RESEARCH ARTICLE

# Work-related stress factors and Psychological Health of Filipino Nurses during the COVID-19 Pandemic

**Janelle Castro, PhD, RN**[1], **Jocelyn Molo, DrPH, RN**[1], **Jed Patrick Montero Catalan, DScN (Cand), RN**[1],
**Norielee S. Magsingit, EdD, RN**[2], **Erlinda Palaganas, PhD, RN, FAAN**[3],
**Reynaldo R. Rivera, DNP, RN, NEA-BC, FAAN, FAONL**[4,5] , **Allison A. Norful, PhD, RN, ANP-BC, FAAN**[4,5]

## Abstract

**Background:** The COVID-19 pandemic has significantly challenged global healthcare systems, particularly impacting the psychological health of nurses. This study examines the psychosocial impact and work-related stressors faced by Filipino nurses during the COVID-19 crisis.

**Methods:** A descriptive cross-sectional survey was used to gather data from May 2021 to May 2022. Participants included registered nurses recruited from across the Philippines, focusing on their exposure to work-related stressors, burnout, job satisfaction, and coping activities. The survey included validated items that measured work related variables (e.g., job responsibilities, workload) and personal stress management strategies. Descriptive statistics (means, standard deviations, frequencies, and percentages) were calculated to interpret the continuous and categorical variables.

**Results:** A total of 2,229 nurses participated in the survey. Findings indicate that 78.9% of nurses experienced increased workloads, and 36% were assigned to units outside their expertise. Despite the high stress and burnout rates (30.4% reported symptoms), 56.4% of nurses intended to stay in their positions. The most common coping strategies were use of social media (53.7%) and connecting with friends and family (51.5%).

**Conclusion:** Filipino nurses displayed considerable resilience despite facing severe work-related stressors and psychological strains during the pandemic. The study highlights significant stressors such as increased workload, role shifts, and the lack of clear workplace goals, contributing to burnout and reduced job satisfaction. This study underscores the need for enhanced support systems and policies to safeguard nurses' well-being, recommending more robust mental health services, adequate staffing, and the provision of necessary resources and training to prepare nurses for future health crises better.

**Keywords:** *COVID-19, Filipino nurses, psychological stress, work-related stressors, burnout, coping activities, job satisfaction.*

**Key Points:**

• This study assesses the psychosocial impact of COVID-19 on Filipino nurses, emphasizing increased workloads and burnout.
• Data from 2,229 nurses show 78.9% experienced increased responsibilities, and 30.4% reported burnout symptoms.
• Despite challenges, 56.4% of nurses planned to stay in their roles, using coping strategies like virtual connections and spiritual activities.
• Recommendations include improving nurse support systems, ensuring adequate staffing, and enhancing mental health resources to mitigate stress and burnout.

## Introduction

The COVID-19 outbreak escalated into a global health crisis, placing an unprecedented strain on healthcare systems across the world. Nurses, central to the healthcare workforce, faced significant occupational stress, exacerbated by the pandemic's demands. Persistent challenges such as extended working hours, high patient volumes, and resource shortages (Foureur et al., 2013; Carayon & Gurses, 2005) intensified and placed nurses at risk for infection, understaffing, inadequate

[1] University of the East Ramon Magsaysay Memorial Medical Center, College of Nursing, Quezon City, Philippines
[2] Capitol Medical Center, Quezon City, Philippines
[3] University of the Philippines, Baguio, Philippines
[4] Columbia University, School of Nursing, New York, New York, USA
[5] NewYork-Presbyterian, New York, New York, USA
* Corresponding author's email address: jpcastro@uerm.edu.ph

protective gear, and professional stigmatization (Catton, 2020). There is emerging evidence that these factors have significantly deteriorated the psychological well-being of nurses.

Despite some control over the pandemic, COVID-19 exerted substantial pressure on healthcare workers, particularly nurses (Catton, 2020; Vizheh et al., 2020). Many hospitals operated at full capacity, grappling with shortages of staff, medical supplies, and protective equipment (Karimi et al., 2020). In some instances, healthcare facilities had to restructure and redeploy staff beyond their usual clinical areas, adversely affecting morale due to the absence of sufficient occupational healthcare support (Cubelo et al., 2024). During the pandemic's early phase, approximately 17,306 to 90,000 healthcare workers, including nurses, were infected, with around 7,000 fatalities reported worldwide (Sant'Ana et al., 2020; Shahmari, Nasrabadi & Ghobadi, 2020).

In the Philippines specifically, nurses were pivotal in combating COVID-19, often at great personal risk (Gilo et al., 2020). The severe and multifaceted stressors inherent in their work environments led to alarming levels of psychological distress. For instance, 35% of Filipino nurses reported the development of depression, anxiety, and stress over the past two years, higher than their international counterparts in severely affected regions like China (Banquirigo et al., 2021; Tee et al., 2020). Despite their commendable resilience and dedication (Raymundo & Miranda, 2021), the persistent psychological stresses endured may pose long-term risks to their professional practice and highlight the need for further research (De los Santos and Labrague, 2021; Li, et al., 2020; Tan et al., 2020).

