Shift Pattern Transition on the Health and Well-Being of Nurses: A Convergent Parallel Analysis

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DOI: https://doi.org/10.51584/IJRIAS.2026.110400126

Received: 17 April 2026; Accepted: 22 April 2026; Published: 13 May 2026

ABSTRACT

This study aimed to examine the impact of shift pattern transitions on the health and well-being of nurses and to explore their experiences during this transition. This study utilized a mixed-method research design using the convergent parallel approach. The quantitative component employed a descriptive-correlational design involving 85 staff nurses in a government hospital in Surigao City. Data were collected using an adapted Standard Shiftwork Index (SSI). Descriptive and inferential statistics, including frequency, percentage, weighted mean, standard deviation, Chi-square, and Cramer's V, were used for analysis. The qualitative component involved in-depth interviews with purposively selected nurses to explore their experiences regarding shift transitions, and the data were analyzed using thematic analysis. The findings revealed varying levels of health and well-being among nurses following the shift pattern transition, with experiences of sleep disruption, fatigue, and stress, while others reported improved work-life balance and adaptation over time. Qualitative themes highlighted physical and psychological effects, coping strategies, and the role of social and organizational support. Overall, shift pattern transitions influence nurses' health, well-being, and work performance. The integration of quantitative and qualitative findings informed the development of a Health and Well-Being Enhancement Plan to support nurses in adapting to shift changes.

Keywords: Shift pattern transition, Nurses, Health and well-being, Shift work, Mixed-methods research

INTRODUCTION

Nurses play an important role in hospital care, providing continuous and direct services to patients across all shifts. To ensure round-the-clock care, hospitals implement work schedules such as 8-hour and 12-hour shifts, and in many settings, nurses experience transitions between these schedules due to staffing needs, increased patient volume, workforce shortages, or administrative decisions. While these shift systems are intended to maintain service delivery, frequent or abrupt transitions can significantly affect nurses' health and overall well-being. The transition from 12-hour to 8-hour shifts disrupts established sleep patterns, recovery habits, and daily routines, interfering with circadian rhythm, reducing sleep quality, and contributing to fatigue, psychological stress, and burnout (Peršolja, 2023; De Kock et al., 2023; Niu et al., 2024). These effects highlight the challenges nurses face when adjusting to changing schedules in demanding healthcare environments.

These health concerns have important implications for patient safety and quality of care, as fatigue, emotional strain, and reduced concentration can increase the risk of errors and weaken nurses' ability to provide safe and compassionate care (Saksvik-Lehouillier et al., 2022). In government hospital settings, observations show that nurses experience noticeable strain during the transition, including difficulty sleeping, persistent tiredness, irritability, decreased motivation, and physical symptoms such as headaches and reduced stamina. While some nurses perceive shorter shifts as lighter, the increased frequency of reporting days becomes exhausting, especially in the context of high patient volume and staffing limitations. Despite these realities, scheduling changes are often implemented with limited consideration of their physical and psychological impact, emphasizing the need for closer examination of shift transitions in public healthcare institutions.

A significant research gap exists as most studies focus on fixed shift systems rather than the transition process, particularly in government hospital settings in the Philippines where staffing shortages and frequent schedule

changes are common (Li et al., 2023). This study aims to examine how the transition from 12-hour to 8-hour shifts affects nurses' health and well-being, including sleep quality, fatigue, physical and psychological health, coping strategies, job satisfaction, and overall perception of well-being. Using a mixed-method convergent parallel design, the study integrates quantitative measures and qualitative experiences to provide a comprehensive understanding of the transition (Creswell & Plano Clark, 2023). The study supports SDG 3 and SDG 8 by promoting healthier working conditions and sustainable work practices (United Nations, 2023), and its findings aim to guide nursing administrators in developing evidence-based scheduling policies, fatigue management programs, and support systems that improve nurse well-being and patient care.

Research Questions

This study was to assess the relationship between profile and impact of shift pattern transitions on the health and well-being and explore the experiences on shift pattern transitions on the health and well-being among nurses in a government hospital in Surigao City for the first quarter of 2026:

What was the profile of the nurses in terms of:

1.1. age;
1.2. sex;
1.3. civil status;
1.4. unit or department; and
1.5 length of nursing experience?

