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PREVALENCE OF HEALTH DISORDERS AND RISK FACTORS FOR MUSCULOSKELETAL COMPLAINTS IN PORT OPERATIONAL TRUCK DRIVERS

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Abstract

Trucks are one of the means of transportation used for the purpose of distributing goods which is quite effective. In addition to providing convenience in transportation, the use of trucks has a health impact on the driver. The purpose of this study is to determine the prevalence of health complaints and risk factors that can cause health problems in truck driver workers. This research is an observational study with a cross sectional approach. The research respondents were port operational truss drivers totaling 38 people. Data collection was carried out using the Guidelines and Questionnaires for Whole-Body Vibration Health Surveillance questionnaire. The results of the study show that most workers are less than 40 years old. Working time is at most less than 10 years. Some workers are obese and overweight. Complaints that are felt include back pain, neck pain and shoulder pain and complaints on the hips / thighs / buttocks. Health problems experienced are visual disturbances, circulatory disorders, kidney and digestive disorders. Lifestyles that can affect health include smoking habits, drinking habits and workers who have exercise habits. The posture of the worker while driving includes reclining the chair, bending position and bending position. Environmental conditions that can affect the level of vibration exposure include road conditions, vehicle suspension, vehicle age, driver behavior, speed, driving time, years of service and other conditions. Truck drivers experience health complaints including back pain, neck pain and shoulder pain and complaints on their hips/thighs/buttocks. Health problems experienced by workers include visual impairment, circulatory disorders,

kidney disorders and digestive disorders. There needs to be further health checks for truck drivers to ensure their health status.

Keywords: Prevalence, Complaints, Health, Drivers, Trucks.

INTRODUCTION

The transportation industry is a service industry that is very important in the provision of transportation services for the mobilization of people and the distribution of goods. Various kinds of facilities in transportation activities are offered by many transportation service companies both by land, sea and air. The government has developed transportation facilities by building and renovating terminals, stations, ports and airports to increase public convenience and speed up the distribution of goods both nationally and internationally. Indonesia's development agenda becomes the world's maritime axis, making port services have a very important role in supporting this agenda.

PT. Pelindo 3 is a company engaged in the operation and operation of port services. One of its services is the provision of loading and unloading services for containers, liquid bulk, dry bulk, general cargo, and vehicles. To support these services, the company has various types of fleets for transporting and lifting goods. One type of fleet at the port for the transportation of goods is a truck.

Trucks are one type of transportation tool that is often used for the purposes of distributing goods in companies that are quite easy to use and can be said to be an effective means of transportation. In addition to providing convenience in transporting goods, the use of trucking equipment also has a health impact on the driver. Truck drivers face various kinds of health risks, one of which is exposure to mechanical vibrations that are transmitted throughout the driver's body (whole body vibration) through the seats and floor of the steering cabin.

Exposure to repeated vibrations in the long term can cause low back pain disorders (Hakim, 2011); (Basri & Griffin, 2013); (Kim et al., 2016); (By Fei Lu, Yutaka Ishikawa, 2010), cardiovascular disorders (Orelaja et al., 2019), indigestion (Johanning, 2011), dizziness, visual disturbances (Hazarin, 2000); (Ishitake et al., 1998) and epidemiological studies suggest that WBV may increase the risk of developing prostate cancer (Krajnak, 2018). Relatively brief exposure to full-body vibration has also been shown to increase serum levels of testosterone and growth hormone. The combined effect on the neuromuscular system and the endocrine system demonstrates its effectiveness as a therapeutic approach for sarcopenia and possibly osteoporosis (Cardinale & Pope, 2003).

Data regarding workers' conditions based on health status and risk factors that cause problems with health status are still very much needed by companies in making policies related to workers' health. This activity is carried out to find out an initial portrait of the condition of workers which can be used as material for prevention and control measures against the findings obtained.

RESEARCH METHODS

This research is an observational study with a cross-sectional approach, namely observing both exposure and outcome at the same time. The research respondents were truck drivers, totaling 38 people. Data collection was carried out using the Guidelines and Questionnaires for Whole-Body Vibration Health Surveillance questionnaire (Pope et al., 2002). The variables observed in this study were age, gender, education level, years of service, nutritional status, health disorders and complaints experienced by workers. Data analysis was carried out descriptively by comparing the research results obtained in the field with the theory and or program guidelines. The results of data analysis are presented in the form of tables, graphs and narratives.

