



RELATIONSHIP OF OCCUPATIONAL FACTORS AND INDIVIDUAL FACTORS TO MUSCULOSKELETAL COMPLAINTS ON GARBAGE CARRIER WORKERS IN WEST ACEH REGENCY

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ABSTRACT

Around 60% of solid waste collectors suffer from impaired finger movement, finger stiffness, hand stiffness, pain in shoulder, neck, and waist, as well as muscle pain. Musculoskeletal disorders (MSDs) are commonly found in workers due to work-related pain. Objective: The aim of the research was to analyze the association between work-related factors (Workload, Frequency, Duration, Posture) and individual factors (age, length of service, smoking habit, physical exercise, BMI) to Musculoskeletal Disorders among Solid Waste Collectors at Environmental Agency in Aceh Barat Regency. This is a cross-sectional study. The number of sample employed in the research was 54 waste collectors.

The data were analyzed using chi-square test, resulted in There is a correlation between load of work to MSDs among solid waste collector in Aceh Barat (p value $0.001 < \alpha 0.05$.) There is a correlation between age to MSDs among solid waste collector in Aceh Barat (p value $0.000 < \alpha 0.05$). There is a correlation between length of service to MSDs among solid waste collector in Aceh Barat. (p value $0.000 < \alpha 0.05$). There is a correlation between smoking habit to MSDs among solid waste collector in Aceh Barat. (p value $0.011 < \alpha 0.05$) There is a correlation between regular physical exercises to MSDs among solid waste collector in Aceh Barat. (p value $0.002 < \alpha 0.05$), There is a correlation between Body Mass Index to MSDs among solid waste collector in Aceh Barat (p value $0.002 < \alpha 0.05$)

Keywords: MSDs, individual factors Workload, Frequency, Duration, Posture.

INTRODUCTION

System abnormalities *Musculoskeletal* are a major cause of chronic pain and physical abnormalities. components *Musculoskeletal* can experience tears, injuries or inflammation. Hosumbat and Chaiklieng 2010, who conducted a study of 80 broom weaving workers in Thailand, reported that 31.3% complained of neck pain, 28.8% in the lower back, 25% in the shoulder, and 15% in the wrist.⁵ Other research conducted in Bali on *suun artisans* (shopping carrier) at the Anyar Buleleng market in 2013 of 43 respondents all experiencing *Musculoskeletal Disorders* (MSDs), the most frequently mentioned were knees by 46.5%, then left shoulder complaints by 41.8%, and upper neck complaints by 37, 2%.⁶

Musculoskeletal is a part of the muscle that is directly related to the bone, especially the spine from the coccyx to the cervical vertebrae. The symptoms of musculoskeletal complaints are very closely related to an occupational illness, odd posture, workload, duration, and length of work, while individual factors are influenced by age, physical fitness and smoking habits.⁷

Indonesia as one of the developing countries with an average economic growth of 5% each year and in early 2016 even increased 5.18% from the previous year of the data from the Central Statistics Agency (BPS), this economic growth also has an impact on more equitable development in Indonesia. In addition to economic growth, population growth also attracts 1.2 annually, Aceh Barat which has a population of 210,669.⁸ The increase in the amount of trash balanced by the increase of population, of some previous studies serial people produce 2-3 liters of rubbish bins and destinations 200-500 Kg / m³ per day.⁹

The waste processing system is carried out through three major stages, namely collection, collection, and transportation of waste to the landfill. Shelter and collection stages are carried out in a community-based manner while the apprehension and landfill are managed by the government.¹⁰

From the results of initial observations of the transport of rubbish which in West Aceh still uses trucks as a transport fleet the transport process is carried out manually, the garbage bin as a garbage

collection container is lifted onto the truck by one of the workers and one other worker pulls from the top of the truck, pours the garbage and drops the trash can is back. The process of transporting waste is done by dividing the area or work route. Each route there are 80-140 garbage cans. The weight of empty garbage can reaches 18 kg while the weight of garbage can and its contents reaches 60 kg. According to NOISH the maximum load that can be lifted by humans is 23 kg.¹¹