Drawing lessons from past outbreaks like SARS and MERS, it is crucial to implement clinical and policy interventions that support the mental health of healthcare workers (Kim, 2018; Lee et al., 2018; Tan et al., 2020). Understanding the psychological distress, coping mechanisms, and workplace stressors experienced by nurses during the COVID-19 pandemic is essential for developing effective hospital contingency plans (Shanafelt, 2020) in the current aftermath of COVID-19 and future similar public health emergencies. Despite the large of amount of literature published across the globe, there is no study, to our knowledge, that specifies the experiences of nurses working in the Philippines. In an effort to inform local and national policy supporting the health workforce, this study may provide evidence of how to focus interventions that protect nurses in future similar public health crises.

This study aimed to identify workplace stressors, burnout, job satisfaction, and coping activities among nurses working during the COVID-19 pandemic in the Philippines. The findings may inform future policy decisions and support strategies for nurses facing ongoing and future healthcare crises.

## Methods

### Study Design and Sampling Technique

This descriptive cross-sectional survey was conducted using an online survey platform, SurveyMonkey, to explore the work-related stressors, burnout levels, job satisfaction, and coping strategies among Filipino nurses during the COVID-19 pandemic. The survey was administered via email from May 2021 to May 2022. All registered nurses employed in both public and private hospitals across the Philippines for at least one year, actively working during the pandemic, were eligible to participate. A snowball sampling technique was employed, initiating recruitment from the National Capital Region (NCR) and expanding to other regions to ensure a diverse representation of participants.

### Survey Measures and Data Collection

The survey consisted of validated questions about nursing demographics (e.g., age, gender, marital status, years in primary position) and work environment characteristics ( e.g., job responsibilities, weekly working hours, and perceived increases in workload due to the pandemic). Burnout was assessed using a single validated item (Dolan et al., 2015). Job satisfaction and intention to leave current position was measured using two single validated items.  A single item inquired about stress-reducing activities that the nurses participated in during the pandemic. This item listed multiple strategies and activities (e.g., yoga, meditation, social media) that nurses were asked to endorse when managing stress during the pandemic. Finally, we used the Work Stress Questionnaire (Frantz, A, & Holmgren, 2019) to assess individual workplace stressors (e.g., conflict in the workplace, leadership support).

### Data Management and Statistical Analysis

Survey responses were exported into an Excel spreadsheet for cleaning and coding.  To handle missing data, we removed responses with less than 70% completion or missing key answers to maintain the integrity of the analysis. Data analysis was conducted using SPSS IBM v24, where descriptive statistics (means, standard deviations, frequencies, and percentages) were utilized to describe and interpret the continuous and categorical variables from the survey responses.

### Ethical Considerations

The study received ethical approval from the Institutional Review Board of the University of the East Ramon Magsaysay

Memorial Medical Center (UERMMMCI) (Registration number: RIHS ERC code: 0998/H/2021/79 ). All participants provided informed consent, and measures were taken to ensure confidentiality and anonymity of the responses.

## Results

A total of 2,229 responses from nurses were analyzed for this study, with the majority (~60%) residing in the National Capital Region. Most respondents were single (60%) and female (75%).

The mean age of respondents was 36 years and almost 90% reported a bachelor's degree as their highest level of education. The majority of respondents reported between 1-6 years working in their current facility.

*Personal stressors*

During the pandemic, 70% of nurses stayed in their primary residence, while 30.0% relocated to protect their families or reduce commute times. About 61.2% did not have responsibilities for chronically ill family members.

*Workload and Role Shifts*

Nurses reported significant increases in workload during the pandemic, with 78.9% experiencing heightened responsibilities. Additionally, 36% of respondents were redeployed to units outside of their primary areas of expertise, which can be particularly stressful due to unfamiliar work environments and tasks. About 13% were assigned roles that differed from their usual duties, further complicating their work life.

A primary concern expressed was the extended hours of work; pre-pandemic, 38% of nurses worked between 31-40 hours per week, whereas during the pandemic, this proportion decreased as 30% reported working beyond 40 hours per week. This shift indicates a substantial increase in workload and potential overtime due to pandemic pressures.

Nurses also highlighted the emotional and cognitive burden of their roles. More than 60% took full responsibility for their job outcomes, which often extended beyond their regular working hours—51.2% reported needing to complete tasks after their shifts ended. This constant engagement with work tasks was reported as a significant stressor, with 65% finding the high demands placed on them at work stressful, and 45.5% feeling stressed by thinking about work outside of working hours.

Furthermore, about 23% of the nurses had only partial knowledge or were completely unaware of their assigned tasks, leading to uncertainty and stress. This lack of clarity in role expectations and task assignments can exacerbate feelings of inadequacy and anxiety.

*Conflicts at Work*

Conflicts in the workplace were reported by more than 63% of the nurses. While not all were directly involved in conflicts, the presence of unresolved disputes or only partially resolved issues by supervisors contributed to workplace stress. Specifically, 9.3% of nurses observed that conflicts were often ignored or not adequately addressed by their supervisors, adding to workplace tensions.

*Burnout*

The AHRQ Mini-Z burnout scale showed varied responses. There were 47.9% who reported that they occasionally experienced stress without burnout. 30.4% of those who reported symptoms of burnout, while 14.4% reported no symptoms of burnout.

*Job satisfaction and Intention to leave*

Despite high workloads, 56.4% of nurses intended to stay in their positions within the next year. More than half (70.7%) were "moderately" or "very" satisfied with their job arrangements during the pandemic.

*Coping Strategies*

Common coping strategies included connecting virtually with family and friends, engaging in social media, praying, and participating in religious/spiritual activities. Some also engaged in exercise, debriefing sessions with other nurses and health workers, and meditation to reduce stress.

