













ORIGINAL

Shift nurse in implementing shift work schedules and fatigue: A phenomenological study

Enfermera de turnos en la implementación de horarios de trabajo por turnos y fatiga: un estudio fenomenológico

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ABSTRACT

Introduction: nurses who work shifts are professionals, but we don't know much about the conditions and feelings of nurses after becoming nurses.

Objective: to analyze the experience of being a shift nurse in implementing shift work schedules and fatigue.

Methods: the research used a qualitative design with phenomenological approach. The research was conducted in two hospitals used purposive sampling techniques according to predetermined inclusion criteria. The participants were 19 nurses and conducted in-depth interviews. The collected data was subjected to thematic analysis.

Results: there were five themes obtained from this research including 1) Shift nurses experience work fatigue which causes their career development opportunities to be reduced; 2) Accompanying doctor visits, workload, number and condition of patients, extended working time due to handovers are the causes of shift nurse fatigue; 3) Nurses experience the risk of SWD and the risk of making human errors while on duty; 4) Changing nurse service schedules and non-ideal service patterns managed by the head of the room risk reducing satisfaction with the service schedule; 5) Shift nurse job satisfaction tends to be low but nurses remain responsible and prioritize working professionally.

Conclusion: this research can be concluded that nurses have unique experiences in managing nurse schedule and the impact of fatigue from working as a shift nurse. Nurses are expected to be able to understand which conditions constitute tiring work, and if it is not the nurse's main duties and responsibilities, they can report it to their superiors.

Keywords: Fatigue; Job Satisfaction; Nurse; Shift Work Schedule.

RESUMEN

Introducción: las enfermeras que trabajan por turnos son profesionales, pero no sabemos mucho sobre las condiciones y los sentimientos de las enfermeras después de convertirse en enfermeras.

Objetivo: explorar la experiencia de ser enfermera de turno en la implementación de horarios de trabajo por turnos y la fatiga.

Métodos: la investigación utilizó un diseño cualitativo con un enfoque fenomenológico. La investigación se llevó a cabo en dos hospitales utilizando técnicas de muestreo intencional de acuerdo con criterios de

inclusión predeterminados. Los participantes fueron 19 enfermeras y realizaron entrevistas en profundidad. Los datos recopilados fueron sometidos a un análisis temático.

Resultados: hay cinco temas obtenidos de esta investigación que incluyen 1) Las enfermeras de turno experimentan fatiga laboral que hace que se reduzcan sus oportunidades de desarrollo profesional; 2) Las visitas médicas de acompañamiento, la carga de trabajo, el número y la condición de los pacientes, el tiempo de trabajo extendido debido a los traspasos son las causas de la fatiga de las enfermeras de turno; 3) Las enfermeras experimentan el riesgo de SWD y el riesgo de cometer errores humanos mientras están de servicio; 4) Los cambios en los horarios de servicio de enfermería y los patrones de servicio no ideales administrados por el jefe de la sala corren el riesgo de reducir la satisfacción con el horario de servicio; 5) La satisfacción laboral de las enfermeras de turno tiende a ser baja, pero las enfermeras siguen siendo responsables y priorizan el trabajo profesional.

Conclusiones: esta investigación puede concluir que las enfermeras tienen experiencias únicas en la gestión de los horarios de trabajo y el impacto de la fatiga por trabajar como enfermeras de turno. Se espera que las enfermeras puedan comprender qué condiciones constituyen un trabajo agotador y, si no son sus principales deberes y responsabilidades, pueden informarlo a sus superiores.

Palabras clave: Enfermero de Turno; Fatiga; Horario de Enfermería; Satisfacción.

INTRODUCTION

Nurses' work shifts are still an interesting topic of discussion in service. Work shifts refer to the allocation of time available to carry out planned work tasks.^(1,2) Work shifts carried out in Indonesia are generally morning, afternoon and night,⁽³⁾ with work shifts 24 hours 7 days.⁽⁴⁾ Shift work requires nurses to work during the most socially valuable times, such as evenings and weekends.⁽⁵⁾

The duty schedule plays a key role in managing nurses' work shifts in hospitals. Nurse schedule refers to a pattern involving rotation through different fixed work periods over the course of a week or month and is common in Health care settings.⁽⁶⁾ The method for making nurse scheduling is divided into three, including self-scheduling by nurses, nurse scheduling made by the head of the room, or nurse scheduling arranged by managerial (head of field).^(3,7) A managed service schedule can have a good impact on service. In the process, problems sometimes occur that will have an impact on the nurse.

