

Original Research Article

Work performance, work-life balance and physiological well-being among nurses on night shift duty

Armelyn E. Eguia^{1*}, Judy Jane S. Revelo²

¹Dr. Jose Rizal Memorial Hospital, Dapitan City, Philippines

²Graduate School, Misamis University, Ozamis City, Philippines

Received: 12 February 2026

Revised: 17 March 2026

Accepted: 20 March 2026

*Correspondence:

Dr. Armelyn E. Eguia,

E-mail: armelyneguia@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Healthcare delivery requires continuous operation, making night shift nurses essential to sustaining patient care. However, night work disrupts circadian rhythms and may adversely affect work performance, work-life balance, and physiological well-being. This study examined these variables and their interrelationships among night shift nurses in a public hospital in southwestern Philippines.

Methods: A descriptive-correlational design was employed among 120 night shift nurses selected through stratified and simple random sampling from a public hospital in the southwestern Philippines. Data were collected using three pilot-tested, researcher-made questionnaires assessing work performance (28 items), work-life balance (21 items), and physiological well-being (28 items), all rated on 4-point Likert-type scales. Descriptive statistics summarized variable levels, while Pearson correlation and multiple regression analyses examined relationships and predictors of physiological well-being. Ethical approval and informed consent were obtained prior to data collection.

Results: Night shift nurses demonstrated effective task performance and adaptability, while contextual performance was fair and counterproductive behaviors were more evident. Work-life balance was generally favorable, with minimal work-personal conflict. In contrast, physiological well-being was low, marked by poor sleep quality, fatigue and physical symptoms despite moderate recovery. Physiological well-being was significantly associated with both work performance and work-life balance, with selected dimensions emerging as significant predictors.

Conclusions: Despite maintaining acceptable work performance and work-life balance, night shift nurses exhibited compromised physiological well-being. The findings underscore the need for institutional strategies that support recovery, reduce physiological strain and promote sustainable night shift nursing practice.

Keywords: Night shift nurses, Physiological well-being, Public hospital, Work-life balance, Work performance

INTRODUCTION

The healthcare system relies on continuous nursing services, making night-shift work an indispensable component of hospital operations. Nurses assigned to night duty ensure uninterrupted patient care but are simultaneously exposed to conditions that challenge their work performance, work-life balance, and physiological well-being. Working against the natural circadian rhythm predisposes nurses to fatigue, sleep disruption and

physiological strain, which can impair both professional functioning and personal health.^{1,2} Within this context, understanding how night-shift work affects nurses' performance, balance between work and personal life, and physiological health is essential for sustaining quality care.

Existing literature consistently documents the adverse effects of night-shift work on nurses' physiological and occupational outcomes. Studies have shown that night

duty disrupts circadian rhythms, reduces sleep quality, and contributes to fatigue and cognitive decline, ultimately affecting task accuracy and efficiency.³⁻⁶ Research further indicates that diminished sleep and prolonged fatigue negatively influence multiple dimensions of work performance, including task, contextual, adaptive, and counterproductive behaviors.⁷⁻⁹ In parallel, poor work-life balance arising from inflexible schedules, heavy workloads, and limited organizational support has been associated with emotional exhaustion, reduced job satisfaction, and compromised well-being.¹⁰⁻¹²

Despite the growing body of research on night-shift nursing, important gaps remain in the literature. Most studies have examined work performance, work-life balance, or physiological well-being as isolated outcomes rather than as interrelated constructs. Moreover, limited empirical attention has been given to the specific dimensions of work performance such as adaptive and counterproductive behaviors in relation to physiological strain and perceived work-life balance, particularly among nurses working night shifts.^{7,9} These gaps are especially evident within the Philippine healthcare context, where localized evidence on the combined effects of night-shift work remains scarce.

This study was undertaken to address gaps in understanding by examining the relationships among work performance, work-life balance, and physiological well-being of night-shift nurses in the Philippine healthcare system, aiming to determine their levels and identify predictors of physiological well-being. By integrating multiple dimensions of work performance with indicators of work-life balance and physiological health, the study provides a comprehensive view of how night-shift work affects nurses. The findings offer evidence-based insights for administrators, nurse managers, and policymakers to develop supportive scheduling, wellness programs, and performance standards, ultimately promoting a healthier, more resilient nursing workforce and improving patient care quality.