From interviews with foremen, the number of waste transport fleets owned by BLHK Aceh Barat is 18 units, the number of transport workers is 54 people, with an average working period of 10 years, with an average age of 35-60 years. The garbage transport workers as a whole are male and have a smoking habit. Smoking can increase complaints of muscular due to reduced oxygen supply in the blood caused by nicotine which can clog arteries.¹²

From interviews with the workers of the 5 workers, we interviewed 60% had impaired motion in the fingers, left and right fingers bent and no longer functioning properly, complaints that often suffer from curved and stiff hands, complaints of pain in the shoulder, neck, and waist. The pain suffered will usually heal and return to normal after resting for 1-3 days workers usually do a muscle massage to speed up the healing process, complaints of muscle pain felt since working as a garbage transport worker, complaints of MSDs to workers caused by occupational exposure or often called illness due work.³

Based on the description above, the researcher is interested to research the analysis of the work factors and individual factors towards MSDs complaints on garbage transport workers in Aceh Barat.

METHODS

This research is an observational study using a study design *cross-sectional*. The study design is *cross-sectional* expected to provide an overview of the study population and the interrelationships between variables to be examined. This study uses primary data, among others, through questionnaires, *nordic body maps* (NBM) and lactic acid test results to determine the relationship of independent variables (risk factors) with dependent variables (MSDs complaints) with instantaneous measurements. occupational factors and individual factors.⁴³ The sample in this study used a total sample of 54 people. Analysis of the data in this

study to see the relationship of MSDs based on work factors (load, frequency, duration, posture), and individual factors (length,of service, working time, exercise habits, smoking habits). Data analysis using the application of SPSS and using logistic regression analysis

This study describes (Age, years of service, working time, exercise habits, smoking habits) work factors (odd posture, duration, and frequency load). The analysis used is the chi-square statistical test.⁴⁷

RESULTS

A. Univariate Analysis

From the results of the research conducted obtained the following data:

1. Characteristics of Respondents

Table 1 Frequency Distribution based on Load Lift

Load	F	%
<23 kg	21	38.9
≥ 23 kg	33	61.1
Total	54	100

Based on table 1 total research results 54 respondents, 21 respondents or 38.9% had lifting loads <23 kg, 33 respondents or 61.1% had lift loads ≥ 23 kg

Table 2 Frequency Distribution based on Lifting Frequency

interval	F	%
9 - 14 times	17	31
15 - 20 times	19	35
21 - 26 times	18	33
Total	54	100

Based on the results of the research the total respondents were 54 people, Most as many as 15 respondents or 27.8% had a Frequency of Lifting 14 times, while at least only 1 respondent or 1.9 % have Lift Frequency 25 Times

Table 3 Frequency Distribution based on Working

Duration	F	%
Short (<1 Hour)	21	38.9
Medium (1-2 Hours)	20	37
Long (> 3 Hours)	13	24.1
Total	54	100

Based on Table 3 can be it can be seen that respondents with Short duration (<1 hour) are 21 people (38.9%) and respondents with medium work duration (1-2 hours) are 20 people (37%), respondents with long duration (1-2 hours) 13 people (24.1%).

Table 4 Frequency Distribution based on work posture,

Posture	F	%
Negligible - Low	26	48.15
Medium - Very High	28	51.85
Total	54	100.00

Table 4 shows that the most samples with risk-negative postures are 26 people (48, 15%) followed by 28 - (51.85%) Medium - Very High-risk postures.

Table 5 Frequency Distribution based on age,

Age	F	%
≥ 35 years	37	68.5
<35 years	17	31.5
Total	54	100

Based on Table 5 the results obtained a description of the age of respondents ≥ 35 years as many as 37 people or 68.5%, aged <35 years as many as 17 people or 31.5%,

Table 6 Frequency distribution based years

Work Period	F	%
<5 years	37	68.5
≥ 5 years	17	31.5
Total	54	100

Based on the research results obtained a description of the length of service of respondents <5 years as many as 37 people or 68.5%, who have a service life of ≥ 5 years as many as 17 people or 31.5%.

