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## **Managing during the COVID-19 pandemic: A cross-sectional study of healthcare workers' perceived organizational support and its consequences on their compassion, resilience, and turnover intention**

### **Abstract**

**Aim:** To evaluate healthcare professionals' perceived organizational support and its effect on their compassion, resilience, and turnover intention in the United Arab Emirates.

**Background:** The COVID-19 pandemic exerted unprecedented pressure on healthcare systems, professionals, and management systems. Healthcare organizations begin to explore their roles and function in relation to risks and resilience, in addition to ascertain what level of organization support they are providing to their workers.

**Methods:** A cross-sectional study was conducted with a questionnaire administered to 538 healthcare workers, to examine their personal resources and organizational support during the pandemic.

**Results:** 37.7% of nurses were found to have a moderate level of resilience, and logistic regression showed that being married is a protective factor against resigning from the profession (OR = 0.462, P = 0.012, 95% CI: 0.254–0.842), and healthcare workers who perceived higher organizational support were approximately 50% less likely to have a turnover intention (OR = 0.506, P = 0.009, 95% CI: 0.303–0.845). Multiple linear regression model indicated significantly higher resilience among physicians ( $\beta = 0.12$ , P < 0.05) and allied healthcare practitioners ( $\beta = 0.12$ , P = 0.022). Organizational support had a significant positive relationship with resilience scores ( $\beta = 0.20$ , P < .001); adequate training was significantly

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related to higher compassion levels ( $\beta = 0.11, P < 0.05$ ); and high organizational support scores were associated with increased compassion scores ( $\beta = 0.27, P < .001$ ).

**Conclusions:** Front-line healthcare workers reported moderate organizational support during the pandemic, commensurately reflected in moderate levels of personal resilience and self-compassion. Continued and better support is vital for employee sustainability and the increased health system performance, including quality of care and patient outcomes.

**Implications for nursing management:** Nurse managers should help healthcare workers improve self-care strategies by strengthening personal resources, including by shortened duty hours, offering adequate break time, providing a safe work climate, and purveying adequate personal protective equipment and supplies to combat infections. They should build an empathetic work environment through understanding the needs of staff, helping tackle their work stress and sustaining cultures of compassion through promoting rewarding and flexibility strategies. Moreover, policymakers and nurse managers should create a rewarding culture for nurses and other healthcare workers to increase their commitment to their jobs.

**Keywords:** Nurse management, Pandemic, Resilience, Self-compassion, Organizational support, Healthcare workers, United Arab Emirates.

## 1. Introduction

The COVID-19 pandemic exerted a huge impact on the world, leading to tremendous physiological and psychological risks for front-line healthcare workers (HCWs). The World Health Organization (WHO, 2021) estimated that the mortality rate was between 80,000 and 180,000 among HCWs infected with COVID-19 in the period between January 2020 to May 2022. However, global reports clearly showed that wider risks and threats existed beyond the chances of contracting the virus and dying from it, including long-term symptoms, stigma, discrimination, work overload, exhaustion, emotional disorders, and sleep deprivation (Labrague & De Los Santos, 2020; Rangachari & Woods, 2020).

These factors in addition to the stress associated with the risk of contracting the disease, caused intense pressure on staff, which in turn resulted in a high volume of work, absenteeism, and burnout (Lau et al., 2020). The multiple uncertainties experienced by front-line nurses and other staff in the context of COVID-19 included high levels of anxiety (Labrague & De Los Santos, 2020), trauma (Zhang et al., 2021c), increased turnover intention (Nashwan et al., 2021), risk of longer working hours (Zhang et al., 2021b), fear of being infected by the virus personally and of subsequently infecting family members, and loss of colleagues either due to infection or death (Mohsin et al., 2021).