METHODS

Research design

This study utilized a descriptive-correlational research design to examine the relationships among work performance, work-life balance, and physiological well-being of nurses working night shifts. This design allowed the assessment of naturally occurring variables without manipulation and was appropriate for identifying patterns and associations relevant to clinical practice and workforce management.

Setting

The study was conducted in a secondary-level public hospital located in the southwestern part of the

Philippines that provides comprehensive medical and surgical services. The hospital employs nurses across multiple units, including the ICU, emergency department and medical-surgical wards, many of whom work 12-hour rotating night shifts. This setting provided a relevant context for examining the experiences and physiological demands of night-shift nursing.

Respondents

A total of 120 respondents were selected using stratified and simple random sampling. Inclusion criteria required respondents to be staff nurses assigned to night shifts for at least three months and willing to provide informed consent. Nurses on prolonged leave or with known chronic physical or mental health conditions that could confound study variables were excluded.

Instruments

Data were collected using three researcher-made questionnaires. The Nurses' Work Performance Questionnaire contained 28 items covering task, contextual, adaptive, and counterproductive performance, rated on a 4-point Likert scale (1 = never to 4 = always); counterproductive items were reverse-scored. The nurses' work-life balance questionnaire comprised 21 items assessing work interference with personal life, personal life interference with work and work-life enhancement, rated on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree), with reverse scoring for interference constructs. The nurses' physiological well-being questionnaire included 28 items measuring sleep quality, fatigue, physical symptoms and recovery, rated on a 4-point Likert scale (1 = never to 4 = always). Higher scores indicated better outcomes, except for fatigue and physical symptoms. All instruments were pilot-tested for reliability and validity.

Data gathering procedure

The study was conducted from August to December of 2026. Approval was obtained from the Graduate School of Misamis University and hospital administrators prior to data collection. Eligible nurses were informed of the study's purpose and procedures, and informed consent was secured. The questionnaires were self-administered, with the researcher available for clarification, and all completed forms were collected for analysis.

Ethical considerations

Ethical clearance was granted by the Misamis University Research Ethics Review Board (MU-RERB). Participation was voluntary, confidentiality and anonymity were ensured, and respondents could withdraw at any time without consequence. Data were securely stored and disposed of in accordance with ethical guidelines.

Data analysis

Descriptive statistics (weighted mean and standard deviation) were used to determine levels of work performance, work-life balance, and physiological well-being. Pearson's correlation coefficient examined relationships among the variables, while multiple regression analysis identified predictors of physiological well-being among night-shift nurses.

RESULTS

Respondents' level of work performance

Table 1 presents the respondents' level of work performance across four dimensions: task performance, contextual performance, adaptive performance and counterproductive work performance. The table indicates that respondents demonstrate stronger performance in core job-related functions and adaptability, as reflected in the high ratings for task and adaptive performance. The fair level of contextual performance suggests moderate engagement in discretionary behaviors such as cooperation, initiative, and organizational citizenship. The low rating in counterproductive work performance implies that undesirable workplace behaviors are generally infrequent among the respondents. However, despite strengths in task execution and adaptability, the overall work performance remains only fair, indicating imbalance across performance dimensions (Table 1).

Table 1: Respondents' level of work performance.

Work performance	Mean	SD	I
Task performance	3.65	0.3675	High
Contextual performance	3.09	0.3136	Fair
Adaptive performance	3.32	0.4531	High
Counter-productive work performance	1.52	0.3723	Low
Overall weighted mean	2.895	0.495	Fair

Respondents' level of work-life balance

Table 2 presents the respondents' level of work-life balance across three dimensions: work interference with personal life, personal life interference with work and work-personal life enhancement. The results suggest that respondents experience work and personal life as mutually reinforcing rather than conflicting, as evidenced

by the very high level of work-personal life enhancement. The low level of personal life interference with work further indicates effective boundary management, where personal responsibilities do not significantly hinder work performance. However, the overall rating of high, rather than very high, work-life balance implies that some degree of work interference with personal life remains present. This pattern reflects a relatively healthy balance in which positive spillover outweighs conflict, but where workload and work demands may still encroach on personal time to a moderate extent.