*Sleep and Recreational Activities*

Many nurses reported difficulties with sleep and recreation due to work preoccupations. About 65% had trouble sleeping adequately, and more than half found it challenging to engage in recreational activities consistently.

This detailed results section offers a comprehensive overview of the stress, burnout, job satisfaction, and coping mechanisms among Filipino nurses during the COVID-19 pandemic, providing a basis for targeted interventions to support their well-being.

## Discussion

This study illuminated the profound work-related stressors and their psychosocial impacts on Filipino nurses during the COVID-19 pandemic. The findings detail significant work stressors, burnout, job satisfaction, and coping mechanisms. These insights may be useful for policymakers, nurse leaders, and administrators to enhance support for hospital nurses amid ongoing crises and potential future outbreaks.

**Table 1.** *Survey Respondent Demographics (N=2,229)*

| Demographics & Geographic Region | | |
|---|---|---|
| | **Mean** | **SD** |
| Age (Years) | 36.6 | 39.1 |
| | Frequency | Percentage* |
| Gender | | |
| Female | 1639 | 75.2 |
| Male | 520 | 23.9 |
| Transgender | 3 | 0.1 |
| Prefer not to answer | 17 | 0.8 |
| Marital Status (Married) | 800 | 36.0 |
| Highest Degree | | |
| Bachelor's Degree | 1508 | 89.4 |
| Master's Degree | 165 | 9.8 |
| Doctoral Degree | 14 | 0.8 |
| Length of time in primary position | | |
| Less than 1 year | 319 | 18.3 |
| 1-6 years | 1001 | 57.5 |
| 7-9 years | 130 | 7.5 |
| >10 years | 291 | 16.7 |
| Geographical Region | | |
| National Capital Region | 1311 | 59.7 |
| Cordillera Administrative Region | 30 | 1.3 |
| Ilocos Region | 53 | 2.4 |
| Cagayan Valley | 32 | 1.4 |
| Central Luzon | 74 | 3.3 |
| Calabarzon | 94 | 4.2 |
| MIMAROPA/Southwestern Tapalog | 9 | 0.4 |
| Bicol | 21 | 0.9 |
| Western Visayas | 18 | 0.8 |
| Central Visayas | 93 | 4.2 |
| Eastern Visayas | 36 | 1.6 |
| Zamboanga Peninsula | 55 | 2.5 |
| Northern Mindanao | 80 | 3.6 |
| Davao | 72 | 3.2 |
| Soccskargen | 25 | 1.1 |
| Caraga | 181 | 8.1 |
| Barmm: Bangsamoro Autonomous Region in Muslim Mindanao | 25 | 1.1 |

*Percentages account for missing data

**Table 2.** *AHRQ Mini-Z Burnout*

| Item | Frequency | Percent |
|------|-----------|---------|
| I enjoy my work. I have no symptoms of burnout | 252 | 14.4 |
| Occasionally, I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out | 840 | 47.9 |
| I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion | 532 | 30.4 |
| The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot. | 69 | 3.9 |
| I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help | 59 | 3.4 |

*(N=1752, M= 2.34, SD= .89)*

**Table 3.** *Overall Job Satisfaction*

| Item | Frequency | Percent |
|------|-----------|---------|
| Very satisfied | 351 | 20 |
| Moderately satisfied | 888 | 50.7 |
| A little satisfied | 343 | 19.6 |
| A little dissatisfied | 108 | 6.2 |
| Moderately dissatisfied | 62 | 3.5 |

*(N = 1752, M= 2.22, SD = .95)*

**Table 4.** *Reported Stress-reducing coping activities during the COVID-19 pandemic*

| Activity | Frequency | Percentage |
|----------|-----------|------------|
| Yoga | 55 | 2.5 |
| Meditation | 164 | 7.4 |
| Debriefing session with other nurses/ health workers | 488 | 21.9 |
| Exercise | 656 | 29.5 |
| Connecting with family/ friends virtually | 1149 | 51.5 |
| Social media (Facebook, Instagram, Twitter, TikTok) | 1197 | 53.7 |
| Online gaming | 470 | 21.1 |
| Prayer and other religious/ spiritual activities | 1024 | 45.9 |
| Personal Development (reading books, attending webinars, learning a new skill or hobby) | 20 | 0.9 |
| Resting/ Sleep | 12 | 0.1 |
| Watching movies and/or TV series | 15 | 0.7 |
| Others (planting, playing with pets, going on vacation, going on food trips, online selling/business) | 19 | 0.85 |

Like countries around the world, the Philippines was initially unprepared for the COVID-19 outbreak, leading to significant adjustments within healthcare settings (Lucchini et al., 2020). Many nurses faced redeployment to units outside their primary areas of expertise, which likely affected care quality due to their unfamiliarity with new roles (Kennedy et al., 2022; Nair et al., 2023). Effective nursing practice relies on a deep familiarity with specific care requirements, which was compromised by these redeployments (Tuyisenge, 2018). Moreover, redeployment often negatively impacted nurses' emotional and social well-being, as they were compelled to adapt to roles without choice, thereby increasing their stress and anxiety (Gan, 2020; Nair et al., 2023). Conversely, nurses who remained in their primary units showed higher organizational commitment and engagement (Van Breugel et al., 2005 as cited in Gan, 2020.

