



NAPPING AFFECTS NIGHT-SHIFT NURSES' OCCUPATIONAL SAFETY

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ABSTRACT

Napping is an evidence-based method used to reduce fatigue and increase alertness during night shift work. Objective: This study aims to identify the relationship between napping in night shift nurses and the work safety of nurses in hospitals. Method of This research uses a quantitative research design using a cross sectional method. Data was collected from 213 nurses using the Napping Nurse Questionnaire and the Occupational Safety questionnaire. Data collection was carried out from June to December 2024. Data analysis included univariate analysis in the form of a frequency distribution table, bivariate analysis using the chi-square test, and multivariate analysis using the multiple logistic regression test ($p > 0.05$). Results There is a significant relationship between the implementation of night shift nurse napping and work safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.001$). Nurses with good napping will have the opportunity to have good work safety. The implementation of napping is the factor that most influences nurses' work safety.

Keywords: napping; night shift work; nurse; occupational safety

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INTRODUCTION

Occupational safety is an effort to prevent occupational hazards where workers are safe and do not experience accidents while carrying out their work (Mehboodi et al., 2024; Nugraha et al., 2023; Özer & et al, 2022). Occupational safety for nurses is a situation that guarantees protection for nurses from the risk of injury, illness, and accidents that occur while carrying out their profession. Cases of Occupational Accidents (OA) and Occupational Diseases (OD) in the world reached 430 million per year in 2019 with 270 million (62.8%) cases of OA and 160 million (37.2%) cases of OD, as determined by global data released by the International Labor Organization (ILO). In 2023, as many as 370,747 cases of occupational accidents were recorded in Indonesia (Elrica, 2024). Research, work accidents and diseases that often befall nurses are needle sticks, wounds from broken ampoules, radiation exposure, falls, back pain, and contracting diseases from patients (Alsharari & Kerari, 2024; Arifuddin et al., 2023; Lien & Liu, 2018). If occupational safety for nurses is not considered, nurses can experience fatigue, stress, and risk of injury, all of which have the potential to affect work productivity and the quality of care provided (He et al., 2016; Özer & et al, 2022; Rohmani et al., 2023). Understanding occupational safety among nurses is important to improve the quality of service.

Nurses are one of the professions that have an important role in the health care system. Health services provided for 24 hours require nurses to work in different shifts (Alfonsi et al., 2021; Alsharari & Kerari, 2024; Books et al., 2020). Night shift work has been associated with sleep deprivation, fatigue, poorer mood, poorer health, and impaired alertness during and after work hours (Gyeltshen et al., 2023; Patterson & et al, 2024). One way to address these challenges is to allow time for napping between work hours. Napping is considered a way to overcome fatigue and

is beneficial for performance, alertness, and mood (Caldwell et al., 2019; Patterson & et al, 2024; Watanabe et al., 2022).

Nurses who work at night can take advantage of napping to relieve drowsiness and fatigue (Gyeltshen et al., 2023; Sagherian & et al, 2020; Watanabe et al., 2022). Based on research conducted by Brown (2021), night shift nurses who napped for 30 minutes reported that they felt fresher and less sleepy when driving home after their night shift (Geiger-Brown et al., 2021). Meanwhile, according to Handiyani (2018), napping for 30 minutes can increase perceptual speed (Handiyani, 2018). The results of this study indicate that nurses need napping to avoid adverse effects on the health and safety of nurses. Nurse managers can implement healthy nurse management, one of which is by napping activities in between work hours, which is a manifestation of a nurse manager's concern for staff so that health services in the hospital are optimal, and the health and safety of nurses are maintained.

Hospitals can implement napping schedules for nurses during working hours in an effort to improve nurse performance and minimize patient safety incidents. Susanti's research (2022) stated that things to consider when implementing a napping schedule include 1) optimal napping duration (20-30 minutes), 2) provision of a comfortable sleeping space, and 3) socialization and support from hospital management (Susanti et al., 2022). Widyastuti's research (2022) found that nurses who were given napping time during their work shifts had better performance and lower levels of fatigue than nurses who did not have napping time (Widyastuti et al., 2022). However, not many hospitals have implemented a napping policy. Napping is needed by nurses to overcome work fatigue which can have an impact on work performance and safety.

