

Challenges and coping strategies on rotational shift work and multishift duty of nurses

Manalo, Trina Jean R. ✉

Graduate School, Lyceum of the Philippines University - Batangas, Philippines

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Abstract

This study explores the challenges faced by nurses in a rotating and multi-shift duty schedule, aiming to compare and evaluate these challenges, identify coping strategies, and propose wellness programs. A descriptive quantitative study, utilizing a survey questionnaire, was conducted on 125 night-duty nurses, examining socio-demographic profiles and experiences. Findings revealed that nurses in rotational and multishift duty faced sleep deprivation, sleep disorders, unhealthy eating habits, increased body weight, and psychological stress. Socially, night shift work was perceived as moderately strenuous, with inadequate recognition compared to day-shift counterparts. Comparing rotational and multishift work, respondents favored multishift schedules for their continuity, facilitating better coping. Coping strategies for rotational shift nurses included stress relief through eating and having fun, adopting behaviors for relaxation. Multishift nurses prioritized problem-solving after calming down. This study underscores the need for wellness programs to address challenges associated with rotating and multishift schedules, emphasizing their impact on sleep, mental health, and lifestyle choices. Implementing strategies that recognize and mitigate these challenges is crucial for promoting the overall well-being of nurses in demanding work environments.

Keywords: challenges, coping strategies, rotational, shiftwork, multishift

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1. Introduction

Many employees work during the evening hours, when people are sleeping. This is essential because, for example in the afternoon, nurses cannot close down the hospital and leave. Even after a "normal" workday has ended, patients still need to be treated because they are ill. The feeling of "working" when others are not, however, can be harmful to one's health. In healthcare, rotational shifts are considered necessary and essential to make sure hospitals provide continuity of care. Rotation as well as scheduling are the primary attributes of shift work, and nurses are highly involved in rosters that include night shifts and provide 24-hour care. Rotational shift work relates to a higher risk of metabolic problems, so a balanced diet is critical. In conjunction with a healthy diet, adequate hydration helps keep the body efficient and alert. Drinking enough water consumption helps infection prevention, body temperature regulation, and cellular nutrition. The danger of errors can be decreased, and night employees' attentiveness can be increased by taking regular breaks during the shift. Rotational shifts are scheduled shifts that change over time. In healthcare, a first responder might work from 7 in the morning then up to 3 in the afternoon. Then, 3 in the afternoon until 11 in the evening. Another, from 11 in the evening to 7 in the morning the following day. This truth of life can be difficult to grasp. One has to rearrange his or her family obligations and sleep schedule. It can be difficult to find free time to visit friends or family, and the resulting lack of personal interaction can be very discouraging.

When referring to a variety of work schedules, the word "multishift work" denotes that shifts alternate or rotate in accordance with a predetermined timetable. It is possible for these shifts to be continuous (i.e., 24 hours a day, 7 days a week) or semi-continuous (i.e., two or three shifts a day, with or without weekends). All shifts are rotated among the workers. Newly hired nurses are frequently forced to work numerous shifts, or "multi shift" work, in hospitals and long-term care facilities. For most nurses, working through the night is difficult. While working the rotating shifts, there are ways to stay healthy since if nurses look after their own health, nurses can better look after others. Even on days off, it is beneficial to group shifts together and maintain a regular work sleep cycle. In this way, nurses bodies may adapt to a set routine and stop being in perpetual adjustment. Consider making a schedule for other facets of their everyday life by adopting a time-management technique. Work that is arranged in shifts that change from week to week is referred to as multi shift work. Healthcare facilities rely on rotating shifts to be effective because they need their employees to work around the clock.

Objectives of the Study - This study aimed to determine and evaluate nurses with their different challenges on a rotational shift and multi shift schedule of duty. Specifically, this explored on the challenges encountered during rotational shift and multi shift schedule of duty; presented a comparison between rotational shift and multi shift schedule; identified the different coping strategies on rotational shift and multi shift schedule of duty; to promote wellness and wellbeing in their working environment and finally, proposed a program that will promote wellness and wellbeing in their work environment.

