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Factors Affecting Axial Neck Pain in Palm Fruit Bunch Cutting Workers Afdeling One at PT. "X" in the District Rokan Hulu Riau Province Year 2017

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ABS T RAC T

In the era of globalization and technological advances, humans are always innovating to create new things, this encourages humans to improve themselves. This research method is a descriptive analytic with a cross sectional approach carried out on workers with slaughtering fresh palm fruit bunches in Afdeling one in Rokan Hulu Regency, Riau Province in 2017. as many as 48 people. The research results were analyzed using cross-tabulated frequency distributions and then tested using Chi-Square. The results of this research, from 48 samples, show that there is a significant influence on the variables of awkward body posture/work attitude, work duration, smoking habits, height and axial neck pain in workers cutting fresh fruit bunches at PT. 'X' p-value (p=0.001; p=0.032; p=0.004) where P is smaller than the significance level (α)=5% (0.05), and there is no significant influence between body weight and neck pain axial with p value (p=0.478) where P is greater than the significance level (α)=5% (0.05). This study concluded that there was a significant influence between awkward body posture/work attitude, work duration, years of service, age, smoking habits, height and axial neck pain in fresh fruit cutting workers at PT. X, and there is no significant influence between body weight and axial neck pain in workers cutting fresh fruit bunches at PT. X.

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INTRODUCTION

Ergonomics is defined as the science, art and application of technology to align, harmonize and balance the facilities used both in activity and rest with all abilities both physically and mentally so that a better overall quality of life is achieved. The expected goal is to achieve a higher quality of work and quality of life accompanied by convenience, comfort and efficiency without ignoring the principles of occupational health and safety (Tarwaka, 2015).

Neck pain is pain that results from complex interactions between muscles and ligaments as well as factors related to posture, sleeping habits, work position, stress, chronic muscle fatigue, postural adaptations from other primary pain (shoulder, temporomandibular joint, craniometrical) or de-generative changes of the cervical discs and joints.

LITERATURE REVIEW

The palm oil plantation sector currently has very important meaning, because Indonesia is the second largest producer and exporter of palm oil in the world after Malaysia. Employment in the oil palm plantation sector is the basis of life for more than 10 million people, including honorary employees, contracts and smallholder plantation farmers (BPS, 2011).

Based on the description above, the author is interested in researching the title "Factors that Influence Axial Neck Pain in Fresh Fruit Bunches Cutting Workers at Afdeling I (Satu) PT. "X" Rokan Hulu Regency, Riau Province.

METHODOLOGY

The research framework developed in this study consists of two variables, namely the dependent variable and the independent variable. The dependent variable is Axial Neck Pain and the independent variables are work duration, smoking habits, height and weight.

This type of research is quantitative research. This research is correlation research using a cross-sectional design, namely momentary tracking, meaning that the subjects are observed only for a moment or once. The research was conducted at Afdeling one PT. X Rokan Hulu Riau Province. The research was conducted in September 2017.

The population taken in this research were all workers who worked in one department of PT. X is 48 people. The sample in this study used the Total Sampling technique. The sample in this study was 48 people. The measuring instrument in this research is a step scale, microtomies, to measure height and weight. To measure Neck Pain, a questionnaire was used.

RESULTS AND DISCUSSION

A. Univariate Analysis

1. Factors Influencing Axial Neck Pain

Table 1. Frequency Distribution of Work Duration

Working Duration (Hours)	frequency (f)	Percentage (%)
≤ 8	23	47,9
> 8	25	52,1

Table 2. Frequency Distribution of Smoking Habits

Smoking habit	frequency (f)	Percentage (%)
Light	17	35,4
Currently	21	43,8
Heavy	10	20,8
Total	48	100

Table 3. Frequency Distribution of Height

Height	frequency (f)	Percentage (%)
low	7	14,6
Currently	28	58,3
High	13	27,1
Total	48	100

Table 4. Frequency Distribution of Body Weight

Height	frequency (f)	Percentage (%)
Underweight	4	8,3
Normal	37	77,1
Overweight	7	14,6