HCWs also reported physical impacts, in addition to contracting infection (Mohsin et al., 2021), such as their experiences cutaneous manifestations related to COVID-19 (Imen et al., 2022). This continuous barrage of stressors confronting HCWs in relation to COVID-19 predictably resulted in reduced work performance efficiency and satisfaction (Wu et al., 2021). In addition, this resulted in commensurately increased turnover intention (including due to

stigmatization), job dissatisfaction, and stress (Cicek et al., 2021; De los Santos & Labrague, 2021). Increased turnover intention is a threat to the competence within healthcare systems to serve populations. Given this persisting situation, the coping mechanisms deployed by HCWs (either autonomously or with organizational support) are of considerable interest. For example, social support (Labrague & De Los Santos, 2020), personal characteristics (Tahara et al., 2020), self-compassion (Lau et al., 2020), personal resilience (Maiorano et al., 2020), and organizational support (Giménez-Espert et al., 2020) all serve to influence coping in a positive way.

Previous studies have identified the protective role of personal resilience during such stressful events (Capolongo et al., 2020; Labrague & De Los Santos, 2020; Rees et al., 2018). Resilience is a process that can help professionals with positive adaptation to difficult experiences of significant trauma (Lutha & Cicchetti, 2000). Therefore, it is imperative that managers and healthcare organizations investigate and understand the current state of HCWs' resilience, in order to understand how best to help them manage current and future challenges. Self-compassion forms an important component of any exploration of how HCWs behave toward themselves with important effects concerning stress buffering (Neff, 2003; Poulin et al., 2013). There is growing evidence indicating a positive relationship between higher levels of self-compassion among nurses and their increased job satisfaction, resilience, work performance, and decreased turnover intention (Ruiz-Fernández et al., 2021). It is interesting that despite the great demand for HCWs' services during public health crises, even front-line workers report that they feel that they must first practice self-compassion and be aware of their own needs before they can help others (Vachon, 2016).

The COVID-19 pandemic and associated public health measures have had serious consequences for health systems, national and global economies, supply chains, food security, quality of life, and the healthcare workforce (Mofijur et al., 2021; Raposo et al., 2021). It is important therefore that healthcare organizations begin to explore their role and function in relation to risks and resilience, and to ascertain what level of organizational support they are providing (and can potentially extend) to their workers.

Organizational support is defined as the degree to which an organization provides resources, reinforcement, encouragement, and communication to employees to enable them to perform their functions effectively (Zhang et al., 2021a). Such support is crucial for HCWs to overcome crisis-related challenges, including those associated with the COVID-19 pandemic (Labrague & De Los Santos, 2020). Organizational support can positively influence HCWs' compassion, work commitment, and ability to manage similar outbreaks (Cho et al., 2021; Gab Allah, 2021; Zhou et al., 2021). This leads to a natural questioning of the role and effectiveness of management and leadership in facilitating and coordinating organizational support during these times.

In the United Arab Emirates (UAE) various public and private stakeholders demonstrated robust leadership and management during the COVID-19 crises. The response to the crises at the national level was organized by the Federal Crises Management Committee. This led to the formation of local committees within individual Emirates, which later translated to units at organizational levels. Hospitals and healthcare facilities demonstrated impressive service coordination and management at the local level, and in coordinating their activities with the higher authorities and crises management committees (Zaher et al., 2021). Given these efforts

to handle the pandemic, the support that organizations provided for workers, especially HCWs, ultimately impacted their ability to cope with their pandemic-related uncertainties, insecurities, and threats (Chatzittofis et al., 2021; De los Santos & Labrague, 2021; Kubilienė et al., 2021; Xiu et al., 2019). Despite these extensive efforts, it common to find some negative impacts on the HCWs due to the pandemic's new experience and its speedily changing nature, in addition to differing leadership styles and interventions adopted at different management levels (Nangia & Arora, 2021).