What was the shift pattern transitions on the health and well-being of the nurses in terms of:

1.1 sleep and fatigue patterns;

1.2 physical and psychological well-being;

1.3 coping and adaptation strategies;

1.4 job satisfaction and work perception; and

1.5 overall perception of health and well-being?

Was there a significant relationship between the profile and the shift pattern transition on the health and well-being of the nurses?
How did the participants describe their experiences on shift pattern transition on their health and well-being?

How did the experiences converge with the quantitative findings?

What health and well-being enhancement Plan was proposed based on the findings of the study?

Statement of Null Hypothesis

H_{o1}: There was no significant relationship between the profile and shift pattern transition on the health and well-being of nurses.

REVIEW OF RELATED LITERATURE AND STUDIES

Shift Pattern Transitions on Health and Well-Being of Nurses. Hospitals often require nurses to adjust working hours through transitions between 8-hour and 12-hour shifts or rotating duties, which are implemented to address staffing shortages and maintain 24-hour care. However, these transitions disturb circadian rhythm, shorten recovery time, and negatively affect physical and psychological health, leading to tiredness, irritability, and impaired concentration (Yu et al., 2025). Sleep disturbance is a major consequence, with reduced sleep hours, poor sleep quality, and difficulty falling asleep reported among nurses, particularly in night and backward

rotational shifts (Xiao et al., 2024; Wangsan et al., 2022). Beyond sleep, frequent transitions contribute to fatigue, reduced alertness, emotional exhaustion, and increased risk of errors, affecting both nurse well-being and patient safety (De Kock et al., 2023; Peršolja, 2023; Saksvik-Lehouillier et al., 2022). Organizational scheduling practices such as forward rotation, adequate recovery time, and fair scheduling are shown to improve adaptation, while unstable schedules lower job satisfaction and increase turnover intention (Chang & Liu, 2021; Li et al., 2023; Varghese et al., 2023). Physical health effects, including headaches, gastrointestinal issues, and long-term risks such as hypertension and sleep disorders, further highlight the need for structured fatigue management and wellness programs (Al Ma'mari et al., 2022).

Correlational studies consistently show that shift pattern transitions significantly affect nurses' physical health, psychological well-being, and job satisfaction. Frequent schedule changes are associated with poor sleep, chronic fatigue, anxiety, burnout, and reduced motivation, with irregular shifts disrupting recovery cycles and increasing the risk of mental health problems (De Kock et al., 2023; Peršolja, 2023; Niu et al., 2024). Nurses in rotating schedules report higher fatigue, irritability, and dissatisfaction compared to those in fixed schedules, indicating the importance of schedule stability and adequate rest intervals (Li et al., 2023; Al Ma'mari et al., 2022). Coping strategies and resilience moderate these effects, as nurses who practice proactive coping and receive strong social support experience lower stress and better adjustment (Jang & Kim, 2021; Maulibulung Hutapea & Marulitua, 2024). Organizational factors such as fair scheduling, supportive leadership, and wellness initiatives also influence outcomes, improving morale and engagement while reducing absenteeism and turnover (De Kock et al., 2023; Li et al., 2023). Additionally, fatigue from irregular shifts is linked to reduced patient safety due to impaired clinical judgment and attention (Al Ma'mari et al., 2022; Niu et al., 2024).