2. Methods

Research Design - The study utilized the descriptive quantitative study that will determine the challenges on a rotational and multi shift schedule of nurses that may be associated to it. By comparing their socio-demographic profile in terms of age, sex, highest educational attainment, plantilla position, and years of work experience in the hospital, the descriptive survey questionnaire could be used to gather information about the current condition and interpret the current situation. On a rotating and multiple shift schedule, 125 nurses who worked the night shift were given a descriptive survey questionnaire to reflect on their challenges and coping mechanisms.

Participants of the Study - This study was conducted initially in private tertiary hospital in Batangas City specifically Batangas Medical Center. Total population sampling was used in the data gathering. A total of 125 registered nurses participated in the study from Batangas Medical Center with a retrieval rate of 98 percent. A letter of approval was presented first to the Nursing Directress and Professional Training Research Office of the Batangas Medical Center together with the research title, objectives and sample questionnaire prior to handing over to the respective respondents. Nurses of the above-mentioned hospital were briefed with the they were informed of the study's objectives and its data privacy. They were also asked to sign the consent prior to taking the survey.

Data Gathering Instrument - The demographic profile of the respondents was covered in Part 1 of a descriptive questionnaire, and the challenges of a rotating shift schedule, including assessment and their psychological and social impacts, were covered in Part 2 of the survey. Part II survey questionnaire measured self-assessment and their psychological and social effects on a rotational and multi shift work. The researcher provided multiple choices for set A questions that will be answerable by the respondents that depends on their own assessment as their identified challenges in a night shift work schedule. For the set B questions it will be answerable depends on how they agree on the psychological and social effects of respondents on a multi shift work schedule. The questionnaire was adopted from two research studies conducted in 5 Iraqi Hospitals (Ramadhan, 2014) and 2 South African hospitals (Madide, 2003). Part III of the questionnaire is an open-ended question with four main themes related to participants' coping strategies, Health Practices, Social and Recreational Activities, and Cognitive Coping methods were all personal coping methods. Work-related coping also surfaced as a subject that could be addressed with a phrase or paragraph on how one deals with the rigors of shift work. The survey was modified from an Australian publication. The questionnaire was adapted from an Australian journal Int. J. Environ. Res. Public Health 2019.

Data Gathering Procedure - The first phase of data gathering was collected through survey questionnaire distributed initially to nurses of different areas of the Batangas Medical Center catering adult patients. Purposive Sampling, particularly total population was utilized by the researcher in this study. A total of 125 respondents participated in taking the survey questionnaire with a retrieval rate of 98 percent. The purpose of the research was explained to the participants and were handed over with a hard copy of the questionnaire which included their challenges and coping strategies on a night shift schedule. The results were precisely encoded, summarized, and were then analyzed. Questionnaires were distributed towards the 2nd week of February 2023. Responses were collected immediately until the 3rd week of March 2023. Data collection was affected greatly by shifting duties of respondents, skeletal workforce implementation, vacation/ leaves, sick leaves and the Covid 19 precautions on Covid Wards.

Ethical Considerations - Voluntary participation of respondents in this study is important. The researchers used the informed consent form to prepare the questionnaires. Respondents were asked to participate on the basis of informed consent. Informed consent means that the researcher provides sufficient information and assurances about participation in the study so that individuals understand the implications of participation and can make a fully informed, considered, and free decision about whether or not to participate, without pressure or coercion.

Data Analysis - The study used descriptive statistics to summarize the data with the purpose of describing the sample and its characteristics. The following are the descriptive statistical methods used in the study:

- Frequency - It refers to the actual number of respondents who answered a particular question or item on the questionnaire. It also refers to the number of ticks for each category or item.
- Weighted mean - The researcher also computed the weighted mean by giving the different weights to choices to have clear and better interpretation.
- The T-Test - The t-test determines if there is a statistically significant difference between the means of two groups. The post-test-only randomized two-group experimental design makes this method

particularly useful whenever the means of two groups are to be compared. Mathematically, the t-test, one-way analysis of variance (ANOVA), and a type of regression analysis are equal and would produce the same outcomes.

