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Tembusan :
Arsip

FACTORS RELATED TO THE INCIDENCE OF LOWER BACK PAIN IN DAILY FIELD WORKERS IN THE MAHATA SERPONG FLATS PROJECT IN 2024

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ABSTRAK

Low back pain merupakan salah satu gangguan muskuloskeletal, low back pain merupakan nyeri di sekitar punggung bawah yang bersumber dari tulang belakang. Prevalensi penderita low back pain di Indonesia tahun 2021 sebanyak 12.914 (3,71%). Tujuan Penelitian Untuk mengetahui faktor-faktor yang berhubungan dengan kejadian low back pain pada pekerja lapangan harian di Proyek Rumah Susun (Rusun) Mahata Serpong. Jenis penelitian deskriptif kuantitatif dengan menggunakan rancangan cross-sectional. Pengumpulan data menggunakan metode observasi, kuesioner, dan penilaian low back pain menggunakan Numeric Pain Rating Scale (NPRS). Teknik penelitian menggunakan probability sampling dengan jenis Simple Random Sampling, sampel dalam penelitian ini berjumlah 85 responden. Analisis penelitian dengan menggunakan uji Chi-Square menunjukkan bahwa terdapat hubungan masa kerja p value = 0,033, umur p value = 0,046, beban kerja p value = 0,022, jam kerja p value = 0,0003 dengan nyeri pinggang dan tidak terdapat hubungan status merokok p value = 0,068, aktivitas fisik p value = 0,779 dengan nyeri pinggang. Masa kerja, umur, beban kerja, dan jam kerja memiliki hubungan dengan nyeri pinggang. Disarankan kepada pekerja untuk menggunakan alat bantu beban, melakukan peregangan di sela-sela jam kerja, serta melakukan olahraga dengan baik, benar, terukur, dan teratur.

***Kata Kunci**: Nyeri Punggung Bawah, Pekerja Lapangan Harian, Faktor*

ABSTRACT

One musculoskeletal condition is low back pain, which is defined as pain in the lower back that comes from the spine. In 2021, 12,914 people (3.71%) in Indonesia suffered from low back discomfort. The purpose of the study to ascertain the contributing causes to the prevalence of lower back pain among the Mahata Serpong Flats (Rusun) Project's daily field workers. kind of cross-sectional quantitative descriptive study design. Questionnaires, observation techniques, and the Numeric Pain Rating Scale (NPRS) were used to gather data on low back pain. The study's sample consisted of 85 respondents, and the research methodology employs probability sampling with the kind of simple random sampling. The Chi-Square test of research analysis revealed a link. There was no correlation between low back pain and smoking status (p value = 0.068), physical activity (p value = 0.779), or working life (p value = 0.033), age (p value = 0.046), workload (p value = 0.022), or working hours (p value = 0.0003). Low back discomfort is correlated with working years, age, workload, and working hours. It is advised that employees use weight assistance, stretch in between tasks, and engage in frequent, appropriate, quantifiable exercise.

***Keyword:** Low Back Pain, Daily Field Worker, Factor*

INTRODUCTION

Since 2016, the building industry has been the main driver of Indonesia's economic growth, despite the fact that construction development carries a risk of danger that could result in occupational disease (PAK). K3 deployment is required to create an ideal work environment and increase productivity. The five categories of causes of occupational diseases are physical, chemical, biological,

ergonomic, and psychological (Kemenkes 2022). Occupational diseases are conditions that develop as a result of labor or the work environment.

According to data gathered by the International Labour Organization (ILO), PAK and work-related accidents claim the lives of 2.3 million people globally, or more than 6000 people per day. Furthermore, around 160 million people suffer from PAK and work accidents, and there are thought to be around 340 million work accidents annually (ILO 2023). Low back discomfort is one type of occupational disease. There are roughly 9.1 million people who suffer from lower back pain between the ages of 45 and 59, and 8.8 million people who suffer from it between the ages of 50 and 54. This is when lower back pain increases and reaches its peak. According to the World Health Organization, 619 million individuals worldwide suffer from low back pain in 2020, and due to aging and population growth, the number of cases is predicted to rise to 843 million by 2050 (WHO 2023). Of all the musculoskeletal disorders, lower back pain has the greatest incidence rate worldwide and is the primary cause of disability (WHO, 2023).