Qualitative studies reveal that shift transitions are lived experiences that affect nurses' physical, emotional, and social well-being. Nurses describe transitions as physically demanding and emotionally draining, with sleep deprivation, fatigue, irritability, and social disconnection as common experiences (Ejebu et al., 2021; Lim & Kim, 2025; Yang et al., 2025). Adaptation requires rebuilding routines, managing energy, and balancing work-life demands, often through trial-and-error coping strategies such as sleep adjustments, time management, and reliance on social support (Varghese et al., 2023). Organizational support plays a critical role, as nurses who are involved in scheduling decisions and receive clear communication report better adjustment and satisfaction, while abrupt and poorly communicated changes lead to dissatisfaction and stress (Ejebu et al., 2021; Gao et al., 2020). Work-life balance is also affected, with nurses experiencing difficulty maintaining family and social relationships due to irregular schedules. Overall, qualitative evidence shows that successful adaptation depends on both individual resilience and institutional support, emphasizing that well-structured, predictable schedules and supportive environments are essential to maintain nurse well-being, morale, and quality of care (Ejebu et al., 2021; Lim & Kim, 2025; Varghese et al., 2023; Yang et al., 2025; Gao et al., 2020).

Correlation of Demographic Profile on Shift Pattern Transition on Health and Well-Being of Nurses

The literature indicates that nurses' demographic characteristics influence how shift pattern transitions affect their health and well-being, with variables such as age, sex, civil status, unit assignment, and length of experience shaping physical, psychological, and emotional responses. Individual differences affect adaptability, recovery capacity, and vulnerability to fatigue and stress during schedule changes (Bakker & Demerouti, 2007; Saksvik-Lehouillier et al., 2022). Age is associated with tolerance to shift transitions, where younger nurses demonstrate faster adjustment while older nurses experience increased fatigue, sleep disturbances, and longer recovery periods due to reduced circadian flexibility (Folkard & Tucker, 2003; Peršolja, 2023). Sex differences also influence outcomes, as female nurses are more likely to experience fatigue, emotional strain, and sleep problems, often linked to biological factors and additional caregiving responsibilities, while male nurses may differ in coping responses (Dall'Ora et al., 2020; Saksvik-Lehouillier et al., 2022). Civil status further affects adjustment, as married nurses with dependents report greater difficulty balancing work and family demands, while single nurses may have more flexibility but limited social support (Costa, 2016; De Kock et al., 2023).

Work-related factors such as unit assignment and length of experience also shape nurses' responses to shift transitions. Nurses in high-acuity areas experience heavier workloads and emotional demands, which, combined with schedule disruptions, increase fatigue, stress, and emotional exhaustion (Niu et al., 2024; Dall'Ora et al., 2020). Length of experience influences coping and adaptation, as more experienced nurses develop strategies

that buffer immediate effects but may still experience cumulative fatigue and long-term health concerns, while less experienced nurses are more vulnerable to stress due to limited coping mechanisms (Jang & Kim, 2021; Peršolja, 2023). Overall, demographic characteristics interact with work demands and organizational conditions, shaping individual responses to shift transitions, and understanding these factors is essential in examining variations in nurses' experiences and informing appropriate scheduling and support strategies within hospital settings.

RESEARCH METHODOLOGY

Design

The study utilized a mixed method research design, specifically the convergent parallel design, where quantitative and qualitative data were collected at the same time, analyzed separately, and then compared to draw overall conclusions (George, 2023). For the quantitative part, a descriptive, correlational design was used to determine the profile of the nurses and the impact of shift pattern on their health and well-being, as well as to assess the relationship between profile and the impact of shift pattern. For the qualitative part, a descriptive qualitative research design was used to explore the relevant experiences of nurses on shift pattern transition, which served to strengthen the quantitative findings and function as a method of triangulation to determine whether the data converged or diverged.

Environment

This study was conducted in a government hospital located in Surigao City, Surigao del Norte, Philippines.

Respondents

The respondents for the quantitative survey were 85 staff nurses, while the participants for the qualitative data collection were 10–12 staff nurses purposively selected.

Sampling Design

This study used complete enumeration for the quantitative sampling design, while purposive sampling was applied for the qualitative component.

Inclusion Criteria and Exclusion Criteria

The inclusion criteria for the quantitative component covered all staff nurses in the tertiary government hospital in Surigao City who were currently employed and on active duty, assigned in any clinical or non-clinical area, and had experienced the transition from 12-hour to 8-hour shifts. For the qualitative component, purposive sampling was used to select 8 to 12 staff nurses from key clinical areas such as medical, surgical, pediatric, ICU, emergency, and OB-Gyne units who were currently employed, had experienced the shift transition, had at least six months of continuous employment, were directly involved in patient care and routine shift work, and were willing to participate through informed consent.

