

FACTORS AFFECTING WORK FATIGUE IN INPATIENTS' FEMALE NURSES: LITERATURE REVIEW

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ABSTRACT

Background: Work fatigue is a decreasing condition of human body physically and mentally which can cause errors and work accident that affect performances and productivities. In several developed countries around 25% of all female workers, including nurses, experience work fatigue. **Purpose:** To determine whether there are relationships between sleep patterns, work shifts, workload, and occupational stress with work fatigue in female nurses inpatient room. **Method:** This is a review study of literature published between 2010 – 2020 available from Google Scholar and PubMed. **Result:** This study contained 20 previous research journals and found that 11 journals proved a strong relationship between sleep patterns and work fatigue, 5 journals proved there were a relationship between workload and work fatigue, 7 journals proved there were a relationship between work shifts and work fatigue, and 5 journals proved there were a relationship between occupational stress and work fatigue. **Conclusion:** The analysis state that sleep patterns most related to work fatigue in nurses. **Suggestion:** Promotion of occupational and safety at the work place is needed to improve the occupational health of nurses, provide a comfortable work space, make recreational activities, and provide balanced nutritional food. **Keywords:** Nurse, work fatigue, sleep patterns, workload, work shifts, occupational stress.

INTRODUCTION

Women face different workplace health challenges compared to men. Social, economic, and cultural factors also influence women's injury and illness. The balance of work and family tasks can cause stress in women, when work and family demands conflict, stress can cause various health problems such as lack of appetite, sleep disturbances, high blood pressure, fatigue, and susceptibility to infections (CDC, 2005).

According to Tarwaka (2013), fatigue is a system in the body that indicates if something causes disturbances in the body and can be overcome by rest. Fatigue is a safety and health hazard for workers in the workplace. Based on the concept of occupational health, fatigue is the result of the use of mental and physical energy that can affect a person's performance and interfere with mental awareness which can lead to accidents (Sadeghniaat-Haghighi & Yazdi, 2015). The novelty of this study is the knowledge of factors related to fatigue in nurses through the literature review method. Existing research uses primary data so that the results from the literature review will be more comprehensive.

Women are at greater risk of experiencing fatigue because women tend to have the ability to multitask. The nursing profession is a job that has many types of work shifts. Nurses who work in health centers or hospitals, especially in inpatient rooms at night can reduce sleep quality so that it affects health and reduces work performance. The consequences of job burnout include decreased memory, reduced reaction time, reduced knowledge processing, emotional, decreased problem solving abilities, inability to think carefully, and reduced concentration and lack of motivation. All of these consequences have an impact on the nurse's plan and implementation in taking action so that error treatment occurs which has a negative impact on the patient. (Zahra *et al.*, 2017).

Research conducted in several developed countries states that around 25% of all female workers, including nurses, experience work fatigue (Aisyah, Fachrin, Haeruddin, & Rahman, 2019). The state of the art of this research is to use the literature review method to determine factors associated with nurse fatigue as published in the last ten years. This study is very relevant

to the current situation where nurses worldwide are over-burdened by the added pressure of the COVID-19 pandemics.

Research results from the Ministry of Manpower in Japan show that 65% of female workers feel physically exhausted, 28% feel mental fatigue, and around 7% feel heavy work stress (Rahmawati and Tualeka, 2019). The Indonesian National Nurses Association (PPNI) conducted a survey on job burnout among nurses including female nurses in 4 provinces in Indonesia, it was found that 50.9% of nurses in these 4 provinces experienced work burnout (Sasanti and Shaluhayah, 2016). The purpose of this study was to determine the factors that affect work fatigue in female nurses who work in inpatient rooms. This research is useful to increase knowledge in the field of occupational health, especially about work fatigue in female nurses who work in inpatient rooms.

METHOD

This study uses a literature review research design or literature study. This study uses secondary data in the form of searching for journal articles conducted from May to June 2020. This study uses 20 journals as references. The research journals used are in 2010-2020 with a total of 15 research journals. The number of studies in 2016 and 2018 was the highest, with 5 research journals each. In this study, the data bank used by the researcher is an electronic database such as Google Scholar and PubMed with the search keywords used, namely work fatigue, sleep disturbances, workload, work shifts, work stress, and nurses as well as work fatigue, sleep disorder, workload, work shift, and work stress or occupational stress and nurses. Based on searches on Google Scholar and PubMed. The results obtained are 3,828 journals that match these keywords. A total of 372 studies were found according to the search keywords, then filtered, 180 studies were not used because they were not available in full text. A feasibility assessment of 192 studies in full text was carried out, studies that did not meet the inclusion criteria were excluded as many as 172 studies so that 20 full-text studies were studied.