Data were encoded and entered. A descriptive statistic was used to analyze the data obtained from the participants about their level challenges and coping strategies on a night shift work schedule. T-Test, an appropriate statistical tool that is used to compare two groups' means (Bevans 2020), was utilized to analyze the survey results.

3. Results and discussion

Table 1

Frequency Table for the Challenges Experienced by the Respondents in terms of Physical Aspect

	f	%
Do you get enough sleep after night shift?		
Yes	21	16.8
No	98	78.4
I do not know	6	4.8
Number of sleeping hours after end of the shift		
Less than 5 hours	59	47.2
6-8 hours	60	48.0
More than 8 hours	6	4.8
Does night shift affect your attitude		
Almost always	59	47.2
Sometimes	58	46.4
Almost never	-	-
I do not know	8	6.4
Does night shift affect your eating habit		
Increase	56	44.8
Fast food	77	61.6
Do not eat	24	19.2
Healthy food	43	34.4
Chocolate and chips	43	34.4
Does night shift affect your body weight		
Increase	91	72.8
Decrease	24	19.2
No effect	8	6.4
Problems experienced when having a multi shift		
Headache	57	45.6
Body ache	77	61.6
Continuous tiredness	75	60.0
Sleep disorder	89	71.2
None	4	3.2
Nurses' strenuousness on a shift work		
Very tired	48	38.4
Moderate	73	58.4
Restful	2	1.6
Which of the following do you currently experience on a multishift work		
Frequent headaches	49	39.2
backache	63	50.4
Persistent tiredness	50	40.0
Feet ailments	33	26.4
Loss of sleep	105	84.0
None of the above	-	-
Do you have any chronic disease		
Hypertension	2	1.6
Diabetic mellitus	20	16.0
Cardiac diseases		
Musculoskeletal diseases	4	3.2
None	95	76.0
others	4	3.2
Does this chronic disease affect your shift work		
Yes	20	16
No	105	84.0

Table 1 depict the challenges experienced of respondents in terms of physical aspect. 78.4% of the respondents answered no if they get enough sleep after night shift, while 21% answer yes and 4.8% of the respondent answers they do not know. On number of sleeping hours after end of shift 48% of the respondents has 6-8-hours of sleep while 47% has less than 5 hours of sleep and 6.4% able to sleep for a more that 8 hours. From the related literature, the negative impact of sleep issues extends beyond mere restlessness, affecting both wellbeing and cognitive abilities while also raising the risk of workplace accidents. Various remedies have been suggested to enhance nurses' sleep quality and bolster their concentration. Lately, there has been a focus on examining personal and contextual elements that impact one's capability to handle lack of sleep while working the night shift.

Respondents were asked if the night shift affect their attitude 47.2% of them answered almost always and 46.4% said sometimes while 6.4% of them answered that they do not know. For the question does the night shift affect your eating habit, 61.6% eat fast food, 44.8% increased their eating habit, 34% of the respondents eat healthy food, chocolate and chips while 24% do not eat. Respondents were asked if the night shift affect their body weight, 91% answered and increase in body weight and 24% decreased in body weight while 6.4% answered that there is no effect on them.

