

## Nurse managers' fatigue and burnout and their associated outcomes during the COVID-19 pandemic

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### Abstract

#### *Context*

Challenging working conditions with high workloads in hospital nursing have been recognized as contributing to decreased nurse safety and well-being, performance, and work satisfaction (Alzailai et al., 2021; Brzozowski et al., 2021). These challenges have worsened during the COVID-19 pandemic with increased work demands and changes in the work environment (Carayon & Perry, 2021; Gao et al., 2020) and have led to increases in nurse fatigue, burnout, depression, psychological distress, and post-traumatic stress (Sagherian et al., 2020; Sagherian et al., 2022). During the ongoing pandemic, hospital nursing staff have pointed to the need for additional organizational support and specifically leadership and supportive management to help with these challenges (Cho et al., 2021).

Nurse managers, working as the local leaders and overseeing day-to-day patient care of the unit, are also exposed to high work demands and other aspects of the hospital unit working environment. In a study completed prior to the COVID-19 pandemic, nurse managers reported high levels of fatigue (Steege et al., 2017) and most likely the high work demands of the ongoing pandemic have exacerbated their fatigue and burnout conditions. However, little work has been done to document and understand hospital nurse managers' well-being, particularly short-term responses to work demands (acute fatigue) and longer-term responses (chronic fatigue, burnout) that may impact well-being, performance, and work satisfaction. Considering nurse managers are critical leaders in supporting the work and well-being of nursing staff and patient care quality and safety (Lee et al., 2019; Zaghini et al., 2020), examining nurse managers' well-being experiences during the ongoing pandemic and their associated outcomes is important. This understanding may help to better support nurse managers' key role in healthcare organizations during the current and future healthcare crises.

#### *Objectives*

This study aimed to: (1) quantify fatigue and burnout levels of hospital nurse managers; (2) examine the associations between nurse managers' fatigue and burnout levels and their job satisfaction; and (3) examine the associations between nurse managers' fatigue and burnout levels and their staff nurses' perceptions of the nurse manager ability, leadership, and support.

#### *Methods*

This cross-sectional descriptive study was conducted at an integrated health system in the Midwest region of the United States on 24 inpatient units across three hospitals. Data collection was conducted from April 2021 through July 2022. Nurse managers and their staff registered nurses (RNs) providing direct patient care on 24 units were asked to complete online surveys. There was a separate survey for managers and for RN staff. An online survey link with the study information was disseminated via work email accounts. The mean number of staff nurses who responded to the survey in each unit was 25 (range: 5-44). The mean percentage of total eligible

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staff nurses who responded to the survey on each unit was 57% with a response rate ranging from 13% to 80%. Staff nurse data were linked using a unit code to the associated nurse manager data. Data from 24 nurse managers and 560 staff nurses were included in the final analysis of this study.

The multidimensional burnout levels of nurse managers were evaluated using the Maslach Burnout Inventory-General (MBI-G; Maslach & Jackson, 1981), which includes the subdomains of professional efficacy, exhaustion, and cynicism. The Occupational Fatigue Exhaustion Recovery-15 Scale (OFER-15; Winwood et al., 2005; Winwood et al., 2006) was used to assess acute fatigue and chronic fatigue levels. Staff nurses' perceptions of nurse manager ability, leadership, and support were evaluated using the subscale of the Practice Environment Scale of the Nursing Work Index (PES-NWI; Lake, 2002). These scales have all been previously validated in studies of nurses and had high internal consistency reliability in the current study. Nurse managers also responded to a single survey item ("Overall, how satisfied are you with your current job?"), which has been widely used in many international studies of hospital nurses, to evaluate their job satisfaction using a 4-point scale from very dissatisfied (1) to very satisfied (4). Descriptive statistics including means (M), standard deviations (SD), frequencies, and percentages were calculated for each measure and Pearson correlation coefficients were calculated to evaluate the associations between measures.

### *Main results*

Among the 24 study units, most units were general medical-surgical units (62.5%). Nurse managers ranged in age from 36 to 76 years (M= 47.30) and staff nurses from 23 to 68 years (M= 35.14). Most nurse managers reported that they had worked in the current unit as a manager for 5 years or less (66.7%). Over half of the staff nurses (52.3%) reported that they 5 years or less experience working as an RN.

Nurse managers overall had moderate professional efficacy (M= 28.08, SD= 5.78), high exhaustion (M= 17.33, SD= 9.00), and high cynicism (M= 12.71, SD= 9.00). Regarding fatigue, nurse managers overall reported moderate-to-high acute fatigue (M= 60.42, SD= 30.87) and moderate-to-high chronic fatigue (M= 53.47, SD= 29.58) levels.

There were significant negative correlations between nurse managers' job satisfaction and their levels of acute fatigue ( $r = -0.71, p < 0.001$ ), chronic fatigue ( $r = -0.75, p < 0.001$ ), exhaustion ( $r = -0.69, p < 0.001$ ), and cynicism ( $r = -0.77, p < 0.001$ ; Table 1). There was a significant positive correlation between nurse managers' job satisfaction and their professional efficacy levels ( $r = 0.60, p = 0.002$ ).