RESULT

Table 1. Overview of Work Fatigue Research

Research Title	Researcher Name	Country	Year of Publication	Research design	ΣSample	Σ Variable under study
<i>Sleep Disturbances and Related Factors Among Nurses</i>	Jindarat Chaiard PhD, RN, Benjamas Suksatit PhD, RN, Jirawan Deeluea MNS, RN, Wanpen Songkham PhD, RN. Nonglak Inta MNS, RN, Teresa E. Stone RN, RMN, BA, MHM, PhD FACMHN	Thailand	2019	<i>Cross Sectional</i>	220	9
<i>Shift Work Sleep Disorders and Associated Factors among Nurses at Federal Government Hospitals in Ethiopia</i>	Kalkidan Kassa Haile, Sintayehu Asnakew, Tsegereda Waja, Habtamu Bogale Kerbih	Ethiopia	2019	<i>Cross Sectional</i>	423	2
The Relationship Between Workload, Work Period, and Work Shifts with Sleep Pattern Disorders in Nurses in the Inpatient Room of GMIM Pancaran Kasih General Hospital Manado	Rivelino Spener Hamel, Rizald M. Rompas, Vanda D. Doda	Indonesia	2018	<i>Cross Sectional</i>	90	4
Relationship between Work Stress and Mental Workload with Work Fatigue in Inpatient Nurses at Unhas Hospital	Elvira Ningsih, Masyitha Muis, Muhammad Rum Rahim	Indonesia	2018	<i>Cross Sectional</i>	75	3
The Relationship between Work Stress and Workload with Work Fatigue on Nurses at the Tenriawaru Hospital Class B, Bone Regency in 2018	Dewi Mulfiyanti, Masyitha Muis, Fridawaty Rivai	Indonesia	2018	<i>Cross Sectional</i>	65	3
<i>Relationship of Sleep Quality and Perceived Fatigue Among Nurses at Cibinong Regency</i>	Kautsar Rizky, Hendra	Indonesia	2018	<i>Cross Sectional</i>	179	2
The Relationship between Work Stress and Work Fatigue of Nurses in the Inpatient Room at RSU GMIM Kalooran Amurang	Ditya P. J. Lendombela, Jimmy Posangi, Linnie Pondaag	Indonesia	2017	<i>Cross Sectional</i>	68	2
The Relationship Between Workload and Sleep Pattern Disorders in Nurses in the Non-Trauma Emergency Room, Prof. DR. R.D. Kandou	Devina Gian Tareluan, Jeavery Bawotong, Rivelino Hamel	Indonesia	2016	<i>Cross Sectional</i>	32	2
<i>Perception of Fatigue in Female Nurses Employed in Hospitals</i>	Zahra Pourmovahed, BSc, MSc; Khadijeh Nasiriani, BSc, MSc, PhD	Iran	2016	<i>Cross Sectional</i>	226	10
The Relationship Between Physical Workload and Work Stress with Feelings of Work Fatigue in Nurses in the Inpatient Room at the Kindergarten Hospital. III R.W. Manado Mongosidi 2016	Nurul Qalbhi, Nancy S. H. Malonda, Paul A.T. Kawatu	Indonesia	2016	<i>Cross Sectional</i>	80	3
<i>Sleep Disorder Status of Nurses in General Hospitals and Its Influencing Factors</i>	Yanjie Han, Yingzi Yuan, Li Zhang & Yanru Fu	China	2016	<i>Cross Sectional</i>	2033	3
Factors Associated with Work Fatigue in Emergency Room Nurses at Haji Makassar Hospital in 2014	Fatmawaty Mallapiang, Syamsul Alam, Andi Agustina Suyuti	Indonesia	2016	<i>Cross Sectional</i>	30	4
Overview of Sleep Quality in the Night Service Nurse Prof. RSUP. Dr. R.D. Kandou Manado	Ricky R. T. A. Thayeb Mieke A. H. N. Kembuan 2Herlyani Khosama	Indonesia	2015	<i>Cross Sectional</i>	52	4