Floating nurses (nurses redeployed to settings outside their primary position) is a practice often utilized to address staffing shortages, presenting unique challenges during crises. When nurses are assigned to areas outside their expertise, it not only affects the operational flow but may also significantly impact their psychological well-being. Nurses in unfamiliar units might feel less competent and more overwhelmed, affecting their job performance and the overall quality of care provided. Additionally, the emotional toll includes feelings of isolation and reduced support when moved away from their regular teams (Gan, 2020).  To mitigate the negative effects of floating, healthcare institutions should offer cross-training and prepare nurses for potential redeployment. Implementing mentorship programs where floated nurses are paired with experienced staff from the new unit can provide necessary guidance and emotional support. Developing clear and fair policies on floating practices can also ensure that such measures respect nurses' preferences and competencies while balancing operational needs

The study also revealed that many nurses faced increased workloads, thought about work outside of working hours, experienced a lack of clarity in workplace goals, and dealt with conflicts within their units during the pandemic. Factors such as insufficient infection control, inconsistent protocols, and unclear treatment plans contributed to physical burnout and emotional strain among employees (Chen et al., 2020; Huang et al., 2020; Liu et al., 2020; Fathuse et al., 2023). Despite these challenges, a notable portion of the respondents remained satisfied with their jobs and intended to stay in their current positions. This finding aligns with Norful et al. (2024), who noted that working outside regular hours was not linked to increased burnout, anxiety, or intention to leave.

While general job satisfaction was reported, some nurses experienced burnout symptoms. Also, many relayed that their workplace goals were unclear, and there was a lack of awareness about assigned tasks. Similarly, Baring, N., Ezpeleta, & Robles, (2022) could not conclusively link burnout to socio-demographic factors; however, increased workload and unclear goals significantly impacted job satisfaction and psychological well-being, leading to reduced work performance and job insecurities (Costin et al., 2023). Effective management of burnout involves clear task mapping and discussion of standardized competencies with nurses (Norful, 2024).

The findings underscore the complex challenges that Filipino nurses faced during the COVID-19 pandemic, encompassing both increased physical workload and significant psychological strains due to role shifts and workplace conflicts. These highlighted the need for better management practices and support systems to address both the logistical and emotional challenges faced by nurses in high-stress scenarios like a pandemic.

In this present study, our findings indicate that many nurses did not intend to leave their positions. As noted in similar studies, family and social support appear to play a protective role, as being with loved ones mitigated stress experienced during the pandemic (Sun et al., 2020, as cited in Gilo et al., 2020). Furthermore, structural adaptations in the workplace, such as strategic plans, vaccinations, and the availability of personal protective equipment, also contributed to their willingness to stay. The present study also highlights the protective factor of social support from supervisors and colleagues. There is evidence that social support, especially from supervisors significantly lowers job stress and enhances job satisfaction (Bartam, Joiner, & Stanton, 2004). Further literature demonstrates that nurses find solace in maintaining connections with family and friends through social media, which provided them not only with a sense of community but also mitigated feelings of isolation (Naslund et al., 2020; Yu et al., 2020; Abel et al., 2021; Tariq et al., 2022; Tindle, 2022; Lin et al., 2024). This form of support is vital for sustaining mental health and well-being during challenging times.  Finally, the engagement in spiritual practices emerged as a prominent coping mechanism, reflecting the cultural values of the Filipino nursing workforce. Spiritual engagement helps nurses navigate the challenges posed by the pandemic, providing them with a sense of inner strength and community support (Rosales, 2021; Ribeiro, 2021; Alquwez, Cruz & Balay-odao, 2022). Interestingly, very few nurses reported using sleep or leisure activities as stress-relief strategies. This oversight is significant as sufficient rest and recreational activities are known to improve mental health and overall well-being (Diaz et al., 2022; Kandemir et al., 2022). The lack of engagement in these activities suggests a potential area for improvement in nursing health promotion programs.

## Limitations of the Study

While this study provides valuable insights into the experiences of Filipino nurses during the COVID-19 pandemic, several limitations must be considered. Firstly, the reliance on self-reported data introduces potential biases, such as social desirability or recall inaccuracies, which may compromise the authenticity of the findings. The study's cross-sectional design prevents us from inferring causality or observing changes over time, limiting the understanding of the dynamics involved. Additionally, the use of snowball sampling may result in a non-representative sample, as participants could recruit peers from within their own networks, possibly leading to homogeneity in responses. The focus on specific geographic and institutional settings might not reflect the experiences of nurses in other regions or healthcare environments, limiting the generalizability of the results. Furthermore, the study lacks qualitative data, which restricts a deeper exploration of the nurses' personal and professional experiences and does not account for potential confounding factors that could influence the outcomes.

### Recommendations for Future Practice

To address the challenges for nurses that were identified in this study and to enhance support for nurses, healthcare institutions should consider the following strategies:

(1) **Implement Clear Communication Strategies:** Develop and maintain clear communication channels that keep nurses well-informed about their roles and responsibilities. This includes providing regular updates on policy changes, procedures, and expectations to reduce uncertainties and enhance role clarity.
(2) **Enhance Support Systems:** Strengthen mental health resources such as counseling services, stress management programs, and wellness workshops. Additionally, provide opportunities for recreational activities that can help nurses maintain physical and mental health, contributing to overall well-being.
(3) **Foster a Supportive Workplace Environment:** Create a workplace culture that promotes strong social connections among staff. Recognize and integrate the importance of spiritual and cultural values in stress management, providing spaces and opportunities for nurses to engage in activities that reflect their beliefs and traditions. This approach can help in building resilience and fostering a supportive community within the healthcare setting.

