

## Original Research Article

# RELATIONSHIP OF AGE AND NUTRITION STATUS WITH WORK FATIGUE IN INPATIENT NURSES AT DR M YUNUS HOSPITAL, BENGKULU

Rina Aprianti <sup>1\*</sup>, Susilo Wulan <sup>1</sup>, Elza Wulandari <sup>2</sup>

<sup>1</sup> Public Health Program, STIKES Tri Mandiri Sakti, Bengkulu, Indonesia

<sup>2</sup> Applied Undergraduate Study Program, STIKES Tri Mandiri Sakti, Bengkulu, Indonesia

### \*Correspondence:

**Rina Aprianti**

Public Health Program, STIKES Tri Mandiri Sakti, Bengkulu, Indonesia  
Jalan Raya Hibrida No. 3, Sido Mulyo, Gading Cempaka, Sido Mulyo, Bengkulu, Kota Bengkulu, Bengkulu 38229

Email: [rina.aprianti89@gmail.com](mailto:rina.aprianti89@gmail.com)

### Article Info:

Received: November 15, 2020

Revised: March 20, 2021

Accepted: May 6, 2021

### DOI:

<https://doi.org/10.36720/nhjk.v10i1.224>

### Abstract

**Background:** Nurse is a profession that cannot be separated from the problem of work fatigue. Fatigue due to work will have a negative impact on work such as decreased accuracy, skill, and even work productivity. If this happens to nurses, it can put the patient at risk, decreasing the quality of service. Work fatigue is caused by several factors, such as worker characteristics, namely age, sex, education, nutritional status, and work environment factors (Tarwaka, 2013). Nurses have a fairly heavy duty in assisting emergency services and nursing services continuously for 24 hours so that nurses sometimes eat irregularly which can cause nutritional conditions to be disturbed (Astuti, Ekawati, & Wahyuni, 2017).

**Objectives:** The purpose of this study was to determine the relationship between age, nutritional status and subjective work fatigue in inpatient nurses at dr. M Yunus Bengkulu.

**Methods:** The research design was an analytic survey with a cross sectional approach. The population of this study were 128 nurses in the inpatient room with total sampling technique. The data collection instrument is a work fatigue feeling questionnaire consisting of 17 questions adopted from (Setyawati, 2010) which has tested the validity and reliability in her book entitled at a glance about work fatigue, a nutritional status questionnaire by taking physical measurements of body weight and height to determine BMI, and age questionnaire with units of years. Data analysis used chi square test with 95% degree of error if  $p\text{-value} \leq 0.05$  indicates a significant relationship and if  $> 0.05$  is not significant.

**Results:** This study shows that there is no relationship between age and subjective work fatigue on nurses with a  $p\text{-value} = 0.107 > \alpha = 0.05$ . And there is a relationship between nutritional status and subjective work fatigue on nurses with a  $p\text{-value} = 0.000 > \alpha = 0.05$ .

**Conclusion:** Work fatigue that occurs in nurses is expected to be an important concern, nurses should maintain a healthy body by consuming balanced nutritious food and diligent exercise and adequate rest, so as to reduce the risk of fatigue due to work.

**Keywords:** Age, Nutrition Status, Work Fatigue.

## INTRODUCTION

One of the occupational health and safety (K3) problems that workers often experience is work fatigue. The result of this work fatigue can cause work accidents. Fatigue is a condition of the body that is weakened in its activities (Budiono, *et al*, 2003). Too long working can cause the body to experience fatigue, which ultimately the body loses energy reserves. Routine work with psychological stress despite experience (Nurmianto, 2008).

According to the World Health Organization (WHO) in 2013, the number of world health workers was 43 million, this includes 9.8 million doctors, 20.7 million nurses / midwives, and around 13 million other health workers. According to the Indonesian Ministry of Health, the number of nursing personnel in Indonesia in 2018 was 354,218, so nurses are the largest number of health workers (Kemenkes RI, 2018).

According to deep Cucit (Uli, Modjo, & Turdinanto, 2018) Nursing is a profession which has a duty to prioritize the interests of patients over oneself. The population increases in line with the increasing number of patients so that nurses are required to work harder and longer to complete all allocated tasks.