Since the role of the organizational support inevitably varied globally, local studies are necessary to understand specific cases (Kubilienė et al., 2021; Rangachari & Woods, 2020; Zhou et al., 2021), and the current paper explores this issue within the Emirati context. However, this study is not particular to UAE, and can serve as a background for transcultural comparisons among different geographical areas, since such studies are lacking in the Gulf Cooperation Council, and in the Middle East and North Africa in general, despite the vast and diverse array of HCWs' cultures and healthcare organizations in this region. Also, this study identifies the most important predictors that healthcare managers, including nurses, can use to reform diverse resilience programs, decrease turnover, improve the quality of care provided, and increase the satisfaction of service users (including patients, their families, and communities). Up to our knowledge, no prior studies have been done to assess the Emirati organizational support that was provided to HCWs during the COVID-19 pandemic from their perceptions, and the potential effects that this support (or lack thereof) had on their resilience, compassion, and intention to leave. This study explores HCWs' perceptions of organizational support and its impacts on their compassion, resilience, and turnover intention.

## **2. Methods**

### **2.1. Research design**

This study used a cross-sectional design.

### **2.2. Research questions**

1. What are levels of resilience, self-compassion, and organizational support among HCWs?
2. What are the most common predictors of intention to leave among HCWs?
3. What is the impact of organizational support on levels of resilience and compassion?

### **2.3. Sampling and data collection**

As of 2020, nurses, physicians, and allied healthcare providers were collectively working across all hospitals within UAE to provide direct care to patients with COVID-19 or were exercising supervisory control in the selected hospitals. Because HCWs in UAE comprise a diverse workforce recruited from various countries worldwide, they have diverse cultural identities that could affect their coping mechanisms with uncertainties during the pandemic (Guan et al., 2020). Despite that these HCW speaks different languages, it is the law of the ministry of health and prevention in UAE that English should be the official communication language used in healthcare settings. Additionally, proficiency in English is one of the essential recruitment criteria among HCWs in the Emirati healthcare settings. All nurses participated in this study are professional in English language, and therefore, the questionnaire was used by English language instead of using different sets of the questionnaire for consistency purposes.

For this study the sample size was calculated as 500, based on 50% response rate, 95% confidence interval, significance level of 0.05, and a margin error of 3% (Naing et al., 2006). To compensate for non-respondents and missing data, a total of 538 HCWs and managers were recruited from two randomly selected large hospitals providing care to patients with COVID-19. HCWs mailing lists were obtained from the hospitals and a link was sent with the study information to ask for their permission to participate in the study. Data were collected using online self-administered questionnaire. All questions were clarified by the research assistant who is bilingual. The research assistant sent a text-reminder at 24-hours intervals to the participants. This text-reminder was also asking about participants' questions or clarifications. The study tools were pilot tested on a sample of 10% of participants, to ensure the face validity of the tools and the cultural acceptability of its content. The results of the pilot indicated that the participants did not have any problems in understanding nor in answering the questions. The data were collected over a period of 6 months from March to August 2021. The questionnaire was designed to collect quantitative data regarding the aspects explained below.

### *2.3.1. Demographic characteristics of healthcare workers*

Participants' socio-demographic characteristics (e.g., age, gender, and ethnicity) and work-related data (e.g., profession, work experience, and turnover intention) were collected.

### *2.3.2. Perceived organizational support*

A short version of Perceived Organizational Support Survey (POS) (Neves & Eisenberger, 2014) was utilized to assess HCWs' opinions on the extent to which their organizations value their well-being. The POS asks nurses to rate their agreement with ten-



items using a seven-point Likert-type scale, with answers ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The mean scale scores for organizational support were categorized as low (1.00–2.99), moderate (3.00–4.30), or high (4.31–5.00) (Labrague et al., 2018). The scale has been shown to have excellent reliability, with an internal consistency of 0.86, with range values of corrected item total correlation of around  $r = 0.09$  (Neves & Eisenberger, 2014). In the current study, the Cronbach's alpha was 0.81.