## Conclusion

This study elucidates the profound impact of the COVID-19 pandemic on Filipino nurses, illuminating stressors they encountered, such as residence relocation, increased workload, and shifts in roles. Despite these challenges, Filipino nurses exhibited remarkable resilience and dedication, choosing to remain in their roles even amidst intense workplace stress. Their reliance on social connections and spiritual practices was pivotal in preserving their mental health.

These observations highlight the critical need for enhanced support systems and policies to protect the well-being of nurses both now and in future health crises. Recommendations for healthcare institutions include bolstering mental health support through regular psychological counseling, stress management workshops, and the promotion of leisure and peer support activities.

Furthermore, ensuring a consistent supply of personal protective equipment (PPE) and medical supplies can reduce stress related to infection fears. Activities that promote work-life balance, such as sufficient rest periods and recreational opportunities, should be encouraged to aid stress management. It is also crucial to regularly acknowledge and appreciate the hard work and dedication of nurses, as this can significantly boost morale and job satisfaction.

Policymakers are urged to use this study's findings to develop comprehensive policies that prioritize nurse well-being, including clear protocols for managing pandemics and other emergencies. Providing ongoing education and training ensures nurses are equipped with current knowledge and skills to handle crises effectively, thereby reducing anxiety and stress. By adopting these recommendations, nurse leaders, administrators, and policymakers can foster a more supportive and resilient healthcare environment, ensuring nurses are well-prepared and protected for future challenges.

---

## References

Abel, S., Machin, T., & Brownlow, C. (2020). Social media, rituals, and long-distance family relationship maintenance: A mixed-methods systematic review. *New Media & Society*, 23(7-8), 632–654. https://doi.org/ 10.1177/1461444820933255

Algahtani, F. D., Alsaif, B., Ahmed, A. A., Almishaal, A. A., Obeidat, S. T., Mohamed, R. F., Kamel, R. M., Gul, I., & Hassan, S. U. N. (2022). Using spiritual connections to cope with stress and anxiety during the COVID-19 pandemic. *Frontiers in Psychology*, 13, 915290. https://doi.org/10.3389/fpsyg.2022.915290

Alquwez, N., Cruz, J. P., & Balay-odao, E. M. (2022). Nurses' spiritual well-being and the COVID-19 pandemic: A thematic approach. *Journal of Nursing Management*, 30(3), 604–611. https://doi.org/10.1111/jonm.13540

Banquirigo, R. S., Conopio, A. Y., Vista, G. A., & Mangubat, J. H. T. (2021). Level of depression, anxiety, stress, and coping strategies among Filipino healthcare workers with confirmed COVID-19 infection using the Filipino-translated depression anxiety stress scale (DASS) 21 and Filipino coping strategies scale in Perpetual Succour Hospital from March 2020 to September 2020. *Philippine Journal of Internal Medicine*, 59(2), 120-132.

Baring, N., Ezpeleta, R., & Robles, J. (2022). Degree of burnout and its association with depression, anxiety, and stress among healthcare workers in a tertiary hospital in Mandaue City during the COVID-19 pandemic. *Philippine Journal of Internal Medicine*, 60, 175-183.

Bartam, T., Joiner, TA., Stanton, P. (2004). Factors affecting the job stress and job satisfaction of Australian nurses: implication for recruitment and retention. *Contemporary Nurse.* https://doi.org/10.5172/conu.17.3.293

Brown, R., Wey, H., & Foland, K. (2018). The relationship among change fatigue, resilience, and job satisfaction of hospital staff workers. *Journal of Nursing Scholarship*, 50, 306–313. https://doi.org/10.1111/jnu.12373

Carayon, P., & Gürses, A. P. (2005). A human factors engineering conceptual framework of nursing workload and patient safety in intensive care units. *Intensive and Critical Care Nursing*, 21(5), 284-301.

Catton, H. (2020). Global challenges in health and health care for nurses and midwives everywhere. *International Nursing Review*, 67(1), 4–6.

Chen, S. C., Lai, Y. H., & Tsay, S. L. (2020). Nursing perspectives on the impacts of COVID-19. *Journal of Nursing Research*, 28(3), e85.

Chee Kee, R. (2020). 12-hour shifts make nurses more vulnerable to COVID-19. Retrieved from https://lifestyle.inquirer.net/ 362323/12-hour-shifts-make-nurses-more-vulnerable-to-covid-19/#ixzz6QL0oeg9E

Cooper, A., Brown, J., & Leslie, G. (2021). Nurse resilience for clinical practice: An integrative review. *Journal of Advanced Nursing*, 77, 2623–2640. https://doi.org/10.1111/jan.14763

Costin, A., Roman, A. F., & Balica, R. S. (2023). Remote work burnout, professional job stress, and employee emotional exhaustion during the COVID-19 pandemic. *Frontiers in psychology*, 14, 1193854. https://doi.org/10.3389/ fpsyg.2023.1193854

Cubelo, F., Parviainen, A., Vehviläinen-Julkunen, K., & Palaganas, E. (2024). Foreign-born nurses as COVID-19 survivors in the Nordic region: A descriptive phenomenological study. *Scandinavian Journal of Caring Sciences*, 38(2), 438-450. https://doi.org/10.1111/ scs.13249

De los Santos, J. A. A., & Labrague, L. J. (2021). The impact of fear of COVID-19 on job stress, and turnover intentions of frontline nurses in the community: A cross-sectional study in the Philippines. *Traumatology*, 27(1), 52-59.