Table 2: Respondents' level of work-life balance.

Work life-balance	Mean	SD	I
Work interference with personal	2.69	0.6189	High
Life personal life interference with	1.93	0.5868	Low
Work work-personal life enhancement	3.41	0.4235	Very high
Overall weighted mean	2.68	0.740	High

The disparity among the dimensions suggests that while respondents are competent in fulfilling formal job responsibilities, they may be less consistent in exhibiting extra-role behaviors that support organizational effectiveness. Contextual performance, which includes helping behaviors and voluntary contributions, appears to be an area needing improvement to elevate overall performance levels. The low counterproductive work performance is a positive finding, as it indicates minimal engagement in behaviors that could harm organizational outcomes. Nonetheless, the overall fair rating implies that maximizing work performance requires not only minimizing negative behaviors but also strengthening positive, value-adding actions beyond assigned tasks (Table 2).

Respondents' level of physiological well-being

Table 3 presents the respondents' level of physiological well-being across four dimensions: sleep quality, fatigue, physical symptoms and recovery. The overall results reflect a low level of physiological well-being, indicating that respondents are experiencing suboptimal physical health and may be at risk of fatigue or other health-related challenges.

Table 3: Respondents' physiological well-being.

Physiological well-being	Mean	SD	I
Sleep	2.37	0.5488	Low
Quality	2.36	0.6828	Low
Fatigue	2.12	0.6242	Low
Physical symptoms recovery	2.94	0.6742	Moderately High
Overall weighted mean	2.45	0.348	Low

The findings suggest that while respondents demonstrate some capacity for physical recovery, they are concurrently experiencing considerable fatigue and physical symptoms, which negatively affect their overall physiological well-being. The low scores in sleep quality and physical symptoms indicate that respondents may not be obtaining adequate restorative rest, and that minor health issues may be prevalent. Overall, the low level of physiological well-being highlights the need for interventions that promote better sleep, reduce fatigue and address physical health concerns to support employees' overall health and functionality (Table 3).

Physiological well-being

Table 4 presents the significant relationships between respondents' work performance and their physiological well-being, which is measured across four constructs: sleep quality, fatigue, physical symptoms, and recovery. Work performance is further divided into four dimensions: task performance, contextual performance, adaptive performance and counterproductive work performance. The table reports Pearson product moment correlation coefficients (r) and p values indicating the strength and significance of the relationships, with all p values <0.05 .

Task performance and physiological well-being

The results indicate that task performance is significantly positively correlated with sleep quality ($r=0.326$, $p=0.00$), fatigue ($r=0.239$, $p=0.00$), and physical symptoms ($r=0.441$, $p=0.00$), while showing a negative correlation with recovery ($r=-0.347$, $p=0.00$). This suggests that employees who perform well in their core job responsibilities generally experience better sleep quality and lower levels of fatigue and physical symptoms, reflecting the beneficial effects of structured work engagement on physiological health. However, the negative correlation with recovery indicates that high task demands may simultaneously reduce opportunities for full physical recuperation, suggesting that sustained high performance can exert physical strain if not balanced with adequate rest. Analytically, these findings imply a dual effect: task performance enhances certain aspects of physiological well-being, such as sleep quality and reduced fatigue, but may also challenge recovery processes, highlighting the importance of workload management and rest periods.

Contextual performance and physiological well-being

The findings indicated that contextual performance was significantly negatively correlated with several dimensions of physiological well-being, including recovery ($r=-0.347$, $p=0.00$), sleep quality ($r=-0.214$,

$p=0.00$), fatigue ($r=-0.011$, $p=0.00$), and physical symptoms ($r=-0.280$, $p=0.00$). These results suggested that nurses who engaged in contextual behaviors- such as assisting colleagues, showing initiative, and contributing to organizational citizenship- often faced higher physical and mental demands that hindered full recovery and disrupted sleep quality, while fatigue was minimally affected. This pattern implied that, although contextual performance contributed positively to organizational functioning, it could simultaneously impose additional physical and psychological strain, highlighting a potential trade-off between supporting colleagues and maintaining personal physiological well-being.

