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Relationship Of Characteristics With Work FatigueIn Oil Palm Harvesters In Afdeling V Ptpn Ii Palm Sebrang

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ABSTRACT

Fatigue is a condition that can be experienced by workers, usually the fatigue is characterized by the weakening of the muscles in the workforce so that workers are unable to do their work again. The research aims to determine relationship of characteristics with work fatigue in oil palm harvesters in Afdeling V PTPN II Sawit Seberang in 2023. This is a quantitative research with a "cross sectional" approach by taking samples using total sampling of 36 respondents. The research results showedthat 15 respondents (41.7%) had work fatigue, while 21 people (58.3%) did not experience fatigue. Variables associated with fatigue are nutritional status (p-value 0.03), working period (p-value 0.04),length of sleep (p-value 0.028), cigarette consumption (p-value 0.004). Suggestions in this study are that oil palm harvesters are expected to maintain a healthy body at work byutilizing rest periods such as stretching muscles, adequate intake of nutrients and mineral water and complying with instructions for the use of personal protective equipment for occupational safety and health.

Keywords: Cigarette Consumption, Fatigue, Harvesters, Working Mass

INTRODUCTION

Health is one of the important factors for productivity and improving labor performance as human resources. Many types of work require high work performance which can only be done by workers who have excellent body condition.

The International Labor Organization (ILO) defines Occupational Safety and Health (OSH) as a condition that improves and conserves the high rate of all workers both mentally and physically so as to prevent health disorders that result from work, protects all of them from any work that has risks caused byhealth problems, places and maintains workers in a working environment that is in line with the workers' physiological and psychological conditions and creates harmony between work and workers and everyone with their tasks(Cici Aprilliani, 2019).

According to (Widiodio, 2020), a pattern that arises in an activity generally occurs in labor, with thcharacteristics of weakening labor, so workers can no longer do their jobs can be called fatigue. Around2020 there were 33 cases of work accidents that occurred in North Sumatra Province (Kiemienakier. 2020). The ILO states that every year the number of deaths due to work has increased, it was recorded that 2.4 million (86.3%) in 2018 lost their lives due to work accidents with 380,000 people famous due to work accidents, while in 2021 as many as 340 million people experienced work accidents and 160 millionpeople were affected by

occupational diseases.

Basically, the two categories of fatigue are muscular fatigue and general fatigue. Muscular fatigue is avibration in the muscles. While the general fatigue occurs due to a decrease in a person's willingness to work caused by psychological requirements. General fatigue is characterized by the duration of both mental and physical work, as well as the environmental conditions (Suma`mur, 2014) in (Tenggor et al., 2019). According to (Budiono, 2015) work fatigue can occur to anyone with a variety of symptoms. For the symptoms of work fatigue can be seen subjectively and objectively, namely Decreased performance both physically and mentally, Decreased level of worker alertness, Feelings of lethargy, sleepiness and dizziness in workers.

A fatigue is not a coincidence, but there are causes that cause fatigue. The cause is a barrier that cannot be passed by workers so that workers can work comfortably and safely and in good health. Suma'mur (2014) divides two types of fatigue factors, namely, internal fatigue factors including (age, gender, nutritional status, smoking habits), and external fatigue factors including (working time, working period, workload, length of sleep).

Up to now, there has been no standardized fatigue measurement method because fatigue was a subjective feeling that was difficult to quantify and required a multi-disciplinary approach. According to (Bunga, 2021) to assess work fatigue in workers can be done by The Work Fatigue Feeling Measurement Tool Questionnaire (KAUPK2) is a tool to subjectively assess indicators of work fatigue. It consists of 17 questions which have proven their Validity andReliability. There were 3 types of KAUPK2, namely, KAUPK2 I, KAUPK2 II, KAUPK2 III.

METHODS

The research was conducted in Afdeling V which is located in Sawit Sebrang District, Langkat Regency, North Sumatra Province. The population for this study was Palm Harvesters in Afdeling V with a total of 36 harvesters in Afdeling V. The sample taken from this study was 36 respondents of all Palm Harvesters in Afdeling V PTPN II Sawit Sebrang. The research was conducted quantitatively with a crosssectional design, to determine if a relationship exists between the characteristics and work fatigue in oil palm harvesters. The data was collected by going directly to the field through observation with questionnaires filled out by respondents.