Excluded from the quantitative phase were nurses not involved in direct patient care, those on official leave, those with less than six months of employment or without experience of the shift transition, those who had resigned or filed for retirement, and those who refused participation, while for the qualitative phase, excluded were newly hired nurses with less than six months of employment, those without sufficient familiarity with the work environment and shift system, those on leave or who had resigned or retired prior to data collection, and those who refused or were unwilling to participate.

Instrument

The quantitative instrument consisted of two parts, where Part I included the respondents' demographic and work-related profile such as age, sex, civil status, unit/department, length of nursing experience, present and previous shift pattern, and duration since shift transition to explore differences in nurses' health and well-being,

while Part II utilized an adopted version of the Standard Shiftwork Index (SSI) developed by Barton et al. (1995; 2007), a validated and widely used tool measuring sleep, fatigue, health, psychological well-being, coping strategies, and job satisfaction. The instrument contained 26 items grouped into five domains: Sleep and Fatigue Patterns, Physical and Psychological Well-Being, Coping and Adaptation Strategies, Job Satisfaction and Work Perception, and Overall Perception of Health and Well-Being, with responses rated on a 5-point Likert scale from 1 (Never) to 5 (Always). Mean scores per domain and overall were computed and interpreted from very poor to very good adaptation, where higher scores indicate better adaptation, positive health and well-being, and effective coping, and lower scores reflect fatigue, stress, and negative effects of shift transitions. The SSI demonstrated acceptable psychometric properties with Cronbach's alpha values generally at or above 0.70.

For the qualitative component, the researcher served as the primary instrument and used a semi-structured interview guide composed of open-ended questions conducted in three phases: introduction, actual interview with probing, and closing, to elicit rich and detailed responses related to nurses' experiences on shift pattern transitions.

Data Gathering Procedures

The data gathering procedure was conducted in three phases: pre-data gathering, actual data collection, and post-data gathering. In the pre-data gathering phase, the researcher secured approval from the Dean of the Graduate School of Allied Health Sciences, obtained a transmittal letter addressed to the Chief of Hospital, and acquired ethical clearance from the Institutional Review Board, followed by title defense and coordination with the Nursing Service Office to identify eligible pediatric nurses and schedule data collection.

In the actual data gathering phase, both online and face-to-face methods were utilized, where participants were informed of the study's purpose, voluntary participation, and confidentiality, and were required to sign an informed consent form before completing the questionnaire, with the researcher personally collecting the accomplished forms to ensure completeness. For the quantitative phase, once the notice to proceed had been issued, recruitment began by obtaining from the Nursing Service Office the list of eligible staff nurses based on the inclusion and exclusion criteria. For the qualitative phase, recruitment was conducted using purposive sampling, where 8 to 12 staff nurses from key clinical areas such as medical, surgical, pediatric, ICU, emergency, and OB-Gyne units who had experienced the shift transition were invited to participate in 45–60 minute in-depth face-to-face interviews; a mock interview was conducted to refine the guide, and actual interviews were held in a private and quiet room within the hospital with informed consent and permission for audio recording secured, supported by field notes, and continued until data saturation was achieved.

In the post-data gathering phase, all accomplished questionnaires were collected, checked for completeness, encoded in a spreadsheet program, and imported into statistical software for appropriate descriptive and inferential analysis, with results presented in tables accompanied by narrative interpretations, implications, and support from relevant literature and studies. The audio-recorded interviews were transcribed verbatim and analyzed using coding and thematic analysis to identify recurring ideas and themes related to nurses' experiences of the shift transition, with member-checking and triangulation conducted to enhance accuracy and credibility. Findings from both quantitative and qualitative phases were integrated to determine convergence or divergence and arrive at an overall interpretation, supported by peer review and expert consultation. After completion of the study, all questionnaires, recordings, and transcripts were securely stored and subsequently disposed of to ensure confidentiality.

