimated parameters	3	3	3	3

TABLE 4 HLM analysis

Note: Values in parentheses are standard errors (SE). The first value is the unstandardized parameter estimate.

** $p < 0.01$, *** $p < 0.001$.

To test the interactive effect of psychosocial safety climate (Hospital Level) and supportive leadership (Individual level) on personal hope (H8), psychosocial safety climate was employed to model the level-1 intercept and slope of supportive leadership. Table 4, panel cross-level interaction, shows that the interaction between supportive leadership and psychosocial safety climate was significant ($\hat{\gamma} = 0.34$, $p < 0.001$) supporting Hypothesis H8. Figure 1 shows the results of hypotheses testing.

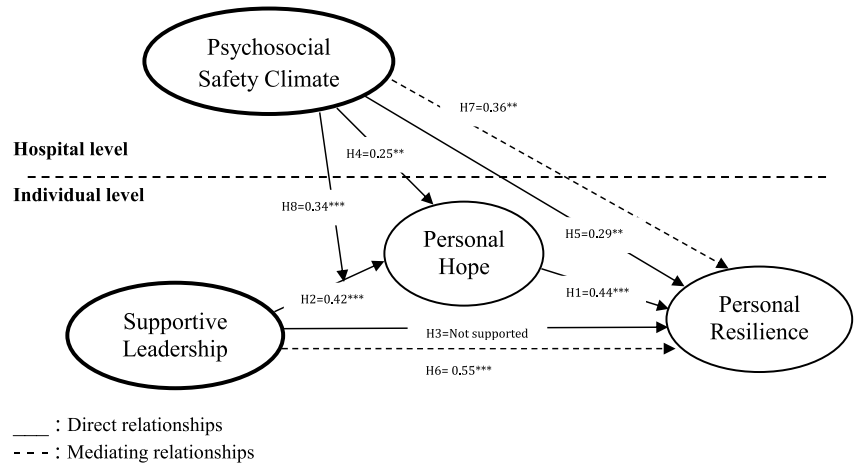
4 | DISCUSSION

Many countries' health care systems are experiencing severe pressure from the beginning of the COVID-19 pandemic. Nurses' work

performance, mental health and quality of life have been affected (Mo et al., 2020). As it is not clear how long nurses will have to work in pandemic related adverse and stressful situations, finding ways to cope and continue working with adverse and stressful work situations (i.e., the COVID-19 pandemic) is vital. Therefore, the present study aims to reveal resources which at both individual and hospital levels increase the personal resilience of nurses.

The study results showed that hopeful individuals are more resilient in hard times. Hopeful nurses can bounce back from adversity and pressure that the pandemic put upon them. In accordance with the resource caravan principle of COR theory, when nurses are facing high workloads and patient death rates for a long time during the pandemic and lose resilience, strategies to enhance their personal hope may replenish their ability to recover.

FIGURE 1 Hypotheses results



Although to the best of our knowledge there is a lack of research on the relationship between personal hope and resilience, the results of this study are in line with Fredrikson et al. (2003) who found a positive relationship between positive emotional states and resilience.

At the individual level, we found that supportive leadership is positively associated with personal hope but surprisingly is not associated with personal resilience. The second principle of COR theory suggests that when individuals lose their personal resources, they strive to substitute their lost resources with other resources. When losing hope, nurses' perception of the support from their leaders would improve their hope, but it seems the perception of support would not be enough for them to recover from adversity. As suggested by Kuntz et al. (2017), developing employees' resilience needs a comprehensive approach including appropriate organizational culture and climate. Therefore, the unexpected result might be because nurses may not consider the perceived support from their supervisors enough to help them be resilient; they might need to see the support and care from the organization too, for example, in policies and practices approved by top management. Furthermore, during the pandemic nursing leaders in Iran may not have remained in their positions for very long so nurses may not be able to count on consistent leader support to build resilience.

The result showed that psychosocial safety climate at the hospital level is associated with both personal hope and resilience. According to the main tenet of COR, during the pandemic when nurses lose their personal psychological resources, they try to access resources provided by their work environment including leaders and the work climate. Therefore, when personal resources of hope and resilience are lost or exhausted, a resource gain spiral helps nurses to start gaining organizational resources from leaders and organizational climate which supports their psychological health and safety.

The mediating role of personal hope was confirmed at both individual-level between supportive leadership and personal

resilience and cross-level, between psychosocial safety climate and personal resilience. The results are in line with previous studies which showed the mediating effect of individual strengths such as hope between social supports and human attitudes and behaviours (Pahlevan Sharif et al., 2021; Zhou, et al., 2018). However, this study is the first to investigate and confirm that hope can not only be a key personal resource but can also transmit the effect of organizational resources such as PSC and SL on other crucial resources (in this study PH and PR). The cross-level interaction between SL at individual-level and PSC at organizational level in affecting personal hope was also confirmed. According to COR theory, this creates a resource caravan passageway of personal and social resource to assist with coping during a crisis like the COVID-19 pandemic. Specifically, SL as perceived by individual nurses and PSC at the organizational level can interact and create a resource caravan which increase personal hope.

