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IDENTIFICATION OF WORK FATIGUE ON KEMPLANG WORKERS

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ABSTRACT

Work fatigue is one of the health problems that occur among workers. Work fatigue needs to be considered, prevented, and handled properly because it has a negative impact on the health of workers and can cause death. The results of a study conducted by the Japanese Ministry of Labor on 12,000 companies involving around 16,000 workers in the country who were randomly selected showed that 65% of workers complained of physical fatigue due to routine work, 28% complained of mental fatigue, and about 7% of workers complained of severe stress and felt left. This research was conducted with the aim of increasing the knowledge of the Kemplang workers in Meranjat II Village and identifying the problem of feelings of work fatigue so that we can solve the problem. The measurement of the feeling of work fatigue of Kemplang workers was carried out using KAUPK2 (Questionnaire for measuring feelings of work fatigue) which contained 17 questions about subjective complaints for 14 respondents. The results show that the level of fatigue of the kemplang workers in Meranjat II Village is low. However, there are no workers who fall into the category of fit workers so that workers still need action to overcome work fatigue.

Keywords: Work Fatigue, Health Problems, Kemplang Workers

Introduction

In order to meet the needs of daily life, most people are willing to do various types of work and even ignore fatigue even though signs of fatigue have appeared on their bodies. Activities or work that exceeds the limits of the body's ability can cause work fatigue as a condition accompanied by a decrease in efficiency and endurance at work according to Suma'mur (1989), while according to Tarwaka (2004), work fatigue is a protective response of the body, where the body must immediately get a recovery, so as to avoid further damage due to activities. too much [1]. Fatigue due to work can have a negative impact on workers, such as decreased worker capacity, worker performance, and increased opportunities for work injuries and accidents in the workplace.

Data from the Ministry of Manpower shows that in the second quarter of 2020, there were around 3174 cases of work accidents and 46 cases of occupational diseases in Indonesia. Meanwhile, at the same time, in South Sumatra there were 206 cases of work accidents and 1 case of occupational disease [2]. The results of a study conducted by the Japanese Ministry of Manpower

on 12,000 companies involving about 16,000 workers in the country who were randomly selected showed that 65% of workers complained of physical fatigue due to routine work, 28% complained of mental fatigue and about 7% of workers complained of severe stress and anxiety. feel left out [3].

Based on data from the National Safety Council (NSC), as many as 13% of injuries at work are related to worker fatigue. The results of a survey of 2,000 adult workers and those who have experienced an accident show that as many as 97% of workers have at least one risk factor for fatigue at work. Meanwhile, more than 80% of workers have more than one risk factor. The more risk factors for fatigue in workers, the higher the chance of injury and work accidents [4].

According to Suma'mur, work fatigue does not just happen, but there are factors that cause it. There are two factors that cause work fatigue, namely individual factors and external factors. Factors from within the individual include aspects of age, aspects of gender, nutritional status of workers, health status, while external factors include workloads that are too heavy, working periods that are too long, inadequate physical work environment such as lack of lighting or lighting in the room. or outdoors, the severity of the work climate or pressure, high noise intensity, and ergonomic factors [5].

Work fatigue, if not identified as early as possible, will cause fatigue to accumulate, so that over time it will worsen health conditions. Work fatigue can cause various conditions in the worker's body, such as poor work performance, decreased motor and neurophysiological functions, the body does not become enthusiastic and feels tired quickly. Fatigue tends to increase the incidence of work accidents and can harm workers and the company by decreasing labor productivity. Work fatigue has been shown to contribute to more than 50 workplace accidents[6].

Based on the results of the study entitled "Analysis of Work Postures Using the Rapid Upper Limb Assessment (Rula) Method at Kerupuk Kemplang SMEs 32, Bumi Waras Subdistrict, Bandar Lampung", it shows that the work postures of workers making kemplang crackers are divided into three activities, namely taking sago water, making dough and roasting kemplang crackers, where these three activities have a score of 7 which indicates the action level 4. In this study it was concluded that the number of work posture errors in making kemplang crackers was still high[7].

