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The Influence of Workload, Body Mass Index (BMI), Duration of Work toward Fatigue of Nurses in Dr. M. Haulussy General Hospital Ambon

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ABSTRACT

Work fatigue is a condition often experienced by a person after doing work due to high workload. In addition, factors of length of work and nutritional status of workers can also affect the occurrence of work fatigue. The job as a nurse has quite heavy and complex work demands and repetitive activities. Such conditions are vulnerable to work fatigue. This study aims to analyze the effect of workload, body mass index (BMI), length of work on work fatigue in nurses at RSUD Dr. M. Haulussy Ambon. This type of research is observational analytic with cross sectional design. Samples were obtained by proportional stratified random sampling method of 123 respondents. Primary data were obtained by measuring workloads with NASA TLX, IMT with microtoids and scales, fatigue was measured by reaction timers. Data were analyzed by path analysis). The results showed that respondents who experienced work fatigue were 118 (95.6%). The results of statistical analysis showed that workload had no effect on work fatigue (p = 0.834). Likewise, body mass index (BMI) had no effect on work fatigue (p = 0.595). Variable length of work affects work fatigue (p = 0.012). The path analysis results showed the effect of workload on work fatigue is not significant (p = 0.140), the effect of BMI on work fatigue is not significant (p = 0.084) and the effect of work time on work fatigue is significant (p = 0.031). The conclusion from this study that the length of work variables significantly influence work fatigue. It is recommended to hospital management to arrange the length of time the nurse works.

Keywords: Work Fatigue, Workload, BMI, Length of Work

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INTRODUCTION

Fatigue is a system in the body that signals that something is causing interference with the body and will recover after rest. Fatigue due to work is called work fatigue and is one of the problems in the workplace, both formally and in the informal sector. Fatigue can lead to workplace accidents, which ultimately cause losses to the company.[1]So, it is necessary to pay special attention to overcome the problem of work fatigue. Factors that cause work fatigue can vary greatly in the form of physical problems of responsibility, health conditions and also nutritional factors.[2]

Work fatigue is a condition that is often experienced by someone after doing work due to high workload. Work fatigue will reduce performance and increase work errors and work accidents.[3]Work fatigue is characterized by feeling tired, feeling reluctant or lazy, weakened activity and imbalance in body condition.[4]Continued fatigue in nurses every day will result in chronic fatigue.[5] This causes the level of absenteeism will increase, especially absent from work in the short term due to the need for more rest or increased pain. Work fatigue has an impact on declining nurse performance thus many complaints of patient dissatisfaction with the services provided by the hospital. According to the ILO, every year two million workers die due to work accidents due to fatigue. Hospital survey research conducted by the American Nurses Association (ANA), Institute of Medicine of 745 samples found 65% experienced acute fatigue and 50% experienced chronic fatigue. The consequences of fatigue identified at the hospital are very large, including an increase in adverse events in patients, including falls, medication errors, and deaths as well as the consequences of individual nurses, such as decreased quality of decision making, increased work injury, decreased performance, poor health, and job dissatisfaction.[6] Research conducted by Kurniawati and Solikhah (2012), showed that there is a relationship between work fatigue with the performance of nurses in the inpatient ward of the Islamic Hospital of Fatimah Cilacap of 63.8% and classified as high levels of fatigue. Generally fatigue is caused by high work demands, which are often experienced by individuals who work in situations where they have to serve the needs of many people.[7]

Personal factors such as gender, anthropometry or body mass index, length of work are also risk factors for work fatigue. Research conducted by Master, et al (2017), nurses in applying comfortable work positions allows the distribution of efforts by various body segments to minimize physical fatigue. Samples (n = 409), show a high prevalence of symptoms of back disorders in the last 12 months (70%) and associated with standing work (48.8%), and repetitive arm movements (34.3%). This study shows the influence of individual characteristics such as: sex, age, and body mass index.[8] Research conducted by Kang (2016), found that there is a relationship between the use of good posture with the effect of reducing fatigue and improving nurse performance.[9]

MATERIALS AND METHOD

This research was conducted at the Regional General Hospital (RSUD) Dr. M. Haulussy Ambon in March-April 2019. The number of samples in the study was 123 respondents with the proportionate stratified random sampling method.