Several literatures have mentioned several impacts of poor shift management. Researchers in America say that nurses who often work night shifts with a duration of 11 - 12 hours of work have poor health quality due to fatigue and lack of sleep opportunities.⁽⁸⁾ According to other literature, shift workers are at higher risk of adverse health effects and reduced quality of life.^(9,10,11)

Nurse burnout still represents a serious problem in hospitals. Work fatigue is characterized by nurses often complaining of fatigue and decreased levels of concentration at work. Fatigue may increase slightly more when nurses work night shift.^(12,13) As many as 35,06 % of nurses were found to complain of being tired from working in caring for patients in China,⁽¹⁴⁾ while 73,5 % of RSUD nurses in West Sumatra also complained of being tired to the point of being very tired after work.⁽¹⁵⁾ This shows that the level of fatigue is still high in hospital services.

Nurses who want to become shift nurses are interesting to explore. Nurses get different shift patterns. When carrying out night shifts, nurses work more than 10 hours which risks fatigue and problems with their health. Although there is already some literature that explores nurse schedules and fatigue. However, there has been no research that explores in depth the extent to which nurses' preferences are considered when selecting or implementing shift work patterns, the causes of fatigue, and its impacts. It is necessary to dig deeper into the experience of being a shift nurse. The aim of this research is to explore the experience of being a shift nurse in implementing nurse schedules and fatigue.

METHODS

Design

The research design uses qualitative with a phenomenological approach. Phenomenology focuses on finding facts about a social phenomenon which emphasizes efforts to understand human behavior based on the informant's perspective.⁽¹⁶⁾ This method aims to delve deeply into the perception of a phenomenon or a person's life experience.⁽¹⁷⁾ The naturalness of the experience in this research is in the form of real experiences experienced by nurses who work shifts related to the implementation of nurse schedules and fatigue. Settings and Participants

This research was conducted at Idaman Hospital in South Kalimantan and UI Hospital in West Java. Data was collected in January-March 2024. Determining participants in this research used a purposive sample technique. Purposive sample are selected participants who are oriented towards research objectives. The criteria for

participants in this study were: (1) experience as a shift nurse in a hospital for at least 6 months; (2) education as a nurse; (3) Ability to convey experiences well. There were 19 participants interviewed who met the inclusion criteria.

Data Collection

This research uses in-depth interviews. In-depth interview proven to be able to dig up participants. In-depth interview data using predetermined questions. The variables explored to participants are shift work schedules and fatigue. In the data collection stage, researchers carried out bracketing, namely bracketing, storing assumptions, beliefs and knowledge about the phenomenon of nurse educators.⁽¹⁸⁾ The interview guide consists of several open questions. Questions such as: 1) What do you think about the job of being a shift nurse? ; 2) What is the impact of activities when nurses are on shift? ; 3) How is the work fatigue of nurses?; 4) How is the official schedule managed?; 5) How satisfied are you regarding your work and official schedule?

Questions are created to stimulate participants to provide information. In-depth interviews last 60-90 minutes. Researchers used interview guide sheets, voice recording equipment, and field note sheets. Before data collection, participants were given a comprehensive description of the main components of the research, such as recording equipment, research objectives and benefits and time duration.

Ethical Considerations

Researchers strive to fulfill the three rights of participants, namely respecting the dignity of participants, paying attention to welfare, and justice for all participants.⁽¹⁹⁾ Participants established a relationship of mutual trust and entered into a time contract to meet via WhatsApp. Participants were informed about the aims of the study and interview procedures during the face-to-face encounter. It is emphasized that participants have the right to withdraw from the research at any time before the results are disseminated. Participants gave written consent to be involved in this research after the researcher met the participants directly. The researcher emphasized that each participant would be kept confidential. This research has received ethical permission (IRB) from RSD Idaman No. RS00306 /KEPK-RSDI/ 01/ 2024 and RS UI No: S-007/KETLIT/RSUI/I/2024.

Data analysis

Data were analyzed with thematic analysis using steps from Colaizzi. Researchers understand the data by doing careful verbatim, followed by repeated close reading. The thematic process continues with code formation such as identifying significant statements. The researcher then identified sub categories and themes . The resulting data is continuously compared (constant comparative). This iterative process allows for the identification of meaning and depiction of overarching themes.⁽²⁰⁾ This research has fulfilled the elements of data validity, namely credibility, dependability, confirmability and transferability. Themes are presented in the form of a thematic tree.