Statistical Treatment of Data

For the quantitative part, frequency distribution and simple percentage were used to present the personal and work-related profile of the nurses, while standard deviation and weighted mean were used to summarize the level of health and well-being and determine variability of responses, with results classified as very poor to very good based on the Likert scale. The Chi-Square Test of Independence was applied to determine significant relationships between nurses' profile and the impact of shift pattern transition, and Cramer's V was used to assess the strength of association when significant relationships were identified. For the qualitative part, audio-recorded interviews were transcribed verbatim and analyzed through coding and thematic analysis to identify

significant statements, patterns, and themes related to nurses' experiences, with member-checking, triangulation, and peer or expert review conducted to ensure credibility and validity while maintaining ethical standards. As a mixed method study using a convergent parallel design, both quantitative and qualitative data were analyzed within the same timeframe and integrated to identify convergence and divergence, providing a comprehensive understanding of the effects of shift pattern transitions on nurses' health and well-being and supporting the development of a Health and Well-Being Enhancement Plan.

Ethical Considerations

Ethical considerations are an essential component of any research study. The study was submitted to the ethics committee of both the university and the hospital. Ethical approval was sought prior to the start of data gathering to ensure that the welfare of the respondents was protected.

Presentation, Analysis, And Interpretation of Data

Table 1 Profile of the Respondents

Profile	*f*	*%*
Age		
18 to 35 years old	55	64.70
36 years old and above	30	35.30
Sex		
Male	28	32.90
Female	57	67.10
Civil Status		
Single	50	58.80
Married	35	41.20
Unit or Department		
Operating Room	9	10.60
PICU	14	16.50
Pedia	11	12.90
Hemodialysis Unit	10	11.80
FAMMED	4	4.70
Medical Ward	27	31.80
ICCU	10	11.80
Length of Nursing Experience		
1 to 3 years	33	38.80
4 to 6 years	12	14.10
7 to 9 years	20	23.50
10 year or more	20	23.50

Note. n=85.

As shown in Table 1, the profile of respondents reflects a nursing workforce largely composed of younger professionals drawn from selected clinical units that had undergone the transition from 12-hour to 8-hour shift schedules, ensuring that the 85 nurses included had directly experienced and were affected by the transition, thereby accurately representing its impact on health and well-being. This aligns with recent workforce trends showing a generational shift toward younger nurses forming the core of hospital care, particularly following post-pandemic restructuring (National Academies of Sciences, Engineering, and Medicine, 2021; Scheepers et al., 2025).

The predominance of female respondents is consistent with global nursing demographics, where nursing remains a female-dominated profession despite increasing male participation (National Nursing Workforce Survey, 2024; Illinois RN Workforce Report, 2025). The distribution of civil status reflects variability based on workforce age

and career stage, with many nurses being single or in early family stages, particularly in demanding and shift-based roles (Abdul Aziz et al., 2023). Respondents were distributed across multiple clinical units such as critical care, medical, pediatric, and specialty areas that implemented the shift transition, highlighting the multidisciplinary nature of nursing practice influenced by patient acuity and staffing models (Brandt et al., 2023; Zhang et al., 2025). Additionally, the presence of both early-career and experienced nurses reflects a balanced workforce, where novice nurses represent ongoing workforce renewal while experienced nurses provide stability and institutional knowledge (Scheepers et al., 2025; National Academies of Sciences, Engineering, and Medicine, 2021).

