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Risk Factors Overview of Low Back Pain in ¹Ojek Drivers in South Jakarta in 2017

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ABSTRACT

Jakarta citizens use the ojek as their daily transportation because it is cheap, easy, and fast and also because that happens every day. Ojek is transportation driven by a driver who has to sit for an extended amount of time. Low back pain is one of the risk factors that could make an ojek driver riskier to have a musculoskeletal disturbance. This research aims to determine the relationship between age, body mass index, working period, length of work, physical activity, work position, and smoking habit with low back pain complaints on ojek drivers in South Jakarta. This research is an analytical observational with cross-sectional study research, the sampling methods being used as a simple random sampling technique with 92 respondents. According to the result of the research, it could be summarized that there is a relationship between working period ($p=0.004$), smoking habits ($p=0.045$), and work position ($p=0.028$), and there is no relation between age, length of working, physical activity, body mass index with low back pain incidence on ojek driver at South Jakarta.

Keywords: Age, Working Period, Smoking Habit, Exercise, Body Mass Index, work Position

INTRODUCTION

Technology in transportation is now increasingly sophisticated in line with human needs, which is never enough. There are various considerations in choosing the type of transportation that can be used, such as practicality and speed to reach the destination. It is what makes many motorcycle users, especially in Indonesia. Motorcycles are vehicles that are cheap to obtain, cheap to maintain, practical and can also reach their destination faster considering the increasingly severe congestion conditions, especially in big cities [1]. It is why many people prefer motorbikes to cars.

However, there are also drawbacks to using this motorbike, especially in the health conditions of the rider, such as exposure to sunlight, wind, rain, and musculoskeletal disorders to accidents that

cause other trauma. It can happen when the driving conditions are less ergonomic [2]. The number of people who need fast and practical transportation has caused creative businesses based on fast shuttles with motorbikes to appear. Initially, it started with simple technology, namely bicycles, in early 1969 in Indonesia, and as technology developed, motorcycles are now used as a means of transportation for motorcycle taxis. *Ojek* are bicycles or motorbikes mined by piggybacking passengers or their tenants [3].

Motorcycle riding as the primary profession puts *ojek* drivers at risk of health problems, one of the most common being muscle and ligament tension or musculoskeletal syndrome. It is due to work that is accustomed to sitting in a vehicle for a long time with uncomfortable posture [4]. Poor health conditions can reduce the

quality and quantity of work results, which will have an impact on the amount of income and welfare for workers. Decreased welfare will also impact health conditions both physically and mentally, and so on [5].

Therefore, workers' health must be considered to minimize losses that may arise. Motorcyclists who ride their motorbikes in poor health can be dangerous because of the risk of accidents up to the most severe ones leading to death. Road traffic accidents are the eighth leading cause of death worldwide. It is estimated that by 2030, traffic accidents will be the fifth leading cause of death in the world [6]. In Indonesia, it was revealed that 72% of traffic accidents that occur involve motorcycles [7]. In 2009, there were 164,431 accidents involving motorcycles. This figure increased when compared to 2008 as many as 95,209 accidents [8].

These numbers can be reduced if motorcyclists pay more attention to safety and health. Preventive measures can also be taken if the risk factors for health problems are known, which will be discussed, especially the musculoskeletal syndrome in the lower back area, which many motorcyclists feel, especially those who work as motorcycle taxis. Low back pain is pain felt in the lower back area, and it can be local pain or radicular pain or both. This pain is felt between the lower costal angles to the lumbar or lumbosacral area and is often accompanied by radiating pain to the legs and feet. Low back pain can be caused by musculoskeletal diseases, psychological disorders and incorrect mobilization [8]. Although not a life-threatening disease, low back pain is a significant health problem in the Western Industrial Society. It affects the number of sufferers each year and causes severe discomfort and financial loss.

Dini Diwayani from the Department of Neurology, Faculty of Medicine, UNPAD, stated that the average incidence of low back pain in productive age in Jatinangor, West Java was 38.4% studied from studied 1075 people of productive age. The prevalence of low back pain in

productive men is 40.4%, while it is 37.3% [4]. Based on the explanation above, the problem is "Overview of risk factors for the incidence of low back pain in ojek driver in South Jakarta in 2017". This research aims to find out the factors related to the level of complaints of low back pain in ojek drivers in South Jakarta in 2017.

LITERATURE REVIEW

Low back pain is a clinical syndrome with manifestations of pain and discomfort in the back body area with the border of the 12th rib to the gluteal folds with or without radiating to the legs [9]. Low back pain includes Lumbar Spinal Pain, Sacral Spinal Pain, and Lumbosacral Pain. Low back pain can be classified into three categories: Chronic Back Pain, Acute Back Pain, and Subacute Back Pain [10; 11].

Low Back Pain can occur due to various factors such as individual characteristics, working conditions such as lifting weights manually (manual handling & lifting), lifestyle and psychological factors. In some cases, low back pain is also caused by trauma to the back, osteoporosis, or long-term use of corticosteroids. Pain in low back pain can be centered on various tissues such as muscles, ligaments, joint cartilage, and blood vessels. These tissues can be pulled, tensed, stretched, or dislocated, which will have an inflammatory effect and produce cytokines and/or chemokines [12]. The chemical stimulates nerve tissue to produce the sensation of pain. The inflammatory process will continue, and swelling will occur. The affected area will experience a decrease in blood intake, resulting in oxygen and nutrients not being channelled optimally, and the uptake of inflammatory products will be disrupted, which causes inflammation and pain feedback.