Diaz, F., Cornelius, T., Bramley, S., Venner, H., Shaw, K., Dong, M., Pham, P., McMurry, C., Cannone, D. E., Sullivan, A. M., Lee, S. A. J., Schwartz, J. E., Shechter, A., & Abdalla, M. (2022). The association between sleep and psychological distress among New York City healthcare workers during the COVID-19 pandemic. *Journal of Affective Disorders*, 298, 618–624. https://doi.org/10.1016/j.jad.2021.10.033

Dolan, E. D., Mohr, D., Lempa, M., Joos, S., Fihn, S. D., Nelson, K. M., & Helfrich, C. D. (2015). Using a single item to measure burnout in primary care staff: a psychometric evaluation. *Journal of General Internal Medicine*, 30, 582-587.

Ebrahimi, H., Jafarjalal, E., Lotfolahzadeh, A., & Kharghani Moghadam, S. M. (2021). The effect of workload on nurses' quality of life with moderating perceived social support during the COVID-19 pandemic. *Work (Reading, Mass.)*, 70(2), 347–354. https://doi.org/10.3233/WOR-210559

Fathuse, N., Hlongwana, K. W., & Ginindza, T. G. (2023). "Why Am I Even Here If I Can't Save the Patients?": The Frontline Healthcare Workers' Experience of Burnout during COVID-19 Pandemic in Mthatha, South Africa. *International Journal of Environmental Research and Public Health*, 20(8), 5451.

Foureur, M., Besley, K., Burton, G., Yu, N., & Crisp, J. (2013). Enhancing the resilience of nurses and midwives: Pilot of a mindfulness-based program for increased health, sense of coherence and decreased depression, anxiety and stress. *Contemporary Nurse*, 45(1), 114-125.

Frantz, A., & Holmgren, K. (2019). The work stress questionnaire (WSQ)–reliability and face validity among male workers. *BMC public health*, 19, 1-8.

Gan, I. (2020). How do nurse managers describe clinical nurses' work arrangements? A qualitative study. *Nursing Open*, 7(1), 160-169.

Gilo, E. L., Garma, P. F., & Delgado, N. V. (2020). A rapid review of nurses' experiences working in hospital settings during the COVID-19 pandemic. *Philippine Journal of Nursing*, 90(3), 10-21.

Huang, L., Lin, G., Tang, L. et al. (2020). Special attention to nurses' protection during the COVID-19 epidemic. *Critical Care*, 24, 120.

Hung, M. S. Y., & Lam, S. K. K. (2020). Antecedents and contextual factors affecting occupational turnover among registered nurses in public hospitals in Hong Kong: A qualitative descriptive study. *International Journal of Environmental Research and Public Health,* 17(11). https://doi.org/10.3390/ ijerph17113834

Kandemir, D., Temiz, Z., Ozhanli, Y., Erdogan, H., & Kanbay, Y. (2022). Analysis of mental health symptoms and insomnia levels of intensive care nurses during the COVID-19 pandemic with a structural equation model. *Journal of Clinical Nursing*, 31(5-6), 601–611. https://doi.org/10.1111/ jocn.15918

Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., Mirzaee, M. S., & Mirzaee, S. (2020). The lived experience of nurses caring for patients with COVID-19 in Iran: A phenomenological study. *Risk Management and Healthcare Policy*, 13, 1271–1278. https://doi.org/10.2147/ RMHP.S258785

Kennedy, E., Kennedy P., Hernandez, J., Shakoor, K., &Munyan, K. (2022). Understanding redeployment during the COVID-19 pandemic: a qualitaitive analysis of nurse reported experiences. SAGE Open Nursing. 8.237796082211149. https://doi.org/ 10.1177/23779608221114985.

Kim, Y. (2018). Nurses' experiences of care for patients with Middle East respiratory syndrome-coronavirus in South Korea. *American Journal of Infection Control*, 46, 781–787. https://doi.org/10.1016/j.ajic.2018.01.012

Lee, SM., Kang, WS., Cho, AR., Kim, T., & Park, JK. (2018). Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. Comprehensive Psychiatry. https://doi.org/10.1016/j.comppsych.2018.10.003.

Li, Z., Ge, J., Yang, M., Feng, J., Qiao, M., Jiang, R., ... & Zhang, K. (2020). Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain, Behavior, and Immunity*, 88, 916–919. https://doi.org/10.1016/j.bbi.2020.03.007

Lin, H. H., Tseng, Y. H., Zheng, Y. Z., & Hung, C. H. (2024). Investigating the leisure patterns and the well-being of healthcare workers in high-risk environments: Insights from a pandemic landscape. *Journal of the Knowledge Economy*. https://doi.org/

10.1007/s13132-023-00879-z

Liu, S., Yang, L. Zhang, C., Xiang, YT., Liu, Z., Hu, S., & Zhang, B. (2020). Online mental health services in China during the COVID-19 outbreak. *The Lancet. Psychiatry*, 7(4), e17-e18.

Lucchini, A., Iozzo, P., & Bambi, S. (2020). Nursing workload in the COVID-19 era. *Intensive and Critical Care Nursing*, 61, 102929. https://doi.org/10.1016/j.iccn.2020.102929

Maben, J., & Bridges, J. (2020). COVID-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, 29(15-16), 2742-2750. https://doi.org/ 10.1111/jocn.15307

Nair, N., Varghese, BT., Hasan, H., Toba, N., Alsharif, G., Panicker, P., …. & Ho, SB. (2023). Tracking risk factors related to an outbreak of COVID-19 among health workers in a general medicine ward. Cureus. https://doi.org/10.7759/cureus.48429.