Table 2 Shift Pattern Transitions on the Health and Well-being

Dimensions	Mean score	SD	Interpretation
Sleep and Fatigue Patterns			
1. I have difficulty falling asleep after my shift.	3.35	1.055	Sometimes
2. I wake up feeling tired even after sleeping.	3.34	0.946	Sometimes
3. I find it hard to stay awake during work hours.	2.42	1.062	Rarely
4. My current shift schedule affects the number of hours I sleep.	3.16	1.153	Sometimes
5. I feel physically exhausted after every shift.	3.05	0.975	Sometimes
6. I experience headaches, body pain, or fatigue after consecutive shifts.	3.19	1.160	Sometimes
Factor mean	3.09	0.795	Fair adaptation
Physical and Psychological Well-being			
7. My current shift pattern has affected my physical health.	2.95	1.068	Sometimes
8. I experience more stress now compared to my previous shift pattern.	2.67	1.095	Sometimes
9. I often feel anxious or emotionally drained after long shifts.	3.05	1.045	Sometimes
10. I find it difficult to balance work and personal life due to my current shift.	2.68	1.207	Sometimes
11. My overall well-being has declined since the shift transition.	2.39	1.166	Rarely
12. I am satisfied with how I can recover physically between shifts.	3.60	1.037	Often
Factor mean	2.89	0.786	Fair adaptation
Coping and Adaptation Strategies			
13. I plan rest periods to adjust to my shift schedule.	3.72	0.921	Often
14. I use caffeine or other stimulants to stay alert at work.	3.49	1.201	Often
15. I maintain regular exercise to cope with fatigue.	3.14	1.136	Sometimes
16. I communicate with family/friends to manage stress from work.	3.68	1.003	Often
17. I have developed personal routines that help me adapt to my shifts.	3.99	0.824	Often
Factor mean	3.60	0.630	High adaptation
Job Satisfaction and Work Perception			
18. I am satisfied with the current scheduling system in the hospital.	3.74	1.125	Often
19. My work performance remains stable despite the change in shift pattern	4.14	0.819	Often
20. I feel appreciated by my supervisors regardless of my shift.	3.85	1.018	Often
21. I would prefer returning to my previous shift pattern.	2.96	1.375	Sometimes
22. Shift pattern changes affect my motivation to work.	2.92	1.197	Sometimes
Factor mean	3.47	0.618	High adaptation
Overall Perception of Health and Well-being			
23. I feel cheerful and in good spirits despite my current work schedule.	4.14	0.875	Often

24. I feel active and energetic during most days.	3.87	0.897	Often
25. My health and well-being are maintained under the current shift system.	3.85	0.893	Often
26. My overall quality of life as a nurse is good.	4.15	0.994	Often
Factor mean	4.00	0.817	High adaptation
Grand mean	3.41	0.430	High adaptation

Note. n=85.

Legend: 4.21 – 5.00 Very high adaptation (always); 3.41 – 4.20 High adaptation (often); 2.61 – 3.40 fair adaptation (sometimes); 1.81 – 2.60 Low adaptation (rarely); 1.00 – 1.80 Very poor adaptation (never).

The results in Table 2, in the quantitative results indicate that nurses generally demonstrate good adjustment to shift pattern transitions, although sleep and recovery remain areas of concern, as sleep disturbances, fatigue, and occasional physical and emotional strain persist due to disrupted circadian rhythms and limited recovery time (Harris et al., 2024; Qtait et al., 2025; Okechukwu et al., 2023). While overall well-being and job satisfaction are maintained, with high adaptation in coping strategies, work perception, and overall health, the findings show that adaptation is manageable but not without cost, as nurses continue to experience moderate stress, emotional fatigue, and hidden strain that may accumulate over time. Literature supports that resilience, adaptive coping behaviors, and supportive work environments allow nurses to sustain performance and maintain positive well-being despite demanding schedules, although early signs of strain such as sleep disruption and fatigue should not be overlooked (Ko et al., 2025; Alameri et al., 2024; Ito-Masui et al., 2025; Harris et al., 2024; Qtait et al., 2025).

For the qualitative findings, themes and subthemes highlight nurses' lived experiences during shift transitions. Theme: "When the Body Clock Struggles": Sleep Disruption and Physical Fatigue reflects recurring sleep difficulties, reduced rest, and persistent exhaustion, particularly during short-turnaround shifts. Theme: "Carrying the Weight Emotionally". Psychological and Emotional Responses shows experiences of stress, irritability, emotional fatigue, and social withdrawal, alongside gradual emotional adjustment over time. Theme: "Finding Ways to Keep Going". Coping Strategies and Support Systems demonstrates the use of structured routines, self-care practices, and reliance on workplace and family support to manage challenges. Theme: "A Better Rhythm at Work". Work Performance and Satisfaction indicates improved performance and stable work perception despite varying preferences for shift patterns. And the overall perception of health and well-being, theme: "Restored Balance". Positive Adjustment and Well-being reflects improved sleep, better health perception, and overall adaptation, while still acknowledging that fatigue may remain present but managed through resilience and coping strategies.