2. ***Axial Neck Pain***

Table 5. Frequency Distribution of Nutritional Status in Toddlers Aged 12-59 Months

Neck Pain	frequency (f)	Percentage (%)
Yes	37	77,1
No	11	22,9
Total	38	100

B. Bivariate Analysis

1. Effect of Work Duration on Axial Neck Pain

Table 6. Effect of Work Duration on Axial Neck Pain

Working Duration (Hours)	Axial Neck Pain				Total		P value
	Yes		No		f	%	
	f	%	f	%			
≤ 8	12	52,2	11	57,8	23	100	
> 8	25	100	0	0	25	100	0,001
Amount	37		11		48		

2. Influence of Smoking Habits and Axial Neck Pain

Table 7. Relationship Between Psychosocial Stimulation Parenting Patterns and Nutritional Status

Smoking habit	Axial Neck Pain				Total		P Value
	Yes		No		f	%	
	f	%	f	%			
Light	10	58,8	7	41,2	17	100	

Tall	27	87,1	4	12,9	31	100	0,032
Amount	37		11		48		

3. Influence of Height on Axial Neck Pain

Table 8. Effect of Body Height on Axial Neck Pain

Height	Axial Neck Pain				Total		P Value
	Yes		No		f	%	
	f	%	f	%			
Low	31	88,6	4	11,4	35	100	
Tall	6	46,2	7	53,8	13	100	0,004
Amount	37		11		48		

4. Effect of Body Weight on Axial Neck Pain

Table 9. Table of the Effect of Body Weight on Axial Neck Pain

Height	Axial Neck Pain				Total		P Value
	Yes		No		f	%	
	f	%	f	%			
Normal	31	75,6	10	24,4	41	100	
Overweight	6	85,7	1	14,3	7	100	0,487
Amount	37		11		48		

1. Discussion of Univariate Analysis

a) Frequency distribution of work duration

From the results of research on the frequency distribution of work duration in Division I at PT. 'X'' in Rokan Hulu Regency, Riau Province, it is known that 25 farmers work more than 8 hours a day

The results of this study are almost the same as those conducted by According to Laalah (2014) who examined the relationship between age and duration of driving and complaints of low back pain in drivers on the Mobagu–Manado city route at CV Paris 88, Mobagu city, stating that workers >8 hours per day were more dominant than those who worked ≤ 8 hours per day.

b) Frequency distribution of smoking habits

From the results of research on the distribution of the frequency of smoking habits in Division I at PT. "X" in Rokan Hulu Regency, Riau Province, it is known that the dominant smoking habit is 21 people (43.8%).

The increase in muscle complaints is closely related to the duration and level of smoking habits. The higher the level of smoking habit, the higher the perceived muscle complaints (OSHA).

c) Frequency distribution of body height

From the results of research on the frequency distribution of body height in division I at PT. "X" in Rokan Hulu Regency, Riau Province, it is known that the dominant height is in the medium category, as many as 28 people.

The proportion of individual body size differs from one individual to another. Even though they come from the same tribe or race, the body proportions can be different. The taller a person is, the higher the angle the neck forms when doing work.

d) Frequency distribution of body weight

From the results of research on the frequency distribution of body weight in Division I at PT. "X" in Rokan Hulu Regency, Riau Province, it is known that the dominant height is in the normal category, as many as 37 people.

Excess body weight will cause fat accumulation in the neck so that neck movement is limited and becomes short (Tarwaka, 2014).

e) Frequency distribution of axial neck pain

From the results of research on the frequency distribution of axial neck pain in division I at PT. "X" in Rokan Hulu Regency, Riau Province, it is known that 37 people complained of pain.

Poor posture, poor ergonomics, stress, and chronic muscle fatigue can cause axial neck pain, which is neck pain caused by muscle and ligament factors (Tarwaka, 2014).

2. Discussion of Bivariate Analysis

a. Effect of work duration on axial neck pain

The results of the research from the 48 workers studied, using the chi-square statistical test, obtained a p value <0.05 (0.001), which means that there is a significant effect of work duration on axial neck pain.

