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Resilience Serves as a Protection Against Depression and Sleep Problems among Hemodialysis Nurses in Indonesia

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ABSTRACT

Nurses are vital in managing infectious disease outbreaks, yet prolonged exposure to high-stress environments, such as during the COVID-19 pandemic, can impair their sleep and increase depressive symptoms, potentially weakening psychological resilience. This study examined the relationships between sleep disturbances, depressive symptoms, and resilience among nurses working in hemodialysis units in post-pandemic Indonesia. Registered nurses having at least a year of clinical experience participated in a cross-sectional survey that was carried out in West Java between April and June 2023. The Zung Self-Rating Depression Scale (SDS), the Insomnia Severity Index (ISI), and the Connor-Davidson Resilience Scale (CD-RISC) were among the tools used. Mediation analysis using bootstrapping was performed to assess whether resilience mediated the association between sleep disturbances and depressive symptoms. A total of 180 valid responses (76.5% response rate) were analyzed. Most participants (58.33%) held a nursing diploma; only 7% were married. Results showed that both the direct relationship between sleep problems and depressive symptoms and the indirect path via resilience were significant. The direct effect explained 43.21% of the total variance, while indirect effects accounted for 34.17%, with resilience specifically mediating 13.21%. Resilience significantly buffers the negative impact of sleep disturbances on depressive symptoms among hemodialysis nurses. Promoting resilience through targeted interventions could enhance psychological well-being and sleep quality, especially in high-stress clinical environments.

Keywords
Depression
Hemodialysis
Nurses
Resilience
Sleep Problems

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Introduction

Nurses are essential in preventing the spread of the epidemic [1]. Nurses take on additional duties such as educating patients, their families, and caregivers about infection prevention, observing and tracking symptoms, applying appropriate infection control protocols, coordinating with caregivers, and keeping precise documentation [2]. Furthermore, the workload of healthcare professionals has experienced a surge following the emergence of the pandemic. This can be ascribed to the introduction of additional infection-control duties, such as the supervision of isolation rooms and the application of protective gear [3], [4]. Haemodialysis nurses have played a critical role in combating the spread of the COVID-19 virus and life-threatening sickness. Nurses may thus experience a variety of detrimental psychological and physical effects, including burnout, depression, and poor sleep quality [5], [6]. According to Zhuo [7], individuals experience both physical and mental stress as a consequence of undertaking additional responsibilities such as cleaning and organizing their surroundings. This, in turn, leads to significant mental distress and a deprivation of sleep.

According to other studies, the percentage of nurses who suffer from depression ranges from 21.5% to 58.2% [8]-[10]. According to several studies, the prevalence of insomnia varied between 15.9% and 50.20 percent [11]-[13]. According Kim and Park [13], among healthcare personnel during the pandemic, sleeplessness has been linked to gender, marital status, and employment in the emergency department. Furthermore, a comprehensive worldwide meta-analysis conducted during the COVID-19 pandemic revealed a combined prevalence rate of 34.31% for depression. The ongoing health crisis underscores the urgent need for early detection and the application of effective mental health interventions [14].

The potential for COVID-19-related resilience to have a substantial impact in alleviating these adverse consequences should not be overlooked. Resilience describes a person's ability to adapt well and cope constructively when faced with adversity or demanding situations [15]. Extended periods of environmental stress can negatively influence sleep patterns and contribute to symptoms of depression, both of which may weaken the overall resilience of nursing professionals. Nurses must maintain psychological resilience in order to manage and adapt to the extreme stressors brought on by the COVID-19 pandemic. This resilience shows a person's capacity to bounce back from emotional setbacks and adjust to challenging situations.

As noted by Cooper et al. [16], nurses who possess resilience may possess enhanced abilities to effectively manage the various challenges inherent in their profession. Additionally, these individuals may encounter fewer adverse consequences and exhibit increased mental well-being.

