

A Descriptive-Comparative and Correlational Study on The Effects of Shifting Schedules on Sleep Quality, Fatigue and Work Performance of Nurses in Selected Hospitals in Northern Samar

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ABSTRACT

This study aimed to find the correlation of Shifting Schedule on the Quality of Sleep, Fatigue, and Work Performance of Nurses in Northern Samar. The study used a descriptive-correlational quantitative approach that was utilized by 60 Nurses from the Selected Hospitals in Northern Samar using a Validated Questionnaire. Descriptive and inferential statistics, such as frequency, mean, ANOVA, and Pearson correlation at $\alpha = 0.05$, were used to analyze the data. The results showed that young, female, single nurses made up the majority of Northern Samar's nursing workforce, and most of them worked rotating shifts. In general, nurses had poor sleep quality, especially when it came to having trouble falling asleep and staying asleep long enough to feel rested. Physical tiredness and diminished focus at work were indicators of occupational fatigue, which was also frequently reported. In spite of these obstacles, nurses continued to perform at acceptable levels. Age and civil status had a significant impact on fatigue and sleep quality, according to statistical analysis, with younger and married nurses having more problems and that the only demographic factor that was found to significantly correlate with work performance was civil status. Additionally, while fatigue did not show a statistically significant correlation with work performance, sleep quality had a significant impact on it, accounting for 45.7% of its variance. Thus, this study highlights a Proposed Shifting Plan that was made with the results from the study and the literature it had.

Keywords: - Nursing, Quality of Sleep, Work Performance, Rural Areas, Fatigue, District Hospitals

INTRODUCTION

Healthcare institutions often use rotating schedules to provide ongoing patient care. However, rotating schedules can disrupt nurses' sleep habits, increase fatigue and adversely influence work performance. Previous research has consistently shown the association of the rotational and night shifts with poor sleep quality, impaired alertness and poorer clinical efficiency, however, evidence is sparse from provincial hospitals in the Philippines. The study used descriptive-comparative-correlational methodology to determine the link between shifting schedules, sleep quality, exhaustion and work performance among registered nurses in selected hospitals in Northern Samar. This study highlighted the proposed shifting plan based on the findings.

Statement of the Problem

1. What is the Demographic and Work-Related Profile of Nurses in terms of;
 - 1.1. Age; 1.2. Sex; 1.3. Civil Status; 1.4. Length of experience; 1.5. Level of Hospital

Affiliated; 1.6. Shifting schedule; 1.6.1. Average working hours per shift; 1.6.2. Number of night shifts per month; 1.6.3. Number of consecutive duties; 1.6.4. Frequency of shift rotation; 1.6.5. Average Overtime hours per week?

2. What is the level of Quality of Sleep of Nurses?
3. What is the level of Fatigue of Nurses?
4. What is the level of Work Performance of Nurses?
5. Is there a significant difference in the level of quality of sleep, fatigue, and work performance of nurses when grouped according to their demographic profile in terms of age, sex, length of experience, and shifting schedule?
6. Is there a significant correlation in the Work Performance of Nurses to their level of fatigue?
7. Is there a significant correlation in the Work Performance of Nurses related to their quality of sleep?
8. What Enhanced Nursing Shifting Plan can be Developed based on the Findings of the study?

Scope and Delimitations

Using stratified random sampling, this descriptive-correlational study looked at 60 nurses from Northern Samar Hospitals. Demographic Profile, Work performance, fatigue, sleep quality, and shifting schedules were all evaluated using validated self-report questionnaires. Cross-sectional design, limited generalizability, self-report bias, and the exclusion of organizational factors are some of the limitations. Despite this, research supports the use of an Enhanced Nursing Shifting Plan to improve nurses' performance and well-being.

Review of Related Literature

Rotating and night shift schedules have been repeatedly linked to poor sleep quality, increased fatigue, and decreased work performance in nurses, according to recent studies (Andaya, 2022; Xiao et al., 2024). Burnout, exhaustion, and subpar patient care are further consequences of inadequate staffing and heavy workloads (Alibudbud, 2023; Aytona et al., 2022; Kim et al., 2022). Most studies were conducted in urban or foreign settings, despite evidence supporting scheduling and staffing interventions to support nurses' well-being and performance (Booker et al., 2023; Ko et al., 2025). This underscores the need for localized evidence in Philippine provincial hospitals. been demonstrated to enhance both performance outcomes and sleep quality (Ko et al., 2025).

