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Analysis of Musculoskeletal Complaints Factors on Work Productivity and Musculoskeletal Disorder in Employees at Putra Waspada Hospital

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ABSTRACT

Background: Occupational health is organized so that any workers can work healthy, the occurence of health disorder is often caused by inadequate work environment both physical, working design mentality and workload.
Purpose: The purpose of this study is to explore the analysis of work productivity and musculosceletal disorders in the Putra Waspada Hospital.
Methodhs: The data collection applied observation quetionnaire techniques. The research used quantitative design with observasional analityc surveys and cross sectional approach. The sampling technique was used by the researcher was Simple Random Sampling with a sample calculation formula obtained a sample of 109 respondents. The data analysis techniques were using the Logistic Regression test.
Results: The results of the study found that there are known for long work of 0,000 ($p < 0,05$) there is an influence of long work with productivity, for variable work shift value 0,996 ($p > 0,05$) there no influence with productivity, nutritional status variable of 0,000 ($p < 0,05$) there is an influence of productivity, and the last variable of ergonomic work attitude 0,995 there is no influence of productivity. Whereas for variables musculosceletal disorder long work of 0,000 ($p<0,05$) there is an influence of long work with musculosceletal disorder, for variable work shift value 0,156 ($p>0,05$) there no influence with musculosceletal disorder, nutritional status variable of 0,000 ($p< 0,05$) there is an influence with musculosceletal disorder, and the last variable of ergonomic work attitude 0,00 there is influence with musculosceletal disorder. The dominant factors affecting musculoskeletal disorder in employees at Putra Waspada Hospital is nutritional sttaus with an old rasio value 8,889 and an old ratio of 154.0 for nutritional productivity.
Conclusion: Obstacles that occur are still many workers who do not pay attention to the balanced nutrients that the body needs and lack of rest time so that there is obesity and complaints on workers.

Keywords: Musculosceletal disorder, productivity, worker

BACKGROUND

Musculoskeletal disorders are a set of symptoms related to the tissues of the muscles, tendons, ligaments, cartilage, nervous system, bone structure, and blood vessels where the musculoskeletal complaint is a complaint on the skeletal muscle parts perceived by a person

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ranging from mild to very fatal complaints. This complaint is triggered by various factors, one of which is the job factor e.g. excess muscle stretching, unnatural work posture, repetitive motion, and environment such as vibration, pressure and Microklimat (Tarwaka, 2013). Occupational health is organized so that every worker can work healthily without endangering themselves and surrounding communities, in order to obtain optimal work productivity (Tarwaka, 2014). Notoatmodjo (2012) Declares occupational health seeks to reduce or regulate the workload of employees or workers by planning or designing a tool that can reduce workloads. In carrying out its activities, workers often do not pay attention to the important things that become the risk factor of the disease caused by work. Occupational Safety and Health Administration (OSHA) 2004 explains that occupational illness is a disease or injury that occurs at work as a result of exposure to working materials or conditions when performing work (Elyas, 2012). Occupational illness can occur during work activity. Of the many occupational illnesses, the musculoskeletal complaint is the most frequently reported complaint. According to WHO incidence of musculoskeletal disease is the most common disease and is estimated to reach 60.4% of all diseases caused by work.

The study of the Ministry of Health in the profile of health problems in Indonesia showed that about 40.5% of the illnesses suffered by workers related to work. Health disorders experienced by workers based on research conducted on 9,482 workers in 12 districts in Indonesia showed the highest number of musculoskeletal disorders (16%), followed by cardiovascular disorders (8%), neuronal disorders (5%), respiratory disorders (3%) and ENT disorders (1.5%). 4 Whereas, the types of public transportation that can be found in Indonesia include Public Transportation (Angkot), buses, taxis, Metro Mini, and many others (Sekaaram, 2017).

OBJECTIVE

By knowing the factors that affect the cause of musculoskeletal complaints on work productivity and musculoskeletal disorders, solutions are given so that they pay attention to their nutritional status and correct ergonomic working attitude in the workplace to prevent or reduce musculoskeletal complaints and improve work productivity. It can encourage researchers to conduct research on the musculoskeletal complaints factor analysis towards work productivity and musculoskeletal disorders in employees at the putra waspada hospital.