RESULT

Table3.1. Relationship between Age and Work Fatigue in Harvesters

		Work Fatigue				**Total**		***Sig*-P**
Variable	**Category**	**Not Tired**		**Tired**				
		N	**%**	**N**	**%**	**N**	**%**	
Age	17-25	6	16.7	1	2,8	7	19,4	0,259
	26-35	9	25,0	8	22,2	17	47,2	
	36-45	6	16,7	6	16,7	12	33,3	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

The results of bivariate analysis can be seen from the age of 17-25 years there are 7 people (19.4%), age 26-35 years there are 17 people (47. 2%) and age 36-35 as many as 12 people (33.3%),

Table.3.2. Relationship Between Gender and Work Fatigue in Harvesters

Gender	Category	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		N	%	N	%	N	%	
	Men	19	52,8	15	41,7	34	94,4	0,33
	Women	2	5,6	0	0	2	5,6	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

In the gender variable, it can beseen that 34 men (94.4%) and while 2 women (5.6%)

Table 3.3. Relationship between Work Duracition and Work Fatigue in Harvesters

Work Duracition	Category	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		N	%	n	%	N	%	
	≤ 8 Hours	15	41,7	4	11,1	19	52,6	0,010
	> 8 Hours	6	16,7	11	30,6	17	47,2	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

Based on table, it can be seen that 19 people (52,6%) work duracition <8 hours and 17 people (47,2%) work duracition >8

Table 3.4. Relationship between working period and fatigue in harvesters

Working Period	Category	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		N	%	N	%	N	%	
	≤ 8 years	11	30,6	1	2,8	12	33,3	0,04
	> 8 years	10	27,8	14	38,9	24	66,7	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

In oil palm harvesters, 12 people (33.3%) were obtained in a work period < 8 years while 24 people (66.7%) had a work period> 8 years.

Table 3.5. Relationship Between Smoking Habit and Work Fatigue in Harvesters

Work Fatigue						Total		*Sig*-P
Smoking	Category	Not Tired		Tired				
		N	%	N	%	N	%	
	Yes	15	41,7	5	13,9	20	55,6	0,026
	No	6	16,7	10	27,8	16	44,4	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

In the variable smoking harvesters can be seen 20 people (55.6%) and there are 16 people (44.4%) who do not smoke

Table 3.6. Relationship Between Workload and Fatigue in Harvesters

N0	Work Loads	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		N	%	N	%	N	%	
1	Medium	18	50	5	13,9	23	63,9	0,004
2	Heavy	3	8,3	8	22,2	11	30,6	
3	Very Heavy	0	0	2	5,6	2	5,6	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

In variable, can be seen that the workload and fatigue category medium 23 people (63,9%), category heavy 11 people (30,6%), category very heavy 2 people (5,6%)

Tabel 3.7. Relationship Between Nutritional Status and Work Fatigue in Harvesters

Nutritional Status	Category	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		N	%	N	%	N	%	
	18,5-22,9	16	44,4	3	8,3	19	52,8	0,03
	23-24,9	2	5,6	8	22,2	10	27,8	
	25-29,9	3	8,3	4	11,1	7	19,4	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

Based on the table above, it can be seen that 19 people (52.8%) in the 18.5-22.9 category, in the 23-24.9 category there are 10 people(27.8%) And there are 7 people(19.4%) in the 25-29.9.

Tabel 3.8. Relationship Between Sleep Duration and Work Fatigue in Harvesters

Sleep Duration	Category	Work Fatigue				Total		*Sig*-P
		Not Tired		Tired				
		n	%	N	%	N	%	
	≤ 8 jam	12	33,3	3	8,3	15	41,7	0,028
	> 8 jam	9	25	12	33,3	21	58,3	
	Total	**21**	**58,3**	**15**	**41,7**	**36**	**100**	

In the variable length of sleep time can be seen from 15 people (41.7%) in a sleep time ≤ 8 hours and from 21 people (62.2%) in a sleep time > 8 hours

DISCUSSION

Relationship between Age and Work Fatigue in Harvesters

Physical capacity can be affected by age which peaks around 25 years old. The muscle strength can decline by 25% when a person is 50-60 years old. Not only that, sensory abilities decrease by 60% with age followed by a decrease in maximum 02, sharp vision and speed of distinguishing something, as well as well as decision making and short-term memory abilities (Amin et al., 2019). The results of bivariate analysis can be seen from the age of 17-25 years there are 7 people (19.4%), there are 1 person (2.8%) who feel tired at work and 6 people