Adaptive performance and physiological well-being

The findings show that adaptive performance is significantly correlated with several dimensions of physiological well-being, including positive relationships with sleep quality ($r=0.466$, $p=0.00$), physical symptoms ($r=0.475$, $p=0.00$), and recovery ($r=0.375$, $p=0.00$), while also showing a positive correlation with fatigue ($r=0.320$, $p=0.00$). These results suggest that employees who exhibit high adaptability, such as adjusting to changing work demands, problem-solving, and learning new skills, tend to experience better sleep quality, improved recovery, and heightened awareness of physical health, although they may also encounter moderate levels of fatigue due to the cognitive and physical demands associated with flexibility. Analytically, this indicates that adaptive behaviors not only enhance work performance but also interact with physiological functioning, promoting overall well-being while requiring careful management of workload to prevent fatigue accumulation.

Counter productive and physiologic well-being

The findings reveal that counterproductive work performance is significantly negatively correlated with multiple dimensions of physiological well-being, including sleep quality ($r=-0.394$, $p=0.00$), fatigue ($r=-0.287$, $p=0.00$), and physical symptoms ($r=-0.386$, $p=0.00$), while also showing a negative correlation with recovery ($r=-0.320$, $p=0.00$). This suggests that employees who engage in counterproductive behaviors- such as procrastination, withdrawal, or workplace deviance- experience poorer sleep quality, higher fatigue, increased physical health complaints, and reduced recovery, highlighting the detrimental impact of negative work behaviors on physiological functioning. Analytically, these results indicate that counterproductive actions not only undermine organizational effectiveness but also compromise personal health, creating a cycle where poor well-being may further exacerbate negative behavior (Table 4).

Table 4: Significant relationship between the level of respondents’ work performance and physiological well- being.

Variables	Sleep quality	Fatigue	Physical symptoms	Recovery
Task performance	r=0.326	r=-0.214	r=-0.287	r=0.375
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀
Contextual performance	r=0.239	r=-0.011	r=-0.122	r=0.320
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀
Adaptive performance	r=0.441	r=-0.280	r=-0.386	r=0.450
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀
Counter productive work performance	r=-0.347	r=0.475	r=0.466	r=-0.394
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀

** : Significant relationship

Table 5: Significant relationship between the respondents’ level of work-life balance and physiological well-being.

Variables	Sleep Quality	Fatigue	Physical Symptoms	Recovery
Work interference with personal life	r=-0.484	r=-0.618	r=0.624	r=-0.551
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀
Personal life interference with work	r=-0.293	r=0.461	r=0.449	r=-0.353
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀
Work-personal life enhancement	r=0.424	r=-0.275	r=-0.311	r=0.381
	p=0.00**	p=0.00**	p=0.00**	p=0.00**
	Reject H ₀	Reject H ₀	Reject H ₀	Reject H ₀

** : Significant relationship

Table 6: Predictors of physiological well-being.

Term	Coeff.	SE Coeff.	T-value	P value
Constant	2.365	0.759	3.12	0.00
Task performance	0.269	0.128	2.10	0.03
Work interference with personal life	-0.4049	0.0895	-4.52	0.00
Personal life with interference with work	0.325	0.120	0.120	0.00

Regression Equation- PW4 = 2.365 + 0.269 TP3 - 0.4049 NW1 + 0.325 NW3; Model Summary S: R-sq- 0.525863, R-sq(adj)- 41.22%, R-sq(pred)- 39.17%

Significant relationship between the respondents’ level of work-life balance and physiological well- being

Table 5 presents the significant relationships between the respondents’ work-life balance and their physiological well-being, which includes sleep quality, fatigue, physical symptoms, and recovery. Work-life balance is measured through three dimensions: work interference with personal life, personal life interference with work, and work-personal life enhancement.