Naslund, J. A., Bondre, A., Torous, J., & Aschbrenner, K. A. (2020). Social media and mental health: Benefits, risks, and opportunities for research and practice. *Journal of Technology in Behavioral Science*, 5(3), 245–257. https://doi.org/10.1007/ s41347-020-00134-x

Norful, A. A., Albloushi, M., Zhao, J., Gao, Y., Castro, J., Palaganas, E., Rivera, R. (2024). Modifiable work stress factors and psychological health risk among nurses working within 13 countries. *Journal of Nursing Scholarship*. https://doi.org/10.1111/jnu.12994

Raymundo, A. V., & Miranda, M. D. (2021). Filipino next-generation nurses as frontliners amid COVID-19 pandemic: A Husserlian phenomenology study. *Philippine Journal of Nursing*, 91(1), 5-8.

Ribeiro, M. R. C., Damiano, R. F., Marujo, R., Nasri, F., & Lucchetti, G. (2021). The role of spirituality in the COVID-19 pandemic: A spiritual hotline project. *Journal of Public Health* (Oxford), fdaa120. https://doi.org/ pubmed/fdaa120

Sagherian, K., Cho, H., & Steege, L. M. (2024). The insomnia, fatigue, and psychological well-being of hospital nurses 18 months after the COVID-19 pandemic began: A cross-sectional study. *Journal of Clinical Nursing*, 33(1), 273-287.

Sant'Ana, G., Imoto, A. M., Amorim, F. F., Taminato, M., Peccin, M. S., Santana, L. A., ... & Camargo, E. B. (2020). Infection and death in healthcare workers due to COVID-19: A systematic review. ACTA Paulista de Enfermagem, 33, eAPE20200107.

Shahmari, M., Nasrabadi, A. N., & Ghobadi, A. (2020). Lived experiences of Iranian ICU nurses in the care of patients with COVID-19: A phenomenological study. Research Square. https://doi.org/ 10.21203/rs.3.rs-58673/v1

Shanafelt, T., Ripp, J., & Trockel, M. (2020). Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA*, 323(21), 2133–2134. https://doi.org/ 10.1001/ jama.2020.5893

Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., ... Abdalla, M. (2020). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *General Hospital Psychiatry*, 66, 1-8. https://doi.org/ 10.1016/j.genhosppsych.2020.06.007

Shen, X., MacDonald, M., Logan, S. W., Parkinson, C., Gorrell, L., & Hatfield, B. E. (2022). Leisure engagement during COVID-19 and its association with mental health and wellbeing in US adults. *International Journal of Environmental Research and Public Health,* 19(3), 1081. https://doi.org/10.3390/ ijerph19031081

Stelnicki, A. M., Carleton, R. N., & Reichert, C. (2020). Nurses' mental health and well-being: COVID-19 impacts. *Canadian Journal of Nursing Research*, 52(3), 237-239. https://doi.org/10.1177/ 0844562120931623

Tan, B., Chew, N., Lee, G., Jing, M., Goh, Y., Yeo, L., ... et al. (2020). Psychological impact of the COVID-19 pandemic on healthcare workers in Singapore. *Annals of Internal Medicine*, 173, 317–320. https://doi.org/10.7326/M20-1083

Tariq, A., Muñoz Sáez, D., & Khan, S. R. (2022). Social media use and family connectedness: A systematic review of quantitative literature. *New Media & Society*, 24(3), 815-832. https://doi.org/ 10.1177/14614448211016885

Tee, M., Wang, C., Tee, C., Pan, R., Reyes, P. W., Wan, X., ... Ho, R. (2021). Impact of the COVID-19 pandemic on physical and mental health in lower and upper middle-income Asian countries: A comparison between the Philippines and China. *Frontiers in Psychiatry*, 11, 568929. https://doi.org/10.3389/ fpsyt.2020.568929

Tindle, R., Hemi, A., & Moustafa, A. A. (2022). Social support, psychological flexibility, and coping mediate the association between COVID-19 related stress exposure and psychological distress. *Scientific Reports*, 12, 8688. https://doi.org/ 10.1038/s41598-022-12262-w

Tuyisenge, M. J. (2018). Exploration of factors influencing nurses' performance in the care of hemodialysis patients at selected nephrology units in Rwanda. *Nephrology Nursing Journal*, 45(2), 206.

Vizheh, M., Qorbani, M., Arzaghi, S. M., Muhidin, S., Javanmard, Z., & Esmaeili, M. (2020). The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *Journal of Diabetes & Metabolic Disorders*, 19, 1967-1978. https://doi.org/10.1007/ s13300-020-00882-2

Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., ... & Xiong, Z. (2020). Coping style, social support, and psychological distress in the general Chinese population in the early stages of the COVID-19 epidemic. *BMC Psychiatry*, 20, 426. https://doi.org/ 10.1186/s12888-020-02826-3

## ABOUT THE AUTHORS

**Janelle P. Castro**, PhD, MSN, RN, is a faculty member of the College of Nursing and the Graduate School of UERMMMCI. She is also a member of the UERM Ethics Review Committee and is a peer-reviewer of the UERM Health Sciences Journal. She earned her BSN and MSN major in Adult Health degrees from UERM and her doctoral degree in Leadership Studies major in Organizational Development from Ateneo de Manila University.