The mean score of staff nurses' perceptions of manager ability, leadership, and support was 2.95 (SD= 0.62, range= 1-4). Staff nurses' perceptions of manager ability, leadership, and support were negatively correlated with their nurse managers' acute fatigue ( $r = -0.23, p < 0.001$ ), chronic fatigue ( $r = -0.17, p < 0.001$ ), exhaustion ( $r = -0.15, p < 0.001$ ), and cynicism ( $r = -0.15, p < 0.001$ ) levels and positively correlated with nurse managers' personal efficacy ( $r = 0.10, p = 0.016$ ; Table 2).

Table 1. Results of correlation analysis of associations between nurse managers' fatigue and burnout levels and their job satisfaction.

		<b>Job Satisfaction</b>
<b>Acute Fatigue</b>	Pearson Correlation	-0.71
	p-value	<0.001
	N	24
<b>Chronic Fatigue</b>	Pearson Correlation	-0.75

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	p-value	<0.001
	N	24
<b>Professional Efficacy</b>	Pearson Correlation	0.60
	p-value	0.002
	N	24
<b>Exhaustion</b>	Pearson Correlation	-0.69
	p-value	<0.001
	N	24
<b>Cynicism</b>	Pearson Correlation	-0.77
	p-value	<0.001
	N	24

Table 2. Results of correlation analysis of associations between nurse managers' fatigue and burnout levels and their staff nurses' perceptions of manager ability, leadership, and support.

		Nurse Managers'				
		Acute Fatigue	Chronic Fatigue	Professional Efficacy	Exhaustion	Cynicism
<b>Staff Nurses' Perceptions of Manager Ability, Leadership, and Support</b>	Pearson Correlation	-0.23	-0.17	0.10	-0.15	-0.15
	p-value	<0.001	<0.001	0.016	<0.001	<0.001
	N	560	560	560	560	560

### *Discussion/perspectives*

Overall, nurse managers in this study reported moderate-to-high acute fatigue (M= 60.42, SD= 30.87) and chronic fatigue (M= 53.47, SD= 29.58), and high exhaustion and cynicism as components of burnout. For comparative purposes, staff nurses in this study reported moderate-to-high levels of acute fatigue (M= 75.07, SD= 17.82) and chronic fatigue (M= 56.73, SD= 23.13). Additionally, in a previous study of nurse managers, the mean acute fatigue level was 54 and the mean chronic fatigue level was 52 (Steege et al., 2017). Thus, nurse managers had relatively lower acute fatigue scores than staff nurses in this study but had higher acute fatigue scores than those reported in a previous study of nurse managers. The relatively higher levels of fatigue and burnout in the nurse managers of this study were also significantly negatively correlated with manager job satisfaction and staff nurses' perceptions of manager ability, leadership, and support.

Previous research with nurse managers conducted before the pandemic revealed that multiple components of the work system including the organization (24-7 accountability and availability), the people (needs of staff), tasks (competing demands, interruptions), and technology (managing email, phone, and pager accessibility) act as sources of nurse manager fatigue (Steege et al., 2017). Considering the findings of our study, which showed that nurse manager fatigue levels were relatively higher than before the pandemic, further research is needed to understand the sources from the work system that can lead to nurse manager fatigue and burnout during the pandemic. Human factors models, such as the Systems Engineering Initiative for Patient Safety (SEIPS) model (Carayon et al., 2006) that have been used to analyze and improve the design of work systems to support nurses (Steege & Dykstra, 2016; Steege & Pinekenstein, 2016), may have value in better understanding and supporting the work of nurse managers.

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Concerns about leadership pipeline and workforce retention are critical in healthcare (DiBello, 2020). Moreover, nurse managers who experienced higher levels of fatigue and burnout were less satisfied with their current job in our study. Given job satisfaction has long been studied as a standard predictor of turnover (Frederiksen, 2017), failure to effectively monitor and manage nurse manager fatigue and burnout may exacerbate staffing challenges.

Staff nurses have identified manager support as key to their support needs, while managers have identified staff needs as contributing to their own fatigue in previous studies (Cho et al., 2021; Steege et al., 2017). Our findings showed that nurse managers' higher levels of fatigue and burnout may negatively impact their work performance and ability to support their staff. These findings call for more attention to the well-being experiences of both staff nurses and nurse managers and the work system factors associated with these important outcomes.

This study provides important insights into nurse managers' well-being experiences and their work-related outcomes during the COVID-19 pandemic. However, this study was conducted on 24 inpatient units across three hospitals, which limits the generalizability of the study findings. Additional studies need to be conducted in this area with randomly selected large samples. The discipline of human factors is well-positioned to expand upon our understanding of the working conditions and associated well-being outcomes for hospital nurses to simultaneously consider the experience of managers working in the same system and the complex interactions between work system components, the work of nurses and the work of nurse managers, and nurse and nurse manager outcomes, all of which ultimately impact patient safety, quality of care, and workforce retention.

## **Keywords**

Hospital nurses, Nurse managers, Burnout, Fatigue, COVID-19 pandemic

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