Lower back pain can lead to missed work hours, which eventually lowers productivity at work. According to RISKESDAS (2021), 12,914 people, or 3.71% of the workforce in Indonesia, suffer from lower back pain annually, compared to 2% to 5% of workers in industrialized nations. After influenza, this incidence comes in second. According to Javan health data, East Java has the greatest average number of complaints of low back pain (58.33%). According to DINKES statistics from 2018, the prevalence of LBP incidence in Central Java Province was 314,492 individuals, with an estimated age range of 20 to 65.

A person's complaints of low back pain can be attributed to a number of factors. Individual factors include things like age, length of employment, gender, smoking, and an elevated body mass index (BMI); job factors include things like work position, workplace design, and excessive working hours. Furthermore, based on characteristics related to body movement, such as repetitive tasks or work done constantly (Ningsih Riski Wahyu 2022).

According to the author's field observations, workers continue to perform manual lifting tasks with weights more than forty kilograms. Additionally, workers work eight to twenty-two hours a day, with two breaks for lunch at twelve and in the afternoon at eighteen. Some day workers report having lower back and neck ache as a result of carrying a heavy load all day. The author's interest in studying "Factors Associated with the Incidence of Lower Back Pain in Daily Field Workers in the Mahata Serpong Flats Project in 2024" stems from the background information provided above.

METHOD

Descriptive quantitative research with a cross-sectional design is the methodology employed. The Numeric Pain Rating Scale (NPRS) questionnaire, observation techniques, and questionnaire completion were used in this study to measure low back pain. At the same time, dependent and

independent viabilities were noted. All of the Mahata Serpong Flats Project's daily field workers made up the study's population, and there were 85 responders in the sample. Simple Random Sampling was the probability sampling method employed in this investigation. This research has received permission from the FKM UMJ ethics committee with no. 10.010.B/KEPK-FKMUMJ/I/2024.

RESULTS AND DISCUSSION

Of the 85 respondents in total, 59 (69.4%) had worked for more than five years, and 56 (65.9%) were in the age group of greater than thirty-five years, according to the data in Table 1. Results for respondents who reported smoking status showed that 72 (84.7%) of respondents selected "yes" for smoking status.

Additionally, 62 (72.9%) respondents indicated that they fell into the workload category of greater than 40 kg in the univariate analysis of the workload variable. The findings from the examination of the respondents' working-hour allocation were 54 (63.5%) of the respondents worked more than eight hours a day. According to an analysis of the distribution of physical activity outside of work, 72 (84.7%) out of 85 workers fell into the group of not getting enough physical activity. 52 (61.2%) of the 85 respondents who reported having low back pain were found to have low back pain, which can be interpreted as the distribution of low back pain among daily field workers in the Mahata Serpong Flats Project. The following were the respondents' reported pain scale results based on the NPRS questionnaire.

Table1. Univariate Analysis

Variable	N	%
Years of Service		
≥ 5 Year	59	69.4
< 5 Year	26	30.6
Age		
≥ 35 Year	56	65.9
< 35 Year	29	34.1
Smoking		
Yes	72	84.7
No	13	15.3
Workload		
≥ 40 Kg	62	72.9
< 40 Kg	23	27.1
Working Hours		
≥ 8 Hour	54	63.5
< 8 Hour	31	36.5
Physical Activity		
Less Active	72	84.7
Sufficiently Active	13	15.3
LBP		
Yes	52	61.2
No	33	38.8

Source: Processed Primary Data, 2024

Using the NPRS pain measuring scale, the distribution of pain frequency across employees revealed that 30 (35.3%) of the respondents had a pain scale of 2-3, which is more in the moderate

group. There were 18 (21.2%) respondents who reported mild pain, with a scale range of 4-6, and 4 (4.7%) who reported severe pain, with a scale range of 7-8.

Table 2. Frequency Distribution of Numeric Pain Rating Scale (NPRS) in Daily Field Worker Respondents in Mahata Serpong Flats Project

Kategori	N	%
None	33	38.8
Mild	18	21.2
Moderate	30	35.3
Severe	4	4.7

Source: Processed Primary Data, 2024

The bivariate analysis revealed that 41 employees (69.5%) had worked for more than five years, whereas 11 employees (42.3%) had LBP complaints over the five-year working period. There were 18 (30.5%) respondents who did not report low back discomfort and were in the working time group of more than five years, whereas 15 (50.7%) respondents were in the working period category of less than five years. There is a statistical correlation between working hours and the occurrence of low back pain among daily field workers of the Mahata Serpong Flats Project (Rusun) in 2024, according to the results of the Chi-Square statistical test, with a p-value of 0.033 (p-value < 0.05). This study supports that of Herawati and Bratajaya (2022), who found a correlation between the incidence of low back pain among rubber farmers in Megang Sakti District, Musi Rawas Regency, South Sumatera, and the variable length of work, as indicated by the Chi-Square statistical test with the level obtained p-value of 0.010.