Some problems were experienced when having a multi shift and 71.2% of the respondents suffer from a sleep disorder, 61.6% has body ache, 60% of them experienced continuous tiredness and 45.6% is suffering from a headache, 58.4%. Nurses on a shift work tells they have a moderate strenuousness, 38.4% of them says they are very tired and only 1.6% take it as restful. On a multishift work 84% of the respondents suffer loss of sleep, 50.4% has experienced back ache and 40% are with persistent tiredness. Frequent headaches were experienced by 39.2% of the respondents and 26.4% of them has feet ailments. 76% percent of the respondent has no chronic diseases but 16% of them has diabetic mellitus, 3.2% has musculoskeletal diseases, 1.6% has a hypertension while 4.8% of them has some other chronic diseases. And when they were asked if these chronic diseases affect their shift work, 84% answer no while 14.4% answers yes. Serious health problems have been documented in relation to night work. Phiri et al. and Books et al. noted that work-related fatigue is a major challenge to healthy lifestyles. Insomnia, sleep deprivation, anxiety, depression, burnout, an increase in body mass index (BMI), hypertension, back pain, chronic fatigue, attention and concentration issues, malaise, fatigue, mood swings, gastrointestinal and cardiovascular disease, and an increased risk of cancer are just a few of the serious health issues that have been reported.

The above table shows the list of challenges faced by nurses in the physical aspect. The data collected from the selected respondents during the study shows that the most common physical challenges faced by the nurses were not getting enough sleep after a night shift, which also affects their attitude. From the literature gathered, the negative impact of sleep issues extends beyond mere restlessness, affecting both wellbeing and cognitive abilities while also raising the risk of workplace accidents. Various remedies have been suggested to enhance nurses' sleep quality and bolster their concentration. Lately, there has been a focus on examining personal and contextual elements that impact one's capability to handle lack of sleep while working the night shift. An individualized intervention that ensures appropriate shift management could effectively counter the negative impact of a night shift, considering these factors' predictive role. Usually, nurses have to work several nights when they are on a night schedule.

Table 2 are the challenges experienced by the respondents in terms of psychological aspect. The effect of rotational and multishift in psychological aspect are 88.8% of the respondents was stress and the 14.4% was anxiety. As the respondents were asked if does rotational and multishift affect their attitude negatively, 66.4% answers no and 33.6% answers yes. 43% of the respondents has identified that rotational and multishift affects their mood while 58.4% of them says it doesn't affect their mood. As respondent were asked is the rotational and multishift increase interpersonal conflict at work 71.2% answers no while 28.8% say yes. Different methods were used by nurses to induce sleeping. 51.2% listen to the music, 40% do nothing, 30.4% taking sleeping tablets and 14.4% drink hot beverages. In level of concentration of nurses when working night shift, 78.4% has

normal concentration while 16% has an almost low of level of concentration. A quantitative study of 50 Brazilian nurses on night duty by Cordeiro et al. also indicates that night work affects social and psychological aspects of life and can lead to health problems.

Table 2

Frequency Table for the Challenges Experienced by the Respondents in terms of Psychological Aspect

	f	%
The effect of rotational and multishift in psychological aspect		
Depression	-	-
Anxiety	18	14.4
Stress	107	85.6
Others	-	-
Does rotational and multishift affects your attitude negatively		
Yes	42	33.6
No	83	66.4
Does rotational and multishift affects your mood		
Yes	54	43.2
No	71	56.8
Does rotational and multishift increase interpersonal conflict at your work		
Yes	36	28.8
No	89	71.2
Methods used by nurses to induce sleeping		
Drinking hot beverages	18	14.4
Taking sleeping tablets	38	30.4
Listening to the music	64	51.2
Nothing to do	50	40.0
How do you find your level of concentration when working night shift?		
Almost high	-	-
Normal	105	84.0
Almost low	20	16.0
I do now know	-	-

In psychological aspect most of the respondents suffered from stress. Usually, stress manifests itself through irritability, feeling of loss of control, fatigue or exhaustion, and even insomnia or general sleep disturbances. In terms of the psychological aspect of the respondents, they suffered from stress, and in conjunction with the collected data in Table 1, the stress affects their physical aspect, and they suffered from lack of sleep. This table also shows that the respondents listen to music to find sleep. Night work usually means that nurses have several night shifts in their work schedule. Nurses must provide treatment for more people at night rather than during the day because there are limited nurses on duty at night. This can increase mental and physical stress because fewer hands are needed to accomplish tasks.

