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INFLUENCE OF AGE, GENDER AND WORKLOAD FACTORS AGAINST WORK FATIGUE ON NURSES

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ABSTRACT
Work fatigue is a condition that can cause a decrease in vitality and work productivity. The impact of work fatigue can reduce the quality of nurses in providing nursing care. The purpose of this study was to determine the effect of age, gender and workload on work fatigue on nurses at Alimuddin Umar Liwa Hospital, West Lampung Regency. This type of research is a quantitative research with analytic survey and using a cross sectional approach. The population in this study were nurses at the Allimudin Umar Liwa Hospital, West Lampung Regency, amounting to 220 people. The sample in this study amounted to 71 respondents with proportional random sampling technique The workload questionnaire uses a questionnaire that has been made by Nursalam (2016) which consists of 13 questions using a Likert scale. The job fatigue questionnaire used the standard KAUPK2 questionnaire ((Kuesioner Alat Ukur Perasaan Kelelahan Kerja). Data analysis using univariate and bivariate analysis using Chi-squere test. The results showed that most of the respondents were male, amounting to 39 respondents (54.9%), most of the respondents aged > 40 years 37 totaling 52.1%, most of the respondents having a normal workload amounting to 53.3% , and most had 57.7% fatigue. The conclusion of this study is that there is an influence of gender (0.016), age (p-value = 0.014) and workload (p-value = 0.032) on work fatigue in nurses at Allimuddin Umar Liwa Hospital, West Lampung Regency.

Keywords: age; workload; work fatigue

INTRODUCTION
Activity is a daily activity carried out by humans in meeting their physical and non-physical needs. One of the activities carried out is to work in both formal and non-formal fields. Doing work will usually cause physical and spiritual burdens for individuals. Work that is too heavy and excessive will cause fatigue. According to Setyawati (2010) cited by (Maharja, 2015) states that work fatigue occurs due to the buildup of lactic acid. High activity that does not pay attention to sufficient recovery time can cause energy changes from anaerobic glycolysis. Anaerobic glycolysis can cause a buildup of blood lactic acid which results in obstruction of energy intake from the aerobic system in muscle cells and causes fatigue (Guyton & Hall, 2016).

Fatigue at work will affect the health of the workforce so that it can cause a decrease in productivity. This fatigue condition is experienced by many workers, one of which is the nursing profession. Nurses are one of the human resources who are the main pillars of the hospital. Nurses have high work demands because nurses have a responsibility to provide 24-hour service to patients. Although divided into three shifts the workload of nurses is still quite high. According to Wiyarso in his research, there is a relationship between work shifts and nurse work fatigue (Wiyarso, 2018). Changing work patterns can cause increased fatigue as a result of biorhythmic changes (PS Dewi, 2012).

Work fatigue can trigger work accidents that result in losses for both the individual himself or the institution where he works. For nurses themselves, work fatigue can cause adverse events, which can be dangerous for patients. Data obtained from the ILO (International Labor Organization) in 2016 states that almost every year as many as two million workers die due to fatigue (Kementerian Ketenagakerjaan, 2018). According to Maurits (2012) in (Wurarah et al., 2020) suggests that the work fatigue factor has a percentage of 50% of the number of work accidents. The Ministry of Manpower and Transmigration (2004) in J.Atikoh, et al Data on work accidents in Indonesia every day about 414 work accidents. The cause of the accident was quite high fatigue (27.8%) with around 39 people experiencing disability (9.5%) (Atiqoh et al., 2014)

Data from the Lampung Provincial Health Office in 2016 showed that as many as 5000 employees complained of physical fatigue due to routine work as much as 60%, complained of mental fatigue as much as 27% and the remaining 13% complained of severe stress and felt that the workload they received exceeded the limit (*Profil Kesehatan Provinsi Lampung Tahun 2016*, 2020). West Lampung is one of the regencies in Lampung Province, data obtained with the number of nurses reaching 2,120 nurses spread across various agencies, such as hospitals, health centers or health clinics. Based on a survey conducted by the West Lampung Health Office, it was found that from 2,120 nurses, 65% experienced work fatigue. Meanwhile, at the Alimuddin Umar Liwa Hospital, West Lampung, there were 60% who experienced work fatigue.