Tabel 3. Bivariate Analysis

Variabel	Low Back Pain				Total		OR (95%CI)	P-value
	Yes		No					
	n	%	n	%	N	%		
Years of Service								
≥ 5 Year	41	69.5	18	30.5	59	100.0	3.106 (1.195–8.073)	0.033
< 5 Year	11	42.3	15	57.7	26	100.0		
Age								
≥ 35 Year	39	69.6	17	30.4	56	100.0	2.824 (1.117–7.138)	0.046
< 35 Year	13	44.8	16	55.2	29	100.0		
Smoking								
Yes	50	64.9	27	35.1	77	100.0		0.068
No	2	25.0	6	75.0	8	100.0		
Workload								
≥ 40 Kg	43	69.4	19	30.6	62	100.0	3.520 (1.300 – 9.535)	0.022
< 40 Kg	9	39.1	14	60.9	23	100.0		
Working Hours								
> 8 Jam	40	74.1	14	25.9	54	100.0	4.524 (1.75 –11.637)	0.003
8 Jam	12	38.7	19	61.3	31	100.0		
Physical Activity								
Less Active	45	62.5	27	37.5	72	100.0		0.779
Sufficiently Active	7	53.8	6	46.2	13	100.0		

Source: Processed Primary Data, 2024

The Mahata Serpong Flats Project's Daily Field Worker Respondents Incidence of Lower Back Pain and Working Period

The bivariate analysis revealed that 41 employees (69.5%) had worked for more than five years, whereas 11 employees (42.3%) had LBP complaints over the five-year working period. There were 18 (30.5%) respondents who did not report low back discomfort and were in the working time group of more than five years, whereas 15 (50.7%) respondents were in the working period category of less than five years. There is a statistical correlation between working hours and the occurrence of low back pain among daily field workers of the Mahata Serpong Flats Project (Rusun) in 2024, according to the results of the Chi-Square statistical test, with a p-value of 0.033 (p-value < 0.05). This study supports that of Herawati and Bratajaya (2022), who found a correlation between the incidence of low back pain among rubber farmers in Megang Sakti District, Musi Rawas Regency, South Sumatera, and the variable length of work, as indicated by the Chi-Square statistical test with the level obtained p-value of 0.010.

The Relationship Between Age and the Incidence of Lower Back Pain among Mahata Serpong Flats Project Daily Field Worker Respondents

According to the analysis of the association between age factors and LBP complaints among the Mahata Serpong Flats Project's daily field workers, 39 (69.6%) of the workers had LBP complaints at or above the age of 35, while 13 (44.8%) had complaints at or below the age of 35. Respondents over 35 years old who had no LBP complaints were 17 (30.4%), while those under 35 years old were 16 (55.2%). A statistical correlation between the age of employees and the prevalence of low back pain among those working on the Mahata Serpong Flats Project in 2024 is demonstrated by the obtained p value of 0.046 (p-value < 0.05). Skeletal system complaints typically start to occur in workers 35 years of age or older, and as they age, the severity of the complaints will rise. This occurs as a result of a decline in muscle endurance and strength, which raises the incidence of muscle complaints; Bettie et al. (1989) studied static muscle strength in women and men aged 20 to 60 (Tarwaka 2004). Following the findings of a study by Noviyanti et al. (2021) on the factors associated with welding workers' complaints of low back pain, chi-square test results were obtained with a p-value of 0.000 (p-value < 0.05). Consequently, Ha was approved, demonstrating a correlation between welding workers' complaints of low back pain and their age. according to the assumption that bones start to deteriorate with age, starting about age 35.

The Relationship between Daily ield Worker Respondents Smoking Status and the Incidence of Lower Back Pain in the Mahata Serpong Flats Project

According to the findings of a study on the association between smoking status and the prevalence of low back pain among employees of the Mahata Serpong Flats Project (Rusun), 50 (64.9%) of the respondents who reported having low back pain were in the "yes" smoking status, while 25.0%

were in the "no" smoking status. Of the employees who did not suffer from low back discomfort, 27 (35.1%) were classified as "yes" smokers, and 6 (75.0%) were classified as "no" smokers. There is no correlation between smoking status and the prevalence of low back pain, according to the Chi-Square statistical test results, which showed a p value of 0.068 (p-value> 0.05). This study is consistent with research of Lisa Ariani (2023). Regarding the association between smoking status and low back pain incidence, the findings of p-value = 0.538 suggest that there is no significant correlation between workers' smoking status and low back pain incidence. According to research (Astuti et al. 2019), there is no correlation between smoking status and the prevalence of low back pain, as indicated by the p-value of the Chi-Square statistical test, P = 0.811 (p-value> 0.05).

