



Research Article

Analysis Of The Relationship Between Nutritional Status And Length Of Work On Fatigue In PT. X

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ABSTRACT

Protection from work accidents and occupational diseases is what occupational health and safety refers to for employees who are valued assets for enterprises. If this disease is not appropriately treated, symptoms such as work tiredness, which has numerous potential causes, may manifest. In order to prevent worker weariness, it is crucial to understand the causes of it. In this work, cross sectional observational research with quantitative approaches is used. The study's population consisted of PT. Y employees, with a sample size of 45 individuals. The findings of this study suggest that a number of factors influence worker weariness at work. According to the investigation, the length of the workday and nutritional status are the main contributors to fatigue at PT. Y. It is evident from the significance value's results, which have a value less than 0.05. according to the value is the connection between nutritional status and the occurrence of fatigue, it is known that it has a p-value of <0.005, which is 0.000. Then on the results of the analysis of the length of work with fatigue it is known that the p-value <0.005, which is 0.015. Therefore, it can be said that variables contributing to the onset of weariness include nutritional state and the length of work. Therefore, changes must be made to prevent or lower the incidence of worker weariness, such as implementing "fit to work," a nutritious diet, regulating the workload, and getting enough rest.

Keywords: Length of work, nutritional status, occupational health, work fatigue

INTRODUCTION

The workplace is an area where there are workers who work or the environment entered by workers for work matters. It can be seen that the workplace or work environment certainly has potential hazards that can harm/affect the health and safety of workers. Occupational Health and Safety is also something that must be applied at work(Suma'mur, 2014).

Occupational Health and Safety (K3) means protection for workers who are valuable assets for organizations or industries from the formation of occupational diseases to occupational accidents No. 13 of 2003 concerning Manpower. These regulations are needed in order to produce a workplace



that is guaranteed to be safe, healthy and safe for workers to carry out their duties and then can avoid the emergence of occupational diseases and accidents at work (Suma'mur, 2014).

The workforce plays an important role in the industrial development process, so it requires special attention to both ability, occupational safety and health. Every job, both for formal and informal workers, has risks that can cause health problems. In general, informal sector workers lack awareness and knowledge of hazards in their work environment. In addition to dietary issues, infectious diseases, and non-communicable illnesses, informal workers face safety and health concerns at work that can hinder productivity (Ramli, 2010).

Enhancing the standard of human resources to raise brainpower and output at work. The community's nutritional status is one of the efforts that has a significant impact on raising the quality of its human resources. One of the elements affecting quality of life and productivity at work is the community's nutritional status. Health problems are fundamental problems for every human being. Disturbances in health can result in decreased productivity (Ramli, 2010).

Occupational health is part of public health or public health applications in a worker community and the community environment. Occupational health aims to obtain the highest degree of health, both physically, mentally and socially for the working community and the company environment, through preventive, promotive and curative efforts within the limits of basic services (Primary Care) against diseases. or health problems due to work or work environment (Notoatmodjo, 2011).

One of the typical issues that are frequently experienced in the workplace is work tiredness. Some due process that weariness might have a substantial negative impact on employee health and productivity. According to ILO statistics, up to two million workers each year pass away as a result of fatigue-related workplace accidents. According to the study, out of 58,115 samples, 32.8%, or around 18,828 samples, were fatigued. According to data on work accidents in 2004 in Indonesia, there were an average of 414 accidents each day, 27.8% of which were related to excessive exhaustion, and 9.5% among these accidents—or 39 people—were handicapped (Januar, 2014).

According to the National Safety Council, weariness is a factor in 13% of workplace accidents. Injuries involving more than 2,000 working persons show that 97% of employees had at least one risk factor for burnout at work, and more than 80% have many risk factors. When these elements come together, the risk of occupational injury rises (National Safety Council, 2017).

PT. X is one of the state-owned companies located in the city of Samarinda. PT. X has many work processes for both field workers and office workers. The amount of work can cause fatigue in workers. Therefore, it is necessary to do research to find out the nutritional status and length of work that cause fatigue in workers.