RESULTS

Characteristics of respondents

These results were obtained as many as 19 participants participated in this research. The average age of participants was 28,89 years with the oldest being 33 years and the youngest being 25 years. Participants' experience in shift work varied from 1 year to 4 years. Details of the characteristics of the participants can be seen in table 1. Table 1 explains that 73,68 % of the participants were female with the largest distribution of Banjar and Javanese tribes at 31,58 % each. PK levels vary from PK 1 to 2B, with 42,11 % of nurses having PK 2A level. 89,47 % of nurses have a nursing education, the rest have a Master's degree in nursing with 52,63 % being married.

Thematic findings

The identified themes are presented in thematic images using thematic tree (figure 1). Thematic images are used as visual representatives to explain the results of the exploration of shift nurses' experiences in implementing duty schedules and fatigue. Thematic analysis yielded six overarching themes.

Shift nurses experience work fatigue which reduces their career development opportunities

This theme consists of 2 sub themes, 5 categories, 8 sub categories with 19 codes. The second category is related to the level of nurse work fatigue from moderate to high. Example of a quote from a participant: "... 80 fatigue numbers on morning duty." (P9). The third category explains the impact of nurse fatigue: the result is easy illness, emotional instability, and risk of accidents. Example of a quote from a participant: "...if I don't sleep that night I'll be tired, the nurse, sometimes on the way I can get sleepy and there's a risk of an accident for the nurse if it's like that..." (P10). How nurses reduce fatigue is the fifth category. An example of a quote from a participant: "...it's like I'm really tired of taking medicine that's like neuralgin..." (P7).

Table 1, Characteristics of respondents

| Characteristics | n | % |
|---------------------------|----|--------|
| Sex | | |
| Man | 5 | 26,32 |
| Woman | 14 | 73,68 |
| Tribes | | |
| Banjar | 6 | 31,58 |
| Java | 6 | 31,58 |
| Batak | 1 | 5,26 |
| Sunda | 5 | 26,32 |
| Batak-Javanese | 1 | 5,26 |
| PK (Career Ladder) | | |
| 1 | 5 | 26,32 |
| 2 | 5 | 26,32 |
| 2A | 8 | 42,11 |
| 2B | 1 | 5,26 |
| 3 | 0 | 0,00 |
| Level Education | | |
| Nurse | 17 | 89,47 |
| Master of Nursing | 2 | 10,53 |
| Married Status | | |
| Not married | 9 | 47,37 |
| Married | 10 | 52,63 |
| Total | 19 | 100,00 |

Accompanying doctor visits, workload, number and condition of patients, prolonged working time due to handovers are causes of shift nurse fatigue.

This theme consists of 5 sub themes, 16 categories, 38 sub categories with 109 codes. The eighth category identifies that working hours are prolonged so that returning home late often occurs among nurses. Example of a quote from a participant: "...in the middle of the handover, sometimes we still like to have the distraction of the patient calling, and we still like being called..." (P8).

The eleventh category identifies that nurses are invited to take part in doctor visit activities even though the visit time is uncertain in all shifts. Example quote: "...I immediately went to the doctor so writing the documentation was postponed. Sometimes the doctor also says, "Come on, Ners, visit." That's straight to the patient. " (P9). "I don't know, he just said, "Come on, come on, accompany me" like that. So we are like "Ehmm, I can't do it alone or something like that..." (P14). In the fifteenth category, it was found that nurses complained about the high workload. This was reinforced by a quote from a participant: "...it should have been finished, I would have just sat down and just printed it out. next service, we haven't finished yet..." (P18)

Nurses experience the risk of SWD and the risk of making human errors while on duty

This theme consists of 3 sub themes, 7 categories, 11 sub categories with 23 codes. The first category is related to nurses at risk of SWD while on duty. Example of a quote from a participant: "...if it's already dawn, there's definitely a lot of sleepiness..." (P1). The third category explains how to keep nurses awake or not sleepy while on duty: eating snacks and drinking. Example of a quote from a participant: "...In the hospital, sometimes we drink coffee depending on whether we buy bottled coffee..." (P4). In the sixth category, it was found that nurses were at risk of making mistakes when on duty. An example of a quote from a participant: "...the rich man made an error in taking it into the pouch which was supposed to go to the patient next to him but I put it in the patient next to him..." (P17).