Table 7 Frequency distribution based on smoking habits

Smoking	F	%
No smoking	32	59.3
Smoking	22	40.7
Total	54	100

Most respondents did not smoke with as many as 32 people or a percentage of 59.3%. This amount is greater than the respondents who are

smokers with as many as 22 people or a percentage of 40.7%.

Table 8 Frequency distribution based on sports habits,

Sports habits	F	%
Yes	18	33.3
No	36	66.7
Total	54	100

Based on table 8 for sports habits, respondents generally have the habit of exercising as many as 18 people (33.3%) and 36 people (66.7%) who do not have exercise habits

Table 9 Frequency distribution based on Body mass index,

BMI	F	%
Normal (18.5-24.9)	32	59.3
Not normal (≥ 25)	22	40.7
Total	54	100

Based on table 9 for the body mass index of the majority of respondents in the normal category of 32 people (59.3 %), Not normal category as many as 22 people (40.7%)

Distribution of respondent characteristics based on MSDs complaints to workers

Measurement of MSDs complaints on garbage transporters in the district of Aceh Barat fruit using a questionnaire containing questions related to MSDs complaints. The score of each answer in the questionnaire when answering yes or at risk gets a value of 0 and if answering no risk gets a score of 1.

Table 10 Frequency Distribution based on MSDs complaints to workers

Complaints MSDs	F	%
No	26	48.1
Yes	28	51.9
Total	54	100

Based on the results of the study the total respondents were 54 people, as many as 26 respondents or 48.1% did not experience complaints of MSDs complaints, as many as 28 respondents or 51.9 % Experiencing Complaints of MSDs

B. Bivariate Analysis

Table 11 Relationship of worker burden to complaints of MSDs

Load		Complaints		Total
		No	Yes	
<23 kg	F	16	5	21
	%	76.2%	23.8%	100.0%
≥ 23 kg	F	10	23	33
	%	30, 3%	69.7%	100.0%
Total	F	26	28	54
	%	48.1%	51.9%	100.0%

P = 0.001

Based on the results of research between the lifting load with MSDs complaints conducted on 54 transport workers shows that as many as 16 Transport workers who lift loads less than 23 kg who do not experience MSDs complaints with a percentage of 76.2%, 5 transport workers who lift loads less than or equal to 23 Kg who experience MSDs complaints with a percentage of 23.8%, 10 workers Transport workers who lift weights more than 23 kg who do not experience MSDs complaints with a percentage of 30.3%, and 23 transport worker who lifted a burden greater than or equal to 23 kg who experienced complaints of MSDs with a percentage of 69.7%. From the Chi-Square test results obtained significance value, p-value $0.001 < \alpha 0.05$, which means a significant relationship between the weight of the load with complaints of pain transporting garbage in West Aceh district.

Table 12. Relationship between workload and MSD

Frequency		Complaints		Total
		No	Yes	
9-14 times	F	8	9	17
	%	47.1%	52.9%	100.0%
15-20 times	F	9	10	19
	%	47.4%	52, 6%	100.0%
21- 26 times	F	9	9	18
	%	50.0%	50.0%	100.0%
Total	F	26	28	54
	%	48.1%	51.9%	100.0%

P = 0.981

Based on the results a study between lifting load and back pain complaints carried out on 54 transport workers showed that as many as 8 haulers who had lifted frequency 9-14 times who did not experience back pain complaints with a percentage of 47.1%, 9 haulers who had lifted frequency 9 -14 times that experienced back pain complaints with a percentage of 52.9%, 9 transport workers with a frequency of lifting 15-20 times who did not experience back pain with a percentage of 47.4%,

10 transport workers with a frequency of lifting 15-20 times who experience complaints of back pain with a percentage of 17.6%, and 9 transport worker workers who raise the frequency 21-26 times both who have complaints n back pain or not each with a percentage of 50.0%. From the Chi-Stest resultsquareobtained significance value, p-value $0.981 > \alpha 0.05$, which means there is no significant relationship between the frequency of the load with complaints of back pain.