RESULT AND DISCUSSION

The results of this study obtained 38 respondents with the sex of all men. The worker characteristics, health status and risk factors are as follows:

A. Distribution of worker characteristics

Table 1. Characteristic distribution of port operational truck drivers in 2021

No	Variabel	Jumlah (n)	Persentase (%)
1	Umur		
	24-40 tahun	27	71,1
	41-50 tahun	10	26,3
	>50 tahun	1	2,6
2	Tingkat Pendidikan		
	SMP	6	15,8
	SMA	31	81,6
	Perguruan tinggi	1	2,6
3	Masa Kerja		
	s/d 5 tahun	13	34,2
	6-10 tahun	18	47,4
	11-20 tahun	5	13,1
	21-30 tahun	2	5,3

Characteristics of most workers aged less than 40 years as many as 27 people (71.1%) with an age range of 24-54 years. The highest level of education is high school with 31 people (81.6%). The longest working period was less than 10 years, with a total of 31 people (81.6%) with a range of <1 to 30 years.

B. Distribution of Workers' Health Status

1. Nutritional Status

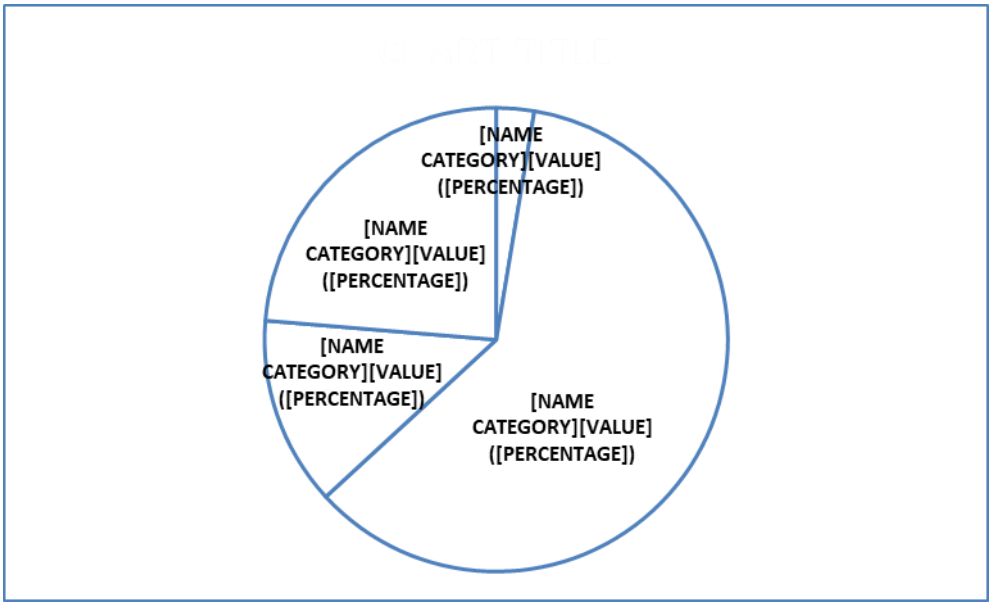

Diagram 1. Distribution of the health status of port operational workers in 2021

The nutritional status of workers including 9 people (24%) are obese, 5 people (13%) are overweight.

2. Complaints experienced

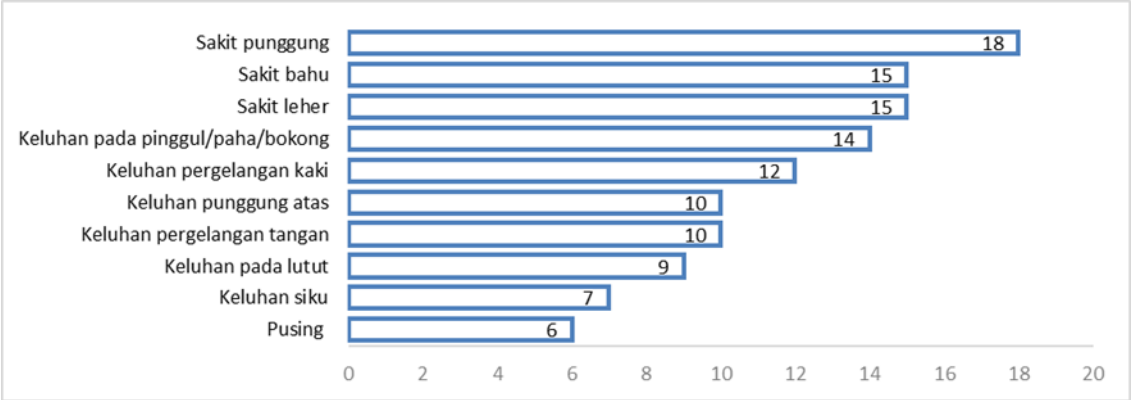

Diagram 2. Distribution of Health complaints experienced by Port operational truck drivers in 2021