According to the World Health Organization (WHO), after heart disease, the number 2 killer disease is a feeling of heavy fatigue (Gaol, Camelia, & Rahmiwati, 2018). Research (Dimkatni, Sumampouw Jufri, & Manampiring, 2020) conducted on 126 nurses who worked in the IGD, ICU, and inpatients at the Bitung Hospital and Budi Mulia Bitung Hospital showed that 66.9% experienced moderate fatigue and 1.7% experienced high fatigue. Research conducted on 153 nurses in the inpatient room of Bandar Lampung Hospital showed that the most experienced fatigue was 75.8% (Saftarina, Mayasari, & Vilia, 2016). Fatigue is a common complaint that affects nurse performance. About 20% of nurses have work fatigue symptoms (Wiyarso, 2018).

According to Robbins, internal factors such as gender, age, nutritional status, family

dependents, education, working time and length of work and work environment are external factors (Setyawati, 2010). Age is one of the factors that can cause work fatigue. As the age increases, the condition of the body will decrease, such as decreased function of vision, hearing, memory, movement and even in making decisions. Therefore, in giving a job one must also consider a person's age (Tarwaka, 2013). According to Astuti *et al*, there is a relationship between age and work fatigue among nurses (Astuti *et al.*, 2017).

Labor requires calories and nutrients to do work and maintain health conditions so that they can be productive at work (Budiono *et al.*, 2003). According to Lestari *et al*, nurses who have abnormal nutritional status tend to experience fatigue and there is a relationship between nutritional status and work fatigue (Rahmawati & Afandi, 2019).

Dr. M. Yunus Bengkulu is a regional public hospital belonging to the provincial government. The conditions of patients who are hospitalized, both in terms of the number and types of diseases suffered are very diverse and demand high accuracy and thoroughness from the nurses. Based on this background, the researchers are interested in conducting this research.

## METHODS

### *Study Design*

This research is a type of analytic survey research with a cross sectional approach.

### *Setting*

The location of this research is in hospital of dr. M Yunus Bengkulu which was held in August 2020. This research was conducted during the Covid-19 pandemic, so researchers are required to apply the Covid-19 prevention protocol.

### *Research Subject*

The subjects of this research were all nurses in the inpatient room of hospital of dr. M. Yunus Bengkulu, namely 128 people with a sampling technique that is total sampling.

*Instruments*

The data collection instrument is a work fatigue feeling questionnaire consisting of 17 questions adopted from (Setyawati, 2010) which has tested the validity and reliability in her book entitled at a glance about work fatigue, a nutritional status questionnaire by taking physical measurements of body weight and height to determine BMI. , and age questionnaire with units of years.

*Data Analysis*

Data analysis is a univariate analysis to determine the distribution and frequency of the independent variables (age and nutritional

status) and the dependent variable (subjective work fatigue). Bivariate analysis to determine the relationship between age, nutritional status and subjective work fatigue. This study uses the chi square test with a degree of error of 95% if  $p\text{-value} \leq 0.05$  indicates a significant relationship and if  $> 0.05$  is not significant. Analysis test using STATA version 11.

*Ethical Consideration*

This study has received approval from the Health Research Ethics Committee of dr. M. Yunus Bengkulu with letter number: No.21/KEPK-RSMY/VIII/2020.

**RESULTS**

*Characteristics of Respondents*

**Table 1.** Distribution Frequency of the Respondents in dr. M. Yunus Hospital, Bengkulu, Indonesia on August 2020.

<b>Variable</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<b>Age</b>		
≤ 35 Years	39	30.5
> 35 Years	89	69.5
<b>Nutrition Status</b>		
Normal Nutrition	97	75.8
Abnormal Nutrition	31	24.2
<b>Subjective Work Fatigue</b>		
Medium	65	50.7
Weight	63	49.2

Sources: Primary Data of Questionnaire, 2020.

According the results of this study in the table 1, it showed that the 128 nurses who experience subjective work fatigue in the moderate category, 65 (50.7%) are nurses and 63 (49.2%) heavy categories are nurses. Nurses with age ≤ 35 years were 39 (30.5%) nurses and aged > 35 years were 89 (69.5%) nurses. Nurses with normal nutrition were 97 (75.8%) and nurses with abnormal nutrition were 31 (24.2%).