Work interference with personal life and physiologic well-being

The findings indicate that work interference with personal life is negatively correlated with sleep quality (r=-0.484,

p=0.00), fatigue (r=-0.293, p=0.00), and recovery (r=-0.618, p=0.00), while positively correlated with physical symptoms (r=0.424, p=0.00). This suggests that when work demands encroach on personal life, employees experience poorer sleep, higher levels of fatigue, greater physical discomfort, and diminished capacity for physiological recovery. Analytically, this underscores the notion that excessive work demands extend beyond organizational boundaries, disrupting essential restorative activities and self-care practices. Employees who are unable to adequately separate work from personal life may face cumulative stress, which over time can manifest as chronic fatigue, impaired sleep patterns and increased susceptibility to physical health issues.

Personal life interference with work and physiological well-being

The results show that personal life interference with work is negatively correlated with sleep quality ($r=-0.214$, $p=0.00$) and recovery ($r=-0.275$, $p=0.00$), while positively correlated with fatigue ($r=0.461$, $p=0.00$) and physical symptoms ($r=-0.353$, $p=0.00$). These findings indicate that demands and responsibilities from personal life can spill over into the work domain, adversely affecting employees' physiological well-being by increasing fatigue, reducing restorative sleep, impairing recovery, and exacerbating physical health complaints. Analytically, even though the correlations are moderate, they highlight the bidirectional nature of work-life balance, suggesting that personal life stressors not only influence work performance but also contribute to cumulative physical strain. Employees who struggle to manage personal responsibilities while fulfilling work demands may experience chronic stress, which can impair immune function, elevate fatigue, and heighten the risk of physical ailments over time.

Work personal life enhancement and physiological well-being

The findings reveal that work–personal life enhancement is positively correlated with sleep quality ($r=0.624$, $p=0.00$), physical symptoms ($r=0.449$, $p=0.00$), and recovery ($r=0.381$, $p=0.00$), while negatively correlated with fatigue ($r=-0.311$, $p=0.00$). These results indicate that when work and personal life mutually support and enrich each other, employees experience higher-quality sleep, more effective recovery, fewer physical complaints, and lower levels of fatigue. Analytically, this underscores the concept of positive spillover, where resources, skills, and satisfaction gained in one domain enhance functioning in the other, contributing to improved physiological well-being. Employees who perceive their work and personal life as complementary are better able to manage stress, maintain energy levels, and sustain overall health despite job demands. Moreover, the strong correlation with sleep quality highlights the critical role of work-life enrichment in restorative processes, suggesting that employees benefit not only physically but also cognitively and emotionally from this synergy (Table 5).

Predictors of physiological well-being

Table 6 presents the results of the multiple regression analysis conducted to determine the predictors of physiological well-being among the respondents. The regression results indicate that task performance and personal life interference with work are significant positive predictors of physiological well-being, while work interference with personal life is a significant negative predictor. This suggests that supportive professional factors and manageable personal demands contribute to better physical functioning. In contrast,

excessive work demands encroaching on personal life are associated with poorer physiological outcomes. The model explains 41.22% of the variance in physiological well-being, indicating a moderate explanatory power. These findings demonstrate that work–life balance factors play a substantial role in shaping physiological health.

The findings reveal that physiological well-being is strongly influenced by the interaction between work responsibilities and personal life demands. When work-related pressures interfere excessively with personal life, individuals may experience increased physical strain and stress-related symptoms. Conversely, when individuals are able to manage personal responsibilities without disrupting work roles, physiological well-being tends to improve. These results emphasize the importance of maintaining equilibrium between professional and personal domains (Table 6).

DISCUSSION

The findings demonstrate a complex but theoretically coherent pattern in which nurses showed strong task-related competence and positive work-life enhancement, yet reported low overall physiological well-being. These results highlight the multidimensional nature of nursing performance and underscore the physiological costs associated with sustained night-shift work, even when professional functioning remains adequate.