Data from the Infection Prevention and Control Committee of the Khidmat Sehat Afiat Hospital, Depok City, stated that there had been a needle stick incident in nurses while on night duty in 2023, as many as 7 nurses and in 2024 as many as 3 nurses due to drowsiness. Meanwhile, data from the nursing division of Graha Permata Ibu Hospital stated that there were officers who had traffic accidents after returning from night shift work due to drowsiness. Nurses who have a night shift schedule at Khidmat Sehat Afiat Hospital, Depok City, are 173 people, and 120 people at Graha Permata Ibu Hospital. This certainly makes nurses with a night shift schedule change their sleep time which should be done at night so that they are at risk of fatigue which can cause work safety incidents. However, the implementation of napping is still not well scheduled because there is no written policy from the management of the two hospitals regarding napping which actually has benefits for the health, safety of nurses and patients. However, from the results of the interview, the nursing field verbally allows taking turns in napping in between working during the night shift.

Several studies have evaluated the relationship between napping and nurse performance and fatigue. Nurses who nap during the night shift perform better than those who do not (Gamble & Foran, 2021; Munawaroh et al., 2023). Prasetya (2021) stated that during the night shift, there is a correlation between sleep time and work fatigue (Prasetya et al., 2021). However, not much research has been conducted to assess the relationship between napping and nurse work safety. Based on this, the researcher is interested in conducting an analysis related to the relationship between napping in night shift nurses and work safety. This study aims to identify the relationship between napping in night shift nurses and the work safety of nurses in hospitals.

METHOD

This study uses a quantitative research design with a cross-sectional approach method. This study was conducted at Khidmat Sehat Afiat Hospital, Depok City and Graha Permata Ibu Hospital in December 2024. The location of the study was chosen based on the type of hospital, namely type C and the location of both is in Depok City, where Khidmat Sehat Afiat Hospital, Depok City is a Regional Government Hospital and Graha Permata Ibu Hospital is a Private Hospital. The

population in this study were nurses who had night shift schedules, with a sample size of 213 nurses. The data collection technique used a questionnaire consisting of 3 parts, consisting of Questionnaire A on demographic characteristics, questionnaire B on nurse napping and questionnaire C on work safety. The researcher conducted a validity and reliability test of the instruments used in the study on 30 nurses at Hasanah Graha Afiah Hospital in Depok City. The characteristics of the respondents selected were the same as the inclusion criteria in this study. The results of the validity test using the SPSS application were obtained for each question item in questionnaire B (r count = 0.473-0.600), questionnaire C (r count = 0.483-0.571) had an r count greater than r table (0.361), questionnaires B and C were valid. The results of the reliability test using Cronbach Alpha, questionnaire B all statement items were declared reliable because the Cronbach Alpha value was 0.751, greater than 0.7, and questionnaire C all statement items were declared reliable because the Cronbach Alpha value was 0.903 greater than 0.7. The conclusion of instruments B and C was categorized as reliable instruments. Data analysis included univariate analysis in the form of a frequency distribution table, bivariate analysis using the chi-square test, and multivariate analysis using multiple logistic regression tests.

RESULT

This study presents research data based on univariate, bivariate and multivariate data analysis.

Table 1.
Distribution of Respondents' Demographic Characteristics

Variables	Khidmat Sehat Afiat Regional Hospital (n=121)		Graha Permata Ibu Hospital (n=92)		Total (n=213)	
	F	%	F	%	F	%
Gender						
Male	43	35.5%	15	16.3%	58	27.2%
Female	78	64.5%	77	83.7%	155	72.8%
Marital Status						
Single	31	25.6%	25	27.2%	56	26.3%
Married	90	74.4%	67	72.8%	157	73.7%
Level of Education						
Diploma Tree Nursing	78	64.5%	66	71.7%	144	67.6%
Bachelor of Nursing, Ners	43	35.5%	26	28.3%	69	32.4%
Work Place						
Emergency Room	27	22.3%	11	12%	38	17.8%
Intensive Room	45	37.2%	23	25%	68	31.9%
Inpatient Room	49	40.5%	58	63%	107	50.2%
Years of Service						
≤ 5 year	82	67.8%	29	31.5%	111	52.1%
>5 year	39	32.2%	63	68.5%	102	47.9%
Napping Duration						
Never	5	4.1%	12	13%	17	8%
10-30 minutes	72	59.5%	33	35.9%	105	49.3%
>30 minutes	44	36.4%	47	51.1%	91	42.7%

Based on table 1, the majority of respondents in both hospitals were female (72.8%), married (73.7%), had a DIII Nursing education (67.6%), worked in the Inpatient Unit (50.2%), had a work period of ≤ 5 years (52.1%), and had napped for 10-30 minutes (49.3%).