*Analysis of the Relationship between Age and Nutrition Status with Work Fatigue*

Based on the results data (table 2), it found that the 39 nurses whose age is ≤ 35 years there are 24 (18.75%) nurses who experience moderate subjective work fatigue and 15 (11.72%) nurses who experience severe subjective work fatigue. Meanwhile, there were 89 nurses whose age > 35 years there were 41 (32.03%) nurses who experienced moderate subjective work fatigue and 48 (37.50%) nurses who experienced severe subjective work fatigue. And also, out of 97 nurses with normal nutrition, there were 58

(59.8%) nurses who experienced moderate subjective work fatigue and 39 (40.2%) nurses experienced severe subjective work fatigue. Whereas 31 nurses with abnormal nutrition, 7

(22.6%) nurses experienced moderate subjective work fatigue and 24 (77.4%) nurses experienced severe subjective work fatigue.

**Table 2.** The Results of Analysis of Relationship between Age and Nutritional Status with Work Fatigue in dr. M. Yunus Hospital, Bengkulu, Indonesia on August 2020 using Chi Square Test.

Variables	Work Fatigue				p-value
	Medium		Weight		
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	
Age					.107
≤ 35 years	24	18.75	15	11.72	
> 35 years	41	32.03	48	37.50	
Nutritional Status					.000
Normal Nutrition	58	45.31	39	30.47	
Abnormal Nutrition	7	5.47	24	18.75	

Sources: Primary Data of Questionnaire, 2020.

## DISCUSSION

Based on the results of research conducted on 128 nurses in the inpatient room of dr. M Yunus Bengkulu Hospital showed that the number of nurses > 35 years old was 69.53% of nurses. Increasing age will be followed by a decrease in VO2 max, visual acuity, hearing acuity, speed of distinguishing things, making decisions and short-term memory abilities. Thus the influence of age must always be taken into consideration in giving someone a job (Tarwaka, 2013).

Based on the research results, it was obtained that of the 39 nurses whose age was ≤ 35 years there were 24 (18.75%) nurses who experienced moderate subjective work fatigue and 15 (11.72%) nurses who experienced severe subjective work fatigue. Nurses who are ≤ 35 years of age but experience severe work fatigue because it is triggered by nurses getting work shifts at night with conditions having to fight drowsiness and also because there are several nurses with conditions of excess nutritional status. According to Dimkatni et al. (2020) the existence of work shifts in nurses can make nurses experience low sleep quality which in turn has an impact on work fatigue. According to Oksandi & Karbito (2020) nurses with poor nutritional status were 3.16 times more likely to experience fatigue than nurses with good nutritional status.

Meanwhile, there were 89 nurses whose age > 35 years there were 41 (32.03%) nurses

who experienced moderate subjective work fatigue and 48 (37.50%) nurses who experienced severe subjective work fatigue. Of the 41 nurses who are > 35 years old but experience moderate subjective work fatigue because their workload is light and they have good relationships with co-workers so that while carrying out work feels easier.

Based on the results of the analysis using the chi square test, there was no relationship between age and work fatigue of nurses in the inpatient room of dr. M Yunus Hospital, Bengkulu. The results of this study are in line with the research conducted on the construction department employee nurses that there is no relationship between age and employee work fatigue (Gaul et al., 2018). According to Oksandi & Karbito (2020), workload can be a measure for workers for how long they can work without causing fatigue or work-related disruption. The higher the workload, the higher the risk of experiencing work-related fatigue. According to Setyawati (2010), mental coaching that takes place periodically and specifically can change the tendency for fatigue problems to arise in workers.

Most of the nurses had normal nutritional status, namely 97 (75.78%) nurses. Work nutrition is needed to maintain and improve the health status and strive for optimal workforce. Health and workability are closely related to a person's nutritional level (Suma'mur, 2014).

Based on the research results, it was obtained that out of 97 nurses with normal nutrition, there were 58 (45.31%) nurses who experienced moderate subjective work fatigue and 39 (30.47%) nurses experienced severe subjective work fatigue. Even though nurses are in good nutritional condition, they can experience severe subjective work fatigue due to the high work activity in the midst of the Covid-19 pandemic and also the condition of the nurses who are over 35 years old.

Whereas 31 nurses with abnormal nutrition, 7 (5.47%) nurses experienced moderate subjective work fatigue and 24 (18.75%) nurses experienced severe subjective work fatigue. Nurses with abnormal nutritional conditions can experience moderate subjective work fatigue because most of them get work shifts in the morning with shorter working hours compared to day shifts and night shifts. In line with research on nurses at Herna Hospital Medan, that nurses experience work fatigue on the morning shift because after finishing work they can rest and sleep at night (Nuraini, 2019). According to the results of research from Siregar & Wenehenubun (2019) nurses with the majority of women can experience work fatigue if they get night shifts with a long duration of time. According to Nurmianto (2008), working on night shifts can pose a big risk to health for workers such as sleep disorders, fatigue, heart disease, high blood pressure, gastrointestinal disorders.