Continuation of Table 1. Overview of Work Fatigue Research

Research Title	Researcher Name	Country	Year of Publication	Research design	Σ Sample	Σ Variable under study
The Effect of Work Stress on Work Fatigue and Its Implications on Employee Performance Study on Nurses at PKU Muhammadiyah Unit II	Rahmad Hidayatullah, Sri Handari	Indonesia	2015	Cross Sectional	43	2
Relationship between Shift Work and Sleep Pattern Disorders in Inpatient Nurses at Abdul Moeloek Hospital Bandar Lampung 2013	Saftarina F, Hasanah L	Indonesia	2014	Cross Sectional	153	2
Shift Work, Sleep Disorders, and Work Fatigue in Female Nurses	Elly Trisnawati	Indonesia	2014	Cross Sectional	66	3
Work Shift and Workload Affect the Occurrence of Work Fatigue in Nurses in the Treatment Room at Government Hospitals	Rusdi, Bambang Edi, Warsito	Indonesia	2014	Cross Sectional	33	3
<i>Sleep Quality Among Female Hospital Staff Nurses</i>	Pei-Li Chien, Hui-Fang Su, Pi-Ching Hsieh, Ruo- Yan Siao, Pei-YingLing,3 dan Hei-JenJou	Taiwan	2013	Cross Sectional	175	3
<i>Sleep, Sleepiness, Fatigue, and Performance of 12-Hour-Shift Nurses</i>	Jeanne Geiger-Brown, Valerie E. Rogers, Alison M. Trinkoff, Robert L. Kane, R. Barker Bausell,1 and Steven M Scharf	Ame rika Seri kat	2012	Observasi onal	175	4
<i>Sleep Disorder in Taiwanese Nurses.; A Random Sample Survey</i>	Mei-Lin Hsieh, rn, msn, Yin-Ming Li, ms, md, En- Ting Chang, md, Hui-Ling Lai, ms(ph), msn, phd, rn, Wan-Hsiang Wang, msn, rn and Shu-Chen Wang, msn, rn	Taiwan	2011	Cross Sectional	990	4

The analysis in table one shows the relationship between sleep pattern disturbances and work fatigue in nurses. Nurses have poor sleep quality and little sleep duration. Nurses' sleep duration varied between work days and holidays. Some studies state that the duration of sleep on holidays is more than the duration of sleep on weekdays. Therefore, irregular sleep patterns in nurses who work in shifts can cause fatigue, work errors and accidents at work (Ruggiero and Avi-itzhak, 2016). Research journals used from various countries in the continents of Asia, Africa, and America. The research journals used are journals published in 2010-2020 with a total of 20 research journals. The number of researches in 2016 was 6 journals and in 2018 there were 4 journals.

The total sample studied ranged from between 30-2033 people and all of them are primary data. The research design used was a cross sectional design with 19 studies and one study using an observational design.

DISCUSSION

Table 1 shows a comparison of journals regarding variables that affect the incidence of work fatigue in nurses. Several variables affect the incidence of work fatigue, including:

Sleep Pattern

Nurses have an essential role in health care facilities that risk making mistakes in doing their jobs. Nurses' sleep patterns are influenced by shift work. Sleep disturbance is a health problem closely related to shifting work, especially for nurses on duty at night. This happens because, at night, the circadian rhythm weakens, and nurses who work at night are more reported to have disturbed sleep patterns than nurses who work at night. Based on research conducted by Trisnawati (2014), female nurses who work with a shift system get an additional burden in the form of fatigue due to sleep disorders. Sleep pattern disturbance is a condition that states difficulty initiating sleep, maintaining sleep, and lack of sleep time. There

is a very close correlation between disturbed sleep patterns and work fatigue. Sleep problems can cause fatigue, lack of concentration, emotional disturbances, stress, and dizziness (Trisnawati, 2014). The analysis of studies proves that sleep patterns are associated with work fatigue. Trisnawati's research (2014) showed a very strong correlation between disturbed sleep patterns and work fatigue.

Shift Work

The number of effective working hours in one week is about 40-48 hours. Suppose more than that time can result in a decrease in work speed and health problems. There is a very close relationship between work shifts and fatigue. However, there are differences between nurses who get the morning, afternoon, and night shifts. It is known that nurses on duty at night have the highest level of fatigue caused by long working hours in one shift and lack of sleep which causes drowsiness and wanting to sleep (Nur Aini 2019). The results of the analysis of the study stated that work shifts had a correlation with work fatigue in nurses.