Table 3 show the challenges experienced by the respondents in terms of social aspect. The opinion of respondents for more workload for nurses on a night shift shows that 59% of them answers it was normal while 23% agreed that there are more workload on a night shift and 22.4% disagreed. On finding the level of concentration when working on a night shift, 60% of the respondents prefer night shift, 28.8% says they prefer night shift because it suit their lifestyle and 11.2% say night shift pays better. As respondent was questioned if the night shift increases interpersonal conflict in their family 74.4% says no while 24% of them admitted that their interpersonal conflict with their family increased. And lastly, respondents were asked were their work performance better at, 50% prefer morning shift 30% prefer afternoon shift at 19.2% prefer night shift.

In a social aspect of the respondents, they do not prefer working the night shift because they find it moderately strenuous compared to other rotating shifts. Respondents also say that they do not receive enough recognition and appreciation on the night shift compared to the day shift. American nurses who work evenings are very susceptible to familial pressures, according to Books et al. Other civilizations and gender roles had the same issues. According to a South African study by Duracinsky et al., (2022) nurses who work nights spend less time with their families and are less adept at resolving disputes within the family. In their study, nurses said they lacked the time to manage their household and personal commitments. They claimed to be grumpy and agitated, which occasionally led to family disputes. Additionally, it. discovered that night shift employment interferes with

social life and can cause health issues in their quantitative study of 50-night shift nurses in Brazil.

Table 3

Frequency Table for the Challenges Experienced by the Respondents in terms of Social Aspect

	f	%
The opinion of more workload for nurses on a night shift		
agree	29	23.2
Normal	68	54.4
Disagree	28	22.4
How do you find your level of concentration when working night shift		
It pays better	14	11.2
I prefer night shift it suits my life style	36	28.8
I do now prefer night shift	75	60.0
Does night shift disturbs your normal life		
Yes	53	42.4
No	72	57.6
Night shift increase interpersonal conflict in your family		
Yes	30	24.0
No	95	76
Work performance better at		
Morning shift	63	50.4
Afternoon shift	38	30.4
Night shift	24	19.2

Table 4

Challenges of Challenges on Rotational and Multishift Work

Indicators	Weighted Mean	Verbal Interpretation	Rank
Rotational Shift Work	3.41	Somewhat Agree	2
Multishift Work	3.50	Agree	1
Composite Mean	3.45	Somewhat Agree	

The data presented in Table 4 shows the result of the comparison in Rotational and Multi-Shift work. The Multi shift work ranked 1 with a mean of 3.50. the respondents agreed working on a multi shift work schedule. This has an effect on the responders' ability to manage a consistent schedule for a week or month. The growth of 24-hour, round-the-clock work schedules, the rise of dual-earner families, and increased focus on the pace and quality of work are all signs that work intensity has increased in recent decades (Alsharari et al., 2021). From the questions above, respondents in multishift work also indicate that their family is understanding and supportive of their multishift work. From the literature review, it is evident that there are different patterns of shift work and that night shifts are the most disruptive. Nevertheless, there are advantages to working at night as a nurse, as one has more time to spend with family and can complete daily tasks efficiently. However, it is important to keep in mind that working at night interferes with the biological clock, as it disrupts the natural rhythm of sleep and wakefulness.

Rotational shift work covers a variety of work schedules, and shifts rotate or change according to a set schedule. The results show that respondents tended to agree with rotational shift work because the practice of rotating shifts, which usually last 8 or 12 hours, is widely used among nurses to maintain consistent care. However, this method has various detrimental impacts on both healthcare and job performance. The negative impact of sleep issues was highlighted in rotational shifts and extends beyond mere restlessness, affecting both well-being and cognitive abilities while also raising the risk of workplace accidents.