The length of time farmers spends harvesting palm oil is in the conditions of the harvester itself, where the work carried out by the harvester is not ergonomic or deviates from the neutral position. In accordance with Nurmianto's theory, working hours are related to the length of load on the spine which increases pressure on the discs, resulting in damage and resulting pain in the back area.

b. The influence of smoking habits on axial neck pain

The results of the research from the 48 workers studied, using the chi-square statistical test, obtained a p value <0.05 (0.032), which means that there is a significant influence of smoking habits on axial neck pain.

According to Tarwaka 2015, the increase in muscle complaints is closely related to the duration and level of smoking habits. The longer and higher the frequency of smoking, the higher the level of complaints felt. Especially for work that requires muscle exertion. Smoking habits can reduce lung capacity, as a result the ability to consume oxygen decreases.

c. The influence of body height on axial neck pain

The results of the research from the 48 workers studied, using the chi-square statistical test, obtained a p value <0.05 (0.004), which means that there is a significant influence of height on axial neck pain.

Height has an effect because the taller a person is, the greater the distance between the eyes and the close object being seen, so that the neck and back muscles will contract to bring the head closer to the close object being seen, and if done for a long time and in a forced posture it will cause a feeling of pain in the neck (Tarwaka, 2015).

d. Influence of body weight on axial neck pain

The results of the research from the 48 workers studied, using the chi-square statistical test, obtained a p value <0.05 (0.487), which means there is no significant effect of body weight on axial neck pain.

Patients who are obese (obese with a BMI > 29) have a 2.5 greater risk than thin ones (BMI < 20), especially for leg muscles. A person with excess body weight will place pressure on the facet joints during movement (Tarwaka, 2015).

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis and discussion regarding the factors that influence axial neck pain in workers cutting Fresh Fruit Bunches (FFB) at PT "X" in Afdeling Satu, it can be concluded as follows:

1. It is known that the work duration factor is more than half of the harvesters working > 8 hours a day).
2. The characteristics of the smoking habits of harvesters with light smoking habits are 35.4%, 43.8% of harvesters with moderate smoking habits, and 20.8% of those with heavy smoking habits.
3. It is known that the characteristics of low height are 14.6%, medium 58.3%, and high 27.1%.
4. It is known that almost all harvesters have normal weight characteristics, with a percentage of 77.1%.
5. It is known that almost all harvesters complain of axial neck pain
6. It was found that there was a significant influence (p = 0.001) between the risk factors for work duration and axial neck pain in TBS cutting workers.
7. It was found that there was a significant influence (p = 0.032) between smoking habits and axial neck pain in TBS cutting workers.
8. It was found that there was a significant influence (p = 0.004) between height and axial neck pain in FFB cutting workers
9. It is known that there is no significant effect (p = 0.487) between body weight and axial neck pain in FFB cutting workers.

For Harvesters

a. Do stretching or warming up for about 10-15 minutes led by a leader to avoid sudden muscle contractions and excessive contractions.
b. Take a break if you feel a complaint in your neck, so that muscle stress does not occur which causes axial neck pain.

c. Underweight workers are advised to consume nutritious food to increase body mass to normal. For those who are obese, they are advised to carry out regular exercise and have a healthy diet to reduce body mass to normal.
d. Comply with company work procedures that have been established regarding safe, healthy and secure work.
e. It is expected that harvesters will not work >8 hours per day.
f. Workers with physical activities who are at risk of neck pain over a period of >10 years are advised to rotate to minimize these complaints.

For Companies

a. Conduct training for harvesters or promote occupational health to provide knowledge about good body posture and the importance of maintaining physical fitness to avoid fatigue.
b. Improving working posture on harvesters and assessing ergonomic risks so that workers avoid musculoskeletal disorders.
c. Carrying out equipment upgrades that can make it easier for workers to carry out FFB harvesting activities.

FURTHER STUDY

Can provide information and references in carrying out further research.

1. The research only asked about farmers' subjective complaints and did not examine disease diagnosis, especially axial neck pain. This can give rise to complaints of axial neck pain.
2. Research using a cross-sectional method, where researchers cannot comprehensively follow the growth of toddlers.

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