This research is included in the type of observational analytic study using cross sectional design. Where in the Cross Sectional study, all measurements for the sample of

respondents were obtained at the same time.[10,11] This study aims to analyze the effect of workload, body mass index, length of work on work fatigue in nurses at RSUD Dr. M. Haulussy Ambon.

Data collection in this study namely primary data and secondary. Primary data was collected using questionnaire and observation. Primary data consisted of the respondents' identity, age, length of work, latest education, directly/ filled out questionnaire or observation on nurses. Data about workloads using Nasa TLX method (National Aeronautics Space Administration Task Load Index). Data related to Body Mass Index (BMI) was measured by microtoise and weight scales. Work duration data was measured by questionnaire by calculating the time from the start of coming to work until after work hours and work fatigue data measured by using a reaction timer. Secondary data were collected from various references or literature related to the research topic and obtained from Dr. M. Haulussy Ambon.

The results of this study were analyzed by Path Analysis, where there are workload, BMI and work duration variables as exogenous variables (independent variables) and work fatigue as endogenous variables (dependent variable).

RESEARCH RESULTS

Table 1: Distribution of Respondents based on Characteristics of Respondents in Nurses at RSUD Dr. M. Haulussy Ambon

Variable	n	%
Age		
21-25	1	0,8
26-30	26	21,1
31-35	32	26,0
>35	64	52,0
Length of Work		
Length	113	91,9
New	10	8,1
Latest education		
Bachelor	84	68,3
Undergraduate	31	25,2
Profession (Ners)	7	5,7
Graduate	1	0,8
Workload		
Heavy	59	48
Low	64	52
Index of Body Mass		
Abnormal	42	34,1
Normal	81	65,9
Length of Work		
Ineligible	104	84,6
Eligible	19	15,4
Work Fatigue		
Tired	118	95,5
Not Tired	5	4,1

Source: Primary Data, 2019

Based on table 1. obtained the distribution of respondents based on the characteristics of respondents to nurses in RSUD Dr. M. Haulussy Ambon that the age distribution of respondents was the most in the age category> 35 years, 64 people (52.0%). Most of the respondents' tenure in the long-term category was 113 people (91.9%). Nurses with the most recent education were found in the Bachelor category, namely 84 people (68.3%). In addition, the workload on nurses was mostly in the light workload category of 64 people (52%). The average body mass index in nurses was normal at 81 people (65.9%). The length of work for nurses was more in the category of not meeting the requirements, namely 104 people (84.6%) and 118 people (95.5%) who felt work fatigue.

The magnitude of the effect of workload, BMI, and length of work on work fatigue was shown in the following path analysis results:

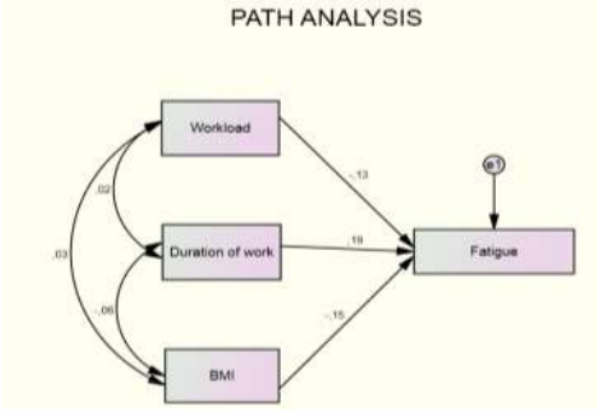

Figure 1: Results of path analysis

Figure 1. shows the results of the calculation of the path coefficient, where the workload variable had a beta coefficient of -0.13; the length of work variable had a beta coefficient of 0.19; the body mass index variable had a beta coefficient of -0.15.