Prior research has indicated that nurses who possess low levels of resilience exhibit a diminished capacity to effectively cope with stress, leading to adverse outcomes such as depression, burnout, or turnover within their profession [17]-[19]. On the other hand, nurses with a high level of resilience have the capacity to effectively navigate challenges and exhibit enhanced skills through the active utilisation of both their resources inside as well as outside [19]. According to a study conducted by Kim and Park [20], nurses who exhibited a high level of resilience demonstrated a decreased inclination to leave their positions. Kwon [19] conducted a meta-analysis to examine the various factors that influence resilience among Korean nurses. The study identified several protective factors, including compassion fulfilment, nursing achievement, satisfaction with job, organizational socialization, social support, and organizational loyalty, which were found to have a positive impact on resilience. On the other hand, it has been observed that psychological stress response, work-related stress, and depression are associated risks that impose a detrimental impact on resilience [19]. Limited research has focused on the resilience of nurses working in hemodialysis settings following the COVID-19 pandemic, particularly in relation to their demographic characteristics, experiences with depression, and sleep-related difficulties. Hence, there is a need for extensive study that investigates the various aspects that impact the resilience of hemodialysis nurses.

In general, the mental health outcomes of hemodialysis nurses throughout the pandemic may have been considerably influenced by their resistance to COVID-19. Nurses exhibiting elevated degrees of resilience may possess enhanced capabilities in effectively navigating the stress and expectations inherent in their professional responsibilities, resulting in favorable mental health outcomes, including diminished instances of depression and sleep disruptions. Designing strategies to strengthen resilience in hemodialysis nurses in response to the challenges posed by COVID-19 is essential for mitigating the pandemic's psychological impact on this workforce. Accordingly, this research sought to explore the connections between depressive symptoms, sleep disturbances, and resilience among nurses in the post-COVID-19 context.

Methods

A. Study design

A cross-sectional observational approach was used in this study to investigate psychological resilience, sleep disruptions, and depression levels among nurses in West Java,

Indonesia. Data collection took place between April and June 2023, focusing on the post-COVID-19 pandemic context.

B. Sample

The study utilized a convenience sampling approach and was conducted among hemodialysis nurses employed at three major referral hospitals in the West Java region of Indonesia. All participants gave their written informed permission after being told of their freedom to discontinue participation in the study at any time without facing any repercussions. Participation was entirely voluntary.

The following conditions had to be fulfilled by participants in order to qualify: possess shift work experience, have worked as registered nurses in haemodialysis centres, and have provided COVID-19 patient care. Participants also needed to have worked as clinical nurses for at least a year.

Using the G*Power tool version 3.1.9.4, the sample size was estimated based on a medium effect size of 0.15, statistical power of 0.95, and an alpha level of 0.05, yielding a minimum necessary sample of 129 individuals. To account for possible dropouts and missing data, 155 questionnaires were distributed. In total, 180 responses were collected, and 76.5% of these were complete and eligible for inclusion in the final analysis. Responses with missing information were excluded from the dataset.

C. Instruments

The demographic data collected for this study included the participants' age, gender, years of professional experience, marital status, employment position, and educational background. The study measured resilience using the two-item condensed version of the Connor-Davidson Resilience Scale (CD-RISC 2), which evaluates an individual's ability to endure adversity and adapt to change. Responses from participants were recorded on a 5-point Likert scale, where 0 meant "not at all true" and 4 meant "true nearly all the time." The total resilience score was calculated by adding the scores of the two components using recognised scoring guidelines. The scale had strong internal consistency in this study, showing reliable psychometric properties, with a Cronbach's alpha coefficient of 0.712.

Seven important components of sleep-related issues are assessed by the Insomnia Severity Index (ISI). These include problems initiating sleep, staying asleep through the night, waking up earlier than intended, dissatisfaction with overall sleep quality, interference with daytime activities due to poor sleep, the degree to which others observe the sleep issues, and the personal distress resulting from these disturbances [21]. Each question on the 5-point Likert scale used by participants to answer the Insomnia Severity Index (ISI) had a score between 0 (no difficulty) and 4 (very severe difficulty). All item responses were added up to determine the overall ISI score, which may vary from 0 to 28. With a Cronbach's alpha coefficient of 0.810,

the ISI showed good internal consistency in this investigation, demonstrating the scale's validity in assessing sleep-related issues.