Table 3 Relationship between Profile and Shift Pattern Transitions on the Health and Well-being

Variables	chi value	*p* value	Cramer's V value	Decision	Interpretation
Age	53.400	.183	--	Failed to reject Ho	Not significant
Sex	57.876	.094	--	Failed to reject Ho	Not significant
Civil Status	62.843	.040	.860	Reject Ho	Significant
Unit or Department	2.748E2	.408	--	Failed to reject Ho	Not significant
Length of nursing experience	1.984E2	.000	.882	Reject Ho	Significant

Legend: Significant if p value is < .05. Dependent Variable: Shift Pattern Transitions on the Health and Well-being. Cramer's V values: A value of >0.25 is very strong, >0.15 is strong, >0.10 is moderate, >0.05 is weak, and >0 is no association.

The quantitative results indicate that civil status and length of nursing experience have meaningful relationships with how nurses adjust to shift pattern transitions in terms of health and well-being, while age, sex, and

unit/department do not show statistically significant relationships. This suggests that adjustment is more influenced by life demands outside work and accumulated experience rather than basic demographics or work location, as supported by literature emphasizing that the burden of schedule changes is shaped by competing personal roles and recovery needs (Harris et al., 2024). Civil status reflects how family responsibilities, support systems, and home environments affect rest and emotional load, with evidence showing both potential strain and protective effects depending on context (Jung & Kim, 2025; Chen et al., 2022). Length of nursing experience highlights the role of adaptation over time, where more experienced nurses develop effective routines and coping strategies, while newer nurses experience greater difficulty adjusting to shift demands (Kisanuki et al., 2024; Lim & Kim, 2025). The non-significance of age, sex, and unit/department further suggests that shift transition experiences are shaped more by scheduling patterns and recovery opportunities than by demographic characteristics, consistent with literature noting variability in shift-work tolerance across contexts (Saksvik-Lehouillier & Sørengaard, 2023). Overall, the findings imply that shift transitions create unequal strain depending on personal and professional circumstances, emphasizing the need for targeted organizational strategies such as supportive scheduling, mentoring, and fatigue management to promote nurses' health and well-being (Inchingolo et al., 2025.

The qualitative findings strengthen the interpretation of Table 3 by showing that adjustment to shift pattern transitions is shaped more by lived experience and personal context than by demographic labels alone. The discussion shows that nurses' adjustment to shift transitions is shaped by family responsibilities, support systems, and lived experiences, where home demands can either limit or support recovery, and experience contributes to stronger routines and coping strategies over time. Narratives reflect that fatigue and sleep disruption persist, especially with short-turnaround schedules, regardless of unit assignment, highlighting that scheduling patterns rather than workplace location drive strain. While sex was not a major factor in experiences, some individual perceptions suggest age-related differences in tolerance, though not consistently observed. Overall, qualitative insights emphasize that adaptation is a gradual, experience-based process influenced by personal context, and that recovery, support, and scheduling practices are central to nurses' well-being during shift transitions.

CONCLUSION AND RECOMMENDATIONS

Conclusion

In conclusion, the findings of the study indicate that shift pattern transitions have a meaningful influence on the health and well-being of nurses. While many nurses were able to adapt to the demands of changing schedules, areas related to sleep, fatigue, and emotional well-being remained vulnerable during periods of transition. The results further suggest that personal circumstances and professional exposure play an important role in shaping how nurses experience and cope with shift changes. These realities highlight that adaptation to shift work is not uniform among nurses and may be influenced by both personal and workplace conditions. Based on these findings, a Health and Well-being Enhancement Plan is proposed to strengthen nurses' capacity to manage shift transitions while promoting sustainable work practices and overall well-being.