METHODS

The location of this research was conducted at PT. X in Samarinda. The type of research used is observational research, using a cross sectional study design, which is a research design that studies descriptively about the independent variables and the dependent variables used in this study. The population in this study were workers who worked in the office and field, the sample in this study amounted to 45 people. The data sources in this study are divided into two, namely primary data and secondary data obtained from company data or documents. The data that has been collected by observation and interviews are then processed. The results of data processing are presented in the form of tables and the explanation.

RESULTS AND DISCUSSION

Fatigue can be interpreted as a condition of fatigue for each person which may be different, usually all of these people feel a loss of efficiency, reduced work capacity, and decreased endurance. The central nervous system has a system of sympathetic activation and parasympathetic inhibition, which the brain uses to control fatigue (Tarwaka, 2014).

The distribution of the respondents' attributes provided the framework for the study's findings

Table. 1 distribution Characteristics of respondents

Variable	n	%
Age		
26-35 Years	5	11,1
36-45 Years	11	24,4
46-55 Years	16	35,6
56-65 Years	13	28,9
Gender		
Man	35	77,8
Woman	10	22,2
Length of Work		
8 Hours	20	44,4
>8 Hours	25	55,6
Nutritional Status		
Thin	10	22,2
Normal	18	40
Overweight	17	37,8
Fatigue Status		
Not tired	17	37,8
Tired	28	62,2
Total	45	100

Primary Data, 2022

Based on the results of the distribution of respondents, it is known that the age of the most respondents is in the age range of 46-55 years as much as 35.6%, then 56-65 years as much as 28.9%, 36-45 years as much as 24.4%, and the last 26-65 years. 35 years as much as 11.1%. In the gender distribution, most of the respondents were male as much as 77.8%. The respondent's length of work in a day is >8 hours as much as 55.6% while those who work 8 hours are 44.4%. In the distribution of the nutritional status of the respondents (The measurement method used is with body mass index), most of the respondents had normal nutritional status, namely 40%, then overweight nutritional status was 37.8% and underweight nutritional status was 22.2%. Based on the level of fatigue, it is known that workers who experience fatigue are 62.2% and those who do not experience fatigue are 37.8%.

The relationship between nutritional status factors and fatigue in workers

Table 2. The relationship of nutritional status factors to fatigue in workers

Nutritional Status	Fatigue		Total	P-Value
	No	Yes		
Thin	7	3	10	0,000
Normal	10	8	18	
Overweight	0	17	17	
Total			45	

Primary Data, 2022

According to the table's results, 17 respondents with overweight nutritional status reported feeling the most work tiredness, compared to 8 respondents with normal nutritional status and 3

respondents with underweight nutritional status. The association between nutritional status and the occurrence of weariness has a p-value of 0.005, meaning 0.000, according to the findings of the chi-square analysis.

An uneven intake and expenditure of nutrients, the body's main energy source, leads to fatigue. The manifestation of nutrition in the form of specific variables or a condition of balance is what is meant by nutritional status. In terms of physiology, the human body is similar to a machine that utilizes fuel as a source of energy to function.

Several systems that can work separately or in concert with one another while engaging in physical activity have an impact on the body. Among these include the circulatory system, neurological system, muscular system, digestive system, and respiratory system (Par'i, 2016). The body needs nutrients from meals for growth, repair, and maintenance of cells and tissues, the amount of which at least depends on 1. Humans need water, vitamins, minerals, lipids, proteins, carbohydrates, and fat-soluble fats to survive.

These nutrients produce the energy needed to maintain growth, for the body's organs to function automatically, and to produce energy to perform tasks outside the body. Good nutrition will increase the capacity and physical endurance of a worker. However, if this condition interferes with work, productivity will decrease, and fatigue will appear (Joyomartono, 2015).

The findings are in line with Dirgayudha's (2014) research on tofu manufacturers in the Ciputat and East Ciputat sub-districts, which found no connection between nutritional status and weariness at work (P value = 0.27 or > 0.05). The researcher hypothesizes that this is caused by the average nutritional status of workers under regular working conditions, which is 24.6. Because one's level of work productivity is determined by their level of nutrition.

