ATLANTIS PRESS

Advances in Health Sciences Research (AHSR), volume 14

1st International Conference on Inter-Professional Health Collaboration (ICIHC 2018)

The Relationship Between Work Posture And Musculoskeletal Disorders (Msds) In Laundry Workers In The Area Of Puskesmas Sukamerindu Bengkulu

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Abstract*—*Central health of Sukamerindu Bengkulu city is a working area of Sukamerindu Public Health Center which has informal business spread in 7 regions. One of the informal businesses in Sukamerindu Village is laundry. Laundry which is spread in Sukamerindu area has 18 laundries with 49 workers. Based on observations made there are 75% of workers with ergonomic posture and 25% of workers who are not ergonomic. As for musculoskeletal complaints, there were 43% who experienced big complaints and 57% with mild complaints. Purpose of research to know the relation of work posture with a complaint of musculoskeletal disorders at laundry worker in work area of central health Sukamerindu. The method used is cross-sectional. The population of laundry workers in the work area of Sukamerindu central health there are 49 workers. The sample used in this study uses total sampling, which is 49 workers. Assessment of work posture using checklist posture and for complaints of musculoskeletal disorders using Nordic body map questionnaire. The statistical test used chi-square to show there is a correlation of work posture with musculoskeletal disorders complaint that is p = 0,003 (p = <0,005), a minority (25%) of workers with not ergonomic posture and less than half (43%) of workers experienced big complaints. It is maintaining body posture while working as a first step to prevent musculoskeletal injury. As for workers who experience complaints, they should maintain their working attitude so as not to increase the risk of complaints.

Keyword: work posture, musculoskeletal disorders (MSDs)

I. INTRODUCTION

In Indonesia, industry development is currently very rapid, both in the formal business sector and in the informal business sector. The informal business sector consists of home industry, agriculture, trade, and plantations. According to the Central Statistics Agency (BPS) in Indonesia, the labor force in February 2017 is estimated at around 4.87% or around 131.55 million people. Workers in the informal sector amounted to 58.35% or around 72.67 million people, while for the formal sector amounted to 41.65% or around 51.87 million people. So that most workers are absorbed in the informal sector.

All industries in the formal and informal business sectors are expected to be able to implement Occupational Safety and Health (K3) in carrying out their duties so that workers feel safe at work, free from occupational diseases and workplace accidents. Besides, according to the Regulation of the Minister of Health of the Republic of Indonesia Number 70 of 2006, in the workplace there are many potential hazards, namely physical, chemical, biological, ergonomic and psychosocial hazards that affect the health of workers.

The danger is the result of interaction between the elements involved, namely workers, tools/machines used in doing work and work environment. The interaction between these three elements results in direct and indirect impacts on workers which include hazards to work safety and occupational health. One occupational health problem that is rarely considered is ergonomics.

According to the International Labor Organization (ILO), ergonomics is the science of discovering and gathering information about behavior, abilities, limitations and human characteristics in the design of machines, equipment, work systems, and a productive, comfortable, safe and effective environment for humans. Ergonomics is a regular or systematic branch of knowledge to utilize information about human nature, human abilities and their limitations in designing a good work system so that goals can be achieved effectively, comfortably and safely.

Ergonomics that are lacking attention can cause ergonomic problems. One common symptom that arises from work is musculoskeletal disorders. Musculoskeletal Disorder is a health problem involving the joints, muscles, tendons, skeleton, cartilage, ligaments, and nerves (Van et al., 2016). Musculoskeletal Disorder is related to the intensity and severity of work, although often light activities such as housework or exercise may also be involved (Barro et al., 2015).

Some studies show that MSDs can occur due to a combination of various factors. According to Kuntodi (2008), concluded that MSDs disorders could occur by several risk factors that can contribute. It is categorized into three categories, namely individual factors, namely age, sex, length of work, and anthropometry, work factors that are factors that come from the job itself, including work posture, repetitive movements, energy usage, and object characteristics, and work environment factors consist of macroclimate vibrations and lighting.

Laundry business is an informal business with unbounded working hours, special education, and a guaranteed salary. Characteristics of work in the laundry are monotonous and repetitive. Not all laundry businesses are work environments that meet the requirements. The process of laundry activities is at least six stages of work, namely weighing, sorting, washing, drying, ironing and packing. In the sixth process, these activities are often carried out with unnatural positions (OHSAH, 2003).

In the sorting process, workers weigh clothing to be washed, separate clothes. This process is done manually. The position of lifting while rotating, carrying a load of clothes baskets to the washing place with an unnatural position, fell, slipped. The second process is washing; this process is the potential danger that arises is the use of detergents, perfumes and softener clothes. At the time of washing too, the position of the worker can bend, sit, and stand. The third process is the drying process, with two stages, using drying and drying machines. The drying process with the engine causes noise and vibration. After passing through the drying stage with the machine, proceed with drying by drying. The fourth process is ironing, can be done in two ways, namely with steam irons and ordinary irons. In the ironing process, the ironing table generally does not match the size of the worker's body dimensions. This causes the position to be pressed by bending, standing too long, legs bent. Static body posture. The ironing desk area is not spacious, so there are weak and repetitive movements. The last process is copying. This packing is the process of inserting clothes that have been ironed into a plastic wrapper, then placed in a temporary storage cabinet. Many clapping activities involve repetitive and static hand and arm movements. Still often found bending position, lifting while rotating, placing the load on the shelf or cabinet that exceeds the height of the worker. A study states that work areas that are too high will cause work posture discomfort (Park, 2013).