Workload

Nurse workload is the number of tasks nurses must complete in a service unit within a predetermined time. Workload affects the productivity of nurses. Excessive workload is caused by a lack of health workers (Rusdi & Warsito, 2013). Based on the analysis results, several studies showed a correlation between workload and work fatigue in nurses. However, there were differences in the results of several studies related to workload. Based on research by Qalbhi, Malonda and Kawatu (2016), the physical load is related to work fatigue. Unlike the case of Ningsih, Muis and Rahim (2018) stated that nurses' work fatigue was not influenced by mental burden.

Work Stress

Job stress is defined as the interaction of several factors, namely internal factors, and external factors. Internal factors are perceptions and characteristics of a worker towards a job. In contrast to internal factors, external factors are stress caused by work. Based on the analysis of the study, it is evident that there is a relationship between job stress and work fatigue. Job stress affects work fatigue, indirectly affecting nurses' performance (Hidayatullah & Handari, 2015). The nursing profession is a profession that has a

high level of stress in carrying out its duties, one of the duties of nurses is to face patients directly (Lendombela, Posangi, and Pondaag, 2017).

Discussion of Summary of Research Journals Related to Work Fatigue in Nurses:

In this study, there are research journals related to work fatigue in nurses. The following is a discussion related to these journals:

1. Research by Mallapiang, Alam and Suyuti (2016), in their research entitled "Factors Related to Work Fatigue in Emergency Room Nurses at Haji Makassar Hospital in 2014," there are factors studied, namely age, working period, and work shifts. This research was to determine what factors affected work fatigue in the hospital. The study used a cross-sectional design. The study's results showed no significant correlation between age and work fatigue. In addition, there is no correlation between years of service and work fatigue and no relationship between work shifts and work fatigue.
2. Hamel and Doda (2018), in their research entitled "The Relationship Between Burden, Work Period, and Work Shifts with Sleep Pattern Disorders in Nurses in the Inpatient Room of GMIK Pancaran Kasih General Hospital Manado," analyzed sleep pattern disturbances, workload, working period, and work shifts. The study aimed to determine the relationship between workload, length of work, and work shifts with sleep pattern disturbances in inpatient ward nurses at the hospital. The study used an analytic observational design with a cross-sectional approach. The results of the study stated that there was a significant correlation between workload and nurses' sleep pattern disorders with a P value = 0.011 and a relationship between shift work and sleep pattern disorders with a P value = 0.12. There was no significant relationship between a work period and sleep patterns, with a p-value = 0.108.
3. Tareluan and Hamel's research (2016) entitled "The Relationship Between Workload and Sleep Pattern Disorders in Nurses in the Non-Trauma Emergency Room, Prof. DR. R. D. Kandou Manado" aims to determine the relationship between workload and sleep disturbances in nurses. The variables studied were workload and

sleep pattern disturbances using an analytical observational design with a cross-sectional approach. The results of this study stated that there was a significant relationship between workload and sleep pattern disorders in nurses, with statistical test results $P = 0.006 < 0.005$.