**Jocelyn Muros-Molo,** DrPH, RN, is an Associate Professor and is the College Secretary of the University of the East Ramon Magsaysay Memorial Medical Center, Inc. (UERMMMCI) College of Nursing. She received her Bachelor's Degree in Nursing from UERMMMCI. She obtained her Master's Degree in Public Health and Doctor of Public Health from University of the Philippines Manila. Her research interest is Health promotion and education.

**Jed Patrick Montero Catalan**, MN, RN is a former Associate Professor of the University of the East Ramon Magsaysay College a freelance research consultant to various international and national research- based funded projects. He earned his Master in Nursing major in Nursing Administration Services, minor in Psychiatric Nursing from Liceo de Cagayan University. Now, he is working on his dissertation for the degree Doctor of Science in Nursing specializing in Gerontology at Cebu Normal University. Most of his research works were focused on health-caring equity, social empowerment, and sexual/reproductive health rights.

**Norielee S. Magsingit,** EdD, RN, currently serves as the Director for Nursing at Capitol Medical Center, Inc. (Mount Grace Partner). She obtained her Doctor of Education in Educational Administration from the Pamantasan ng Lungsod ng Maynila, received her Master of Arts in Nursing from the Trinity University of Asia, and took her Bachelor of Science in Nursing at the University of the East Ramon Magsaysay Memorial Medical Center. She worked in various institutions, such as the University of the East Ramon Magsaysay Memorial Medical Center as chief nurse; Saint Luke's Medical Center-Global as house manager/nurse resource manager; De Los Santos-STI College as vice president for academics, dean of the college of nursing and caregiver program director; and Philippine Children's Medical Center as nurse supervisor. A Diplomate in Philippine Society for Quality in Health Care (DipPSQua) , Certified Quality Specialist in Philippine Society for Quality in Healthcare ( CQISPSQua) and a Fellow in Philippine Society for Quality in Health Care (FPSQua), her presence in various organizations is attributed to her frequent involvement as guest speaker, panelist, presenter, moderator or judge. Her research interests include Quality and patient safety, and leadership and management.

**Erlinda C, Palaganas,** PhD, RN, FAAN, is a retired professor of the University of the Philippines Baguio. She is currenlty a visiting professor of the School of Advanced Studies of the Saint Louis University and Professorial Lecturer of the University of the Philippines, Manila. She received her Bachelor of Science in Nursing from the University of the East Ramon Magsaysay Memorial Medical Center Inc. (1979), her Master of Public Health from the University of the Philippines, Manila and her Doctor of Philosophy in Nursing from the University of Sydney, NSW, Australia. She led the crusade of Qualitative Research in the Philippines and takes pride of what this mode of inquiry has achieved. Her national and global impact has been recognized by various awards including her conferment as UP Scientist III (2021-2020); Princess Srinagarindra Laureate Award 2021and, Outstanding Alumna in Research. She was and is involved in various multidisciplinary and inter-country researches with Canada, Australia, Finland, US, and Asia Pacific Region countries. Her research interests include social issues and the social determinants of health.

**Reynaldo R. Rivera,** DNP, RN, NEA-BC, FAAN, FAONL, is the Director of Nursing Research and Innovation at New York-Presbyterian, where he oversees corporate-level initiatives and leads groundbreaking projects such as the NYP professional practice and PEACE models and an academic-practice partnership enhancing collaboration between researchers and clinical nurses. His global impact is recognized through his extensive publications and presentations. Dr. Rivera has held several key leadership positions, including Interim Vice President/CNO, Senior Director of Nursing, and Director of Nursing. His outstanding contributions have garnered him fellowships in the American Academy of Nursing (FAAN) and the American Organization for Nursing Leadership (FAONL), and he serves on the editorial boards of Nurse Leader and Practical Implementation of Nursing Science. Dr. Rivera's commitment to excellence is evident in the numerous awards he has received, such as the AONL Exemplary Leadership Award, Sigma Theta Tau Founders Award for Nursing Excellence, Columbia University Outstanding Alumni Award, AACN Flame of Excellence Award, the AAMN Lee Cohen Award, and the UERMMMC Outstanding Alumni Award. His academic achievements are equally impressive, holding degrees in nursing and psychology from UERMMMC College of Nursing and Ateneo de Manila University, an EdM and MA from Columbia University Teachers College, executive management training from the University of Pennsylvania Wharton School, a Post-Master's in Adult Health from New York University, and a Doctor of Nursing Practice from Case Western Reserve University. His role as a Fulbright Specialist further underscores his dedication to advancing nursing education worldwide.

**Allison A. Norful,** PhD, RN, ANP-BC, FAAN is a PhD-prepared nurse practitioner who is jointly appointed as an Assistant Professor at Columbia University School of Nursing in New York and a Nurse Scientist in the New York-Presbyterian Hospital enterprise. She has been recognized as a leading international researcher and expert consultant in latent construct measurement, care delivery model analysis, nurse work environments and psychometric testing. She is the developer of several survey instruments including the Provider Co-Management Index, now being used across 6 countries in both research and clinical settings. Her studies primarily focus on the impact of work environment factors on physiologic stress that precipitates adverse psychological outcomes in nurses. Dr. Norful has received several national and international accolades for her research and clinical efforts including fellowship in the New York Academy of Medicine and American Academy of Nursing.

### Acknowledgments