At the Khidmat Sehat Afiat Regional Hospital in Depok City, the majority of respondents were female (64.5%), married (74.4%), had a DIII Nursing education (64.5%), worked in the Inpatient Unit (40.5%), had a work period of ≤ 5 years (67.8%), and had napped for 10-30 minutes (59.5%). Meanwhile, at Graha Permata Ibu Hospital, the majority of respondents were female (83.7%), married (72.8%), had a DIII Nursing education (71.7%), worked in the Inpatient Unit (63%), and had a work period of ≤ 5 years (68.5%) and did napping >30 minutes (51.1%).

The duration of napping of night shift nurses at Khidmat Sehat Afiat Hospital, Depok City, was found to be mostly 10-30 minutes (59.5%), while the duration of napping of night shift nurses at Graha Permata Ibu Hospital was found to be mostly >30 minutes (51.1%). The majority did napping in both hospitals for 10-30 minutes (49.3%).

Table 2.
Respondent Age Distribution

Age Variable	Mean	Median	Standard Deviation	Min-Max	95% CI
Total	32.31	32	5.498	23-49	31.57-33.06
Khidmat Sehat Afiat Hospital Region	32.15	30	5.251	23-47	31.20-33.09
Graha Permata Ibu Hospital	32.53	33	5.828	24-49	31.33-33.74

Based on table 4.2, the average age of respondents was 32.31 years with a variation of 5.498 years, with a minimum age of 23 years and a maximum of 49 years.

Table 3.
Analysis of the Relationship between Demographic Characteristics and Nurse Occupational Safety

Variables	Work safety				Total	OR (95% CI)	p
	Not Good		Good				
	n	%	n	%			
Gender							
Male	36	62.1%	22	37.9%	58	2.207	0.017*
Female	66	42.6%	89	57.4%	155	(1.189-4.096)	
Marital Status							0.600
Single	29	51.8%	27	48.2%	56	1.236	(0.671-2.276)
Married	73	46.5%	84	53.5%	157		
Level of Education							
Diploma Tree Nursing							0.651
Bachelor of Nursing,	71	49.3%	73	50.7%	144	1.192	
Ners	31	44.9%	38	55.1%	69	(0.670-2.121)	
Work Place							
Emergency Room	21	55.3%	17	44.7%	38	-	0.450
Intensive Room	29	42.6%	39	57.4%	68		
Inpatient Room	52	48.6%	55	51.4%	107		
Years of Service							
≤ 5 year	54	48.6%	57	51.4%	111	1.086	0.925
>5 year	48	47.1%	54	52.9%	102	(0.622-1.826)	
Napping Duration							
Never	10	58.8%	7	41.2%	17		0.028*
10-31 minutes	58	55.2%	47	44.8%	105	-	
>30 minutes	34	37.4%	57	62.6%	91		

Table 3 is the result of chi-square analysis, used because the data is categorical. The results show no relationship between marital status, education level, workplace, and length of service with work safety. However, there is a significant relationship between gender and napping duration. Male nurses mostly have poor work safety, which is 62.1%. Female nurses mostly have good work safety, which is 57.4%. Unmarried nurses mostly have poor work safety, which is 51.8%, and nurses who have been married mostly have good work safety, which is 53.5%. Nurses with DIII Nursing education mostly have good work safety, which is 50.7%, and nurses with S1 Nursing education mostly have good work safety, which is 55.1%. Nurses working in the emergency department mostly have poor work safety, which is 55.3%, in the intensive care unit mostly have good work safety, which is 57.4%, and hospitalized mostly have good work safety, which is 51.4%. Nurses with a work period of ≤ 5 years mostly have good work safety, which is 51.4%, and nurses with a work period of > 5 years mostly have good work safety, which is 52.9%. Nurses who have

never napped mostly have poor work safety, which is 58.8%, nurses who nap for 10-30 minutes mostly have good work safety, which is 44.8%, and nurses who nap > 30 minutes mostly have good work safety, which is 62.6%.

Table 4.
Analysis of the Relationship between Age and Nurse Occupational Safety

Variable	n	Mean Rank	U Value	Z Value	p
Age					
< 23 years	102	98.79	4823.5	-1.868	0.062
23 - 49 years	111	114.55			

Table 4 is the result of Mann Whitney analysis due to the type of numeric-categorical data and non-normally distributed data. The results show no significant relationship between nurse age and work safety ($p=0.062$).