The Zung Self-Rating Depression Scale (SDS) is one tool used to assess the presence and severity of symptoms linked to major depressive disorder (MDD) [22]. Participants rated their experiences over the previous two weeks using a four-point scale. Response options included: “none or a little of the time” (scored as 1), “some of the time” (2), “a good part of the time” (3), and “all or almost all the time” (4). The total score on the Self-Rating Depression Scale (SDS) could range between 20 and 80. A score of 40 or higher was used as the cutoff point to identify individuals likely experiencing clinically meaningful symptoms of depression [23]. The Sleep Disturbance Scale (SDS) has two specific items that pertain to sleep and tiredness concerns. These items are identified as Item 4, which addresses difficulties in sleeping during nighttime, and Item 10, which focuses on experiencing weariness without any apparent cause. To minimize potential confounding in the relationship between sleep disturbances and the overall SDS score, two items directly related to sleep were excluded from the analysis. This adjustment resulted in a modified version of the SDS total score, labeled the 'SDS-Sleep' score. The internal consistency of the ISI in this study was computed after this change, and the Cronbach's alpha came out to be 0.776.

D. Procedure

The data collection took place between April and June 2023. During scheduled on-site visits to hemodialysis units, the researcher distributed information packets containing a detailed explanation of the study, an informed consent form, and the research questionnaire. Participants were given time to review the materials and decide whether to participate voluntarily. To ensure familiarity with the clinical context, the study specifically targeted nurses who had worked in the hemodialysis unit for more than one year—exceeding the standard six-week orientation period for newly employed nurses. These individuals were considered to have sufficient experience and knowledge relevant to the study’s focus. Completion of the questionnaire required approximately 20 to 30 minutes, depending on the individual respondent.

E. Data analysis

IBM SPSS software, version 25.0, was used for data analysis. Means, standard deviations, and percentages were among the descriptive statistics utilised to provide an overview of the sample characteristics. The average levels of caring traits in each demographic group were compared using t-tests. To investigate the relationships between sleep disruptions, depressive symptoms, and resilience, Pearson correlation analysis was utilised. The predictive importance of sleep problems and resilience on depressive outcomes was determined using hierarchical regression analysis, which was adjusted for potential confounders such age, gender, education

level, marital status, job classification, and years of work experience. A bootstrap-based mediation technique was also used to evaluate resilience's possible function as a mediating variable in the relationship between depression and sleep disturbances. Statistical significance was defined as a p-value of less than 0.05.

F. Ethics approval and consent to participate

The Institutional Review Board of STIKep PPNI Jawa Barat granted ethical permission for this study under approval number III/109/KEPK/STIKep/PPNI/Jabar/II/2023. All participants gave their written consent after being told about the study prior to data collection. The investigation was carried out in accordance with the ethical principles outlined in the Declaration of Helsinki.

Results

Table 1 presents the demographic characteristics of the study participants, including variables related to personal background, socioeconomic status, and other relevant respondent profiles involved in the research.

Table 1. Demographic characteristics (n=180)

Variables	Nurse	
	n	%
Age, Mean ± SD	30.98±7.86	
Gender		
• Male	120	66.67
• Female	60	33.33
Education level		
• Diploma III	105	58.33
• Bachelor	75	41.67
Marital status		
• Married	97	53.89
• Single	83	46.11
Working position		
• Nurse level 1-3	126	70.00
• Nurse level 3-5	54	30.00
Working experience, Mean ± SD	10.34 ± 3.87	

The demographic profile of the 180 participating nurses is shown in Table 1. The majority (58.33%) held a diploma in nursing, while only 7% reported being married. Around 70% of the participants were employed within nursing levels 1 to 3. On average, respondents had 10.34 years of professional experience (SD = 3.87). A statistical analysis indicates that there is no appreciable relationship between depression and demographic characteristics such as age, gender, marital status, level of education, or employment.

Table 2 presents the bivariate relationships between the main study variables, including resilience, depression, and insomnia, along with their mean scores, standard deviations, ranges, and correlation coefficients among participants.

Table 2. Bivariate relationship between variables (n=180)

Variable	Mean ±SD	Range	1	2	3	4
Resilience	3.13 ± 0.90	0-4	1			
Depression	2.76 ± 1.30	1-4	-0.501**	0.312*	1	
Insomnia	2.88 ± 1.45	0-4	0.465**	-0.351*	-0.407**	1

The mean score of resilience was 3.13 (SD=0.90), the mean score of anxiety 3.56 ± 1.72, the mean score of depression was 2.32 ± 1.30, and the mean score of sleep quality was 31.5 ± 14.5 (Table 2). Sleep quality showed a positive correlation with resilience, but anxiety and depression showed a negative correlation ($p<0.05$).

Table 3 presents the results of the mediation analysis using the bootstrapping method to examine the mediating role of depression in the relationship between the study variables among participants.