The respondents demonstrated high task performance and low counterproductive work behavior, but only a fair overall level of work performance due to moderate contextual performance. This finding reinforces the view that effective nursing performance cannot be assessed solely through task execution. Koopmans et al highlighted that task performance alone provides an incomplete picture of employee effectiveness, emphasizing the importance of contextual and adaptive behaviors.¹⁰ Similarly, Pradhan and Jena found that adaptive performance plays a crucial role in sustaining effectiveness in demanding environments such as healthcare.¹¹ While the low incidence of counterproductive behavior observed in this study aligns with healthier organizational climates described by Redley et al, the fair overall performance suggests that limited discretionary and citizenship behaviors may constrain collective effectiveness during night shifts.¹²

From a nursing management perspective, this imbalance suggests that nurses may prioritize essential clinical tasks to ensure patient safety, particularly under the physiological strain of night work. However, contextual performance such as voluntary cooperation and emotional support may be compromised by fatigue and recovery deficits. These findings resonate with Orem's self-care deficit nursing theory, which posits that when personal resources are depleted, individuals conserve energy by focusing on essential functions, potentially limiting extra-role behaviors.¹³

The respondents reported a high level of work-life balance, characterized by very high work-personal life enhancement and low personal life interference with work. This indicates that many nurses perceived positive spillover between work and personal domains, despite the demands of night-shift schedules. Allen et al similarly reported that work-family enrichment enhances well-being and job satisfaction, while Kossek et al emphasized the role of effective boundary management in minimizing life-to-work conflict.^{14,15} Kim and Kim further demonstrated that high work-life balance is associated with better overall functioning and reduced stress.¹⁶

However, the overall rating of “high” rather than “very high” work-life balance suggests that work interference with personal life remains present to some extent. This is consistent with the nature of night-shift work, which inherently disrupts social rhythms and family time. Within the job demands-resources framework, these findings suggest that while nurses may possess or receive sufficient resources to experience enrichment, persistent job demands such as long shifts and circadian disruption continue to encroach on personal life.

Despite favorable work performance and work-life balance indicators, respondents exhibited a low level of physiological well-being, marked by fatigue, physical symptoms and compromised sleep quality. This finding aligns with evidence that night-shift work exerts cumulative physiological strain that may not be immediately offset by positive psychosocial resources. Feng et al demonstrated that poor sleep quality and persistent fatigue are strongly associated with health risks and reduced functioning, while Guglielmi et al linked physical symptoms to decreased productivity and well-being.^{17,18} Konya et al further emphasized the importance of structured recovery interventions in mitigating work-related physiological stress.¹⁹

From the perspective of Roy’s adaptation model, the low physiological well-being observed suggests incomplete or strained adaptation to nocturnal work demands. Although nurses may develop coping strategies to maintain performance, prolonged circadian disruption and insufficient recovery can lead to maladaptation, manifesting as fatigue and somatic complaints.²⁰

Significant relationships were observed between all dimensions of work performance and physiological well-being, underscoring their interdependence. Task performance was positively associated with sleep quality and reduced fatigue but negatively related to recovery, indicating that sustained high performance may come at the expense of adequate rest. This dual effect mirrors findings by Sonnentag et al and Demerouti et al, who emphasized that high engagement improves well-being only when accompanied by sufficient recovery opportunities.^{21,22}

Contextual performance showed negative associations with several physiological indicators, suggesting that extra-role behaviors may impose additional strain on already taxed nurses. Feng et al and Jeon et al similarly reported that discretionary efforts can reduce recovery when workload is high.^{17,23} In contrast, adaptive performance demonstrated positive associations with sleep quality and recovery, supporting evidence that flexibility and problem-solving skills enhance resilience when appropriately supported.^{21,22} Counterproductive work behavior exhibited consistent negative relationships with all physiological indicators, reinforcing findings that poor health and maladaptive behaviors often coexist in a reinforcing cycle.^{17,23}

These patterns collectively support Orem’s assertion that self-care capacity is critical to sustaining both health and performance. When recovery is inadequate, even positive work behaviors may contribute to physiological depletion.

Work-life balance showed robust associations with physiological well-being. Work interference with personal life was linked to poorer sleep, increased fatigue, more physical symptoms, and reduced recovery, consistent with the previous findings.^{15,16} Conversely, work-personal life enhancement was strongly associated with better sleep quality, lower fatigue, and improved recovery, echoing previously reported results.^{14,16} These findings highlight the protective role of positive spillover in sustaining physiological health.