Table 13 Relationship between age and complaints of MSDs

Age		Complaints		Total
		No	Yes	
≥ 35 years	F	24	13	37
	%	64.9%	35.1%	100.0%
<35 years	F	2	15	17
	%	11.8%	88.2%	100, 0%
Total	F	26	28	54
	%	48.1%	51.9%	100.0%

P = 0.000

Based on the results of research between the ages with complaints of MSDs conducted on 54 transport workers, it shows that as many as 16 transport workers who are aged ≥ 35 years who did not experience MSDs complaints with a percentage of 64.9%, 13 transport workers who ended up equal to 35 who experienced MSDs complaints with a percentage of 35.1%, 2 transport workers who were <35 years of age who did not experience MSDs complaints with a percentage of 11.8%, and 15 transport worker workers aged <35 years who experienced complaints of MSDs with a percentage of 88.2%. From the Chi-Square test results obtained significance value, p value $0.000 < \alpha 0.05$, which means a significant relationship between ageand complaints of pain transporting garbage in West Aceh district.

Table 14 Relationship of working period to complaints MSDs

Work Period		Complaints		Total
		No	Yes	
<5 years	F	24	13	37
	%	64.9%	35.1%	100.0%
≥ 5 years	F	2	15	17
	%	11.8%	88.2%	100.0%
Total	F	26	28	54
	%	48.1%	51.9%	100.0%

P = 0.000

Based on the results of research between work periods with complaints of MSDs conducted on 54 transport workers, it shows that as many as 24

transport workers who lifted the period work <5 years that did not experience complaints of MSDs with a percentage of 76.2%, 13 transport worker workers who raised tenure of work <5 who experienced complaints of MSDs with a percentage of 35.1%, 2 transport workers who raised work periods of ≥ 5 years did not experience complaints of MSDs with a percentage of 11.8%, and 23 transport workers who raised a period of work ≥ 5 years who experienced complaints of MSDs with a percentage of 88.2%. From the Chi-Square test results obtained significance value, p value $0.000 < \alpha 0.05$, which means a significant relationship between the length of work with complaints of pain transporting garbage in West Aceh district.

Table 15 Relationship between Sport habits and MSDssports

Sport Habits		Complaints		Total
		No	Yes	
Yes	F	14	4	18
	%	77.8%	22.2%	100.0%
No	F	12	24	36
	%	33.3%	66.7%	100.0 %
Total	F	26	28	54
	%	48.1%	51.9%	100.0%

P = 0.002

Based on the results of research between sports habits with complaints of MSDs conducted on 54 transport workers showed that as many as 14 transport workers who raised sports habits that did not experiencing MSDs complaints with a percentage of 77.8%, 4 non-sporting transport workers who experienced MSDs complaints with a percentage of 22.2%, 12 smoking transport workers who did not experience MSDs complaints with a percentage of 33.3%, and 24 workers Smoking transport workers who experience MSDs complaints with a percentage of 66.7%. From the results Chi-Square test obtained significance value, p value $0.002 < \alpha 0.05$, which means a significant relationship between sports habits with complaints of pain transporting garbage in West Aceh district.

DISCUSSION

Relationship of workload to complaints of MSDs to wasteworkers in Aceh Barat

Based on the results of data analysis showing that lift load is a risk factor for MSDs complaints, this is evident from the Chi-Square test results obtained significance value, p value $0.001 < 0.05$. From the research results it is known from 54 as

many as 16 transport workers who lift loads less than 23 kg who do not experience MSDs complaints with a percentage of 76.2%, 5 transport workers who lift loads less or equal to 23 Kg who experience MSDs complaints with the percentage of 23.8%, 10 transport workers who lifted loads more than 23 kg who did not experience MSDs complaints with a percentage of 30.3%, and 23 transport workers who lifted loads less or equal to 23 kg who experienced complaints of MSDs with a percentage 69.7%.