Theoretical Framework

Dorothea Orem's Self-Care Deficit Theory, Hildegard Peplau's Interpersonal Relations Theory, and Sister Callista Roy's Adaptation Model served as the foundation for the study. Taken as a whole, these theories provided the basis for understanding how nurses' professional performance and well-being are affected by shifting schedules.

Conceptual Framework

The study was guided by an IPO framework. The demographic and shifting schedule profiles of nurses were among the inputs. Data were gathered using validated questionnaires,

coded, tabulated, and statistically examined. Based on the results, an improved nursing shifting plan was produced.

METHODOLOGY

This quantitative descriptive-correlational study investigated the correlation of the shifting schedule to the Quality of Sleep, Fatigue, and Work Performance of Nurses from the Selected Hospitals in Northern Samar

Research Design

To compare groups, describe the characteristics of respondents, and examine the relationships between study variables without proving causation, a descriptive-comparative-correlational research design was used. Significant correlations and differences between the variables could be found thanks to this design.

Research Steps

To lay the groundwork for the study and pinpoint any gaps, it began with a review of relevant literature. Data were gathered from qualified registered nurses using Google Forms and printed questionnaires after ethical approval. An evidence-based Enhanced Nursing Shifting Plan was then created by coding, analyzing, and interpreting the data using the proper statistical techniques.

Data Collection and Sample Selection

The SBLC Ethics Review Board granted ethical approval prior to data collection, and the participating hospitals then granted permission. After getting each participant's informed consent, data were gathered over the course of a week using printed and Google Forms questionnaires. Respondents were informed of the study's goal, confidentiality precautions, and their right to withdraw at any time. Participation was entirely voluntary. In accordance with the Philippine Data Privacy Act of 2012, all data were anonymized, safely stored, and accessible only to the researcher, statistician, and research adviser.

Data Analysis Methods

Descriptive and inferential statistics were used to analyze the data. Work performance, fatigue, and sleep quality were summarized by mean and standard deviation, while demographic and work profiles were described by frequency and percentage. Independent t-test and One-Way ANOVA were used to analyze group differences, and Pearson's Product-Moment Correlation was used to examine relationships between variables. SPSS was used for all analyses, with a significance level of 0.05.

Research Hypotheses and Validation

Using standardized tools, this study looked at how 60 registered nurses' work performance, fatigue, and sleep quality were affected by shifting schedules. The study hypothesis was supported by the significant differences in fatigue and sleep quality across demographic groups, as well as the significant correlation between sleep quality and work performance ($r=0.676$, $p=0.000$).

Study Limitations and Ethical Considerations

The study's cross-sectional design, small sample size (60 nurses from particular Northern Samar hospitals), and use of self-reported measures may limit generalizability and prevent causal inference. In accordance with the Data Privacy Act of 2012, informed consent was obtained, ethical approval was obtained, and participant confidentiality, anonymity, and voluntary participation were guaranteed.

RESULTS AND DISCUSSION

SOP 1. What is the Demographic and Work-Related Profile of Nurses in terms of; 1.1. Age; 1.2. Sex; 1.3. Civil Status; 1.4. Length of experience; 1.5. Level of Hospital Affiliated; 1.6. Shifting schedule; 1.6.1. Average working hours per shift; 1.6.2. Number of night shifts per month; 1.6.3. Number of consecutive duties; 1.6.4. Frequency of shift rotation; 1.6.5. Average Overtime hours per week?

Of the 60 nurse respondents, the majority were female (75%), single (58%), aged 22-27 (43%), with 1-7 years of experience (53%). Most worked rotating shifts (60%), 8-hour duties (72%), with 1-5 overtime hours weekly (57%), and 4-5 consecutive days (52%).

SOP 2. What is the level of Quality of Sleep of Nurses?

The weighted mean of sleep quality was 2.54 ("Often"), indicating poor sleep. Highest items: difficulty falling asleep (3.20), insufficient sleep hours (3.08), and tiredness upon waking (3.04), consistent with Andaya, (2022) and Xiao et al., (2024).

SOP 3. What is the level of Fatigue of Nurses?

Overall weighted mean of fatigue was 2.73 ("Often"). Top items: physical exhaustion (3.00), concentration difficulty (2.98), and lack of energy (2.88), supporting Pi et al. (2025) and Chen et al. (2023).

SOP 4. What is the level of Work Performance of Nurses?

mean work performance was 2.92 ("Often"). Highest items: handling workload (3.46), extending hours (3.41), and working efficiently (3.40), aligning with Daba et al. (2024).

SOP 5. Is there a significant difference in the level of quality of sleep, fatigue, and work performance of nurses when grouped according to their demographic profile in terms of age, sex, length of experience, and shifting schedule?