Table 5.
Analysis of the Relationship between Nurse Napping and Occupational Safety

Analysis of the Relationship between Nurse Napping and Occupational Safety							
Variable	Work safety				Total	OR (95% CI)	p
	Not Good		Good				
	n	%	n	%			
Napping							
Not Good	67	88.2%	9	11.8%	76	21.695	0.001*
Good	35	25.5%	102	74.5%	137	(9.800-48.029)	

*significance value <0.05

Table 5 is the result of analysis with chi-square test because of categorical data. The results show that there is a significant relationship between nurses' napping and work safety ($p = 0.001$). Nurses who have good napping mostly have good work safety of 74.5%, while nurses who have poor napping mostly have poor work safety of 88.2%.

Table 6.
Logistic Regression Modeling with Interaction Test

Variable	P
<i>Napping*age</i>	0.430*
<i>Napping*gender</i>	0.733*

* $p > 0,05$ in the interaction test

The variables of age, gender, and napping environment do not have interactions because the results of the interaction test are $p > 0.05$. Thus, the modeling has been completed, a valid model is a model without any interactions.

Table 7.
Final Results of Multivariate Regression Modeling

Variable	B	SE	Wald	df	p-value	OR	95% CI
Age	0.074	0.033	5.147	1	0.023	1.007	1.010-1.149
Gender	0.636	0.402	2.512	1	0.113	1.890	0.860-4.151
<i>Napping</i>	2.793	0.603	21.429	1	0.001	16.338	5.006-53.315
Constant	-8.925	1.607	30.836	1	0.001	0.000	

The analysis results obtained the largest Odds Ratio (OR) namely the napping variable is 16.338 (95% CI: 5.006-53.315). This means that napping is the factor that most influences nurses' occupational safety. Nurses with good napping will have a chance of having good occupational safety of 16.338 times compared to poor napping. The gender variable has an OR = 1.890 with a 95% CI of 0.860-4.151, meaning that females have a chance of good occupational safety of 1.890 times compared to male nurses. The age variable has an OR value of 1.007 with a 95% CI of 1.010-

1.149, meaning that older ages have a chance of better occupational safety of 1.007 times compared to young nurses.

DISCUSSION

This study explains the results of the study which includes interpretation and discussion of the results of the study from each variable that is connected to the theory, as well as previous research. Based on our findings, it was found that the majority of respondents in both hospitals were female, married, had a DIII Nursing education, worked in the Inpatient Unit, had a work period of ≤ 5 years, and had napped for 10-30 minutes. Our study found that there is no relationship between marital status, education level, workplace, and length of service with work safety. However, there is a significant relationship between gender and napping duration. Our study also found that there is no significant relationship between nurses' age and work safety and there is a significant relationship between nurses' napping and work safety. Nurses who have good napping mostly have good work safety, while nurses who have poor napping mostly have poor work safety.

Relationship of Age with Nurse Occupational Safety

The results of the study showed that there was no significant relationship between the age of nurses and occupational safety at the Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.062$). The results of this study are in accordance with the study conducted by Febrianti, Yusmanisari, & Umami (2024) on "Safety and Health with Nurse Performance" that there was no significant relationship between the age of nurses and occupational safety (Febrianti et al., 2024). work at Masyithoh Bangil Islamic Hospital, Pasuruan Regency. In line with the research of Azalia, et al. (2024) stated that there is no relationship between the age of nurses and compliance with the implementation of occupational safety and health in nurses at DR. A. Dadi Tjokrodipo Bandar Lampung Regional Hospital (Azalia et al., 2024).

Nurses with older ages are more dominant with unsafe actions than nurses who are younger. Researchers assume that unsafe actions do not depend on the age of a person, but rather this is due to factors of the level of concentration and caution that must be instilled in a person (Darma et al., 2024). Early adulthood and late adulthood have the same tendency to be non-compliant in implementing occupational safety and health. Nurses with a young age can ignore the implementation of occupational safety and health which is considered unimportant and will cause work accidents because they still lack knowledge and nurses in old age can also ignore the implementation of occupational safety and health because they feel that their work experience is long which causes someone to ignore the implementation of occupational safety and health (Azalia et al., 2024). Researchers assume that with increasing age, nurses' work experience also increases, resulting in better safety attitudes.