The Relationship between Workload and the Incidence of Lower Back Pain in Daily Field Worker Respondents in the Mahata Serpong Flats Project

Research on the relationship between workload and low back pain found that the highest incidence of low back pain was experienced by 9 (39.1%) respondents in the workload category of < 40 kg and 43 (69.4%) respondents in the workload category of > 40 kg. There were 19 (30.6%) respondents who believed their workload was greater than 40 kg, and 14 (60.9%) respondents who felt their burden was less than 40 kg. These respondents were the most likely to not have low back pain. The Chi-Square statistical test yielded a p-value of 0.022 at alpha = 0.05, meaning that the p-value is bigger than the alpha value (0.022 < 0.05). Therefore, it can be concluded that, in 2024, there is a connection between the frequency of low back discomfort among daily field workers of the Mahata Serpong Flats Project (Rusun) and workload. The findings of this investigation are consistent with those of a study by (Awaluddin et al. 2019). The findings of the Chi-Square statistical test on Makassar sewing house workers showed a p-value of 0.005 (p-value < 0.05), indicating a correlation between the incidence of low back discomfort and workload. The employability of each worker varies and is largely influenced by their body size, gender, age, freshness, nutritional status, and skill level (Suma'mur P.K. 1984).

The Relationship between Working Hours and the Incidence of Lower Back Pain among Mahata Serpong Flats Daily Field Worker Respondents

According to the research findings, information about the association between working hours and the prevalence of low back pain was gathered. It is known that the majority of LBP events occurred among respondents who worked more than eight hours a day, totaling 40 (74.1%), as opposed to those who worked eight hours a day, who only had 12 (38.7%) LBP events. There were 14 (25.9%) respondents who worked more than eight hours, and 19 (61.3%) other respondents who worked eight hours or more and did not feel low back pain. Health problems can arise from extended work hours (Nasution, Nuraeni, and Nuzula 2022). Compared to those who work <8 hours, those who work >8

hours without rest are more likely to experience skeletal and muscular health issues (Nikaputra, Marji, and Kurniawan 2020). There is a correlation between working hours and the prevalence of low back discomfort among daily field workers of the Mahata Serpong Flats Project (Rusun) in 2024, according to the results of statistical tests using Chi-Square, which yielded a p value of 0.003 (p-value < 0.05). This study supports that of Herawati and Bratajaya (2022), who discovered a significant correlation (p value = 0.010) between the duration of work and the prevalence of low back pain among rubber farmer workers in Megang Sakti District, Musi Rawas Regency.

The Relationship between Physical Activity and the Incidence of Lower Back Pain among Mahata Serpong Flats Project daily Field Workers

According to the findings of a study on the correlation between physical activity and the prevalence of low back pain, respondents who fell into the "less" physical activity category had the highest incidence of low back pain, at 45 (62.5%), while those who fell into the activity category had the lowest incidence, at 7 (53.8%). Although those who fell into the "less" physical activity category had the lowest incidence of low back pain, as many as 27 (37.5%) respondents and 6 (46.2%) others who fell into the "sufficiently active" physical activity category did not suffer from low back pain. The p-value of 0.779, which is more than the alpha value (0.779 > 0.05), was derived from the Chi-Square statistical test findings at alpha = 0.05. Therefore, it can be concluded that in 2024, there is no correlation between the prevalence of low back discomfort among daily field workers of the Mahata Serpong Flats Project (Rusun) and physical activity. There is no correlation between exercise habits and the incidence of low back pain, according to research by Halipa and Febriyanto (2022), with a p-value of 0.545 (P > 0.05). Forty-five Heavy Equipment Operator employees of PT. Kutai Bara Abadi were the subjects of the study.

CONCLUSION AND SUGGESTIONS

Based on the findings of previous studies, it is known that the occurrence of low back pain is correlated with working hours, age, workload, and experience, but not with physical activity or smoking status. Workers are advised to utilize tools to shift material loads or other things and to take a break once an hour to alleviate lower back pain. Provide tools to agencies so that employees don't have to change workloads by hand. In light of the four primary risk factors reps, force, uncomfortable posture and movement, and absence of rest periods it is anticipated that future researchers would look at additional variables that might be significantly associated with the incidence of low back pain but were not included in this study.

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