Table 3. The results from mediation analysis using a bootstrapping method for depression (n=180)

Outcomes	Predictors	R	R^2	F	ß (SE)	*p*-value	*VIF*
Depression	Sleep problems	0.634	0.652	96.72***	0.245 (0.056)	0.001	2.132
Depression	Resilience	0.621	0.676	112.2***	-0.321 (0.121)	0.001	3.342
Sleep problems	Resilience	0.711	0.633	78.4***	-0.299 (0.176)	0.001	2.221
Depression	Sleep problems	0.731	0.612	154.2***	0.565 (0.033)	0.001	1.785
	Resilience				-0.308 (0.109)	0.001	2.543

The results of the bootstrapping method used in the mediation analysis to investigate factors linked to depressed symptoms are shown in Table 3. Sleep problems and depression were shown to be significantly positively correlated (β = 0.245, p = 0.001), according to the research. On the other hand, depressed symptoms (β = -0.299, p = 0.001) and sleep-related problems (β = -0.321, p = 0.01) were substantially correlated with resilience. These findings suggest that the association between depression and sleep problems may be mediated by resilience.

Table 4 presents the indirect effect of sleep problems on depression through resilience, highlighting the mediating role of resilience in the relationship between sleep-related issues and depressive symptoms among participants.

Table 4. Indirect effect of sleep problems on depression via resilience.

Path	Coefficient	Relative effect %	95% confidence interval Boot LLCI	Boot ULCI
Total effect	4.43		2.48	6.11
Direct effect	3.44	43.21	1.01	5.15
Total indirect effect	2.78	34.17	1.78	5.98
Sleep problems → Depression	1.52	19.45	1.10	3.56
Resilience→ Sleep problems	1.85	15.23	1.05	3.52
Sleep problems → resilience → depression	0.57	13.21	0.09	0.98

LLCI, Lower limit of confidence interval; ULCI, Upper limit of confidence interval.

The findings of the bootstrap analysis that was utilised to determine the mediating effect's significance are shown in Table 4. The results show that both the indirect influence mediated by resilience and the direct effect of sleep issues on depression were statistically significant. Specifically, the direct effect contributed 43.21% to the overall effect, while the total indirect influence accounted for 34.17%. Within this indirect pathway, the specific mediating role of resilience represented 13.21% of the total effect, demonstrating its role as a partial mediator in the association between depression symptoms and sleep disruptions.

Discussion

This study is one of the first to investigate the possible causative links between sleep problems, depressive symptoms, and resilience among Indonesian haemodialysis nurses during the COVID-19 epidemic, as far as we are aware. The findings highlight resilience as a meaningful protective factor, playing a crucial role in mitigating both sleep-related problems and depressive symptoms within this professional group. Consistent with these findings, research by Young has also emphasized the buffering role of resilience in high-stress healthcare environments [24], there exists an inverse relationship between depression levels and resilience among shift nurses, indicating that as depression levels increase, resilience levels decrease. Similarly, [25] found that among ICU nurses, there is a positive correlation between lower resilience levels and greater depression levels. Moreover, it has been documented in prior research that there exists an inverse relationship between the level of resilience exhibited by nurses working in public medical centers and their susceptibility to experiencing burnout when providing treatment to patients afflicted with COVID-19 [26].

According to Tusaie and Dyer [27], nurses who possess inadequate resilience exhibit a diminished capacity to adequately regulate and handle stress. The presence of resilience appears to mitigate the adverse consequences associated with sleep disorders and depression among nurses. This finding contributes further insights into the role of resilience as a mediator in the association between sleep issues and depression. According to the results of earlier research, those with more resilience have shown a superior ability to manage stress, anxiety, and other mental health issues throughout the current epidemic than people with lower resilience [28], [29], [30]. This phenomenon is associated with improved sleep quality and maybe reduced symptoms of depression. Nevertheless, additional research is required to comprehensively situate the situation in Indonesia and establish comparative analyses with other nations.