Table 2: Relationships Between Variables

Variable			p	Info
Work Fatigue	←	Workload	0,140	Not significant
Work Fatigue	←	IMT	0,084	Not significant
Work Fatigue	←	Length of Work	0,031	Significant

Source: Primary Data, 2019

Based on table 1. it can be seen that the p value on the effect of workload on work fatigue was not significant (p = 0.140> 0.05), the effect of BMI on work fatigue was not significant (p = 0.084> 0.05) and the influence of work time on work fatigue was significant (p=0,031< 0,05).

DISCUSSION

Fatigue is the impact of physical, mental and emotional activities experienced by all individuals during their lives. Fatigue is defined as a condition where a person does not perform his task at the desired level of performance due to reduced mental or / and physical strength. Fatigue can be mental or / and physical, but in real situations, they occur in combination in various proportions depending on the workload that exists.[12]

Based on the results of the analysis obtained as many as 118 respondents (95.5%) who felt work fatigue. Fatigue is characterized by a sensation of fatigue, decreased motivation, enthusiasm for work; even doing repetitive work thus boredom appears. Fatigue experienced by the respondent was fatigue caused by long time working that did not meet the requirements (> 8 hours / day) with repetitive work as well as activities that occured at home or other activities outside of domestic work and workloads other than nursing duties.

Based on the analysis results obtained as many as 64 people (52%) who have a light workload in carrying out their duties as a nurse. From the path analysis, it is found that the influence of workload on work fatigue obtained p value (0.140> 0.05) meaning that the influence of workload on work fatigue was not significant. This is in line with the research conducted byHaryanto ada Rosa (2012), Workload did not significantly influence the change in fatigue with a significance value (p = 0.196> 0.05) and a value of -0.336.[13] Other studies by Fakhradin et al (2019) that the direct effect of workload on work fatigue in nurses was not significant coefficient path: 0.15; (p = 0.076).[14]

Based on the results of observations made during the study showed that the existence of breafing carried out by the nursing field was routinely carried out every day before the nurse did his job. The long duration of about 1-2 hours is the complaint of nurses feeling tired before working. But this does not become an obstacle in improving the performance of nurses in serving patients, work arrangements with the team division system that applies in each inpatient room is one of the strategies in the division of workload, where the team is divided into 2 namely team 1 and team 2, for example in one of the team has a nurse who is not present, so the work can be done by friends in a team. This is in line with Steege (2016) stated that teamwork is one way in preventing and overcoming fatigue nurses, where with teamwork can help nurses interpersonal problems.[15]

Based on the analysis results obtained as many as 81 people (65.9%) with normal Body Mass Index (BMI). From the path analysis, it was found that the influence of BMI on work fatigue was obtained p value (p = 0.084) which means the influence of BMI on work fatigue was not significant. BMI is a tool or a simple way to monitor the nutritional status of adults, especially those related to underweight and overweight. Adult IMT monitoring is measured using a body weight and height measurement (microtise). The use of BMI is only for adults> 18 years old.[16]

Respondents who experienced fatigue were many experienced in the normal nutrition category. According to the researcher, this incident can be influenced by individual characteristic factors that can cause fatigue, such as respondents with normal BMI but are over 40 years old or with relatively long years of service (> 5 years). In addition, respondents were already experiencing fatigue before they worked that day.

In line with research conducted by Ningsih and Nilamsari (2018), the statistical results showed that there is no relationship between BMI and fatigue experienced by workers because of the p value (0.092> 0.05.) [17]

Based on the analysis results obtained as many as 104 people (84.6%) included in the category of length of work not eligible. From the path analysis, it was found that the influence of work duration on work fatigue was obtained by the value of p value (p = 0.031) which means that the work duration of work fatigue was significant.