(16.7%) feel not tired, age 26-35 years there are 17 people (47. 2%) with 8 people (222.2%) feeling tired and 9 people (25%) do not feel tired, and age 36-35 as many as 12 people (33.3%), while those who feel tired are 6 people (16.7%), and do not feel tired there are 6 people (16.7%). The Chi Square is p = 0.259 which means there is no relationship between age and fatigue in oil palm harvesters. This research is the same as research conducted (Rino Komalig & Mamusung, 2020), the spearman- rho statistical test results obtained a value of ρ = 0.839. It means age is not a factor that affects the fatigue of parking ticket officers in the Megamas area.

Relationship Between Gender and Work Fatigue in Harvesters

Aerobic power produced by women is 2.4 L/min, while men are around 3.0 L/min. In general, women are more resistant to cold temperatures than hot temperatures. Because tissues with higher conduction to heat are found in the body of a woman. According to the bivariate analysis, the result of chi-square p = 0.33 indicates that the relationship between gender and work fatigue in oil palm harvesters is not significant.. In the gender variable, it can beseen that 34 men (94.4%) there are 19 people (52.8%) who do not feel tired and 15 people (41.7%) feel tired, while 2 women (5.6%) feel tired and no one feels tired. This is in line with research (Edward, 2022) obtained *P-value* = 0.176 (*P-value* > 0.05). Ho is accepted and Ha is rejected, so it can be interpreted that a relationship does not exist between gender and fatigue feelings among workers of CV Harico Serut Madurejo Prambanan Sleman Yogyakarta.

Relationship between Work Duracition and Work Fatigue in Harvesters

In general health and mental health, there are negative impacts that can occur on workers' health, namely long working hours. If workers have long working hours, they have a higher chance of developing occupational health problems. Sleep duration has a strong influence on working hours. Because sleep duration greatly affects the health conditions of workers (Wiong et al., 2019).

Based on research of relationship between work duration and work fatigue in oil palm harvesters, the Chi-square results obtained the results of P= 0.010 which means a relationship between work duration and work fatigue in oil palm harvesters. In the variable length of work can be seen from 19 people (52.6%) working < 8 hours 15 people (41.7%) do not feel tired, instead 4 people (11.1%) feel tired. Conversely, there are 17 people (47.2%) who work < 8 hours, there are 6 people (16.7%) working not tired, and 11 people (30.6%) feel tired. This study is related to research (Darmayanti et al., 2021), statistical test results with Chi-Square showed a p-value <0.05 (0.001), so it could be inferred that Ho was rejected Ha accepted, which meant that there was a relationship between working hours and fatigue in office workers.

Relationship between working period and fatigue in harvesters

A person's length of work at an agency in a long enough period of time can be said to be a working period. Working period can be affected by the satisfaction of a person working in an agency, the work stress felt, the job path offered by the agency and the compensation wages given as a result of work (Suryaatmaja & Eka Pridianata, 2020).

Based on results of *chi-square*, the results obtained *P= 0.04*, which means that there is a relationship between working period and fatigue at work in oil palm harvesters. in oil palm harvesters, 12 people (33.3%) were obtained in a work period < 8 years while 24 people (66.7%) had a work period> 8 years. Research (Suryaatmaja & Eka Pridianata, 2020) explains that from the results of the relationship test by *Chi-square* it is known that the contingency coefficient is p> 0.0537 which means that the relationship working period and fatigue is strong.

Relationship Between Smoking Habit and Work Fatigue in Harvesters

Work fatigue can occur due to a worker's smoking habit. Cigarette smoking increases the heart's work load and raises a person's BP. The nicotine of cigarettes is very harmful to health, because nicotine can increase blood clots in blood vessels, causing calcification of blood vessel walls (Fiebriyantio et al., 2019).