The capacity of a person to adjust and bounce back from traumatic or extremely stressful events is known as resilience [16], and is becoming more widely acknowledged as a critical protective element for maintaining mental health, especially in times of crisis like

disease epidemics [31]. Throughout the COVID-19 pandemic, fostering resilience among nursing professionals has been linked to lower levels of disease-related fear, psychological strain, emotional exhaustion, and depressive symptoms, while also contributing to improved overall well-being and life satisfaction [28], [29]. Empirical evidence has also demonstrated a positive relationship between resilience and the preservation of clinical performance and professional engagement in healthcare settings [32]. Furthermore, a study by [33] showed that nurses' emotional load was reduced by resilience, which partially mitigated the psychological consequences of pandemic-related stresses. These findings underscore the critical need for early intervention strategies that strengthen resilience, as such efforts may help alleviate pandemic-induced mental fatigue, improve sleep quality, and enhance job satisfaction among nurses.

The pivotal role of resilience as a mediating factor underscores the importance of implementing targeted interventions designed to strengthen resilience among nurses. Evidence-based approaches—such as structured educational programs, mindfulness-based resilience training, and mindfulness-centered self-care practices—have shown promise in fostering psychological strength in nursing professionals [34]. Many of these treatments have moved to digital platforms due to limitations on in-person interaction. Virtual tactics, such as webinars, online resilience seminars, cognitive behavioural therapy, and interprofessional web-based debriefing sessions, have been effectively used to boost nurses' resilience and mental health during trying situations [35], [36]. Studies have affirmed the effectiveness of these remote formats in enhancing psychological resilience and improving emotional well-being among nurses. Crucially, the success of such interventions is reinforced by organizational commitment to a supportive work culture. Key factors include strong leadership, a balanced nurse-to-patient ratio, flexible scheduling, consistent access to essential equipment and supplies—such as personal protective gear—timely communication about emerging health threats, and availability of mental health support services. These organizational strategies are essential in cultivating a resilient and sustainable nursing workforce, particularly in high-stress environments.

Limitations

The present study was done inside a single province characterized by a low response rate, perhaps constraining its generalizability. The limitations of the self-reported questionnaires employed in this study are acknowledged by the authors. Nevertheless, they assert that the responses provided by participants were authentic due to the anonymous nature of the surveys, which were completed without any influence on academic performance. While self-reported measures are frequently employed in research, their ability to offer a

comprehensive and precise depiction of an individual's experiences or behaviors may be limited. Therefore, further investigation is warranted, encompassing an alternate research approach that can effectively address these difficulties, such as qualitative and/or mixed-method methodologies. The present study, which was done using an online platform that was freely accessible, employed a strategy to mitigate the occurrence of missing data. Specifically, participants were required to complete mandatory fields before being allowed to proceed with subsequent questions. The data was inputted directly into an Excel spreadsheet, so ensuring precise transcription and reducing the occurrence of errors. In conclusion, it is imperative to conduct longitudinal investigations in order to ascertain additional noteworthy factors that contribute to the development of resilience against infectious diseases. In future investigations, it is recommended that additional sociodemographic factors be taken into account, in addition to nation, age, and sex, as these variables may influence the outcomes in a non-uniform manner.

Implications

This study presents fundamental data pertaining to interventions designed to enhance resilience among hemodialysis nurses, with the objective of mitigating the adverse effects of the pandemic on their mental well-being and sleep-related issues. According to the study's findings, haemodialysis nurses who expressed higher degrees of depression and sleeplessness also showed lower resilience. Hence, it is imperative to devise and execute supportive interventions aimed at effectively managing resilience among hemodialysis nurses and enhancing their mental well-being and addressing sleep-related issues. The implementation of social support mechanisms, such as mentoring or counselling, which take into account the overall characteristics of individuals, has the potential to enhance the resilience of hemodialysis nurses.

Conclusion

In conclusion, resilience plays a protective role in reducing both depressive symptoms and sleep-related problems among hemodialysis nurses in Indonesia. The psychological difficulties that this community suffered in the wake of the COVID-19 epidemic are highlighted in this study, which adds to the body of current research. The findings show a correlation between increased resilience and decreased rates of depression and sleep disruptions. Implementing targeted strategies to enhance resilience may be vital for safeguarding the mental well-being of hemodialysis nurses and promoting better sleep, thereby supporting their overall health and professional performance.

Conflict of Interest

There should be no conflicts of interest disclosed by the writers.

References

[1] M. Fawaz, H. Anshasi, and A. Samaha, "Nurses at the front line of COVID-19: Roles, responsibilities, risks, and rights," *Am. J. Trop. Med. Hyg.*, vol. 103, no. 4, p. 1341, 2020.