Problems caused by work fatigue cannot be ignored, but must be overcome by paying attention to the contributing factors. Some of the factors that cause work fatigue are age, gender, disease factors, psychological state of the workforce, and workload (Summa'mur, 2020). Research conducted by Rahmawati and Afandi stated that there was a significant relationship between gender, age and nutritional status on work fatigue (Rahmawati & Afandi, 2019). By paying attention to these factors, work fatigue can be overcome so that the performance of nurses increases. Hospitals also greatly contribute to improving the performance of nurses, because nurses are the most abundant human resources and are at the forefront of providing services to patients. This study aims to determine the effect of age, gender and workload on work fatigue on nurses at Alimuddin Liwa Hospital, West Lampung.

METHOD

This research is a type of quantitative research with analytic survey and using a cross sectional approach. This research was conducted at the Allimudin Umar Liwa Hospital, West Lampung Regency. The population in this study were nurses at the Allimudin Umar Liwa Hospital, West Lampung Regency, amounting to 220 people. The variables in this study were gender, age and workload factors. The study was carried out from September 2021 to December 2021. The sample in this study amounted to 71 respondents, using proportional random sampling technique. The method of collecting data is by filling out a questionnaire on individual characteristics, namely age with a measuring scale of 0 = for female gender and 1 for male gender, while for age the measuring scale is 0 = for age < 40 and a measuring scale 1 = for age > 40. The workload questionnaire uses a questionnaire that has been made by Nursalam (2016) which consists of 13 questions using a Likert scale (Nursalam, 2016). The job fatigue questionnaire used the standard KAUPK2 questionnaire ((Kuesioner Alat Ukur Perasaan Kelelahan Kerja). This questionnaire was compiled by Setyawati (1994) which has been tested for validity and reliability. The total number of questionnaires consists of 17 question items, with the provisions (score 1: given for yes answers and score 2: given for no answers) (Tenggor et al., 2019). Data analysis using univariate and bivariate analysis using Chi-squere test.

RESULTS

Based on the research that has been carried out, the following results are obtained:

Table 1.
Frequency Distribution of Respondents' Gender (n=71)

Gender	f	%
Female	39	54.9
Male	32	45.1

Table 1, it is known that most of the respondents are male, amounting to 39 respondents (54.9%).

Table 2.
Frequency Distribution of Respondents' Age (n=71)

Age	f	%
≤ 40	34	54.9
> 40	37	45.1

Table 2, it is known that most of the respondents are over 40 years old 37 respondents (52.1%).

Table 3.
Frequency Distribution of Respondents' Workload (n=71)

Workload	f	%
Normal	38	53.5
Over	33	46.5

Table 3, it is known that most of the respondents have a normal workload of 38 respondents (53.5%).

Table 4
Frequency Distribution of Respondents' Work Fatigue
at Alimuddin Umar Hospital Liwa, West Lampung Regency

Work Fatique	Frequency	Percent (%)
Low	30	42.3
High	41	57.7
Quantity	71	100

Table 4, it is known that most of the respondents experienced high fatigue, amounting to 41 respondents (57.7%)

Table 5.
Analysis of the Relationship of Gender Factors with Work Fatigue (n=71)

Gender	Work Fatigue				Total		*p-value*	OR (CI 95%)
	Low		High					
	f	%	f	%	f	%		
Female	13	40	19	59,4	32	100	0,016	3,04
Male	28	71,8	11	28,2	39	100		
Quantity	41	57,7	30	42,3	71	100		

Table 5, it is known that there are 32 respondents with female gender mostly experiencing high fatigue as many as 19 people (59.4%), while 13 (40%) have low fatigue. Meanwhile, male respondents mostly experienced low fatigue, namely 28 (71.8%) and 11 (28.2%) others

experienced high fatigue. Statistical results show that there is an influence of gender on work fatigue with a p-value of 0.016 or a p-value <0.05 with an OR value of 3.04. The OR value indicates that the female sex has a 3.04 times risk of experiencing work fatigue.