### 2.3.3. Resilience

Personal resilience level was measured using the 25-item Connor & Davidson Resilience Scale (CD-RISC) questionnaire (Connor & Davidson, 2003). Its items' responses are measured using a five-point Likert scale ranging from 0 (*not true at all*) to 4 (*true nearly all of the time*). The scale is rated based on how HCWs felt over the first, second, and third waves of the COVID-19 pandemic. The total mean score of all items represents resilience (ranging from 0-100), with mean scores being categorized as low (<65), moderate (66-79), or high (80-100) (Jose et al., 2020). The reliability coefficient of this scale indicates good internal consistency of 0.90 in this study, similar to that reported by Connor and Davidson (2003) (0.94).

### 2.3.4. Self-compassion

The 26-item Self-Compassion Scale comprises six subscales, covering self-kindness, self-judgment, common humanity, seclusion, mindfulness, and overmatching. It uses a five-point Likert scale, with responses ranging from 1 = *almost never* to 5 = *almost always*. Total self-compassion scores are categorized as low (1-2.5), moderate (2.5-3.5), or high (3.5-5.0) (Neff, 2003). The scale demonstrated excellent reliability, with internal consistency of 0.92,

and range values of corrected item total correlation of around  $r = 0.13$  in previous research (Neff, 2003). It had a Cronbach's alpha of 0.90 in the current study.

#### **2.4. Data analysis**

Descriptive statistics were first conducted to characterize levels of resilience, compassion, and organizational support. The total mean score was calculated for each study domain: resilience (25 items), compassion (26 items), and organizational support (10 items); the mean scores of each domain were then divided into three levels (low, moderate, and high). Data analysis examined whether these study domains varied in relation to demographic and professional characteristics and associated organizational support measures. To determine the most common predictors for the turnover intention, logistic regression was used. To further understand the ways in which the organizational support, demographic, and professional characteristics were associated with resilience and compassion, stepwise multiple regression analyses were conducted to identify significant predictors for resilience and compassion categories.

#### **2.5. Ethical consideration**

Approval to conduct the study was obtained from the Ministry of Health and Prevention Research Ethics Committee (Approval Reference No: MOHAP/DXB-REC/ MMM/No. 28/2021). Online informed consent was obtained from each HCW before the start of data collection. The researchers guaranteed that all participants received information explaining the aim of the study. Anonymity, confidentiality, and the rights to participate, refuse or withdraw

from the study at any time were assured. Data were kept in a password-protected computer, and only aggregate data were used in this publication.

### **3. Results**

#### **3.1. Participant characteristics**

The descriptive statistics for the characteristics of the 538 front-line HCW participants are presented in Table 1. In total, females comprised 89.2% (n = 480) of the sample. The majority (96.3 %, n= 518) of participants were non-Arab, while 3.7% only were Arab. The majority (87.2 %, n= 469) of respondents were married, and more than three quarters of them (78%) had children. With regards to professional characteristics, more than half of the participants worked in critical care units (57.8 %), with the rest working in surgical wards and other departments (42.2%). Nurses represented 61.7% of the sample, while 19.3% were physicians, and 19% were allied healthcare practitioners. Approximately half of respondents (50.6%) reported less than 10 years of work experience, and a further 33.6% had 10–20 years of experience, and 15.8% had more than 20 years of experience. With regard to training related to resilience and/ or compassion, 71% (n= 383) reported having adequate training, and 52.6% reported that they intended to resign from their professions during the time of pandemic. Of the entire sample, only 2.8% had never been tested for COVID-19, and among those who had been, 20.1% had tested positive at some point.

#### **3.2. Description of study variables**

Table 2 represents the reported levels of resilience, compassion, and organizational support among front-line HCWs facing the COVID-19 pandemic. Approximately a third of

nurses had low (36%) and moderate (37%) levels of resilience, while a quarter (25.9%) reported high resilience. Almost three-quarters (73.8%) reported moderate levels of compassion. In terms of organizational support, 22% of nurses perceived low organizational support, 71.1% a moderate level, and only 6.9% a high level. There were no statistically significant differences between the levels of resilience, compassion, and organizational support ( $P= 0.773, 0.351, 0.059$ , respectively) among HCWs, using analysis of variance (ANOVA) test analysis.