In the Indralaya area, Ogan Ilir district, there are various types of cottage industries, such as the kemplang industry, songket weavers, welding work, furniture and others. The majority of the cottage industry in the Ogan Ilir area, especially in the South Indralaya area, is the kemplang cracker industry. The process of making kemplang crackers is still using the traditional method, so that when workers do their work, they often encounter non-ergonomic body postures that cause severe work fatigue if the body position while working is done repeatedly or repetitively [8].

In addition, the kemplang cracker business is growing and the use of human labor in the kemplang cracker industry is still dominant, especially in manual material handling activities. The

problem that is commonly encountered in the kemplang cracker industry is work fatigue. As for example, as in one of the processes of kneading kemplang cracker dough, where if done repeatedly (repetitive), a long standing working position will put pressure on the nerves, blood vessels and muscles in the legs so that it can cause musculoskeletal complaints[7].

This study took the topic of "Identification of Work Fatigue in Kemplang Workers in Meranjat II Village by Using the Questionnaire for Measuring Feelings of Work Fatigue (KAUPK2)" which aims to identify and see a description of subjective work fatigue that occurs in kemplang workers in Meranjat II Village. Work fatigue in this study is fatigue that is measured subjectively regarding complaints of feelings of fatigue experienced by workers.

Method

This research was conducted using interviews and questionnaires measuring feelings of work fatigue (KUPK2). The questionnaire was filled in by asking individual samples with a total sampling of 14 people. Furthermore, the data obtained is processed to determine and interpret the proportion of each work fatigue felt by the work of the Kemplang Village of Meranjat II.

Results

Work fatigue research was conducted on kemplang workers in Meranjat II Village. At the implementation stage, the researchers made further observations about the conditions in the field and collected data by filling out questionnaires. To measure work fatigue, researchers used the KAUPK2 questionnaire (Questionnaire for Measuring Feelings of Work Fatigue). KAUPK2 consists of 3 aspects, namely aspects of weakening activities, aspects of weakening motivation, and aspects of physical symptoms. KAUPK2 consists of 17 questions about subjective complaints that can be suffered by workers. Each of 14 respondents was given a questionnaire and the researcher provided assistance to the kemplang workers in Meranjat II Village when filling out.

Characteristics of Respondents

The following are the results of the distribution of respondents based on the general characteristics of respondents to kemplang workers in Meranjat II Village.

Table 1. Gender Distribution of Respondents

Gender	n	%
Man	1	7.15
Woman	13	92.85
Total	**14**	**100**

Table 1 shows that most of the respondents are female as many as 13 respondents (92.85%) while the rest are male as many as 1 respondent (7.15%).

Table 2. Age Distribution of Respondents

Age	n	%
>26 Years	6	42.9
26 Years	8	57.1
Total	**14**	**100**

Table 2 shows that the majority of respondents aged 26 years were 8 respondents (57.15%) while those aged >26 years were 6 respondents (42.85%).

Table 3. Distribution of Respondents Working Period

Years of service	n	%
1-10 Years	10	71.4
11-20 Years	2	14.3
21-30 Years	2	14.3
Total	**14**	**100**

Table 3 shows that most of the respondents have a working period of 1-10 years as many as 10 respondents (71.4%) while a small proportion of respondents have a working period of 11-20 years as many as 2 respondents (14.3%) and a small proportion have a working period of time. 21-30 years as many as 2 respondents (14.3%)[9].

Work Fatigue Rate

The level of work fatigue is obtained by adding up the scores of the respondents' questionnaire assessments and categorizing them according to predetermined indicators. The following are the results of the distribution carried out regarding the number of scores for filling out the questionnaire against the indicators set to determine the level of fatigue of Kemplang workers in Meranjat II Village[10].

Table4. Distribution of Respondents Subjective Fatigue Level

Category	n	%
Fit	0	0.0
Fatigue Level I	8	57.1
Fatigue Level II	5	35.7
Fatigue Level III	1	7.2
Total	**14**	**100**

The results in Table 4 show that there are no respondents who have a fit condition without work fatigue. 8 respondents (57.1%) had fatigue level I, 5 respondents (35.7%) and 1 respondent (7.2%) had fatigue level III.