Table 6.
Analysis of the Relationship of Age Factors with Work Fatigue (n=71)

Age	Work Fatigue				Total		*p-value*	OR (CI 95%)
	Low		High					
	f	%	f	%	f	%		
≤ 40	20	58,8	14	41,2	34	100	0,014	3,86
> 40	10	26,0	27	73,0	37	100		
Quantity	30	42,2	41	57,7	71	100		

Table 6, it is known that there are 34 respondents aged 40 most of whom experienced low fatigue, namely as many as 20 people (58.8%), while 14 (41.2%) experienced low fatigue. Meanwhile, respondents with > 40 experienced high fatigue, as many as 27 (73.0%) and 10 (26.0%) experienced low fatigue. Statistical results show that there is an effect of age factor on work fatigue with a p-value of 0.014 or a p-value <0.05 with an OR value of 3.86. The OR value indicates that respondents aged > 40 have a 3.86 times risk of experiencing work fatigue.

Table 7.
Analysis of the Relationship between Workload and Work Fatigue

Workload	Work Fatigue				Total		*p-value*	OR (CI 95%)
	Low		High					
	f	%	f	%	f	%		
Normal	21	55,3	17	44,7	38	100	0,032	3,27
Over	9	27,3	24	72,7	33	100		
Quantity	30	42,3	14	57,7	71	100		

Table 7, it is known that there are 38 respondents with normal workloads mostly experiencing low fatigue, namely 21 people (55.3%) and 17 (44.7%) experiencing low fatigue. Meanwhile, respondents with excessive workload mostly experienced high fatigue as many as 24 (72.7%) and 9 (27.3%) others had low fatigue. Statistical results show that there is an effect of workload factor on work fatigue with a p-value of 0.032 or a p-value <0.05 with an OR value of 3.86. The OR value indicates that respondents with excessive workload have a 3.27 times risk of experiencing work fatigue.

DISCUSSION

Based on the results of research that has been carried out and data processing has been carried out, then a discussion is carried out according to the research variables. The discussion is as follows:

The effect of age on work fatigue in nurses at the Alimuddin Liwa Hospital, West Lampung Regency. Based on Table 5, there are 32 respondents with female gender mostly experiencing high fatigue as many as 19 people (59.4%), while 13 (40%) have low fatigue. While respondents with male sex mostly experienced low fatigue, namely 28 (71.8%) and 11 (28.2%) others experienced high fatigue. Statistical results show that there is an influence of gender on work fatigue with a p-value of 0.016 or a p-value <0.05 with an OR value of 3.04. The OR value indicates that the female sex has a 3.04 times risk of experiencing work fatigue. This study shows that women tend to experience work burnout, this is in line with research conducted by

Pratiwi on differences in female nurses' work fatigue with results showing that most of the female night shift nurses experience moderate fatigue (Pratiwi, 2011). Female nurses are more prone to stress than male nurses due to multiple role conflicts, many work both as nurses and housewives. According to Mariati, there is a relationship between dual role conflict and the performance of female nurses at the Dampek Health Center (Mariati & Rambing, 2019). This is in line with the research conducted by Rhamdani and Wartono in their research entitled the relationship between work shifts, work fatigue and work stress on nurses. It shows that the percentage of nurses who experience severe stress is higher than male nurses (78.6%) (Rhamdani & Wartono, 2019). Other studies have linked oxygen demand with fatigue. According to Nuarti, et al in their research entitled the comparison of the maximum oxygen capacity between men and women with the result that the average VO2 max for men was 30.47 ml/kg/mt while the average VO2 max for women was 26, 9 ml/kg/min ((Nuarti et al., 2019)