The length of work in this study was the work time of nurses every workday. The length of work that meets the requirements in accordance with the Law on Manpower Number 13 of 2003 was 6-8 hours / day or a maximum of 40 hours / week.[18] If the length of work did not meet the requirements ie exceeding 8 hours / day or 40 hours / week then will affect the condition of workers will feel fatigue.

In line with research conducted by Faizin (2008), the significant level produced is less than 5%, that is 0.001.[19]. Thus there is a relationship between the length of work of nurses and the performance of nurses in Pandan Arang General Hospital, Boyolali Regency. Ineligible work hours cause nurses to work overtime and have little rest so that fatigue increases. On the other hand, the night shift is also determined to contribute to increased fatigue, because it interferes with cyclic circulation and interferes with sleep.[20]

In the 12 studies produced, 3 studies reported that the 12-hour shift had an impact on the health and well-being of nurses, such as cognitive anxiety, bone-muscle disorders, sleep disturbances, and role stress.[21] Based on observations made during the study, it was seen that almost every day nurses extended the working time was around 1-3 hours. In addition, nurses often complain of feeling tired. This happens because of the disturbed Circardium rhythm (natural state of the body) such as sleep, readiness to work, which should rest due to work that requires work, the process in the body was forced to be alert in working, this will increase work fatigue. Nurses were dissatisfied with work because they work long hours. The process of determining staff and ineffective work shifts was a concern among nurses and had the potential to have an impact on increasing levels of fatigue.[22,23,24,25, 26,27]

CONCLUSION AND SUGGESTION

The effect of workload and Body Mass Index (BMI) on work fatigue is not significant, while the effect of work time on work fatigue is significant. It is expected that the relevant agencies can conduct time management of working hours for workers in this case nurses to reduce the prevalence of work fatigue. In addition, it encourages teamwork as a strategy to support nurses who work long hours. Agencies can also develop systems to monitor the level of fatigue in nurses.

CONFLICT OF INTEREST

There is no conflict of interest in this study

SOURCE OF FUNDING

Domestic Government

REFERENCES

1. Tarwaka. (2013). Industrial Ergonomics: Basics of Ergonomics Knowledge and Applications at Work. Surakarta: Harapan Press.
2. Russeng, S.S. (2011). Work fatigue and Traffic Accidents; review on night bus drivers in South and West Sulawesi, Waves Publisher.
3. Nurmianto, E. (2004). Ergonomics of Basic Concepts and Their Applications. Surabaya: Guna Widya.
4. Australian Safety and Compensation Council. (2006). Work-Related Fatigue Summary Of Recent Indicative Research, Australian, Australian Government.
5. Suma'mur P. K. (1996). Corporate Hygiene and Occupational Health. Jakarta: PT. Toko Gunung Agung.
6. Steege, L. M, Dykstra, J. G. (2016). A Macroergonomic Perspective on Fatigue and Coping in The Hospital Nurse Work System. Applied Ergonomics, 54 (8).
7. Kurniawati D, Solikhah. (2012). Relationship between Work Fatigue and Nurse Performance in the Inpatient Ward of Fatimah Islamic Hospital, Cilacap Regency. Journal of Public Health. 6(2), 162-232.
8. Master, T. R., Serranheira, F, Loureiro, H. (2017). Work related musculoskeletal disorders in primary health care nurses. Applied Nursing Research,33 (6).
9. Kang, S.-W. (2017). The Use Of Body Mechanics Principle, Clinical-Practice Fatigue, And Practice Satisfaction Of Nursing Students. Nursingplus Open, 3 (5).
10. Sedgwick, P. (2014). Cross sectional studies: advantages and disadvantages. Philip Sedgwick reader in medical statistics and medical education, 2.
11. Sugiyono. (2010). Qualitative and Quantitative Research Methods and Rnd. Bandung: Alfabeta.
12. Techera U, Hallowell M, Stambaugh N, et al. (2016). Causes and consequences of occupational fatigue: meta-analysis and systems model. Journal Occupational Environmental Med. 58:961–973.
13. Haryanto, W. C, Rosa, E. M. (2012). The Influence of Nurse's Workload and Fatigue on Infusion Care in Class III Rsud Sukoharjo Treatment Room. Yogyakarta Muhammadiyah University.
14. Fakhradin Ghasemi, Parnia Samavat & Fatemeh Soleimani. (2019). The links among workload, sleep quality, and fatigue in nurses: a structural equation modeling approach. Fatigue: Biomedicine, Health & Behavior.