The most common complaints felt by workers were back pain for 18 people, followed by neck pain and shoulder pain for each 15 people and complaints on hips/thighs/buttocks by 14 people.

3. Health problems

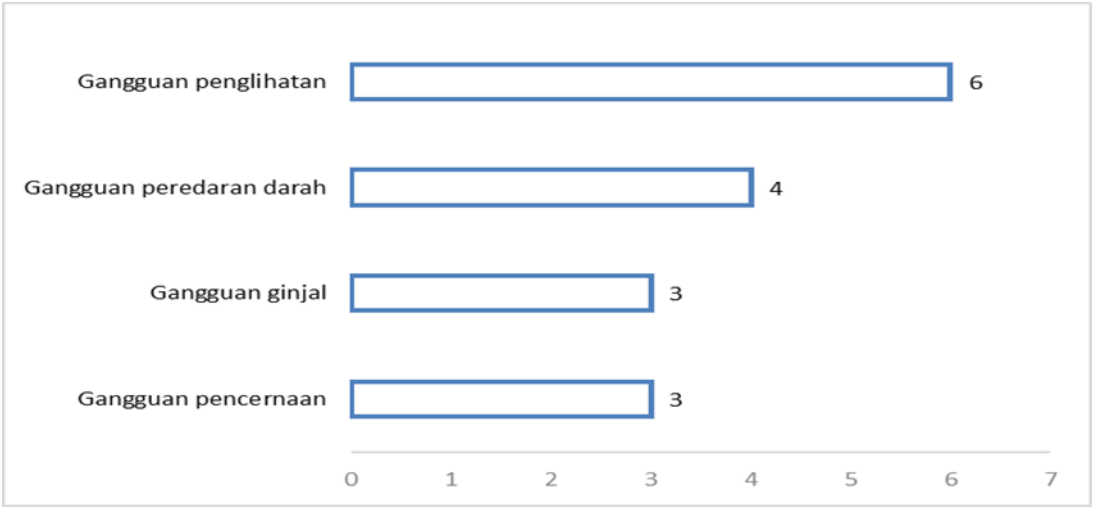

Diagram 3. Distribution of health problems experienced by Port operational truck drivers in 2021

Health problems experienced by workers included visual impairments of 6 people, circulatory disorders of 4 people and kidney disorders and digestive disorders of 3 people each.

C. Distribution of Risk Factors

1. Lifestyle of workers

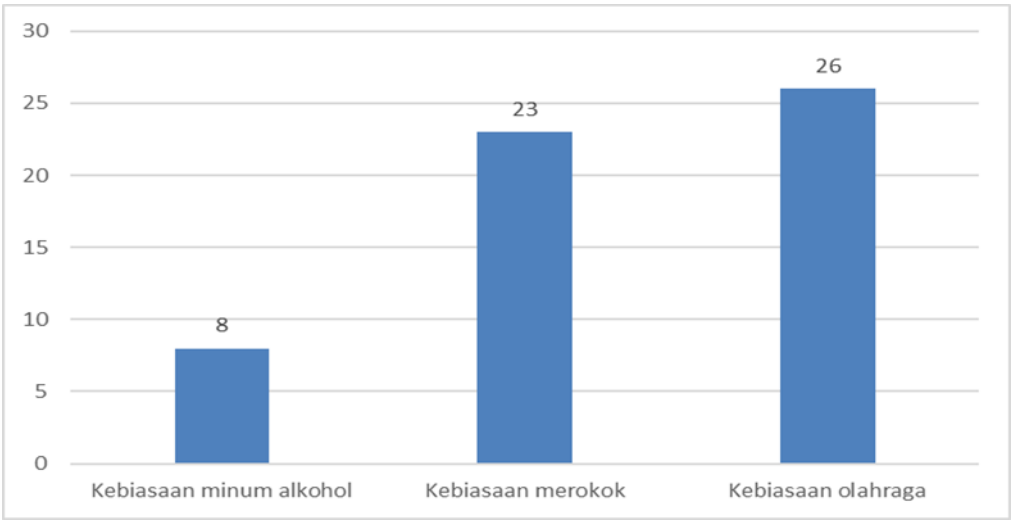

Diagram 4. Health lifestyle distribution experienced by Port operational truck drivers in 2021