The study carried out at PT. Iskandar Indah Printing Textile Surakarta supports this. The results of the correlation test with the product moment achieved a significance value (ρ value) of 0.000 < 0.05. This means that H_0 is rejected, which means that there is a relationship between nutritional status and work fatigue with a correlation level (r) of 0.614 (strong) in the weaving section of PT. Iskandar Indah Printing Textile Surakarta (Pranoto, 2014).

The relationship between the length of work and fatigue in workers

Table 3. The relationship between the factors of length of work and fatigue in workers

Length of work	Fatigue		Total	P-Value/ OR
	No	Yes		
8 Hours	12	8	20	0,015
>8 Hours	5	20	25	(OR= 6,000)
Total			45	

Primary Data, 2022

The results in the table, it is known that the respondents who experienced the most fatigue were workers who worked >8 hours, namely as many as 20 people. Then for workers who experience fatigue at 8 hours of work as many as 8 people. Based on the results of the chi-square analysis test, it is known that the p-value < 0.005, which is 0.015. Therefore, it can be inferred that the duration of employment influences whether or not workers experience job tiredness. Then it is also known that the OR value is 6,000, this means that workers who have worked longer than 8 hours have a risk of fatigue 6 times greater than workers who work 8 hours.

An individual can usually work well for 6 to 10 hours each day. Downtime is used for things like family and community activities, rest, and sleep. Working longer than one's capacity to do so is usually not accompanied by maximum efficiency, effectiveness, or productivity; on the other

hand, Long working hours raise the chance of exhaustion, health issues, accidents, and disease in addition to increasing the likelihood of a drop in work quality and productivity.

A person can usually work well for 40-50 hours a week. In addition, there is a high probability that the affected workers and the work itself will suffer. The probability of an unfortunate event occurring increases with the length of the work week. The 40-hour work week can be divided into five or six working days depending on a number of factors, but in practice, working five days or 40 hours per week is the standard and is continued. and anywhere everywhere¹.

Based on the findings of a study done with 35 participants at the PT. Nusa Raya Cipta DP Mall Hotel Semarang project, a relationship between length of work and weariness of construction employees at PT. Nusa Raya Cipta Semarang is demonstrated. This is based on the analysis' findings using a different test, the Kolmogorov-Smirnov test, which had a 0.002 p value (8 hours, although not all workers have risky working hours, construction workers do most of the work manually, repetitively and too hard). a work style that makes employees susceptible to exhaustion (Hastuti, 2015). There is a connection between weariness and length of labor, according to earlier research by Irma, Syamsiar S. Russeng, and Andi Wahyuni in 2014 at CV Sumber Galian's Paving Block production facility in Biringkanaya District, Makassar City with p value $0,001 < \alpha 0,0512$. This can be brought on by factors such as the workers' nutritional status, health conditions, static work, psychological factors, environmental factors, monotonous or repetitive work, and the fact that most respondents work 12 hours per day, though some respondents only work 7 hours per day for a variety of reasons.

Due to labor requiring overtime, the body's natural rhythms (Circardium rhythms), which regulate activities such as sleep and readiness for work as well as many other autonomic processes that require rest at night, are disrupted. This causes the body's natural production of lactic acid to increase. can cause job burnout, especially for those who work overtime (Irma et al., 2014).

CONCLUSION AND SUGGESTION

The body needs fatigue as a defense mechanism to prevent further injury, allowing for rest-induced recuperation. A decrease in attentiveness and a subjective experience of fatigue during work are what define the condition. In this study, 62.2% of workers reported feeling fatigued at work. This is why it is important to understand how length of work and nutritional state affect worker weariness. Based on the findings of the connection between nutritional status and the occurrence of fatigue, it is known that it has a p-value of <0.005 , which is 0.000. Then on the results of the analysis of the length of work with fatigue it is known that the p-value <0.005 , which is 0.015.

This leads to the conclusion that workers' occurrence of weariness and their nutritional state have a link. The existence of these problems requires handling and supervision from the company in order to reduce the level of fatigue. There are several things that companies can do besides supervision and socialization, such as implementing "fit to work", a nutritious diet, managing workloads, and getting adequate rest.

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