[2] Q. Chen *et al.*, "Mental health care for medical staff in China during the COVID-19 outbreak," *Lancet Psychiatry*, vol. 7, no. 4, pp. e15–e16, 2020.

[3] H. Bernard, R. Fischer, R. T. Mikolajczyk, M. Kretzschmar, and M. Wildner, "Nurses' contacts and potential for infectious disease transmission," *Emerg. Infect. Dis.*, vol. 15, no. 9, p. 1438, 2009.

[4] A. Corley, N. E. Hammond, and J. F. Fraser, "The experiences of health care workers employed in an Australian intensive care unit during the H1N1 Influenza pandemic of 2009: a phenomenological study," *Int. J. Nurs. Stud.*, vol. 47, no. 5, pp. 577–585, 2010.

[5] A. Nie, X. Su, S. Zhang, W. Guan, and J. Li, "Psychological impact of COVID-19 outbreak on frontline nurses: A cross-sectional survey study," *J. Clin. Nurs.*, vol. 29, no. 21–22, pp. 4217–4226, 2020.

[6] N. Sun *et al.*, "A qualitative study on the psychological experience of caregivers of COVID-19 patients," *Am. J. Infect. Control*, vol. 48, no. 6, pp. 592–598, 2020.

[7] K. Zhuo, C. Gao, X. Wang, C. Zhang, and Z. Wang, "Stress and sleep: a survey based on wearable sleep trackers among medical and nursing staff in Wuhan during the COVID-19 pandemic," *Gen. Psychiatr.*, vol. 33, no. 3, 2020.

[8] T. A. Yadeta, Y. Dessie, and B. Balis, "Magnitude and predictors of health care workers depression during the COVID-19 pandemic: health facility-based study in Eastern Ethiopia," *Front. Psychiatry*, vol. 12, p. 654430, 2021.

[9] Z. J. Wayessa, G. T. Melesse, E. Amaje Hadona, and W. G. Wako, "Prevalence of depressive symptoms due to COVID-19 and associated factors among healthcare workers in Southern Ethiopia," *SAGE Open Med.*, vol. 9, p. 20503121211032810, 2021.

[10] S. Asnakew, H. Amha, and T. Kassew, "Mental health adverse effects of COVID-19 pandemic on health care workers in North West Ethiopia: a multicenter cross-sectional study," *Neuropsychiatr. Dis. Treat.*, pp. 1375–1384, 2021.

[11] K. Jemal *et al.*, "Self-reported symptoms of depression, anxiety, and stress among healthcare workers in Ethiopia during the COVID-19 pandemic: a cross-sectional study," *Neuropsychiatr. Dis. Treat.*, pp. 1363–1373, 2021.

[12] Y. Habtamu *et al.*, "Mental health outcomes among frontline health-care workers at Eka Kotebe national COVID-19 treatment center, Addis Ababa, Ethiopia, 2020: a cross-sectional study," *Neuropsychiatr. Dis. Treat.*, pp. 2831–2840, 2021.

[13] Y. Yitayih, S. Mekonen, A. Zeynudin, E. Mengistie, and A. Ambelu, "Mental health of healthcare professionals during the early stage of the COVID-19 pandemic in Ethiopia," *BJPsych Open*, vol. 7, no. 1, p. e1, 2021.

[14] M. Necho, M. Tsehay, M. Birkie, G. Biset, and E. Tadesse, "Prevalence of anxiety, depression, and psychological distress among the general population during the COVID-19 pandemic: A systematic review and meta-analysis," *International Journal of Social Psychiatry*, vol. 67, no. 7, pp. 892–906, 2021.

[15] Y. Eo, "How resilience affects post-traumatic stress symptoms: The mediating role of acceptance," *Korean Journal of Clinical Psychology*, vol. 38, no. 3, pp. 308–317, 2019.

[16] A. L. Cooper, J. A. Brown, C. S. Rees, and G. D. Leslie, "Nurse resilience: A concept analysis," *Int. J. Ment. Health Nurs.*, vol. 29, no. 4, pp. 553–575, 2020.

[17] J.-S. Kang and J.-Y. Lim, "Effects of clinical nurses' resilience on job stress and burnout," *The Journal of the Korea Contents Association*, vol. 15, no. 11, pp. 263–273, 2015.

[18] K. Ryu and J. K. Kim, "A study on relationships among resilience, stress, burnout and organizational commitment of hospital nurses," *The Journal of the Korea Contents Association*, vol. 16, no. 7, pp. 439–450, 2016.