4. Saftarina and Hasanah's research (2013) entitled "The Relationship between Shift Work and Sleep Pattern Disorders in Inpatient Nurses at Abdul Moeloek Hospital Bandar Lampung 2013," aimed to determine the relationship between work shifts and sleep pattern disorders in inpatient nurses at hospitals. The variables studied in this study were shift work and sleep pattern disturbances. This research is analytic observational using cross-sectional design. The result of this study was that there was no significant relationship between work shifts and sleep pattern disturbances ($P=0.434$).
5. Trisnawati's research (2014) entitled "Shift Work, Sleep Disorders, and Work Fatigue in Female Nurses" aims to determine the relationship between work shifts, sleep disorders, and fatigue in female nurses. The variables studied in this study were shift work, sleep disturbances, and work fatigue. This study used a cross-sectional approach. The results of this study stated that there was a strong relationship between shift work and sleep disturbances and a strong relationship between sleep disturbances and work fatigue of female nurses.
6. Rusdi and Warsito's research (2013), entitled "Work Shift and Workload Affects the Occurrence of Work Fatigue in Nursing Rooms at Government Hospitals," aimed to determine the relationship between work shifts, workload, and work fatigue in nurses in the inpatient room using a cross-sectional approach. The results of this study indicate that shifts and workloads influence the incidence of work fatigue in nurses. Rizky and Hendra's research (2018), entitled "Relationship of Sleep Quality and Perceived Faigue Among Nurses at the Cibinong Regional Public Hospital, 2017," aimed to investigate the relationship between sleep quality and work fatigue in nurses at the Cibinong Regional General Hospital, Bogor Regency. The variables studied were sleep quality and work fatigue using a cross-sectional design. The results of statistical tests in this study stated a strong relationship between sleep quality and work fatigue with a value ($P = 0.001$).
7. Rizky and Hendra (2018), entitled "Relationship of Sleep Quality and Perceived Faigue Among Nurses at the Cibinong Regional Public Hospital, 2017," aimed to investigate the relationship between sleep quality and work fatigue in nurses at the Cibinong Regional General Hospital, Kabupaten Bogor. The variables studied were sleep quality and work fatigue using a cross-sectional design and total sampling technique with the number of respondents 179 nurses in the hospital. The results of statistical tests in this study stated a strong relationship between sleep quality and work fatigue with a value ($P = 0.001$). Rizky and Hendra concluded that poor sleep quality has a big risk of causing work fatigue in nurses. Timing and work shifts are needed to improve the quality of nurses' sleep and reduce the risk of work fatigue.
8. Research by Haile *et al.* (2019) entitled "Shift work sleep disorders and associated factors among nurses at federal government hospitals in Ethiopia: a cross-sectional study." This study uses a cross-sectional design to assess the prevalence and factors influencing shift work-related sleep disorders among Ethiopian nurses in Addis Ababa government hospital. The result of this study is that about of the respondents experience sleep disturbances and work in 3 rotations of work time (morning, afternoon, and evening) significantly proven to affect sleep disorders.
9. Research Chien *et al.* (2013) entitled "Sleep Quality among Female Hospital Staff Nurses," aimed to investigate sleep quality in hospital staff nurses. The results of this study were 156 nursing staff managed to meet the research needs. Nurses with low levels of education have a higher risk of experiencing sleep disorders than nurses with higher education levels.
10. Thayeb, Kembuan and Khosama (2015) research entitled "An Overview of Sleep Quality in the Night Service Nurse Prof. RSUP. DR. R.D. Kandou. Manado" aims to determine the description of the sleep quality of nurses in RSUP. Prof. Dr. R.D. Kandou Manado. By using the descriptive

observational method and filling out a questionnaire. The results of this study stated that nurses experienced sleep disturbances 1-2 times a week, and 69% of nurses admitted that they did not take sleeping pills.

11. Zahra Pourmovahed and Nasiriani's research (2017) entitled "Perception of Fatigue in Female Nurses Employed in Hospitals" aimed to determine the work fatigue felt by female nurses in hospitals and identify it individually and the work factors that influence it. Using a cross-sectional design, the results of this study stated that there was a significant relationship between work status, husband's support, age, and work experience on job burnout in female nurses.
12. Hidayatullah and Handari's (2015) research entitled "The Effect of Work Stress on Work Fatigue and Its Implications on Employee Performance Study on Nurses at PKU Muhammadiyah Unit II" aimed to determine the effect of work stress and excessive workload on the performance of nurses in the ICU, ER, and the hospital's operating room. The variables studied were job stress, burnout implications, and job burnout. This study used a cross-sectional research design. The results of this study stated that job stress has a significant relationship with job burnout.
13. Research Geiger-Brown *et al.* entitled "Sleep, Sleepiness, Fatigue, and performance of 12-Hour-Shift Nurses" aimed to determine the relationship between sleep, drowsiness, fatigue, and 12-hour work performance in nurses. The subjects of this study were registered female nurses working full time. This research was an observational study. Fatigue occurs in 1/3 of female nurses in one of the major hospitals in the United States. There is no significant difference between fatigue that occurs in female nurses who work on the morning shift and the night shift.
14. Han *et al.*'s research (2016) entitled "Sleep Disorder Status of Nurses in General Hospitals and Its Influencing Factors" which aimed to determine the factors that influence the incidence of sleep disorders in nurses in public hospitals in China. This study used a cross sectional design. The results of this study stated that female nurses in the delivery department, emergency department, and ICU had a high risk of experiencing sleep disorders.
15. The research by Lendombela, Posangi and Pondaag (2017) entitled "The Relationship between Work Stress and Work Fatigue of Nurses in the Inpatient Room of RSU GMIM Kalooran Amurang" aimed to determine the relationship between work stress and work fatigue in nurses at RSU GMIM Kalooran Amurang. This research used a cross-sectional method. The results of statistical tests in this study stated $P = 0.012$, which means that there is a significant relationship between work stress and work fatigue in nurses.
16. Research conducted by Jindarat (Chaiard *et al.*, 2019) entitled "Sleep Disturbances And Related Factors Among Nurses", aims to describe the patterns and potential risks of sleep disorders in nurses registered in Thailand. The variables studied included the time needed to sleep, the prevalence of awakening, and the length of sleep. Using descriptive research, cross-sectional. Most of the participants were women (92,3%), aged <40 years (65,5), and single (57,7). From these data, 8,6% indicated a high risk of sleep apnea (a sleep disorder that causes breathing to stop temporarily). In addition, 57,3% were at risk of depression.
17. Research conducted by Hsieh *et al.* entitled "Sleep Disorder Taiwanese Nurses: A Random Sample Survey". Aimed to determine the prevalence and factors related to insomnia in shift nurses. With personal and professional factors, factors related to the workplace, factors related to health. Using two levels of cross-sectional. Work Fatigue on Nurses in the Inpatient Room at Tk Hospital. III R. W. Mongisidi Manado in 2016". Aims to analyze the relationship between physical workload and work stress with feelings of work fatigue during treatment in the hospital inpatient room in 2016. With the variables of physical load and work stress, this study uses an analytical observational study, a cross-sectional approach. The results of this study are in the form of a relationship between work stress and feelings of fatigue.
18. Research conducted by Nurul (Rumah *et al.*, 2016) with the title "The Relationship