METHODS

This study used quantitative research by using a correlational study with a cross sectional design. The population in this study was 150 employees at Putra Waspada hospital. The sampling technique is Simple Random Sampling with a large sample calculation in obtaining a sample of 109 respondents. The instruments used for data collection in this study are questionnaires and checklist sheets. The statistical analysis is quantitative analysis with data analysis techniques by using the Logistic Regression test. The location of the study was at Putra Waspada Hospital. Independent variables for long work, shift work, nutritional status and ergonomics work attitudes while dependent variables are occupational productivity and musculoskeletal disorders. This research has also been conducted through the Institute of Health Sciences IIK STRADA. This study has also passed the ethical test conducted through the Health Sciences Institute IIK STRADA SK No. 1633/KEPK/XI/2019.

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RESULTS

Table 1. Respondents on length of work

Length Of Work	Total	Presentase (%)
< 1 year	22	20
1-3 year	27	25
> 3 year	60	55
Total	109	100

Based on table 1, more than half of respondents experienced a long work of > 3 years by 60 respondents (55%).

Table 2. Respondents Based on Work Shifting

Shift work	Total	Presentase (%)
Morning	68	62.4
Evening	27	24.8
Night	14	12.8
Total	109	100

Based on table 2, most employees work on morning shift by 68 respondents (62.4%)

Table 3. Respondents Based on Nutritional status

Nutritional status	Total	Presentase (%)
Skinny	30	27.5
Natural	29	26.6
Chubby	50	45.9
Total	109	100

Based on table 3, half of the respondents have overweight by 50 respondents (45,9%)

Table 4. Respondents Based on Ergonomic Work Attitude

Ergonomic Work Attitude	Total	Presentase (%)
Low risk	45	41.3
Moderate risk	6	5.5
High risk	58	53.2
Total	109	100

Based on table 4, more employees are experiencing high risk by 58 respondents (53,2%)

Table 5. Respondents Based on Work productivity

Work productivity	Total	Presentase (%)
Productive	53	48,6
Unproductive	56	51,4
Total	109	100

Based on table 5, nearly half of the unproductive employees amounted to 56 (51,4%).

Table 6. Respondents Based on Musculoskeletal disorder

Musculoskeletal disorder	Total	Presentase (%)
Low risk	0	0
Moderate risk	50	45.9
High risk	59	54.1
Total	109	100

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Based on table 6, almost half of employees experienced high risk musculoskeletal disorders amounting to 59 (54.1%).

Table 7. Result analysis of factors affecting musculoskeletal disorders in employees at Putra Waspada Hospital

Variables in the Equation						
	B	**S.E.**	**Wald**	**Df**	**Sig.**	**Exp(B)**
Step 1[a]	Length of Work	.671	28.082	1	.000	1.238
	Constant	1.874	23.314	1	.000	.000
Step 1[a]	Shift work	4.071E3	.000	1	.996	1.000
	Constant	1.221E	.000	1	.996	3.346E26
Step 1[a]	Nutritional status	1.078	22.530	1	.000	154.000
	Constant	2.341	23.714	1	.000	8.932E4
Step 1[a]	Ergonomic work attitude	3.299E3	.000	1	.995	.000
	Constant	9.896E3	.000	1	.995	2.182E26
Step 1[a]	Length of work	.270	13.425	1	.000	.238
	Constant	.689	13.126	1	.000	12.118
Step 1[a]	Shift work	.229	2.008	1	.156	1.384
	Constant	.579	1.103	1	.294	.544
Step 1[a]	Nutritional status	.264	17.460	1	.000	8.889
	Constant	.613	13.264	1	.000	.107
Step 1[a]	Ergonomic work attitude	.220	17.793	1	.000	.159
	Constant	.506	12.401	1	.000	.168

Musculoskeletal complaints factor is found in the length of work factors, shift work factor, nutritional status factor and ergonomics working attitude factors. According to the table above, shows that the productivity and musculoskeletal disorders are influenced by old working factors, nutritional status and ergonomics. Muckuloskeletal complaints are pain, aches, pains and other parts of the musculoskeletal system such as blood vessels, tendons, nerves, joints, bones, and more because of the work performed. The causes of musculoskeletal complaints are excessive muscle stretching, repetitive activity and an unnatural work attitude. With the long-standing relationship to the productivity and musculoskeletal disorders is expected that employees who have long worked in particular can rotation/mutation to other parts so that the productivity remains high and lowers the musculoskeletal disorder.