5 | STRENGTHS AND LIMITATIONS

The present study offers several critical theoretical strengths and contributions. While a very limited number of studies have been conducted to investigate the effect of nurses' resilience on anxiety during the pandemic (see Labrague & De los Santos, 2020), our study extends resilience research by attempting to understand antecedents of personal resilience during the pandemic. The study proposed and tested a multilevel mechanism in which organizational resources at both individual (Supportive leadership) and hospital level (Psychosocial safety climate) create an environment to nurture personal resilience. Using COR and its principles including resource caravan, resource caravan passageway, gain paradox and resource investment to explain and examine how organizational resources from different levels of theory and organization is another innovative contribution of the study. The relationship between personal resources of hope and resilience is another novel finding of the study. Although Norman et al. (2005)

suggested such a relationship between leaders' hope and employees' resilience, to the best of our knowledge this study is among the first to investigate the relationship between individual resources of hope and resilience.

The mediating role of personal hope is another significant contribution of the study. This is in line with other research which found that hope can mediate the relationship between social resources and positive outcomes (Satici, 2016; Zhou et al., 2018). However, this study extended this body of knowledge by proposing and empirically investigating that personal hope can transmit the effect of social resources to personal resilience. The fact that the findings did not support the direct relationship between supportive leadership and resilience, specially makes this contribution important. Even if supportive leadership was not associated with personal resilience, personal hope was able to transfer the effect of supportive leadership just like the mediating role between psychosocial safety climate and personal resilience. The last but not least important contribution of the study was examination of the interaction effect of organizational resources perceived by individual nurses (Supportive leadership) and nurses at hospital level (Psychosocial safety climate). The findings showed that supportive leadership at individual level and psychosocial safety climate at hospital level positively interacted in affecting hope as a personal resource. This suggests that organizational resources originated from both individual and organizational levels can improve personal resources like hope especially during demanding situations.

In addition to the theoretical contributions, the study offers practical implications. Considering the important role of personal resilience among nurses at the forefront of the fight with COVID-19, provision of psychosocial support from hospital managers should be prioritized. To improve personal resilience of nurses during and after the pandemic, hospital managers should make sure that all organizational levels are involved in nurses' stress prevention and occupational health and safety issues. On the other hand, as hope is recognized as another source of resilience among nurses, managers should support nurses and do whatever is in their power to enhance personal hope among nurses. Managers should do their own part in improving hope and resilience among nurses. The main roles of hospital managers can be establishing policies, practices and procedures that support nurses' psychosocial health and safety. Nursing managers can directly support the provision of overall leader support including both psychological and other resources nurses may need during the pandemic.

Despite several benefits this study has some limitations. One of the most important limitations of this study was using a self-administered, cross-sectional design which limited the generalizability of the study. Cross-sectional study design is also prone to common method bias. Due to this design a plausible reverse causal pathway or reciprocal self-report relationship is possible however potential common method variance is addressed to some extent in the multilevel analysis by modelling psychosocial safety climate at the team level and estimating between teams' effects in individual

level data. Following Podsakoff et al. (2012), temporal and proximal separation strategies have been employed to reduce common method bias. As explained in method section, the data were collected in two different times. First, the data related to independent and mediating variables were collected, then, 8 weeks later, data related to the dependent variable were collected. Also, some explanations about the nature of variable were added as fillers to proximally separate the questionnaire.

Shortage of nurses in hospitals during the pandemic, and the overwhelming level of stress and anxiety among nurses after five continuous waves of the pandemic in Iran may have caused refusal to answer the survey or rating the survey carelessly. Using temporal separation strategy may improve the quality of the collected data. Finally, to put less pressure on nurses, researchers decided to reduce the length of the survey and as a result some effective factors that could be studied might be ignored. Therefore, to assess the more comprehensive effect of a psychosocially safe and supportive work environment on nurses hope and resiliency, researchers suggest an extension of the study when the number of COVID-19 cases has significantly decreased.

6 | CONCLUSION

When nurses perceive that nursing managers have a supportive leadership approach and the organizational climate is psychosocially safe, their psychological strengths such as personal hope and personal resilience may be improved. Whilst these factors are important to the quality of working life of nurses, they are particularly critical during times of increased stress and demand such as the COVID-19 pandemic. Individual nurse's improved hope caused by their perception of a supportive leadership makes them more resilient. In addition, nurses' shared perception of psychosocial safety climate affects both their hopes and resilience. Importantly, during the pandemic when nurses perceive both their leaders' support and a psychosocially safe working climate, their personal hope would be boosted more. The study was unable to confirm that supportive leadership directly affects the nurses' personal resilience. One explanation for this result might be because top managers would not remain in their positions for a long time, therefore, nurses do not count on their leaders' support to build resilience.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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