The effect of age on work fatigue in nurses at the Alimuddin Liwa Hospital, West Lampung Regency. Based on Table 6, there are 34 respondents aged 40 most of whom experienced low fatigue, as many as 20 people (58.8%), while 14 (41.2%) experienced low fatigue. While respondents with > 40 mostly experienced high fatigue, namely 27 (73.0%) and 10 (26.0%) others experienced low fatigue. Statistical results show that there is an effect of age factor on work fatigue with a p-value of 0.014 or a p-value <0.05 with an OR value of 3.86. The OR value indicates that respondents aged > 40 have a 3.86 times risk of experiencing work fatigue. The results of this study indicate that there is an influence between age and work fatigue, this is in line with research conducted by Astuti et al which states that there is a relationship between age and nurses' work fatigue with the OR value of nurses aged > 35 years at risk of experiencing work burnout (Astuti et al., 2017). According to Tenggor, et al in their research entitled Factors related to nurse work fatigue, it shows that one factor that affects work fatigue is age with a *p-value* of 0.006 (Tenggor et al., 2019). Increasing age will be followed by a process of degeneration of cells and organs so that the ability of the organs will decrease so that workers over 41 years of age will easily experience work fatigue. The age factor also affects the ability of work productivity (Pasaribu, 2012).

Effect of workload on work fatigue on nurses at Alimuddin Liwa Hospital, West Lampung Regency. Based on Table 7, it is known that there are 38 respondents with normal workloads, most of whom experienced low fatigue, namely 21 people (55.3%), while 17 (44.7%) experienced low fatigue. While respondents with excessive workload mostly experienced high fatigue as many as 24 (72.7%) and 9 (27.3%) others had low fatigue. Statistical results show that there is an effect of workload factor on work fatigue with a p-value of 0.032 or a p-value <0.05 with an OR value of 3.86. The OR value indicates that respondents with excessive workload have a 3.27 times risk of experiencing work fatigue. This research is in line with Maharja's research which states that there is a nurse's physical workload in the moderate category (Maharja, 2015).This happens because nurses have many and varied activities. Workloads can be experienced by workers because of the work they do. Workload is one of the factors that affect the level of worker safety and health. The workload also affects the productivity and efficiency of the workforce. These conditions can cause an increase in adverse events in performing nursing care; Nurses can also experience a decline in health (Hutabarat, 2017). The workload that increases both physically and mentally will trigger fatigue and can reduce the work productivity of nurses. According to Wahyudi and Gunarto, work productivity is directly influenced by workload (Wahyudi & Gunarto, 2019). This study was supported by Majore et al in their research entitled the relationship between work fatigue and the performance of nurses at the Pancaran Kasih Inpatient Installation GMIM Manado (Majore et al., 2018).

CONCLUSION

Based on the results of research that has been carried out at Alimuddin Umar Liwa Hospital, West Lampung Regency, it can be concluded that: (1) Most of the respondents are male, totaling 39 respondents (54.9%). (2)Most of the respondents have an unproductive age of 37 respondents (52.1%). (3) Most of the respondents are above 40 years old 37 respondents (52.1%). (4) most of the respondents have a good workload amounting to 38 respondents (53.5%). (5) most of the respondents experienced high fatigue, amounting to 41 respondents (57.7%). (6)There is an influence of gender on work fatigue with a p-value of 0.016 or p-value <0.05 with an OR value of 3.04 7. There is an influence of age factor on work fatigue with a p-value of 0.014 or p-value <0.05 with an OR value of 3.86 8. There is an influence of workload factor on work fatigue with a p-value of 0.032 or p-value <0.05 with an OR value of 3.86 .

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