The dominant factor that affecting musculoskeletal disorder in employees at Putra Alert Hospital is the nutritional status with the old value of the ratio of 8,889 and old ratio of 154.0 to the nutritional status to the productivity of work. Obstacles that occur are still many workers who do not pay attention to the balanced nutrients that the body needs and lack of rest time so that there is obesity and complaints on workers.

DISCUSSION

The results of the research known for a long work of 0.000 ($P < 0.05$) have long influence on working with productivity, for variable shift work value sig. 0.996 ($P < 0.05$) there is no shift in work impact with productivity, variable nutrient status of 0.000 ($P < 0.05$) there is an influence of nutritional status with Produktovotas and the last variable ergonomic work attitude of 0.995 ($P > 0.05$) there is no influence of ergonomic work attitude with

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productivity. As for the variable musculoskeletal disorder, there is a long working result of 0.000 (P < 0.05) there is a long working influence with musculoskeletal disorder, for variable shift work value sig. 0.156 (P < 0.05) there is no shift in work with musculoskeletal disorders, a nutritional status variable of 0.000 (p < 0.05) there is an influence of nutritional status with musculoskeletal disorder and the last variable ergonomic work attitude of 0.00 (P < 0.05) there is an ergonomic influence of work attitude with musculoskeletal disorders. The dominant factor affecting musculoskeletal disorder in employees at Putra Alert Hospital is the nutritional status with the old value of the ratio of 8,889 and old ratio of 154.0 to the nutritional status to the productivity of work. Obstacles that occur are still many workers who do not pay attention to the balanced nutrients that the body needs and lack of rest time so that there is obesity and complaints on workers.

According to Kartika Dani (2014) Nutritional Status strongly affects the person's condition, if the status of malnutrition in this will result in fewer people's productivity in the work, one will be weak, lazy, and less concentration. So nutritional monitoring is very necessary. The results of this research in line with the research of Fauziah, 2018 on the factors causing the incidence of proditivity of work in mine workers, obtained the result of most of the respondents obesity 56 (57.8%) Unproductive. Obesity is a result of excessive eating consumption that is then at risk of causing various diseases and decreased physical activity as a impact of obesity experienced that ultimately impacts the decrease in the work productivity when not to do prevention by changing the lifestyle to be healthier (Fauziah, 2018).

Overweight is an internal factor that causes the decline in the productivity of one's work, this is because in someone who is obese will have difficulties in moving and lazy activities (Ginanjar, 2018). Musculoskeletal disorders are also the most commonly associated with overweight or obesity. In overweight or obese, fat cells also follow the fat and such cells will produce some substances that are classified as more adipositokine than the state at no fat time. Those substances that caused frequent musculoskeletal disorders occur in those who are obese (Rahayu,2012).

In addition to the nutritional status factor, the longer the working position is not balanced with the change in position as in the installation section there is no change in position then there will be musculoskeletal disorder and work productivity. With a position balanced between there is a position change and not then it will be able to minimize the complaint. The length of the work position followed by a change in position can reduce the workload so that fatigue can be prevented for the worker. The position of sitting-stand alternately (position change) to avoid muscle saturation and tension – muscles in the static limbs as well as changing the monotonous working attitude to be more varied.

CONCLUSION

The dominant factor that affecting musculoskeletal disorder in employees at Putra Alert Hospital is the nutritional status with the old value of the ratio of 8,889 and old ratio of 154.0 to the nutritional status to the productivity of work. Employees should consider the status of good nutrition so that it is not overweight and can improve work productivity and reduce musculoskeletal disorders.

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CONFILCT OF INTEREST

This study did not have any conflict of interest.

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