Relationship between Gender and Nurse Occupational Safety

The results of the study showed that there was a significant relationship between the gender of nurses and occupational safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.017$). The majority of male nurses had poor occupational safety, namely 62.1%, while the majority of female nurses had good occupational safety, namely 57.4%. The results of this study are in line with the research of Nasution, Harahap & Liesmayani (2022) on "Factors Affecting Nurse Performance in Implementing Patient Safety in the Inpatient Room of Dr. Kumpulan Pane Regional Hospital, Tebing Tinggi City" explaining that there is an influence of female gender on nurse performance in implementing patient safety (Nasution et al., 2022).

In contrast to the research of Azalia, et al. (2024) which stated that there was no relationship between the gender of nurses and compliance with the implementation of occupational safety and health in nurses at DR. A. Dadi Tjokrodipo Regional Hospital, Bandar Lampung. Implementation of occupational safety and health, both men and women have the same tendency not to implement

(Azalia et al., 2024). The implementation of occupational safety and health itself is not an activity that requires certain physical strength in its implementation, so both men and women have the same opportunity to implement occupational safety and health and the same applies vice versa, both men and women have the same opportunity not to implement (Azalia et al., 2024).

Relationship between Marital Status and Nurse Occupational Safety

The results of the study showed that there was no significant relationship between the marital status of nurses and occupational safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.600$). The results of this study are in accordance with the study conducted by Pambudi, Sutriningsih & Yasin (2018) on "The Most Dominant Factors Influencing the Implementation of 6 SKP (Patient Safety Targets) in JCI (Joint Commission International) Accreditation in the Inpatient Room of Panti Waluya Hospital, Malang" showed that there was no significant influence between the marital status of nurses and the behavior of implementing the 6 SKP ($p = 0.658$) (Pambudi et al., 2018).

Marital status is also a measure of a person's emotional maturity. In theory, those who are married have maturity in thinking and acting and have more foresight than those who are not married. However, this is not always the case, sometimes those who are not married also have maturity in thinking and acting and have a far-sighted view beyond those who are married (Permayasa et al., 2023). Marital status increases responsibility and permanent work becomes important and valuable for those who are married. A person's marital status greatly influences the quality of work produced by a person (Nasution et al., 2022). Researchers assume that marriage causes increased responsibility and permanent work becomes more valuable and important. The majority of workers who are loyal and satisfied with their jobs are married workers. Married nurses have better performance than unmarried nurses, so they are better able to implement work safety.

Relationship between Education Level and Nurse Occupational Safety

The results of the study showed that there was no significant relationship between the level of education of nurses and occupational safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.651$). The results of this study are in accordance with the study conducted by Surahmat, Neherta & Nurariati (2019) on "The relationship between nurse characteristics and the implementation of patient safety targets after hospital accreditation in Palembang City" explaining that there was no relationship between nurse education and the implementation of patient safety targets with $p = 1.000$. In contrast to the study by Yunus (2023) which concluded that there was a relationship between education level and Occupational Safety and Health behavior at Dr. A. Dadi Tjokrodipo Regional Hospital, Bandar Lampung with $p = 0.0024$ (Yunus, 2023).

The results of the study also showed that nurses with DIII Nursing education mostly had good occupational safety, namely 50.7%, and nurses with S1 Nursing education mostly had good occupational safety, namely 55.1%. Education is a fundamental factor in motivating behavior and providing personal references in a person's learning experience. A person's level of education is related to the level of knowledge and how a person behaves (Darma et al., 2024). Nurses' knowledge of patient safety influences their attitudes towards patient safety (Agustina et al., 2022). Researchers assume that the higher the education, the more aware and aware they will be in implementing risk management in the workplace.

Relationship between Workplace and Nurse Occupational Safety

The results of the study showed that there was no significant relationship between the nurse's workplace and occupational safety at Khidmat Sehat Afiat Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.450$). The results of this study are not much different from the study by Adelia, Asmaningrum & Kurniawan (2023) on "Comparison of Occupational Accidents of Nurses in the

Emergency Room and ICU of Type C Regional Hospitals" which stated that there was no relationship between the number of occupational accidents of nurses in the intensive care unit ($p = 0.244$) (Adelia et al., 2023).