Age ($p=0.028$) and civil status ($p=0.006$) significantly affected sleep quality; age ($p=0.038$) and civil status ($p=0.042$) affected fatigue. Civil status alone ($p=0.908$) affected work performance. Younger and married nurses had poorer outcomes.

SOP 6. Is there a significant correlation in the Work Performance of Nurses to their level of fatigue?

No significant correlation ($r=0.1289$, $p=0.377$) was found, indicating fatigue does not affect performance, consistent with Peršolja (2023).

SOP 7. Is there a significant correlation in the Work Performance of Nurses related to their

quality of sleep?

Significant moderate-strong correlation ($r=0.676$, $p=0.000$) was indicated, explaining 45.7% variance, confirming sleep quality predicts performance (Ko et al., 2025).

SOP 8. What Enhanced Nursing Shifting Plan can be Developed based on the Findings of the study?

After interpreting the results, the proposed Enhanced Nursing Shifting Plan was made such as shift scheduling reform (fixed shifts, no quick returns, limit consecutive days), WISN-based staffing, wellness programs, family-friendly options, and regular monitoring.

SUMMARY

This descriptive-comparative-correlational study looked at how shifting schedules affected 60 nurses' work performance, fatigue, and sleep quality in a few Northern Samar hospitals. Nurses reported high levels of fatigue (WM=2.73), poor sleep quality (WM=2.54), and satisfactory work performance (WM=2.92). While fatigue did not significantly correlate with work performance ($r=0.129$, $p=0.377$), sleep quality demonstrated a moderate-to-strong correlation ($r=0.676$, $p=0.000$), explaining 45.7% of its variance. These results led to the proposal of an Enhanced Shifting Plan to enhance nurses' productivity and quality of sleep.

CONCLUSIONS

The study concludes that nurses in selected Northern Samar hospitals frequently experience poor sleep quality and fatigue as a result of shifting schedules, but still perform satisfactorily at work. Sleep and fatigue outcomes are strongly influenced by age and civil status. With a significant moderate-strong correlation ($r=0.676$, $p=0.000$), sleep quality is a better predictor of work performance than fatigue. An evidence-based framework to support high-quality patient care, improve scheduling procedures, and improve nurse well-being is provided by the proposed Enhanced Nursing Shifting Plan.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are suggested: (1) Enhanced Nursing Shifting Plan - eliminate quick returns to work, fixed shifts for 3 months, WISN-based staffing, wellness programs, family-friendly scheduling, and quarterly sleep-fatigue monitoring. (2) For Hospital Administrators, adopt the Enhanced Shifting Plan, establish rest areas, and conduct regular staffing evaluations. (3) For Policymakers, Formulate national standards on working hours, rest periods, and staffing ratios. (4) For Educators, insert sleep health and fatigue management into nursing curricula if needed. For Nurses, practice self-care and maintain healthy sleep routines. (4) For Future Researchers, conduct longitudinal studies with sleep measures and expand respondents throughout Philippine Hospitals.

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AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

REFERENCES

- Alibudbud, Rowalt. “Addressing the Burnout and Shortage of Nurses in the Philippines.” *SAGE Open Nursing*, vol. 9, 13 Aug. 2023, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10424539/>, 10.1177/23779608231195737 .
- Andaya, Kathrynne Endenna. “Quality of Sleep Among Shift Work Nurses at the Baguio General Hospital: A Pilot Cross - Sectional Study.” *Philippine Journal of Otolaryngology Head and Neck Surgery*, vol. 37, no. 2, 15 Nov. 2022, p. 26, 10.32412/pjohns.v37i2.2023
- Aytona, Ma Graziella, et al. “Determining Staffing Standards for Primary Care Services Using Workload Indicators of Staffing Needs in the Philippines.” *Human Resources for Health*, vol. 19, no. S1, Jan. 2022, 10.1186/s12960-021-00670-4.
- Kim, Yunmi, et al. “Improvement in Nurse Staffing Ratios According to Policy Changes: A Prospective Cohort Study.” *BMC Nursing*, vol. 23, no. 1, 17 May 2024, pp. 1–13, <https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-024-01995-w>, 10.1186/s12912-024-01995-w.
- Xiao, Qingqing, et al. “Determinants of Sleep Quality and Their Impact on Health Outcomes: A Cross-Sectional Study on Night-Shift Nurses.” *Frontiers in Psychiatry*, vol. 15, 24 Dec. 2024, 10.3389/fpsy.2024.1506061.