Changing nurse service schedules and non-ideal service patterns managed by the head of the room risk reducing satisfaction with the service schedule

This theme consists of 3 sub themes, 9 categories, 31 sub categories with 61 codes. The second category identifies that the head of the room manages the nurse's duty schedule. Example quote: "...usually the person

who manages the scheduling is the head of the room...” (P6). In the seventh category , it was found that the change in official schedule was random: changing teams, illness and leave. This is reinforced by a quote from a participant: “...it’s not structured like that because there are 3 times or 3 times in the afternoon...” (P12). The eighth category explains that non-ideal service schedule patterns have an impact on fatigue. Example of a quote from a participant: ..I usually schedule PPSSMM after holidays like that...” (P13).

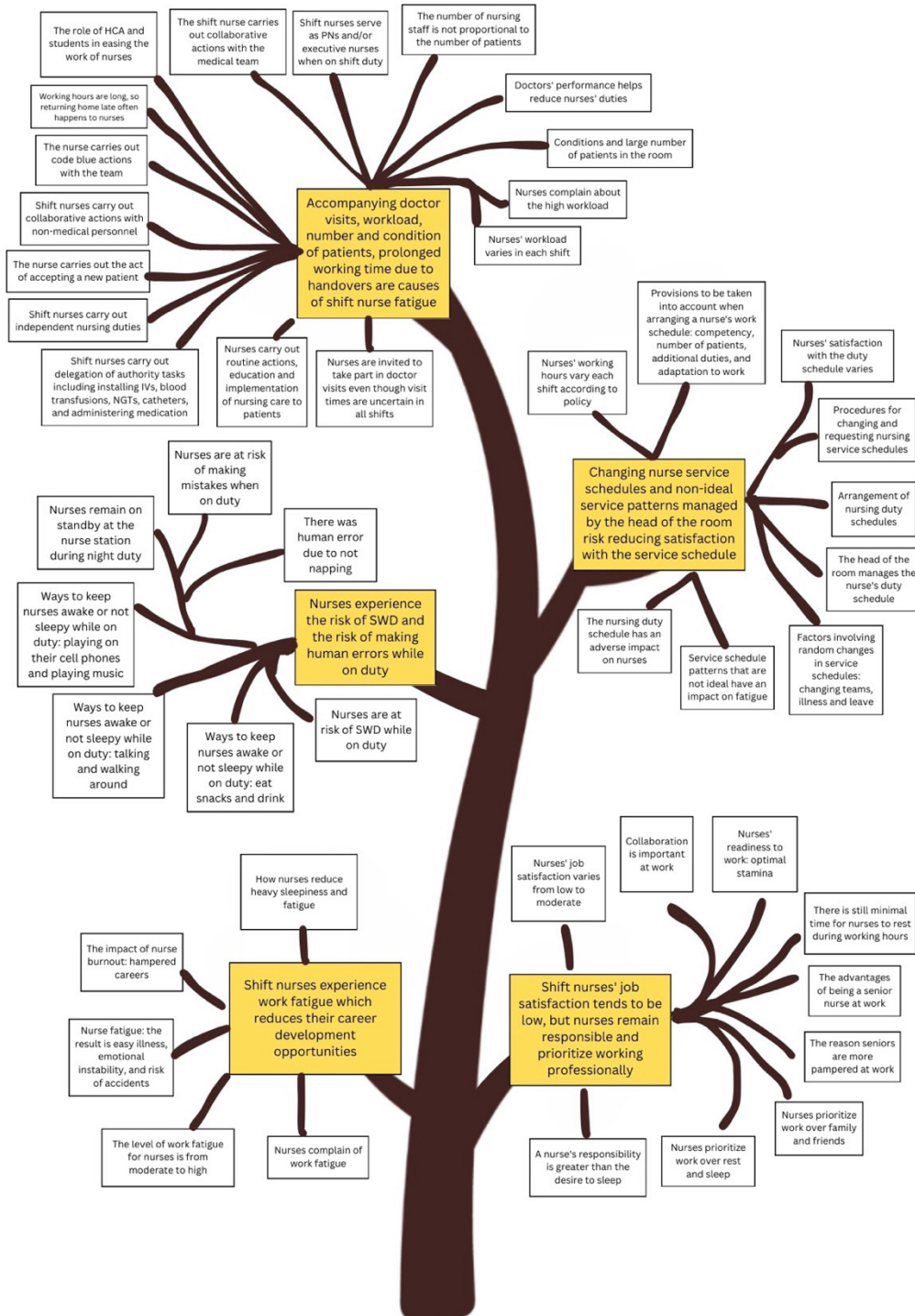


Figure 1. Thematic tree

Shift nurses’ job satisfaction tends to be low, but nurses remain responsible and prioritize working professionally.