Table 5

Coping Strategies on Rotational and Multishift Work

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Rotational Shift Work	3.85	Agree	1
Multishift Work	3.78	Agree	2
Composite Mean	3.82	Agree	

Legend: 1.00 – 1.49 (Disagree), 1.50 – 2.49 (Slightly disagree), 2.50 – 3.49 (Somewhat Agree), 3.50 – 4.49, (Agree), 4.50 – 5.00 (Strongly Agree)

Table 5 shows the coping strategies on rotational and multishift work. The identified coping strategies of nurses in rotating and multishift work are eating and having fun to reduce stress, and trying to do or think things that make them happier and allow them to relax and recover; they also set goals to achieve and think about how to change their attitude to be happy in a rotating shift. Nurses who work in multiple shifts first calm down and think about how to solve the problems they encountered and cope with the recurring problems; nurses also take occupation with many things as their coping strategies in a multiple shift. Nurses often must work multiple shifts because of the round-the-clock care required in modern healthcare. However, not much is known about how they cope with shift work's detrimental consequences on their health and wellbeing.

To avoid burnout, preserve wellness, and deliver high-quality patient care, it may be crucial for nurses to develop coping mechanisms for shift work. The methods nurses employ to deal with shift work are looked at in this essay. 449 nurses working shift work were surveyed using open-ended questions regarding their coping mechanisms. The responses were collected from a significant metropolitan health service in Melbourne, Australia, and then evaluated using a thematic analysis framework. A thematic analysis approach was used to examine responses to open-ended questions about coping mechanisms. The results revealed four major, interconnected themes: (i) health practices, (ii) social and recreational activities, (iii) cognitive coping mechanisms, and (iv) work-related coping mechanisms. There are many ways to deal with stress, but their efficiency is sometimes hampered by sleep issues, which can damage a person's general health. The workplace significantly affects nurses' ability to adopt effective coping mechanisms on an individual level and promotes their well-being (Chana et al., 2015).

4. Conclusions and recommendations

The result of the study identified challenges experienced by the nurses on a rotational and multi shift work in different aspects. In a physical aspect the nurses didn't able to get enough sleep after working on a night shift and most of them suffer from a sleep disorder which almost always affects their attitude. Their eating habits prefer fast food and results to an increased body weight. Eventually, none of the respondents has suffered from a chronic disease. In psychological aspect most of the respondents suffered from stress but in a social aspect of the respondents they do not prefer working on a night shift for they experience a moderate strenuousness compared on other rotating shifts. The respondents also says that they did not get enough recognition and appreciation on a night shift compared to day shift nurses. From the comparison in Rotational and Multi Shift work, the respondents agreed working on a multi shift work schedule because they can easily cope in a continuous same work schedule for a week or month, while in the rotational shift work it covers a wide variety of work schedules and shifts rotates or change according to a set schedule. The identified coping strategies of nurses on rotating shifts are eating and having fun to reduce the stress of rotating shifts. They try to do or think things that make them happier and allow them to relax and unwind. Nurses who work a rotating shift set goals they want to achieve and think about how they can change their attitude to be happy on a rotating shift. The identified coping strategies of nurses on a multi shift work are letting themselves calm down first and think of how to solve encountered problems during their multi shift work. Thinking with a calm and optimistic attitude about how to cope with the recurring problems, while talking to their colleagues about problems and asking for their opinion, considering

Based from the Conclusion drawn and discussed, the nursing service management should review the number of employees or staff and should identify the high activity periods as well as volume of workload of patients in a department or area that may require more employees. Additional staff nurses on areas with high number of patients would give less exhaustion to nurses at work since they could manage properly the need of each patient and would be able to provide the quality of service for the patients. The nursing service management should come up with seminars for healthy management in dealing with the challenges of nurses on a rotational shift work schedule as well as to enhance their coping strategies in dealing with different work schedules. With the said seminars, nurses would be able to deal with their specific challenges at work and would lean to cope with it.

The seminar would give awareness of different challenges and coping strategies to the student nurses. The nursing service management should implement programs of wellness for nurses which includes stress management on a workplace, healthy eating habits and counseling for nurses to help them to feel more motivated on their work. The nursing service management should give monthly recognitions to nurses of each areas for them to feel valued and appreciated which can boost their morale and improve retention.

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