Table 5. Cross Tabulation of the Relationship between Gender and Work Fatigue

Gender	Fatigue Category				Total
	Fit	Fatigue I	Fatigue II	Fatigue III	
	n(%)	n(%)	n(%)	n(%)	n(%)
Man	0 (0,0)	1 (7.15)	0 (0,0)	0 (0,0)	1 (7.15)
Woman	0 (0,0)	7 (50.0)	5 (35.7)	1 (7.15)	13 (92.85)
Total	0 (0,0)	8 (57.15)	5 (35.7)	1 (7.15)	14 (100)

The results of the cross tabulation between gender and work fatigue level in table 5 show that none of the respondents have a healthy condition. 8 respondents (57.15%) experienced level I fatigue, 5 respondents (35.7%) experienced level II fatigue, and 1 respondent (7.15%) experienced level III fatigue.

Table 6. Cross Tabulation of Age Relationship with Work Fatigue

Age	Fatigue Category				Total
	Fit	Fatigue I	Fatigue II	Fatigue III	
	n(%)	n(%)	n(%)	n(%)	n(%)
>26 Years	0 (0,0)	2 (14.3)	4 (28.6)	0 (0,0)	6 (42.9)
26 Years	0 (0,0)	6 (42.9)	1 (7.1)	1 (7.1)	8 (57.1)
Total	0 (0,0)	8 (57.2)	5 (35.7)	1 (7.1)	14 (100)

The results of the cross tabulation between the age of the respondent and the level of work fatigue in table 6 show that none of the respondents have a fit condition. A total of 8 respondents (57.2%) experienced level I fatigue, 5 respondents (35.7%) experienced level II fatigue, and 1 respondent (7.15%) experienced level III fatigue.

Table 7. Cross Tabulation of the Relationship between Work Period and Work Fatigue

Years of service	Fatigue Category				Total
	Fit	Fatigue I	Fatigue II	Fatigue III	
	n(%)	n(%)	n(%)	n(%)	n(%)
1-10 Years	0 (0,0)	7 (50.0)	2 (14.3)	1 (7.1)	10 (71.4)
11-20 Years	0 (0,0)	0 (0,0)	2 (14.3)	0 (0,0)	2 (14.3)
21-30 Years	0 (0,0)	1 (7.15)	1 (7.15)	0 (0,0)	2 (14.3)
Total	0 (0,0)	8 (57.15)	5 (35.75)	1 (7.1)	14 (100)

The results of the cross tabulation between the period of work and the level of work fatigue in table 7 show that there are no respondents who have a fit condition. A total of 8 respondents

(57.15%) experienced level I fatigue, 5 respondents (35.75%) experienced level II fatigue, and 1 respondent (7.1%) experienced level III fatigue.

Discussion

Fatigue is a condition where the body gives a signal that there are things that can interfere with the body's health condition. Generally, fatigue occurs in someone who does work. This condition can be an indicator that there are health problems for workers. If the problem of fatigue is not immediately addressed, it will have an impact on decreasing the ability to work productivity [11]. The results showed that the characteristics of the respondents were mostly female (92.85%), aged less than 26 years (57.1%) and had a working period of 1-10 years (71.4%).

When viewed from the results of the sex distribution of respondents, it can be seen that most of the workers are female with a percentage of 92.85% or as many as 13 people. This shows that not only men are only able to do work, but women can also participate in improving the household economy. The female character who is patient, tenacious, persistent and hardworking makes her a lot involved in making kemplang. This is in line with research conducted by Miftakhuljanah, et al (2016) that the involvement of women in the small kemplang cracker industry is able to improve the household economy [12].

Age is related to BMR (Basal Metabolism Rate) because with increasing age, the BMR will decrease so that a person is prone to fatigue. To process metabolism, the body needs energy in order to process food and oxygen that enters the body. If this ability decreases, then the individual's ability to maintain life also decreases. A person's ability to work can also be influenced by age. The older a person is, the less his performance abilities will be. When a person is young, they will be able to do tough work. On the other hand, when one gets older, it is easier for a person to feel tired and not agile in doing his job [13].

The working period is the time spent by a person in doing his job. With a period of work, a person has work experience, knowledge and skills as a worker/employee. The results of the study show that some respondents have a working period of 1-10 years [14]. As research conducted by Utami, et al (2018) that the longer a person's working period, the more experience a person has in doing his job. On the other hand, it will have a negative impact if the longer you work, it can cause fatigue, boredom and more exposure to hazards from the work environment [15].