### **3.3. Associations of study variables with participant characteristics**

Married HCWs were more likely to report higher and moderate levels compassion ( $X^2 =8.72, P<0.05$ ) and perceptions of moderate organizational support ( $X^2 =25.62, P<0.000$ ) than their unmarried counterparts. Having children was also associated with perceptions of moderate organizational support ( $X^2 =7.31, P<0.05$ ). Less experience (i.e., less than ten years) was also associated with perceptions of moderate organizational support, which was significantly higher than among those with higher work experience (i.e., more than ten years) ( $X^2 =9.50, P<0.05$ ). In terms of receiving resilience and compassion training, more HCWs with adequate training had higher resilience than those who did not receive training ( $X^2 =11.14, P<0.05$ ). While the number of HCWs who had moderate organizational support were having adequate training than those who did not have training ( $X^2 =31.86, P<0.000$ ).

### **3.4. Correlations between study variables**

Correlations among the organizational support, resilience, and compassion subscales are displayed in Table 3. Organizational support showed a significant positive relationship ( $P < 0.001$ ) with both resilience and compassion (with correlation coefficients of 0.258 and 0.261, respectively). Moreover, organizational support was significantly correlated with the compassion sub-scales. Positive behaviors (kindness, humanity, and mindfulness) were positively correlated with organizational support. Conversely, organizational support was negatively correlated with negative attitudes like judgment and isolation. Resilience was significantly associated with compassion ( $P < 0.001$ ) and compassion sub-scales ( $P < 0.001$ ). Thus, an increase in compassion was significantly correlated with better resilience. Overall, the increase in organizational support had an improving effect on resilience and compassion.

### **3.5. Predictors of intention to leave among HCWs**

The results showed that marital status and perceived organizational support were significant predictors of HCWs' turnover intention (Table 4). HCWs who are married were 54% less likely to leave their work compared to those who are unmarried ( $OR = 0.462$ ,  $P = 0.012$ , 95% CI: 0.254–0.842). Furthermore, HCWs who perceived higher organizational support were 50% less likely to leave their work ( $OR = 0.506$ ,  $P = 0.009$ , 95% CI: 0.303–0.845) compared to other groups.

### **3.6. Impact of organizational support on levels of resilience and compassion**

Stepwise multiple linear regression revealed that four variables significantly contribute to the model (Table 5). Regarding profession, significantly higher resilience was found among

physicians ( $\beta = 0.12$ ,  $P = .027$ ) and allied healthcare practitioners ( $\beta = 0.12$ ,  $P = .022$ ). Furthermore, perceiving higher organizational support was associated with a 0.20-point increase in resilience scores ( $\beta = 0.20$ ,  $p < .001$ ). Not having adequate training was significantly negatively associated with resilience scores ( $\beta = -0.15$ ,  $P = .008$ ). The model explained 4% of the variance. Related to compassion, three variables significantly contributed to the model. Being married was significantly correlated with lower level of compassion ( $\beta = -0.10$ ,  $P = .019$ ). The model explained 5% of the variance. Receiving adequate training was related to higher compassion levels ( $\beta = 0.11$ ,  $P = .014$ ). Similarly, perceiving higher organizational support was associated with a 0.27-point increase in compassion score ( $\beta = 0.27$ ,  $P < .001$ ). There was no multicollinearity between independent variables, since  $VIF < 3$  (Shieh, 2011).

#### **4. Discussion**

Many studies have investigated perceived organizational support, personal resilience, and compassion, both in general (Hashem & Zeinoun, 2020; Mealer et al., 2017; Tau et al., 2018) and specifically concerning the COVID-19 pandemic (Bozdağ & Ergün, 2021; Labrague & De Los Santos, 2020; Lau et al., 2020; LeCraw, 2020; Rangachari & Woods, 2020). The current study evaluates these variables among HCWs in UAE for several reasons. First, the UAE healthcare workforce have diverse cultural, religious, linguistic, economic, social, and educational backgrounds, which are associated with different personal coping strategies (Al-Yateem et al., 2021), and healthcare organizations face a difficult task to manage personnel and provide optimum services as employers relative to such variables. Second, some healthcare organizations in UAE experience high rates of turnover among HCWs, which undermines quality of service and health system efficiency. Third, recruiting new HCWs was very

challenging during the pandemic, and new and even experienced employees could find it difficult to keep pace with new policies, procedures, and rules.