The results of the study also showed that nurses working in the Emergency Room (IGD) mostly had poor occupational safety, namely 55.3%, in the intensive care unit, the majority had good occupational safety, namely 57.4%, and those hospitalized mostly had good occupational safety, namely 51.4%. The work unit is part of the room, so the behavior of nurses is determined by other factors. The IGD is a room that provides services to emergency patients (Adelia et al., 2023). Nurses in the ER are at risk of experiencing work accidents due to the generally unstructured work environment and working in a hurry as well as unpredictable patient conditions that require immediate care. The Intensive Care Unit (ICU) is a special area in a hospital, where patients who are critically ill or injured will receive special medical and nursing services and are highly dependent on doctors and nurses who are experienced in managing situations in the ICU (Handayani & Marzali, 2022).

Nurses in the inpatient ward are responsible for long-term care, which includes routine monitoring, administering medication, and assisting with patients' daily activities. The workload tends to be stable but has a high volume of tasks. Nurses in the inpatient ward may have a greater opportunity to nap because the work rhythm is more predictable, so the potential benefits of napping for work safety are more easily seen. The nurse's rest room also affects the coping strategies used. The nurse's rest room in the inpatient ward tends to be quieter. A comfortable environment for dealing with sleep problems is an environment that is clean, quiet, cool, and not too bright (Rahmi & Kuntarti, 2016).

Relationship between Length of Service and Nurses' Occupational Safety

The results of the study showed that there was no significant relationship between length of service of nurses and occupational safety at Khidmat Sehat Afiat Hospital, Depok City and Graha Permata Ibu Hospital ($p=0.925$). The results of this study are in line with the research of Surahmat, Neherta & Nurariati (2019) on "The relationship between nurse characteristics and the implementation of patient safety targets after hospital accreditation in Palembang City" explaining that there was no relationship between length of service and the implementation of patient safety targets with $p=0.585$ (Surahmat et al., 2019).

The length of service of a nurse is related to their work experience, knowledge and work skills. The longer a person works, the more work experience, knowledge and work skills they will gain, so that it can affect compliance with occupational safety (Aditia et al., 2021). Nursing practice work experience also influences nurses' attitudes towards safety. The knowledge of patient safety obtained by nurses based on their experience is expected to make them more careful, thereby reducing errors in their work (Agustina et al., 2022). Researchers assume that the longer a nurse's work period, the more experience they have, so their behavior in maintaining their own safety also becomes better.

Relationship between Night Shift Nurse Napping Implementation and Occupational Safety

The results of the study showed that there was a significant relationship between night shift nurse napping and occupational safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p=0.001$). The results of this study are in accordance with the study conducted by Gyeltshen, et al (2023) on "Nurses' napping practices and their effects on sleepiness, fatigue, well-being, and quality of nursing care" which explains that the implementation of napping as an intervention for nurses working on night shifts can be an effective strategy in reducing levels of sleepiness and fatigue, as well as improving the quality of patient care (Gyeltshen et al., 2023).

The results of the study according to Gamble and Foran (2021) on "Asleep on the job: Can night shift napping provide greater safety for both staff and patients?" which states that napping is only one of the nurses' weapons to overcome fatigue during the night shift on the grounds that napping for 30 minutes is an appropriate and effective safety intervention for night shift nurses (Gamble & Foran, 2021). Meanwhile, Handayani (2022) explained that the implementation of napping, if there is enough time for napping for 1.5 hours, is one strategy to improve sleep quality, but if it is not possible, then napping for 30 minutes at 2-3 am can increase perceptual speed (Handayani & Marzali, 2022).

Dalky, Raeda & Esraa (2018) stated that nurses think that there will be negative consequences if they are caught napping, even though their managers say there is no special place for napping. This is also a fact in hospitals, where night shift nurses do napping according to the conditions and situations of the treatment room, of course if the room is conducive, nurses can do napping according to the direction of the nursing manager on duty (Dalky et al., 2018).

The concern and support of the head of the room or nursing manager are very important in the implementation of napping for night shift nurses because they have a strategic role in creating a work environment that supports staff welfare. This support can be in the form of policies that allow for a structured napping schedule, the provision of comfortable facilities for rest, and open communication to understand the needs of nurses. This concern not only helps reduce fatigue and improve nurses' work performance, but also contributes to improving patient safety and the quality of nursing services. Without support from management, napping implementation is often difficult to implement consistently and effectively (Dalky et al., 2018). Researchers assume that the policy of implementing napping in health services is a form of nurse management concern, especially for night shift nurses. This policy is important because lack of sleep increases the risk of fatigue and has an impact on work safety and the quality of patient care.