The level of subjective work fatigue is a measurement taken to determine the limits of worker fatigue by providing 17 questions related to work fatigue. Then, it is divided into 4 categories of worker conditions, namely fit, fatigue I (low fatigue), fatigue II (moderate fatigue) and fatigue III (severe fatigue). The results showed that most of the kemplang workers had low levels of fatigue with a percentage of 57.1% or as many as 8 people. This is in line with Verawati's

research (2016) which shows that many workers experience low levels of fatigue. Work fatigue in kemplang workers in Meranjat II Village is caused by the workload in the form of psychological factors on workers which results in many workers feeling nervous and forgetting something to do [9].

The relationship between sex and the level of work fatigue at the time of the study showed that most of the kemplang workers in Meranjat II Village were female. The level of fatigue in female workers is at fatigue level III (severe fatigue) with a percentage of 92.85% or 13 people. This excessive fatigue can be caused by the body size and muscle strength of women being smaller than men [3]. However, this study is not in line with Manik's (2019) research which states that there is no relationship between work fatigue and gender. Work fatigue experienced by women is not only caused by physical strength, but is also influenced by monotonous work, mental conditions, health status and others [16].

The results in table 6 show that respondents in the age group 26 years are mostly in the category with fatigue level I, which is 46.9%, while in the age group > 26 years most are in the category II fatigue level. This shows that the higher the age of the respondent, the greater the risk of experiencing fatigue at a higher level. This is in line with the results of Andriani's research (2016) which shows that the increasing age of workers will cause reduced body strength so that they are prone to experiencing a higher risk of fatigue. Increasing age will be followed by a decrease in physical capacities, such as vision, hearing, speed to distinguish things, make decisions and short-term memory skills [17].

According to Lahay et al (2018) the age factor can affect the reaction time and feelings of fatigue of workers. Older workers tend to experience a decrease in muscle strength, but this situation is balanced by better emotional stability than younger workers, so that it can have a positive impact on doing work. Therefore, it would be wiser if there was a division of the work portion that was adjusted to the conditions of the workers so that it would not have a negative impact in the future [18].

The tenure in this study was categorized into 3 groups, namely 1-10 years of service, 11-20 years, and 21-30 years. Of the 14 respondents studied, it was found that 10 respondents were in the working period of 1-10 years, 2 respondents were in the working period of 11-20 years, and 2 respondents were in the working period of 21-30 years. Respondents in the working period of 1-10 years mostly experienced fatigue in the fatigue category I (50%), respondents in the 11-20 years working period were in the fatigue category II (14.7%), while respondents in the working period 21-30 years are in the fatigue category I and II (14.7%). This shows that the longer the worker's working period, the greater the risk of workers experiencing a higher level of work fatigue.

The length of the working period will have a positive and negative impact on workers. The length of a worker's tenure can be influenced by the worker's satisfaction at work, the perceived stress, the career path offered and the compensation given as a result of their work. Someone who

works long enough will have more experience in work and tend to adapt easily in their work environment. However, workers with longer tenures also tend to experience fatigue and boredom caused by monotonous and repetitive work activities. This is in line with the results of research by Melissa and Dwiyanti (2018) which showed that the longer the working period of workers, the more fatigue and boredom they could have. The longer you work [10].

Conclusion

Work fatigue in kemplang workers in Meranjat II Village is still in the low fatigue category with a percentage of 57.1% while the level of fatigue in female workers is at fatigue level III (severe fatigue) with a percentage of 92.85% which is caused by monotonous work and the mental condition of workers is less stable. At this level, it is necessary to carry out countermeasures so as not to have a major adverse impact on workers.Kemplang workers in the age group >26 years experienced work fatigue in the category II level of fatigue caused by a decrease in the physical capacity of the workers.Kemplang workers with 1-10 years of service experience fatigue in fatigue category I (50%), 11-20 years of service are in fatigue category II (14.7%), and workers with 21-30 years of service are in category fatigue I and II (14,7%). This is because the longer the working period, the higher the risk of workers experiencing work fatigue.Kemplang workers in Meranjat II Village are advised to carry out work fatigue management to prevent and inhibit the increase in work fatigue.

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Conflict of Interest

There is no potential conflict of interest that can be conveyed by group members in field lecture activities.

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