This milieu represents a gap in the literature, calling for further research specific to the COVID-19/ public health crisis context, in addition to comparing healthcare systems in Middle Eastern and other cultures. In particular, this research demonstrates the impacts of organizational support on HCWs' personal resilience, self-compassion, and turnover intention. While the pandemic is being well-managed in the UAE's health sector (Zaher et al., 2021), Middle Eastern cultures and organizational diversity because of globalization may pose different and varying challenges, in general and at different times.

#### **4.1. Levels of resilience, self-compassion, and organizational support among HCWs**

This study's main finding is that HCWs reported moderate levels of perceived organizational support, personal resilience, and self-compassion during the second and third waves of the pandemic. In our study, organizational support was perceived as moderate, in line with previously published studies (Chatzittofis et al., 2021; Labrague & De Los Santos, 2020), and could be attributable to the efforts made by Emirati healthcare organizations to mitigate hardship and difficulties faced by HCWs during the pandemic. HCWs, especially front-line nurses, are compelled to rely on their own personal resilience to cope with a demanding profession in general, and particularly during egregiously difficult times such as pandemics of natural disasters. In this study, we identified a moderate level of resilience among HCWs, which is consistent with other international studies (Jose et al., 2020; Yusefi et al., 2021). Although a study in Spain reported a notably higher level of resilience among HCWs during the COVID-19 crisis (Ruiz-Fernández et al., 2021), it is evident that COVID-19 generally

entailed additional challenges and stressors for HCWs worldwide, during the first and subsequent waves.

In the early phases of the pandemic during 2020, nurses were struggling with rapidly changing rules and guidelines, and numerous research studies reported a low level of resilience among HCWs at that time (Hu et al., 2020; Huang et al., 2020; Nathiya et al., 2021; Roberts et al., 2021; Wang et al., 2021). With the second and third waves of COVID-19 nurses were more ready and prepared to face the pandemic, which may explain the contrasting findings between studies. Therefore, according to the findings of our study, it is recommended that healthcare organizations provide continuous training for HCWs to improve their personal resilience, in order to increase their ability to face future crises.

The pandemic was a very stressful and prolonged era that profoundly interrupted healthcare systems worldwide, and which placed immense pressures on front-line HCWs including nurses (Wang et al., 2021) . Facing such uncertainties that are largely beyond their control, HCWs must use their personal resources. HCWs reported a moderate level of self-compassion in responding to sufferings, fears, and uncertainties along the second and third waves of the pandemic. This may be related to most HCWs, especially those who are working in critical care units, experiencing compassion fatigue. This explanation, however, arguably implies that HCWs tend to consider patients' needs before their own, when other studies have found that HCWs consciously exercise self-compassion as a precursor to being able to help others (Vachon, 2016).

HCWs' personal resources may be helped by the presence of social support and self-care practices, such as compassion training and training in dealing with unusual emergencies and



pandemics. These practices could cultivate self-awareness and help with personal and professional development. Worldwide, there is agreement on the need to develop and improve compassionate practice among HCWs, especially those who are front-line professionals, beyond COVID-19 today and into the future (Dwyer et al., 2021; Hofmeyer et al., 2020; Ruiz-Fernández et al., 2021).

These findings could guide organizations to take proactive measures to promote HCWs' health status and personal coping strategies (Rangachari & Woods, 2020; Sedhain et al., 2021). Supporting strategies should provide effective communication procedures, rewarding systems, job security, job-life balance, and self-development opportunities (Alketbi et al., 2022). Moreover, organizations could provide HCWs with sufficient equipment and supplies to reduce infection risks and guarantee their wellbeing. HCWs also need to be encouraged and supported once a climate of trust has been established within the organization. For an organization to effectively support front-line HCWs cope with uncertainties, it must devise a support system (Rangachari & Woods, 2020).