Factors That Most Influence the Implementation of Night Shift Nurse Napping with Occupational Safety

The results of the study showed that the factors that most influence the implementation of night shift nurse napping with occupational safety at Khidmat Sehat Afiat Hospital, Depok City and Graha Permata Ibu Hospital include (1) Good napping implementation will have a chance of having good occupational safety of 16.338 times compared to poor napping; (2) Female gender has a chance of good occupational safety of 1.890 times compared to male nurses; and (3) Older nurses have a chance of better occupational safety of 1.007 times compared to young nurses.

The results of this study are in accordance with the study conducted by Alnawafleh (2024) on "Napping strategies among nurses in night shift settings: Implementation challenges, and barriers" that napping increases safety for patients and nurses (Alnawafleh, 2024). Nurses who get enough rest usually show increased alertness, faster reaction times, and better moods. Nurses' sleep deprivation increases the likelihood of errors causing increased risks to the safety of nurses and patients. Research conducted by Aditia, Endarti & Djaali (2021) on "The Relationship between Age, Gender and Length of Service with Compliance with the Use of Personal Protective Equipment (PPE) in Health Workers at the Radjak Group Health Service in 2020" states that female health workers are 5.984 times more likely to comply with the use of PPE compared to male health workers (Aditia et al., 2021).

Women are more careful than men. This accuracy is likely due to the difference in hippocampus capacity between men and women. The hippocampus itself is the part of the brain that stores memory, this part is one of the reasons why women can process information faster. The difference in the nature of women and men in responding to information occurs because women have verbal centers in both parts of the brain, while men only have a verbal center in the left brain (Nasution et

al., 2022). Although, female and male nurses have the same responsibility in providing quality nursing services. However, female nurses have better performance scores on average than male nurses. This is evident from the number of nurses accepted in a hospital, the majority of nursing professions in a hospital are dominated by female nurses.

The results of this study are also in line with the research of Nasution, Harahap & Liesmayani (2022) on "Factors Affecting Nurse Performance in the Implementation of Patient Safety in the Inpatient Room of Dr. Kumpulan Pane Hospital, Tebing Tinggi City" explaining that young people have a 35.399 times chance of having poor performance compared to older respondents with a coefficient B value of 3.567 which is positive, the more young nurses there are, the more nurses have poor performance in implementing patient safety in the Inpatient Room of Dr. Kumpulan Pane Hospital, Tebing Tinggi City (Nasution et al., 2022).

An individual's age affects physical, mental, work ability, responsibility, and tends to be absent. On the other hand, older nurses are less physically fit, but work hard, and have greater responsibilities (Nasution et al., 2022). Researchers assume that the characteristics of a nurse based on age greatly influence performance in nursing practice, where the older the nurse, the more responsible and experienced they will be in accepting a job. Increasing age will also increase the wisdom of a person's ability to make decisions, think rationally, control emotions, and tolerate the views of others, thus affecting their performance.

CONCLUSION

There is a significant relationship between napping of night shift nurses and occupational safety at Khidmat Sehat Afiat Regional Hospital, Depok City and Graha Permata Ibu Hospital ($p = 0.001$). Nurses who have good napping mostly have good occupational safety of 74.5%, while nurses who have poor napping mostly have poor occupational safety of 88.2%. The factors that most influence napping in night shift nurses with occupational safety of nurses include gender, women have a chance of good occupational safety of 1.890 times compared to male nurses, older nurses have a chance of better occupational safety of 1.007 times compared to young nurses, and nurses with good napping will have a chance of good occupational safety of 16.338 times compared to poor napping.

The results of this study can provide an overview or input to hospital management in making policies and priorities regarding regulations, as well as efforts to implement napping for nurses, especially during night shifts by considering its benefits on nurse performance and nurse safety in hospitals. Researchers suggest that the duration of napping for night shift nurses be set with an optimal duration of >30 minutes. However, if not possible, 30-minute napping can also reduce fatigue, increase alertness without causing post-wake grogginess (sleep inertia) and without reducing productivity. Management needs to provide a special room for napping that is comfortable, quiet, and free from disturbances, such as a break room with dim lighting, good air circulation, and ergonomic bed or chair facilities. The results of the study can be used as information, reference, and reference material to improve knowledge and insight, especially about the relationship between napping in night shift nurses and nurse work safety, and can be developed further for future research by exploring more other research variables.

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