In accordance with Peter Vi's question, quoted by Tarwaka¹⁹ which states that lower MSDs due to excessive muscle stretching are often complained of by workers whose work activities require large exertions such as lifting, pushing, pulling and holding heavy loads. Similar opinion was also confirmed by Wahyu Purwanto et al.¹⁹ that lifting activity that exceeds lifting capacity often results in disruption to the Musculoskeletal system or MSDs.

Those who suffer from back pain like this are workers who carry a lot of weight or those who sit in certain positions or bend in the wrong way. There is a relationship between lifting loads and MSDs complaints because every human being has the ability to lift loads that vary depending on their respective conditions. Such conditions illustrate the absence of harmony between body size and the shape and size of work facilities so that excessive local loading occurs in the lower back area⁵².

There is a relationship between work posture and MSDs complaints on waste pickers in Aceh Barat.

Work posture as one of the variables that is suspected to influence the occurrence of complaints Musculoskeletal Disorders (MSDs). Occupational factors that influence the occurrence of Musculoskeletal Disorders based on REBA calculations include load, duration, frequency and grip.

Based on observations using REBA calculation, the ergonomic risk level of 15 transport workers who lift Negligible - Low posture short work that did not experience MSDs complaints with a percentage of 57.7%, 11 transport workers who raised Negligible - Low posture who experienced complaints MSDs with a percentage of 42.3%, 11 transport workers with Medium - Very High postures who did not experience complaints MSDs with a percentage of 39.3% and there were 17 transport workers who raised Medium - Very High postures who experienced MSDs complaints with a

percentage of 60, 7%. The results of statistical tests performed using the Chi Square test were obtained ($p = 0.176$), because the value of $p > (\alpha = 0.05)$. Thus, H_0 is accepted and H_a is rejected, which means there is no meaningful relationship between posture work with MSDs complaints on garbage transport workers in West Aceh District in 2017

The results of this study contradict the research conducted by Cindyastira⁵⁴ regarding the relationship of vibration intensity with complaints Musculoskeletal Disorders (MSDs) in the workforce of the paving block production unit CV. The Makassar Galian source shows ($p = 0.015$) < 0.05 which means there is a significant relationship between work attitude and MSDs complaints. Body position that deviates significantly from its normal position while doing work can cause mechanical stress.

Posture is the average orientation of the limbs. Body posture is determined by body size and size of equipment or other objects used at work. At work you need to pay attention to your posture in a balanced state so that you can work comfortably and last longer. Body balance is strongly influenced by the area of the base of the support or floor and the height of the point of gravity.⁵⁴ Body position that deviates significantly from its normal position while doing work can cause local mechanical stress on muscles, ligaments, and joints. This results in injuries to the neck, spine, shoulders, wrists etc.

The unnatural work attitude is a work attitude that causes parts of the body to move away from their natural position. The farther the position of the body from the center of gravity, the higher the skeletal muscle complaints occur. Job attitudes are not natural in general because of incompatibility of work with the ability of workers.⁵⁴

A study conducted in Korea by Jung Ho Kim.⁵⁴ With the title "Risk Factors of Work-related Upper Extermity Musculoskeletal Disorders in Male Cameramen. Data obtained that the highest level of WRMSDs symptoms was felt by the shoulder 14.5% and the lowest occurred in the arms and elbows 6%. The results of logistic regression analysis showed that symptoms on the shoulder were caused by physical load, and symptoms on the arms, wrists and elbows, caused by ergonomic factors.