Anchored in Orem’s self-care deficit theory, work-life balance can be viewed as a determinant of nurses’ ability to meet essential self-care needs. Peplau’s Interpersonal Relations Theory further contextualizes these findings by emphasizing the role of supportive relationships and environments in reducing stress and promoting well-being.²⁴ A work environment that fosters healthy boundaries and interpersonal support can therefore enhance both physiological health and professional functioning.

Regression analysis identified task performance and personal life interference with work as positive predictors of physiological well-being, while work interference with personal life emerged as a negative predictor. These findings suggest that manageable personal demands and structured work engagement support physiological health, whereas excessive work intrusion undermines it. The model’s ability to explain over 40% of the variance in physiological well-being underscores the substantial role of work-life dynamics. These results are consistent with evidence from Kalliath et al, Okechukwu et al, and Rashmi et al, who emphasized the health consequences of prolonged work stress and role imbalance.²⁵⁻²⁷

The findings highlight the need for healthcare organizations to adopt holistic workforce strategies that integrate performance expectations with physiological

and psychosocial support. Interventions such as flexible scheduling, protected rest periods, wellness and recovery programs, and leadership practices that encourage supportive contextual behaviors without overburdening staff are critical. Strengthening nurses' self-care agency, as emphasized by Orem's theory, can enhance resilience, sustain performance, and ultimately improve patient care quality.

Several limitations should be acknowledged. The use of a descriptive-correlational design precludes causal inference. Data were collected from a single public hospital, which may limit generalizability to other healthcare settings. Self-reported measures may also be subject to response bias. Future studies may employ longitudinal designs, objective physiological indicators, and multi-site sampling to strengthen evidence and expand applicability.

CONCLUSION

The findings of this study demonstrate that while night shift nurses exhibit strong task execution and adaptive performance, overall work performance remains only fair due to relatively weaker engagement in contextual or extra-role behaviors. Although nurses generally experience a favorable level of work-life balance, characterized by positive work-personal life enhancement, work demands continue to moderately encroach on personal time. Despite some capacity for recovery, the overall physiological well-being of night shift nurses is low, particularly in terms of sleep quality, fatigue and physical symptoms, reflecting the persistent strain imposed by nocturnal work schedules. Importantly, physiological well-being is significantly associated with both work performance and work-life balance, indicating that adequate sleep, reduced fatigue, effective recovery, and well-managed work-life boundaries are essential for sustaining positive performance and minimizing counterproductive behaviors.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Misamis University Research Ethics Committee