Recommendations

The recommendations emphasize the application of the Shift Pattern Health and Well-being Enhancement Plan in nursing practice to promote better sleep recovery, reduce fatigue, and support nurses' physical and psychological well-being during shift pattern transitions, with potential adaptation by other healthcare institutions with similar scheduling contexts. In nursing education, the study contributes to the body of knowledge on occupational health, workforce management, and work-life balance, and may serve as a reference for both content and research methodologies such as descriptive-correlational design and convergent parallel mixed methods, including ethical considerations in healthcare research. For nursing policy, hospital administrators and nursing leaders are encouraged to strengthen institutional policies that ensure adequate recovery time, fair scheduling practices, and programs that support nurses' well-being, integrating these into strategic and operational plans to sustain workforce productivity and patient safety. In nursing research, the findings may be disseminated through publication and conference presentations to expand existing literature on nurse workforce well-being, while encouraging future studies to further explore related areas of inquiry.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue IV April 2026

Shift Pattern Health and Well-Being Enhancement Plan

Rationale

Findings of the study revealed that nurses demonstrated an overall high level of adaptation to shift pattern transitions. However, sleep and fatigue patterns and physical and psychological well-being reflected only fair adaptation, indicating areas that require intervention. Moreover, civil status and length of nursing experience were found to have significant relationships with health and well-being during shift transitions, suggesting that personal responsibilities and professional exposure influence recovery and adjustment. Qualitative findings further identified short-turnaround shifts as a major contributor to sleep disruption and fatigue.

Given these findings, a structured and targeted Health and Well-being Enhancement Plan is necessary to strengthen vulnerable domains while sustaining areas of high adaptation.

General Objective

To enhance and sustain optimal health and well-being among nurses undergoing shift pattern transitions.

Specific Objectives

a. To improve the fair level of adaptation in sleep and fatigue patterns.

b. To improve the fair level of adaptation in physical and psychological well-being.

c. To address scheduling practices contributing to sleep disruption, particularly short-turnaround shifts.

d. To provide targeted support for nurses significantly affected based on civil status and length of nursing experience.

e. To sustain high levels of job perception and coping adaptation.

Areas of Concern	**Specific Objectives**	**Activities**	**Persons Responsible**	**Resources**	**Time Frame**	**Success Indicators**
Sleep and Fatigue Patterns (Fair Adaptation)	Improve sleep quality and reduce fatigue	• Ensure ≥12-hour recovery interval • Limit consecutive night shifts • Provide rest areas • Conduct fatigue management seminar • Promote sleep hygiene	Nurse Supervisors Chief Nurse HR Director	Seminar budget Rest space	Q3 onwards	Improved sleep scores Reduced fatigue Fewer short-turnaround shifts
Physical & Psychological Well-being	Reduce stress and improve	• Conduct stress management	Nurse Supervisors Chief Nurse	Seminar budget Wellness	Q3 onwards	Improved well-being Reduced emotional exhaustion

(Fair Adaptation)	emotional well-being	seminar • Establish peer-support groups • Wellness check-ins and debriefings	HR Director	tools		
Scheduling Practices (Short-Turnaround Shifts)	Minimize inadequate recovery intervals	• Avoid <12-hour shift intervals • Implement fair shift-swapping • Monthly schedule audit • Transparent scheduling	Chief Nurse HR Director Hospital Admin	Scheduling tools	Q3 onwards	Reduced short-turnaround shifts Improved recovery and satisfaction
Civil Status & Length of Experience (Significant Factors)	Provide targeted support	• Assign mentors (<3 yrs experience) • Orientation on shift adaptation • Flexible scheduling (if feasible) • Feedback sessions	Nurse Supervisors Senior Nurses HR Director	Mentorship guides	Q3 onwards	Improved adaptation Reduced fatigue Positive feedback
Sustain High Adaptation (Job Satisfaction & Coping)	Maintain high engagement and performance	• Continue programs • Regular well-being assessment • Recognize high-performing units	Chief Nurse HR Director	Assessment tools Incentives	Q3 onwards	Sustained satisfaction Stable retention Positive performance

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