In addition, the contradictory research conducted by Sintia Dwi Rosalina, entitled "Analysis of Factors Related to the Occurrence of

Musculoskeletal Disorders of Arm, Shoulder, and Leg Segments in Bonded Weaving Workers in Jepara". In his research showed a relationship between repetitive movements with complaints on the arm. Where 86.7% of the respondents did high repetitive movements, namely movements with frequencies ≥ 30 times per minute. The existence of repetitive movements in a long time will exceed the ability of muscle workers to make recovery (recovery), this can encourage disruption of the muscles.

The results of the study found by Icsal⁵³ about factors related to MSDs complaints on tailors in Pasar Panjang Kota Kendari in 2016, showed the results of statistical tests using the Spearman correlation test obtained P value $0.108 > 0.05$, which means there is no relationship between work postures with musculoskeletal complaints. This is because the respondent at work, posture is in a balanced state.

There is an age relationship with MSDs complaints on waste pickers in Aceh Barat.

Based on the results of the analysis it is known that there are 17 respondents (38.6%) aged < 35 years experiencing moderate complaints, 11 respondents (25.0%) experienced mild complaints and as many as 10 respondents (22.7%) aged ≥ 35 years experienced moderate complaints. From the Chi-Square statistical test results obtained value ($p = 0,000$) which means there is a significant relationship between age and complaints of Musculoskeletal Disorders (MSDs). This happens because the longer a person works with increasing age there will be degeneration in the form of tissue damage, tissue replacement to scar tissue, tissue reduction so that it causes stability in the bones and muscles to be reduced. Therefore working age is a factor that plays a role in Musculoskeletal Disorder. It was revealed by Obome⁵⁵ that skeletal muscle complaints are usually experienced by someone at work age that is 24-65 years, usually the first complaint is experienced at the age of 35 years and the level of complaints will increase with age. So the older a person is, the greater the risk of developing Musculoskeletal Disorders. This is also proven by Hadler's research on workers in Sweden showing the results that about 70% of those who experience complaints on the back aged between 35-40 years. This happens because in middle age, strength and endurance of muscles begin to decrease, the risk of complaints more increasing.

The results of this study are strengthened by Krisdanto, et al⁵⁶ who showed the results of statistical tests using the Lambda association test obtained a value ($p = 0.049$) so that there was a significant relationship between age and Musculoskeletal Disorders complaints in fishermen in Puger Wetan Village, Puger District, Jember District conducted to be able to avoid the emergence of Musculoskeletal Disorders (MSDs), namely by placing workers aged ≥ 35 years in a place that is not too risky to cause Musculoskeletal Disorders

There is a working period relationship with MSDs complaints on garbage picker workers in West Aceh.

Based on the results of the research analysis, there were 24 transport workers who raised > 5 years of service who did not experience MSDs complaints with a percentage of 76.2%, 13 transport workers who raised years of service > 5 who experienced MSDs complaints with a percentage of 35.1% , 2 transport workers who raised ≥ 5 years of work who did not experience MSDs complaints with a percentage of 11.8%, and 23 transport workers who raised ≥ 5 years of work who experienced MSDs complaints with a percentage of 88.2%. From the Chi-Square statistical test results obtained value ($p = 0,000$), which means there is a significant relationship between work period with complaints of Musculoskeletal Disorders (MSDs). This result is also influenced by the fact that the longer the work period of a person, the longer the exposure to the time and type of work carried out by workers, so that it will cause physical complaints due to work.

The results of this study are in line with research conducted by Cindyastira⁵⁴ regarding the relationship of vibration intensity with complaints of Musculoskeletal Disorders (MSDs) in the workforce of CV paving block production units. Makassar Source Galian. The results of the statistical test using the Fishers Exact test were obtained ($p = 0.007$) for the variable working period on complaints of Musculoskeletal Disorders (MSDs). Thus that there is a significant relationship between tenure and Musculoskeletal Disorders complaints.