REFERENCES

- Zhan T, Wei X, Zhang Z, Shi Z, Xie H, Ma X, et al. The impact of working night shifts on cardiac autonomic nervous regulation during the six-minute walk test in nurses. *BMC Nurs*. 2024;23:907.
- An R, Li C, Ai S, Wu Y, Luo X, Li X, et al. Effect of shift work on fatigue, reaction time, and accuracy of nurses in the department of neurology: a cross-sectional observational study. *J Nurs Manag*. 2022;30(6):2074-83.
- Ko H, Shim J, Baek J. Effects of programs on sleep improvement in shift-work nurses: a systematic review and meta-analysis. *BMC Nurs*. 2025;24:1142.
- Al-Hrinat J, Al-Ansi AM, Hendi A, Adwan G, Hazaimh M. The impact of night shift stress and sleep disturbance on nurses quality of life: case in Palestine Red Crescent and Al-Ahli Hospital. *BMC Nurs*. 2024;23(1):24.
- Li X, Han J, Lin H. The effects of psychological flexibility and night shifts on mental health and well-being in nurses. *PLoS One*. 2024;19(11):e0313634.
- Lee G, Cummings GG, Lee H. An examination of work characteristics, fatigue, and recovery among acute care nurses. *J Nurs Scholarsh*. 2021;53(3):414-24.
- Öztürk Yıldırım T, Karatepe HK. The effect of the challenges experienced by nurses during the pandemic on their intention to leave work: The mediating role of performance. *BMC Nurs*. 2024;23:819.
- Dires T, Feleke D, Amera T. Assessment of night-shift effects on nurses' health and work performance at South Gondar Zone public hospitals. *Int J Afr Nurs Sci*. 2023;18:100530.
- Gu K, Chen H, Shi H, Hua C. Global prevalence of excessive daytime sleepiness among nurses: a systematic review and meta-analysis. *Int Nurs Rev*. 2025;72(1):e13087.
- Koopmans L, Bernaards CM, Hildebrandt VH, de Vet HCW, van der Beek AJ. Measuring individual work performance: Identifying and selecting indicators. *Work*. 2020;65(3):595-607.
- Pradhan RK, Jena LK. Employee performance at workplace: conceptual model and empirical validation. *Bus Perspect Res*. 2021;9(1):69-85.
- Redley B, Olsen R, Cockburn J, Williams A. The impact of shift work and organisational climate on nurse health: a cross-sectional study. *BMC Health Serv Res*. 2018;18:586.
- Orem DE. *Self-care deficit nursing theory: selected papers of Dorothea Orem*. New York, NY: Springer Publishing; 2001.
- Allen TD, French KA, Dumani S, Shockley KM. A cross-national meta-analytic examination of predictors and outcomes associated with work-family conflict and enrichment. *J Appl Psychol*. 2020;105(6):539-76.
- Kossek EE, Thompson RJ, Lautsch BA. Balanced workplace flexibility: Avoiding the traps. *Calif Manage Rev*. 2021;63(4):5-25.
- Kim M, Kim H. Work-life balance and subjective well-being among Korean adults: Focused on the moderating effect of gender. *Int J Environ Res Public Health*. 2020;17(19):7231.
- Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The job demands-resources model of burnout. *J Appl Psychol*. 2001;86(3):499-512.
- Feng X, Li J, Zhang J, Hu Y, Gao J, Zhou L. Association between night shift and sleep quality

- and health among Chinese nurses: a cross-sectional study. *J Nurs Manag*. 2021;29(5):1182-90.
19. Guglielmi O, de Vito A, Mazzotta F, Guglielmi T, D'Errico A. The impact of shift work on the psychological and physical health of nurses in a general hospital: a comparison between rotating night shifts and day shifts. *Intern Emerg Med*. 2015;10:493-502.
 20. Konya I, Watanabe K, Shishido I, Sugimura N, Matsushita Y, Yamaguchi S, et al. Post-work recovery from fatigue and sleep episodes among nurses engaged in 16-hour night shifts: a prospective observational study. *Healthcare*. 2022;10(6):1089.
 21. Roy C, Andrews HA. *The Roy adaptation model*. 3rd edn. Upper Saddle River, NJ: Pearson; 2009.
 22. Sonnentag S, Binnewies C, Mojza EJ. Staying well and engaged during the workweek: The role of work engagement, performance, and recovery experiences. *J Appl Psychol*. 2020;105(2):123-38.
 23. Jeon BM, Kim SH. Associations of extended work, higher workloads, and emotional work demands with sleep disturbance among night-shift workers. *BMC Public Health*. 2022;22:2138.
 24. Peplau HE. Peplau's theory of interpersonal relations. *Nurs Sci Q*. 1997;10(4):162-7.
 25. Kalliath T, Kalliath P, Chan C. Work-family conflict, family satisfaction and employee well-being: a comparative study of nurses and other professionals. *J Adv Nurs*. 2020;76(8):1973-83.
 26. Okechukwu CE, Colaprico C, Di Mario S, Oko-ohoh AG, Shaholli D, Manai MV, et al. The relationship between working night shifts and depression among nurses: a systematic review and meta-analysis. *Healthcare*. 2023;11(7):937.
 27. Rashmi K, Kataria A. The mediating role of work-life balance on the relationship between job resources and job satisfaction: Perspectives from Indian nursing professionals. *Int J Organ Anal*. 2023;31(5):1316-42.

Cite this article as: Eguia AE, Revelo JJS. Work performance, work-life balance and physiological well-being among nurses on night shift duty. *Int J Community Med Public Health* 2026;13:1705-13.