Lifestyles that affect health include smoking habits owned by 23 workers, drinking alcohol habits by 8 workers and workers who have exercise habits by 26 people.

2. Posture while driving

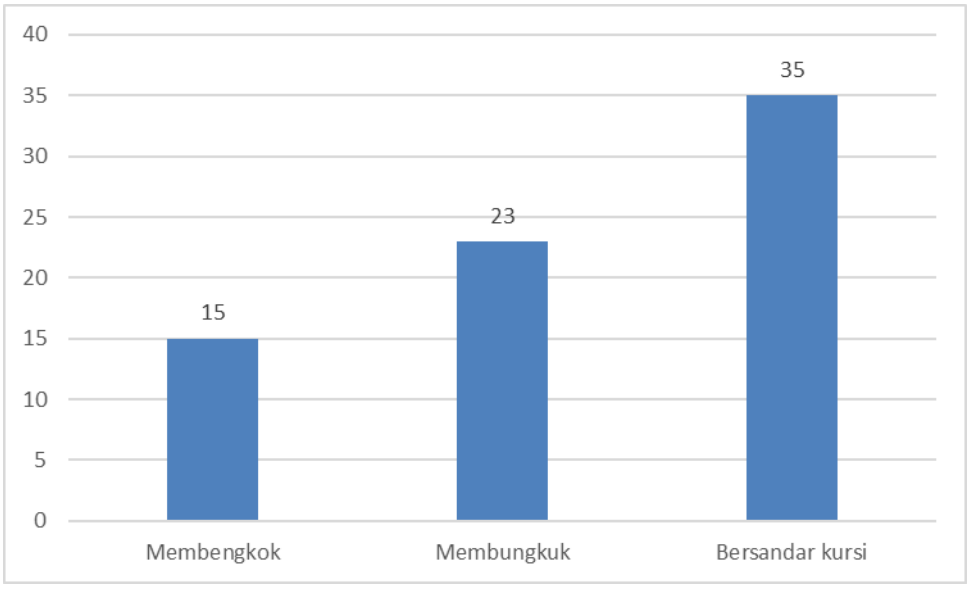

Diagram 5. Distribution of posture while driving for port operational truck drivers in 2021

The posture of the workers while driving included 35 people leaning back in the chair, 23 people with a bent position and 15 people in a bent position.

3. Work environment

Table 2. Conditions of the truck driver's work environment

No	Variabel	Jumlah (n)	Persentase (%)
1	Kondisi Jalan		
	Jalan baik	28	73,7
	Jalan rusak	10	26,3
2	Suspensi kendaraan		
	Suspensi mekanik	30	78,9
	Suspensi udara	6	15,8
	Suspensi hidrolik	2	5,3
3	Usia kendaraan		
	3-5 tahun	3	7,9
	6-10 tahun	18	47,4
	>10 tahun	17	44,7

Working environment conditions, especially damaged roads, were experienced by 10 workers. The vehicle suspension used the most is the mechanical suspension used by 30 workers. The age of the vehicle used the most is above 5 years with details of vehicle age 6-10 years used by 18 workers and more than 10 years used by 17 workers.

4. Work behavior

Table 3. Distribution of worker behavior while driving

No	Variabel	Jumlah (n)	Persentase (%)
1	Pemakaian *safety belt*		
	Ya	34	89,5
	Tidak	4	10,5
2	Kecepatan berkendara		
	< 20 km/jam	7	18,4
	>20-30 km/jam	10	26,4
	>30-40 km/jam	14	36,8
	> 40 km/jam	7	18,4

As many as 34 workers have used safety belts. The driving speed of workers is 14 people with speeds > 30-40 km/hour, 10 people with speeds > 20-30 km/hour and 7 people each with speeds < 20 km/hour and > 40 km/hour.