However, different from the results of the study revealed by Krisdanto,⁵⁶ based on the results of statistical tests conducted, obtained ($p = 0.189$) the results of the analysis indicate that there is no relationship between variables with musculoskeletal complaints due to work. This is due

to the adjustments experienced by workers who have a long working period can already adjust to work activities such as lifting, holding, and moving loads / goods compared to new workers.

There is a relationship of body index with complaints of MSDs on garbage transport workers in Aceh Barat

The more obese a person, the greater the risk of experiencing MSDs. This is because a person who is overweight will try to support his weight by contracting the back muscles, if this is done continuously it can cause pressure on the spinal cord pads⁵⁴ In this study, researchers categorized BMI into 2 categories, normal and abnormal. The normal category is workers with a normal BMI, while the abnormal category is workers with a fat BMI. This assessment is based on Bernard, et al^{55,58} found that the risk of CTS among obese women was twice that of lean women.

Based on the research, it is known that 21 transport workers who raised normal body mass index who did not experience MSDs complaints with a percentage of 65.6%, 11 transport workers who had normal body mass index who experienced MSDs complaints with a percentage of 34.4%, 5 workers transports with an abnormal body mass index experienced complaints of MSDs with a percentage of 22.7%, and 17 transport worker workers who had an abnormal body mass index who experienced complaints of MSDs with a percentage of 77.3%. From the bivariate analysis results obtained p-value of 0.229 (> 0.05) so that it can be concluded that there is no relationship between the Body Mass Index with complaints of MSDs on waste transport workers in the West Aceh district in 2017.

In theory, BMI is a related factor with the emergence of MSDs complaints, but the results of this study obtained different results. This discrepancy can occur because the workers studied have an average normal Body Mass Index (80% of workers have a normal BMI). Besides that work in the MP section does not really need strong energy because the load (coconut) that is lifted is not more than 5kg. This is consistent with the described⁵⁸ stating that the complaints of the musculoskeletal system associated with the size of the human body is caused by the condition of the balance frame structure in accepting the burden, both heavy burden of the human body itself, as well as the additional burden of more

CONCLUSION

Based on the research that has been carried out on 54 respondents who worked as garbage workers in West Aceh Regency in 2017 obtained the following conclusions:

1. There is a relationship between the workload of the MSDs and complaints of MSW workers in West Aceh. (p value $0.001 < \alpha 0.05$.)
2. There is no relationship with the frequency of work with MSDs complaints on waste pickers in Aceh Barat. (p value $0.981 < \alpha 0.05$.)
3. There is no relationship of work duration with complaints of MSDs in waste picker workers in West Aceh. (p value $0.716 > \alpha 0.05$)
4. There is no relationship of work postures with complaints of MSDs in trash pickers in West Aceh. (p value $0.170 > \alpha 0.05$)
5. There is an age relationship with complaints of MSDs in garbage workers in Aceh Barat. (p value $0.000 < \alpha 0.05$)
6. There is a relationship between working period and complaints from MSDs to waste-picking workers in Aceh Barat. (p value $0.000 < \alpha 0.05$)
7. There is a correlation between smoking habit and MSDs complaints on garbage workers in West Aceh. (p value $0.011 < \alpha 0.05$)
8. There is a relationship between sporting habits and MSDs complaints on waste pickers in Aceh Barat. (p value $0.002 < \alpha 0.05$)
9. There is a relationship between body mass index and MSDs complaints on garbage transport workers in Aceh Barat (p value $0.002 < \alpha 0.05$)

SUGGESTION

1. Local government should provide work facilities such as: terrain / work table, ergonomic work equipment and machines for work
2. Workers should when lifting heavy loads, use work tools / carts and ask for help from other coworkers, and rest for a few minutes when the body begins to feel fatigue or muscle stress
3. For the relevant agencies, so as to enable the activities of the Safety Unit Post and the nearest Occupational Health (Pos UKK) or Community Occupational Health Center (BKKM)
4. For further researchers to re-design the work equipment used and conduct a work posture analysis using methods other than REBA

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