This theme consists of 4 sub themes, 9 categories, 27 sub categories with 54 codes. The first category is related to nurses’ job satisfaction which varies from low to moderate . Example of a quote from a participant: “ ...Maybe there’s so much work, so I feel like it’s 50-60 .” (P18). The fourth category explains that nurses have minimal time to rest during working hours. Example of a quote from a participant: “...morning service

doesn't have time to rest unless we can steal time in the sense that we take turns with friends..." (P5). Nurses prioritize work over rest and sleep is the eighth category. An example of a quote from a participant: "...at the hospital I usually set my personality to work..." (P15).

DISCUSSION

Shift nurses experience work fatigue which reduces their career development opportunities

Identical nurses experience fatigue. The level of nurse burnout from this study varied from low to moderate. These results are in line with several studies that show that 70 % of nurses experience moderate fatigue,⁽²¹⁾ and 67,2 % of nurses experience fatigue at work.⁽²²⁾ Research also states that nurses who carry out rotational shifts experience fatigue to the point of chronic fatigue.^(23,24) This proves that nurses who shift are at risk of experiencing work fatigue.

One category of this research found that nurses who experienced fatigue resulted in being easily sick, emotionally unstable, and at risk of accidents. It is emphasized that the risks that occur if nurses experience fatigue include increased absenteeism due to illness and decreased performance.⁽²⁵⁾ This decreased performance also has an impact on hindering the careers of nurses whose motivation fluctuates. Several studies say that fatigue will cause type II diabetes, cardiovascular disease, various types of cancer, depression, anxiety. Apart from that, workplace injuries can also occur as a result of fatigue while working.⁽²⁶⁻²⁸⁾ So nurses who experience fatigue will have an impact on themselves and others.

This research also found that nurses were sleepy when driving and almost had accidents. This is in line with the fact that nurses who work shifts and often work night shifts increase the risk of driving while drowsy and motor vehicle accidents.⁽¹⁰⁾ Research conducted by stated that one of the participants had a motorbike accident on the road due to fatigue and sleepiness. The nurse complained of being sleepy while on the road.⁽²⁹⁾ 49 % (n= 87) of nurses reported falling asleep while driving and 44 % (n= 78) reported near-miss car accidents while returning home from a night shift.⁽³⁰⁾ This shows that the impact of fatigue for nurses is very dangerous.

Some of the impacts of burnout that are allowed to persist have been identified as detrimental to nurses and hospitals. Burnout in hospitals can compromise nurses' ability to provide safe and effective care to patients and can increase the risk of injury to nurses.⁽³¹⁾ Another impact will be increasing the error rate, increasing absenteeism, reducing productivity, increasing the possibility of accidents and injuries to staff, and reducing work motivation, which is the impact of fatigue.⁽²⁵⁾ Fatigue will also ultimately have an impact on nurse satisfaction.^(32,33)

Accompanying doctor visits, workload, number and condition of patients, prolonged working time due to handovers are causes of shift nurse fatigue

The most interesting result of this research is that doctor visits are one of the causes of nurse fatigue. Nurses carrying out unprofessional activities have an impact on nurse fatigue and satisfaction, such as referrals, coordination, non-professional services, cleanliness, obtaining equipment, patient transportation, and delivering food.⁽³⁴⁾ Not much research has reviewed the impact of these visits on fatigue. Researchers assume that visiting with a doctor is a good thing for implementing collaboration but needs to be balanced with the priority aspects of the assignment. If it will interfere with the nurse's main activities then the nurse can complete the main work.

Another finding from this research is that the workload, number and condition of patients make nurses tired. The research results showed that age, sleep patterns, caffeine intake and patient condition influenced nurses' fatigue at work.⁽³¹⁾ Other research states that gender, length of service, and workload were found to have varying relationships with subjective fatigue in ICU and ER nurses.⁽³⁵⁾ Nurses may experience psychological stress and job demands in caring for patients that have a positive association with burnout.⁽³⁶⁾ Nurse fatigue can be caused by an unbalanced workload, causing decreased motivation, low performance and work stress.^(21,37) Another condition experienced by nurses is caused by the large number of patients treated while on duty.⁽³⁸⁾

Long hours are also a cause of nurse fatigue. Long hours of nursing work have been reported as a contributing factor to increased burnout. Nurses who work more than 60 hours per week report more burnout than those who work 40 hours or less.⁽³⁹⁾ A studies find that distraction fatigue happen from Work One shift 12 O'clock And increase further with shifts Work consecutively, show effect cumulative from fatigue on performance nurse.⁽⁴⁰⁾