Based on the results of the analysis using the chi square test, there is a relationship between nutritional status and work fatigue of nurses in the inpatient room of dr. M. Yunus Hospital, Bengkulu. Consuming a balanced nutrition is important so that the body condition remains healthy and avoids work fatigue, especially for nurses who are busy dealing with patients with various disease backgrounds. Nurses with abnormal nutritional conditions will have an impact on decreasing the ability and endurance of the body in doing work. According to research from Rahmawati & Afandi (2019) workers with inappropriate nutritional intake can feel tired when compared to workers with adequate nutritional intake.

In line with research on nurses and midwives at Puskesmas Mlati II, that nutritional status has a significant relationship with work fatigue (Ardiyanti, Wahyuni, & Jayanti, 2017). According to research from Lestari & Isnaeni (2020), the occurrence of work fatigue is

related to the nutritional status of workers. As many as 38 people with abnormal nutritional conditions experienced more work fatigue than normal nutritional conditions.

## CONCLUSION

Most of the nurses in the inpatient room were > 35 years old and the nutritional status was mostly normal. The results showed that there was no relationship between age and subjective work fatigue in nurses, and there was a relationship between nutritional status and subjective work fatigue in nurses.

## SUGGESTIONS

It is expected that the inpatient nurse of dr. M Yunus Bengkulu to be able to manage his own working time by making the best use of the rest time available and stretching the muscles in between busy working hours. Nurses are also expected to be able to maintain a healthy body by consuming a balanced and diligent nutritional menu.

## ACKNOWLEDGMENT

Our thanks go to the Directorate of Research and Community Service, Directorate General of Research and Development Strengthening Ministry of Research, Technology / National Research and Innovation Agency (KEMENRISTEK-BRIN RI) who have provided grants through the novice lecturer research program. Apart from that, we would also like to thank dr. M. Yunus Hospital, Bengkulu and other parties who have helped for the cooperation that has been given, so that this research can be carried out.

## DECLARATION OF CONFLICTING INTEREST

This study has no conflict of interest.

## FUNDING

This research was funded by the Directorate of Research and Community Service, Directorate General of Research and Development Strengthening Ministry

of Research, Technology / National Research and Innovation Agency (KEMENRISTEK-BRIN RI).

#### AUTHOR CONTRIBUTION

**Rina Aprianti:** Data collection in the field, data analysis, data interpretation, preparation of research reports, compile the manuscript.

**Susilo Wulan:** Data collection in the field, data analysis, data interpretation, preparation of research reports, compile the manuscript.

**Elza Wulandari:** Data collection in the field, data analysis, data interpretation, preparation of research reports, compile the manuscript.