Based on results of chi-square, the result is p= 0.026, meaning that there is a relationship

between cigarette consumption and work fatigue in oil palm harvesters.. In the variable smoking harvesters can be seen 20 people (55.6%) who smoke there are 15 people (41.7%) feel not tired and 5 people (13.9%) feel tired. Furthermore, there are 16 people (44.4%) who do not smoke, 6 people (16.7%) feel not tired, and 10 people (27.8%) feel tired. Similarly, research (Relationship et al., 2023) based on bivariate analysis found that there is a relationship between cigarette consumption and work fatigue in Kendari Mayor's Office construction project workers in 2021, where the relationship value of the two variables is (p-value = 0.001).

Relationship Between Workload and Fatigue in Harvesters

Workload is one form of ergonomic factors other than work position or work station. In variable, canbe seen that the average harvesters experience moderate workload as many as 23 people (63.9%), 18 people (50%) do not feel tired, 5 people (13.9%) feel tired., while those who experience heavy workloads are 11 people (30.6%), 3 people (8.3%) feel not tired, 8 people (22.2%) feel tired and harvestersexperience very heavy workloads as many as 2 people (5.6%) also feel tired. Based on the results of chi square, the result is p = 0.004, which means that there is a relationship between workload and fatigue in palm oil harvesters. The results of the study (Dewi Mulfiyanti, 2020) explain that based on the Chi- Square test output regarding the relationship between workload and work fatigue in nurses through surveys before and after work has a value of p = 0.001 (p < 0.05).

Relationship Between Nutritional Status and Work Fatigue in Harvesters

Nutritional status is important for a person's body condition. Nutritional status is the state of the body as a result of the consumption of food and nutrients. Work fatigue can occur in people who are in poor nutritional conditions so that it is easier to experience fatigue at work (Bakri et al., 2022).Based on the table above, it can be seen that 19 people (52.8%) in the 18.5-22.9 category, 16 people (44.4%) feel not tired, 3 people (8.3%) feel tired at work. It can be seen that in the 23-24.9 category there are 10 people(27.8%), where 2 people (5.6%) feel not tired, 8 people (22.2%) feel tired at work. And there are 7 people(19.4%) in the 25-29.9 category where 3 people (8.3%) feel not tired at work, then 4 people (11.1%) feel tired at work.

Based on results of *chi-square*, the results obtained *P= 0.03*, meaning there is relationship between nutritional status and work fatigue in oil palm harvesters. Research (Relationship et al., 2023) shows that based on research at the relationship between nutritional status and work fatigue, the research of statisticaltests by *chi-square* obtained a value of *p = 0.00*, meaning that there is a relationship between nutritional status and work fatigue in workers at PT. Maruki Internasional Indonesia Makassar.

Relationship Between Sleep Duration and Work Fatigue in Harvesters

Work fatigue can also arise due to lack of sleep in a worker. Because lack of sleep is related to a worse mood, as well as a decrease in the congnitive function of workers if they sleep less than 8 hours every night, triggering the onset of hypertension (Narpati, J. R., Ekawati, E., & Wahyuni, 2019). In the variable length of sleep time can be seen from 15 people (41.7%) in a sleep time ≤ 8 hours there are 12 people (33.3%) who do not experience fatigue at work, and 3 people (8.3%) experience fatigue at work, and from 21 people (62.2%) in a sleep time > 8 hours there are 9 people (25%) who do not experience fatigue and 21 people (58.3%) who experience fatigue at work.

Based of research the *chi-square*, the results obtained *p= 0.028* it was means that there is arelationship between the length of sleep time with fatigue at work on oil palm harvesters. Research (Anggorokasih et al., 2019) the research by *Chi-Square* relationship test obtained a p-value of 0.005 it was means that a relationship between sleep duration and work fatigue.

CONCLUSION

Based of research on the relationship between characteristics and work fatigue in oil palm harvestersin Afdeling V PTPN II in Afdeling V PTPN II Sawit Sebrang, it can be

concluded that:

1. There is a relationship between work duration and work fatigue in oil palm harvesters. With chi- square results obtained p = 0.010.
2. There are 12 people (33.3%) in the work period < 8 years and 24 people (66.7%) in the work period > 8 years have a relationship of work period with fatigue in oil palm harvesters with chi-square results p = 0.04.
3. Based on the chi-square results, P-value = 0.026 means that there is a relationship between cigarette consumption and work fatigue in oil palm harvesters. With a total of 20 people (55.6%) who smoke and 16 people (44.4%) do not smoke.

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