Nurses experience the risk of SWD and the risk of making human errors while on duty

Shift work disorder (SWD), or sleep disorders in workers, is a problem for nurses who work shifts. Shift work disorder resulting in circadian rhythm disturbances that occur in nurses who work in outside sleep period (22,00-06,00) and out of time Work.⁽⁴¹⁾ This is in line with this research. The nurse experienced difficulty sleeping, experienced insomnia, and excessive sleepiness which indicated the condition of SWD.⁽⁴²⁾ Researchers predict SWD arises because nurses are scheduled for night *shifts*, which are considered part of the work the hardest part of *shift work* which can disrupt circadian regulation and sleep homeostasis.^(41,43,44) The more often

nurses work *shifts*, the prevalence of SWD increases.

Misbehavior has the potential to occur to nurses who do shifts. Rotating shift work and extra time extending from home time made nurses who had signs of fatigue significantly contribute to medication error behavior.⁽²³⁾ Potential risks that can occur in the form of accidents at work.⁽⁴⁵⁾ Nurses do not carry out risky behavior towards patients so that patients avoid *human error*.⁽⁴⁶⁾

Changing nurse service schedules and non-ideal service patterns managed by the head of the room risk reducing satisfaction with the service schedule

The service schedule is generally managed by the head of the room. In Indonesia, the head of the room is tasked with managing the service schedule. Several things are paid attention to by the head of the office in the service schedule, such as competency, workload, flexibility, and service schedule requests.^(2,3,6) Nurse scheduling must also consider existing constraints such as the number of nurses available, their abilities, employment regulations, and hospital policies so that a schedule that is close to optimal is obtained.⁽⁴⁷⁾ This is what also causes changing service patterns.

Shift patterns in nursing are often structured in ways that are detrimental to nurses' health and well-being, job performance, and patient care.⁽⁴⁸⁾ This research also found that participants experienced a pattern of twice night duty (night duty followed by night duty again the next day). Scheduling like this is not appropriate. Several studies have stated that work schedule patterns are often arranged which can be detrimental to nurses' health, do not give nurses the opportunity to recover or have time to rest at home, and tend to make nurses dissatisfied and make nurses tired.⁽⁴⁸⁻⁵⁰⁾ What's worse, irregular night shift arrangements also make nurses feel more tired than nurses who have a more regular night shift schedule.⁽⁵¹⁾ Apart from that, nurses who work more than 12 hours will have an impact on nurse fatigue and satisfaction.^(12,38,40)

Shift nurse job satisfaction tends to be low but nurses remain responsible and prioritize working professionally

Job satisfaction is one of the categories obtained from this research. Several studies show that nurses are not satisfied with their work. Quantitative research conducted by previous researchers showed that the level of nurse satisfaction also varied, amounting to 60,22 % in the Jakarta Vertical Hospital, 67 % in the military hospital.^(2,6) The satisfaction level of nurses at RSD Idaman was found to be 76,9 %.⁽⁵²⁾ This shows that satisfaction is a challenge to improve.

Interestingly, in this research, it was found that nurses still prioritize and work professionally even though they are not yet satisfied with their work. This condition cannot be separated from the nurse's responsibility to provide the best for the patient. This also emphasizes that nurses also prioritize patients at work compared to family.⁽⁵⁾ This research is not in line with several studies that show that when job satisfaction decreases, professionalism and performance such as application of values, cooperation, positive feelings or empathy also decreases.^(53,54,55) This can happen because the culture of nurses in Indonesia has great responsibility even though they are paid low salaries. On the other hand, job satisfaction can be caused by other factors such as low salaries, minimal career opportunities, and the role of managers in motivating nurses.^(56,57,58,59)

CONCLUSIONS

This research can be concluded that nurses have unique experiences in managing nurse schedules and variations in fatigue from work as nurses caused by workload and the culture of doctor visits. This research found 5 themes with 17 sub-themes and 266 item codes. Recommendations for this research are given to nursing managers to be able to pay attention to the level of fatigue of nurses at work, to be able to manage the collaboration process between nurses and other professions, especially in carrying out patient visits. Nursing managers also need to manage work schedules more flexibly through a rational nurse schedule pattern with nurse rest times. Apart from that, nurses are also expected to be able to understand which conditions constitute tiring work, and if it is not the nurse's main duties and responsibilities, they can report it to their superiors.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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