#### ORCID

**Rina Aprianti**

<https://orcid.org/0000-0002-1999-2199>

**Susilo Wulan**

<https://orcid.org/0000-0002-3708-467X>

**Elza Wulandari**

<https://orcid.org/0000-0003-1614-6293>

#### REFERENCES

- Ardiyanti, N., Wahyuni, I., & Jayanti, S. (2017). Hubungan Beban Kerja Mental Dengan Kelelahan Kerja Pada Tenaga Keperawatan Dan Tenaga Kebidanan Di Puskesmas Mlati Ii Sleman Yogyakarta. *Jurnal Kesehatan Masyarakat (E-Journal)*, 5(5), 264–272.
- Astuti, F. W., Ekawati, & Wahyuni, I. (2017). Hubungan Antara Faktor Individu, Beban Kerja Dan Shift Kerja Dengan Kelelahan Kerja Pada Perawat Di Rsjd Dr. Amino Gondohutomo Semarang. *Jurnal Kesehatan Masyarakat (E-Journal)*, 5(5), 163–172.
- Budiono, A. M. S., Jusuf, R. M. S., & Pusparini, A. (2003). *Bunga Rampai Hiperkes Dan KK*. Semarang: Badan Penerbit UNDIP.
- Dimkatni, N. W., Sumampouw Jufri, O., & Manampiring, A. E. (2020). Apakah Beban Kerja, stress Kerja dan Kualitas Tidur Mempengaruhi Kelelahan Kerja pada Perawat di Rumah Sakit? *Kesehatan Masyarakat*, 1(March), 1–8. Retrieved from <https://ejournal.unsrat.ac.id/index.php/srjph/article/view/27273/26836>
- Gaol, M. J. L., Camelia, A., & Rahmiwati, A. (2018). ANALISIS FAKTOR RISIKO KELELAHAN KERJA PADA KARYAWAN BAGIAN PRODUKSI PT. ARWANA ANUGRAH KERAMIK, Tbk. *Jurnal Ilmu Kesehatan Masyarakat*, 9(1), 53–63. <http://doi.org/10.26553/jikm.2018.9.1.53-63>
- Kemenkes RI. (2018). Data dan Informasi profil Kesehatan Indonesia 2018.
- Lestari, R. R., & Isnaeni, L. M. A. (2020). Hubungan umur dan status gizi dengan kelelahan kerja pada bidan di rsia bunda anisah tahun 2019, 4(1), 38–42.
- Nuraini. (2019). Hubungan Shift Kerja Dengan Kelelahan Kerja Pada Perawat Di Instalasi Rawat Inap Di Rumah Sakit Herna Medan Tahun 2018, 4(1), 45–56.
- Nurmianto, E. (2008). *Ergonomi, Konsep Dasar dan Aplikasinya* (Edisi Kedu). Surabaya: Prima Printing.
- Oksandi, H. R., & Karbitto, A. (2020). Faktor-Faktor yang Berhubungan Dengan Kelelahan Kerja Pada Perawat Di RSUD dr.H.BOB Bazar Kalianda Kabupaten Lampung Selatan Hendro. *Jurnal Ilmi Kesehatan Indonesia (JIKSI)*, 1(1), 1–7.
- Rahmawati, R., & Afandi, S. (2019). Faktor-Faktor yang Berhubungan dengan Kelelahan Kerja pada Perawat di RSUD Bangkinang Tahun 2019, 3, 15–16.
- Saftarina, F., Mayasari, D., & Vilia, A. (2016). ANALYSIS OF FACTORS RELATED TO WORK FATIGUE AMONG NURSES AT HOSPITAL IN BANDAR LAMPUNG Abstract .

- Work fatigue is a symptom correlated to the decrease of work efficiency , skills , boredom and the increase of anxiety . Performance of nurses with work fati, *17*, 1–5.
- Setyawati, L. (2010). *Sekilas Tentang Kelelahan Kerja*. Yogyakarta: Amara Books.
- Siregar, T., & Wenehenubun, F. (2019). Jurnal Persada Husada Indonesia Hubungan Shift Kerja Dengan Tingkat Kelelahan Kerja Perawat Di Ruang Instalasi Gawat Darurat RSUD Budhi Asih , Jakarta Timur Relationship Between Work Shift And Fatigue Level Of Nurses In The Emergency Room At Budhi Asih Hospital , East Jakarta Abstrak Pendahuluan, *6*(22), 1–8.
- Suma'mur, P. K. (2014). *Higiene Perusahaan dan Keselamatan Kerja (Hiperkes)* (2nd ed.). Jakarta: Sagung Seto.
- Tarwaka. (2013). *ERGONOMI INDUSTRI: Dasar-Dasar Pengetahuan Ergonomi Dan Aplikasi Di Tempat Kerja*. Harapan Press.
- Uli, R., Modjo, R., & Turdinanto. (2018). Factors Related to Fatigue among Nurses in Jambi Mental Hospital: A 2017 Study. *KnE Life Sciences*, *4*(5), 190.  
<http://doi.org/10.18502/cls.v4i5.2552>
- Wiyarso, J. (2018). Hubungan Antara Shift Kerja Dan Beban Kerja Dengan Kelelahan Kerja Pada Perawat Di Ruang Rawat Inap Yeheskiel Dan Hana Di Rumah Sakit Umum Gmim Pancaran Kasih Manado. *Kesehatan Masyarakat*, *7*(5), 1–5.

**Cite this article as:** Aprianti, R., Wulan, S., Wulandari, E. (2021). Relationship of age and nutrition status with work fatigue in inpatient nurses at dr M Yunus hospital, Bengkulu. *Nurse and Health: Jurnal Keperawatan*, *10* (1), 72-78. <https://doi.org/10.36720/nhjk.v10i1.224>