#### **4.2. The impact of organizational support on levels of resilience, compassion, and intention to leave**

In our study, higher levels of perceived organizational support were found to be associated with higher levels of personal resilience and compassion, and a decreased turnover intention while facing the pandemic. Increased organizational support appears to increase the compassion and resilience level of HCWs, which corroborates some existing studies (Al-Omar et al., 2019; Lyu et al., 2020), and diverges from others with contrasting findings (Liu et al., 2020; Rangachari & Woods, 2020). This study also showed that perceived organizational

support plays a protective role against turnover intention among HCWs, affirming recent studies (Cicek et al., 2021; Wang & Wang, 2020). The findings of this study also suggest that social support (particularly being married and having children) may have a role in improving HCWs' perception of support received from their organizations.

## **5. Conclusion**

This study provides an overview of the current state of front-line HCWs' personal resources (namely personal resilience, self-compassion, and perceived organizational support) throughout the three waves of the COVID-19 pandemic in UAE. Moderate levels of personal resilience, self-compassion, and perceived organizational support were identified, and increased resilience is correlated with a higher compassion level, while increased organizational support appears to improve the compassion and resilience level of the participants and decrease their turnover intention. Continued efforts from organizations coupled with advocacy of the managers would help in enhancing HCWs' personal resources when caring for patients.

### **5.1. Implications for nursing management**

A noteworthy finding of this study is that a higher level of perceived organizational support appears to increase the compassion and resilience level of the HCWs; however, low organizational support in the long term would be destructive to them. These findings suggest a need for nurse managers to develop in-service compassion and self-care training plan, strengthen workforce resilience, and their prosocial and compassionate behaviors, thereby improving the quality of care they deliver to service users. Furthermore, such organizational practices

supervised by nursing managers are crucial to maintain workforce physical and psychological health, including self-care strategies and promoting engagement and collaborations between nurse managers, policymakers, and psychologists, to ensure HCWs have a healthy work-life balance.

Nurse managers should strengthen HCWs' personal resources, which might be easily implemented through shortened duty hours, offering adequate break time, providing a safe work climate, and providing adequate personal protective equipment and supplies to combat infections (Gab Allah, 2021; Rangachari & Woods, 2020). Nurse managers should build an empathetic work environment through understanding the needs of staff, helping tackle their work stress and sustaining cultures of compassion through promoting rewarding and flexibility strategies (Hofmeyer et al., 2020). Moreover, to effectively respond to future pandemics, nurse managers must evaluate existing plans, policies, and resources. Nurses will be more committed to their jobs if policymakers and nurse managers create a rewarding culture.

Future studies need to use qualitative and quantitative research methodologies to achieve a more in-depth understanding of other variables that may affect HCWs' personal resources, and identify further information not addressed by the scales used in this study. Future research on personal resilience, self-compassion, and perceived organizational support may need to involve other stakeholders such as policymakers and administrators, not only HCWs. Additionally, empirical research is needed to develop targeted, evidence-based practice strategies for nursing managers to implement the target areas identified above and to deeply study the impact of cultural diversity on personal resilience, self-compassion, and perceived organizational support.

## 5.2. Limitations

The foremost limitation of this study was the use of convenience sampling, which may limit the generality of the findings. Second, the use of a quantitative design alone (as opposed to a mixed-method or qualitative approach) limits the depth of information extracted from participating HCWs (i.e., original expert insights not covered by the scales used). Third, the data were collected in English language only. Furthermore, the data reflect the perspectives of HCWs, without differentiating between front-line care providers and managers or their cultural background which might have an important impact on their resilience, compassion levels in addition to their perception to the organizational support. Future research may consider both perspectives to assess the agreement and discrepancy between the two perspectives.

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