15. Steege, L. M, Dykstra, J. G. (2016). A Macroergonomic Perspective on Fatigue and Coping in The Hospital Nurse Work System. Applied Ergonomics,54 (8).
16. Supariasa, I. D. N., Bakri, B, Fajar, I. (2017). Nutritional Status Assessment, Jakarta, Buku Kedokteran EGC.
17. Ningsih, S. N. P, Nilamsari, N. (2018). Factors Associated With Fatigue In Locomotive Dipo Workers Pt. Kereta Api Indonesia (Persero). Journal Of Industrial Hygiene And Occupational Health, 3 (1).
18. Law Number 13 concerning Manpower in 2003.
19. Faizin , Ahmad., Winarsih. (2008). Relationship of Education Level and Length of Nurse Work with Nurse Performance in Rsu Pandan Arang Boyolali Regency. Nursing Science News n. Issn. 1979-2397. I(3)
20. Achmad H. (2018). Biopsychosocial Identification of Early Childhood Caries (ECC) As A Predictor Of Risk, Factors Of Caries In Pre-School Children, International Dental and Medical Research, April. ISSN 1309-100X. (Scopus index). Volume 11 Number (1). pp. 107-115.
21. Alahmadi, Bader Abdullah., Alharbi, Manal Fehade. (2018). Work-Related Fatigue Factors among Hospital Nurses: An Integrative Literature Review. Nurse Media Journal of Nursing, 8(2), 113-133. Available Online at http://ejournal.undip.ac.id/index.php/medianers.
22. Achmad H, Ramadhany S, Mudjari S, Adam M. (2018). Determinant Factors of Dental Caries in Indonesian Children Age 8-12 Years Pesquisa Brasileira em Odontopediatria e Clinica Integrada, 18 (1): e4037 DOI: ISSN 1519-0501.
23. Banakhar, Maram. (2017). The Impact of 12-hour shifts on nurses' health, wellbeing, and job satisfaction: A Systematis review. Journal of Nursing Education and Practice. 7(11):69-83. Available Online at http://jnep.scidepress.com.
24. Reddy, B., ChikkaswamySrinivas, B., Ramegowda Raghu, T., Patil, V., Shankar, S., Kumar, V., Mahadevappa Nagesh, C., Nanjappa Manjunath, C., Natraj Setty, H.S. Role of interventional cardiologists in lower limb swelling/DVT -case series on May-Thurner syndrome and its variants (2018) Journal of Cardiovascular Disease Research, 9 (2), pp. 92-98. DOI: 10.5530/jcdr.2018.2.22
25. Dempsey, C, Reilly, B. (2016). Nurse engagement: What are the contributing factors for success. OJIN: The Online Journal of Issues in Nursing. 21(1):2016.
26. Achmad H, et. al. (2017). Prevalence of Medically Compromised Children Regarding Dental Caries and Treatment Needs in WahidinSudirohusodo Hospital. Journal of International Dental and Medical Research. 10(3):915-19
27. Fauziah E, Rachmawati S, Rachmadani Aprillia P, Susilo CW, Achmad H. Comparison of the educational effect of two and three dimensional books on dental anxiety in children with hearing impairment (aged 7 – 9 years) . JIPHRD.2019;10(10).
28. Achmad H, Samad R, Handayani H, Ramadhany S, Adam M, Mardiana, Suci AD. (2018). Analysis of Disease Risk Factors of Early Childhood Caries (ECC) on Pre-School Children Psicosocial Project Review. Asian Journal of Microbiol. 20:18-25.

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