5. Exposure at work

Table 4. Vibration exposure conditions at work

No	Variabel	Jumlah (n)	Persentase (%)
1	Lama bekerja		
	8 jam	2	5,3
	> 8 jam	36	94,7
2	Jarak tempat tinggal ke tempat kerja		
	<10 km	18	47,4
	10-20 km	15	39,5
	>20km	5	13,1
3	Terganggu getaran		
	Ya	27	71,1
	Tidak	11	28,9
4	Terhentak dikursi		
	Tidak pernah	14	36,8
	Kurang dari 5 kali sehari	12	31,7
	Lebih dari 5 kali dalam satu jam, tapi kurang dari 5 kali dalam satu menit	4	10,5
	Lebih dari 5 kali tapi kurang dari 5 kali dalam satu jam	7	18,4
	Lebih dari 5 kali tapi kurang dari 5 kali dalam satu jam, Lebih dari 5 kali dalam satu jam, tapi kurang dari 5 kali dalam satu menit	1	2,6

Working hours of workers exceeding 8 hours a day were found in 36 workers. distance of residence of more than 20 km was found in 5 workers, distance of 10-20 km was found in 15 workers and 18 workers had a distance of residence and place of work of less than 10 km.

Vibration exposure to the point that workers feel disturbed was found in 27 workers while 11 workers were not disturbed by vibration. A total of 24 workers were knocked on chairs with details of 12 people being knocked down less than 5 times a day, 7 workers were knocked over more than 5 times but less than 5 times an hour, 4 workers were knocked over more than 5 times in an hour, but less than 5 times in one minute, one worker More than 5 times but less than 5 times in one hour, More than 5 times in one hour, but less than 5 times in one minute.

6. Type of work

Table 5. Other types of work performed by respondents besides driving trucks

No	Variabel	Jumlah (n)	Persentase (%)
1	Mengangkat beban		
	Ya	1	2,6
	Tidak	37	97,4
2	Menarik beban		
	Ya	11	28,9
	Tidak	27	71,1

This type of work pulling loads was found in 11 workers while only one worker did the work lifting weights.

D. Discussion

Heavy equipment vehicles such as trucks generate vibrations which are then transmitted to the driver through the seats and footrests. The results showed that drivers who get exposure to whole body vibrations from industrial vehicle activities such as trucks, fork-lifts, tractors, etc. can cause low back pain, sciatica pain, and lumbar disc herniation (Pope et al., 2002). Research conducted by (Hakim, 2011) in Sidoarjo also shows that truck drivers are at risk of developing low back pain. The results of this study indicate that the most common complaints experienced by drivers are back pain for 18 people (47.4%), neck pain and shoulder pain for each 15 people (39.5%) and complaints on hips/thighs/buttocks 14 people (36.8%). The longer the working time, the more vibration exposure they receive. The majority of workers (94.7%) work more than 8 hours a day, (63.2%) workers have been kicked in a chair and (71.1%) workers feel disturbed due to vibration.

Improper sitting posture while driving can cause musculoskeletal disorders. There is a significant relationship between sitting posture and complaints of pain in the lower back (Chyntia Angkouw, Paul A. T. Kawatu, 2019). Adult nutritional status is an assessment of the nutritional status of the population over 18 years as assessed by Body Mass Index (BMI). The nutritional status indicators used for this age group are based on anthropometric measurements of body weight (BB) and height (TB) presented in the form of Body Mass Index (BMI). The prevalence of nutritional status based on the BMI category in the adult population (age > 18 years) based on the 2018 Riskesdas data is 21.8%

nationally, while in East Java it is 22.4% (Badan Penelitian dan Pengembangan Kesehatan, 2019). The results of research at PT Pelindo 3 obtained a proportion value of 24% for cases of obesity. Based on the results of the study (Naufal et al., 2021) it was stated that there was a significant relationship between lower back pain and body mass index (BMI) in goods truck drivers.

CONCLUSION

The most common complaints felt by workers are back pain, neck pain and shoulder pain and complaints on the hips/thighs/buttocks. Health problems experienced by workers include visual impairment, circulatory disorders, kidney disorders and disorders. Risk factors that can affect a driver's health include smoking habits, working posture while driving, road conditions, vehicle suspension, vehicle age, driving behavior, length of working hours and the level of vibration caused by the vehicle. There needs to be further health checks for truck drivers to ensure their health status.

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