[19] H.-K. Kwon, S.-H. Kim, and S.-H. Park, "A meta-analysis of the correlates of resilience in Korean nurses," *Journal of Korean Clinical Nursing Research*, pp. 100–109, 2017.

[20] E.-H. Kim and H.-S. Park, "The impacts of organizational job stress factors on organizational commitment-focusing on the effects of ego-resilience," *The Korean Association for Governance*, vol. 17, no. 1, pp. 1–28, 2010.

[21] C. H. Bastien, A. Vallières, and C. M. Morin, "Validation of the Insomnia Severity Index as an outcome measure for insomnia research," *Sleep Med.*, vol. 2, no. 4, pp. 297–307, 2001.

[22] W. W. K. Zung, "A self-rating depression scale," *Arch. Gen. Psychiatry*, vol. 12, no. 1, pp. 63–70, 1965.

[23] W. W. K. Zung, "From art to science: The diagnosis and treatment of depression," *Arch. Gen.*

Psychiatry, vol. 29, no. 3, pp. 328–337, 1973.
[24] S. Young, "Influence of job stress, compassion satisfaction and resilience on depression of nurses," *Korean Journal of Occupational Health Nursing*, vol. 28, no. 4, pp. 253–261, 2019.
[25] M. Mealer, J. Jones, J. Newman, K. K. McFann, B. Rothbaum, and M. Moss, "The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: results of a national survey," *Int. J. Nurs. Stud.*, vol. 49, no. 3, pp. 292–299, 2012.
[26] Y. Jeong and M. Gu, "Structural equation model for sleep quality of female shift work nurses," *Journal of Korean Academy of Nursing*, vol. 48, no. 5, pp. 622–635, 2018.
[27] K. Tusaie and J. Dyer, "Resilience: A historical review of the construct," *Holist. Nurs. Pract.*, vol. 18, no. 1, pp. 3–10, 2004.
[28] S. Yörük and D. Güler, "The relationship between psychological resilience, burnout, stress, and sociodemographic factors with depression in nurses and midwives during the COVID-19 pandemic: A cross-sectional study in Turkey," *Perspect. Psychiatr. Care*, vol. 57, no. 1, pp. 390–398, 2021.
[29] L. J. Labrague and J. A. A. De los Santos, "COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support," *J. Nurs. Manag.*, vol. 28, no. 7, pp. 1653–1661, 2020.
[30] N. J. Roberts, K. McAloney-Kocaman, K. Lippiett, E. Ray, L. Welch, and C. Kelly, "Levels of resilience, anxiety and depression in nurses working in respiratory clinical areas during the COVID pandemic," *Respir. Med.*, vol. 176, p. 106219, 2021.
[31] A. M. Pollock, L. Clements, and L. Harding-Edgar, "Covid-19: why we need a national health and social care service," 2020, *British Medical Journal Publishing Group*.
[32] P. Lyu, X. Liu, R. Zhang, L. Shi, and J. Gao, "The performance of chest CT in evaluating the clinical severity of COVID-19 pneumonia: identifying critical cases based on CT characteristics," *Invest. Radiol.*, vol. 55, no. 7, pp. 412–421, 2020.
[33] L. Lorente, M. Vera, and T. Peiró, "Nurses stressors and psychological distress during the COVID-19 pandemic: The mediating role of coping and resilience," *J. Adv. Nurs.*, vol. 77, no. 3, pp. 1335–1344, 2021.
[34] E. Badu *et al.*, "Workplace stress and resilience in the Australian nursing workforce: A comprehensive integrative review," *Int. J. Ment. Health Nurs.*, vol. 29, no. 1, pp. 5–34, 2020.
[35] D. R. Azizoddin, K. Vella Gray, A. Dundin, and D. Szyld, "Bolstering clinician resilience through an interprofessional, web-based nightly debriefing program for emergency departments during the COVID-19 pandemic," *J. Interprof. Care*, vol. 34, no. 5, pp. 711–715, 2020.
[36] L. Weiner, F. Berna, N. Nourry, F. Severac, P. Vidailhet, and A. C. Mengin, "Efficacy of an online cognitive behavioral therapy program developed for healthcare workers during the COVID-19 pandemic: the REduction of STress (REST) study protocol for a randomized controlled trial," *Trials*, vol. 21, pp. 1–10, 2020.

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