The Work Area of the Sukamerindu Health Center itself has 18 laundry facilities with a total of 49 workers. Based on the initial survey on January 17, 2018, at Laundry X in Sukamerindu Village, there were five laundry workers, but there were only 60% or 3 people at the time of this activity. It is known that 60% of laundry workers complain of aches and pains in body parts such as the neck, back, and hands at work or after work. Therefore, there needs to be an effort to assess ergonomic risks to the work process in the laundry service industry especially by looking at the work activities carried out by workers.

Assessment is carried out based on the aspect of work assessed as ergonomic risk parameters based on body posture, load pressure used, type of movement or action, repetition of hand position when in contact with the object. Based on the above, the authors are interested in researching musculoskeletal disorders (MSDs) risk analysis on laundry workers in the working area of Sukamerindu City Health Center in Bengkulu.

II. METHOD

This study aims to determine the relationship between work posture and musculoskeletal disorders in laundry workers in the work area of Sukamerindu City Health Center in Bengkulu.

III. RESULT

TABLE 1. DISTRIBUTION FREQUENCY OF WORK POSTURE FOR LAUNDRY WORKERS IN SUKAMERINDU HEALTH CENTER WORK AREA IN 2018

Work Posture	Frekuensi	Presents (%)
Ergonomi	37	75
No Ergonomics	12	25
amount	49	100

I have based on table 1. It is known that from 49 workers a small proportion of workers (25%) were not ergonomics.

TABLE 2 DISTRIBUTION FREQUENCY OF MUSCULOSKELETAL DISORDERS LEVEL FOR LAUNDRY WORKERS IN SUKAMERINDU HEALTH CENTER WORK AREA IN 2018

Complaint Level	Frekuensi	Presentase (%)
28 – 70 (minor complaints)	28	57
71 – 112 (high complaint)	21	43

Based on table 2 the results of musculoskeletal complaints found that more than half (57%) experienced mild complaints.

TABLE 3 RELATIONSHIP BETWEEN WORK POSTURE AND MSDS COMPLAINTS ON LAUNDRY WORKERS IN THE SUKAMERINDU CITY OF BENGKULU WORK AREA IN 2018

Work	Complaint				Total		p-value	OR		
Posture										
	High		Light							
Ergonomi	11	30	26	70	37	100	0,002	63,024)	(2,216	11,818
Not ergonomics	10	83	2	17	12	100				
amount	21	43	28	57	49	100			–	

Based on table 3 that the value of p-value there is a relationship between work posture with complaints of musculoskeletal disorders, because of the p-value of 0.002 (p<0.05).

IV. DISCUSSION

Work posture as an independent variable in this study. Assessment of work posture using a work post checklist and dependent variable in the form of musculoskeletal complaints with NBM questionnaire. to get this.

The relationship, the chi-square test was performed . Based on the results of the analysis of the relationship between work posture and complaints of MSDs on laundry workers in the Sukamerindu Health Center work area on the posture of workers who experience mild complaints there are 2 (17%) with work postures that are not ergonomics. Whereas for big complaints there were 10 (83%) workers with no ergonomic work posture. Workers with non-ergonomic work postures with big complaints due to the condition of the workplace of each laundry vary from laundry facilities there are those who use the facilities of tables and chairs to work like ironing, sitting down with floor pads for ironing. According to research, work sitting position can put pressure on the lower back which is quite heavy and cause low back pain in workers. Same as sitting too long can cause an excessive burden on the lumbar spine, causing pain in the lower back. An ergonomic sitting position will cause contraction of the back muscles isometrically (against resistance) in the primary muscles involved in the work. The back muscles will work hard to withstand the burden of the upper limbs. As a result, the workload rests on the waist area as the primary load retaining so that it will experience fatigue and further pain in the lower back muscles. For ergonomic work posture with minor complaints, there were 26 (70%) workers, while ergonomic work postures with big complaints contained 11 (30%) workers. This is due to the age of the worker, the duration of the worker and the amount of workload.

The MSDS of the works were evaluations by the modified Nordic M Questionaire technique the, and percentage of different musculoskeletal problems were determinant.Ergonomic work postpones in undergraduate consistency students: correlation between them and practice. The valence of work-related musculoskeletal MSDS and ergonomic risk assessment talk ready-made garment wonders of Bangladesh a cross-sectional study.

Statistical test results obtained p-value = 0.002 (p = <0.005), it can be concluded that there is a significant relationship between work posture with MSDS Complaints on laundry workers in the Sukamerindu Health Center Work Area. From the results of the analysis obtained OR value = 11.818 which means that workers who work with non-ergonomic work postures have 12 times the chance of experiencing MSDs than workers who work with ergonomic work postures. This research is in line with the research of Giri Carakan (2012) using variables of body posture, environment, age, and sex which stated that in some work postures caused minor complaints in the packaging process. there is a the relationship between work posture and complaints of MSDs.

V. CONCLUSION

A few posture workers work did not provide ergonomic, less than a half of workers complaint with the high category and the is the significant relation between and then.. Workers should pay attention to their posture during work as a first step to prevent musculoskeletal disorders. As for workers who experience complaints, they should maintain their working attitude so as not to increase the risk of complaints.

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