Between Physical Workload and Work Stress With Feelings of Work Fatigue on Nurses in the Inpatient Room at the Tk.III R. W. Mongisidi Hospital Manado in 2016". Aims to analyze the relationship between physical workload and work stress with feelings of work fatigue on care in the inpatient ward of the at the Tk.III R. W. Mongisidi Hospital Manado in 2016. With the variables of physical load and work stress, this study used an analytical observational study, a cross-sectional approach with a total sampling of 80 respondents. The results of this study were a relationship between work stress and feelings of fatigue. This study concluded that there is a relationship between workload and feelings of fatigue and the relationship between work stress and feelings of fatigue.

19. Research conducted by Elvira Ningsih, Muis and Rahim (2018) entitled "The Relationship between Work Stress and Mental Workload with Work Fatigue in Inpatient Nurses at UNHAS Hospital". This study aimed to analyze the relationship between work stress and mental workload with work fatigue of inpatient nurses at UNHAS Hospital. With work stress variables, mental workload, and age. This study used a cross-sectional analytic observational method. The results of this study were nurses with mild fatigue 54.7% and moderate 45.35%, and nurses with moderate fatigue felt more tired than nurses with mild fatigue.
20. Research conducted by Dewi Mulfiyanti, Muis, and Rivai (2019) entitled "The Relationship between Work Stress and Workload with Work Fatigue in Nurses at Tenriawaru Hospital Class B, Bone Regency in 2018". This study aimed to analyze the relationship between workload and work stress with work fatigue on nurses at Tenriawaru Hospital Class B, Bone Regency. With the variables of work stress, workload, gender, age, years of service, and nutritional status. This research used cross sectional analytic observational method and purposive sampling with 65 respondents. The results of this research were respondents with light workloads feel the majority of moderate fatigue categories and moderate workload respondents feel high categories of fatigue. In conclusion,

there is a significant relationship between work stress and workload with work fatigue in nurses.

CONCLUSION

Based on the output of the research that has been carried out by the researcher, the conclusions of the research the variables that affect the incidence of work fatigue in nurses include sleep patterns, work shifts, workload, and work stress. The results of the analysis state that sleep patterns have the most effect on work fatigue in nurses. The more disturbed the sleep pattern of a nurse, the greater the perceived work fatigue.

SUGGESTIONS

For the Hospital

1. Provide counseling on the application of occupational health and safety (K3) behavior.
2. Provide female nurses with comfortable work and rest rooms.
3. Provide food and extra food for nurses in the inpatient room according to a balanced nutritional pattern.
4. Practicing muscle stretching/stretching exercises for nurses in the inpatient room.

For the Further Research

1. Adding variables, such as years of service, work environment, and organizational climate.
2. Increase the number of research journals in order to expand literacy in research.

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CONFLICT OF INTEREST

Author have no conflict of interest.

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AUTHOR CONTRIBUTION

Author Shafiera Rosnia as data collector, data analysis, literature study, and reference. Author Dyah Utari Determine the study design, data collection, and writing revisions. Author Agustina revise writing and revision of important content in research.

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