Signs and symptoms of low back pain can be categorized as follows, namely, uncomplicated low back pain and low back pain with neural disorders. The risk factors for low back pain are age, years of service,

duration of work, smoking, body mass index, physical activity, work attitude, vibration (Whole Body Vibration), and a history of skeletal and trauma-related diseases [13; 14; 15].

The vertebral column consists of 33 vertebrae, and five bones make up the spine, namely the cervical, thoracic, lumbar, sacrum, and coccyx [16; 17]. These bones are connected by joints consisting of fibrocartilage cartilage. Of the 33 vertebrae, only 24 of them can be actively moved. The vertebral column supports the body so that it can be upright, bent, even twisted and, at the same time, protects the spinal cord from injury. Strong bones and muscles, flexible tendons and ligaments, and sensitive nerves contribute to a healthy spine. The vertebrae are divided into two parts. The anterior part consists of the vertebral bodies, intervertebral discs for articulation and the anterior and posterior longitudinal ligaments for support. Posteriorly, pedicles, laminae, vertebral canals, and the transverse and spinous processes provide support [18; 19].

The pathophysiology of Low Back Pain is that pain mediators in the form of nociceptors on peripheral sensory neurons, are helpful for warning of potential damage to the skin by transduction of the stimulus into an electrical signal sent directly to the brain [20; 21]. This stimulus will be responded to by releasing inflammatory mediators that will cause pain perception. Pain mechanisms are needed to minimize movement so that the healing process can be carried out quickly. Another protective mechanism is to cause ischemia which is initiated by muscle spasms. Inflammatory pain arises from the pressure that occurs on the nerve sheath that is rich in nociceptors. Pain is usually felt along the nerve fibres and increases with movement or stretching. There is also direct compression of the nerve fibres causing pain at the affected site [22].

Management of Low Back Pain consists of:

- a. Analgesic: The primary management of low back pain is controlling pain, maintaining function, and preventing exacerbations. Analgesics commonly used to manage low back pain are paracetamol, NSAIDs, or weak opioids. However, difficulties were found in treating chronic low back pain because of the side effects of long-term treatment. For example, long-term administration of opioids can cause addiction to the drugs used, so the use of slow-release forms of opioids is an option in treating chronic low back pain to prevent dependence [23].
- b. Surgery: Usually, after drug administration, one does not experience pain relief as a last resort. It is usually done if the pain is caused by a herniated nucleus pulposus (HNP).
- c. Neuro-reflexotherapy Intervention: NRT is a temporary epidermal implant placed at the site of pain to reduce persistent pain, neurogenic inflammation, and muscle contractures [23].

RESEARCH METHOD

This study used an analytic observational research design with a cross-sectional approach. The researcher only observed and measured the variables: age, body mass index, years of service, working duration, smoking habits, physical activity, and work attitude with low back pain. Everything is done simultaneously. The research was conducted at *ojek* bases in Duren Tiga, Tebet, and Kuningan, South Jakarta, from October-December 2017. The population of the study was *ojek* drivers. The research sample is a subject from a population that meets the sample criteria. The sampling technique in this study was simple random sampling. The number of samples sought is based on the prevalence of events in areas with similar characteristics and can represent the population.

$$n = \frac{Z\alpha^2 PQ}{d^2}$$

Description:

Q = 1-P

P = Prevalence

Z α = 1.96

d = desired relative determination (10%)

$$n = \frac{1.96^2 \times 0.404 \times (1-0.404)}{0.1^2} = 92.4$$

The number of samples obtained is calculated at 92.4 and is rounded up to 92 samples. Data was collected using primary data; namely, respondents were interviewed directly on the spot using a questionnaire about low back pain. The research instrument is a questionnaire containing questions answered directly by the respondents (attachment 1). It is done by visiting the respondent at the location and asking the respondent's willingness to answer questions according to their experience. The questions in this questionnaire are closed (close-ended); namely, the respondent only chooses the answer choices that have been provided in the questionnaire. The questionnaire test was conducted to measure the reliability of the instrument. Researchers conducted a test questionnaire on 20 respondents who had criteria that matched the inclusion criteria. Validity is an index that shows the measuring instrument measures what is being measured. Questions in the questionnaire are valid if they are easily understood by respondents and can measure

the concept that the researcher will measure. Reliability is an index that shows how a measuring instrument or instrument can be trusted or relied on. Cronbach's alpha was used to test the reliability of the research instrument. A questionnaire is said to be reliable if it is obtained from the instrument test results that the value of Cronbach's alpha > criteria (0.60). In the questionnaire test, this study obtained the results of Cronbach's alpha of 0.779 (> 0.60), so this research questionnaire was declared valid. All data collected will be recorded, grouped, and then processed using the SPSS (Statistical Product and Service Solution) program. The crosstab test was used to see the incidence of low back pain in the *ojek* drivers, and the chi-square test was used to see the correlation of risk factors for low back pain in the *ojek* drivers. Data processing is carried out through editing, coding, data entry and cleaning processes. The data analysis technique was carried out through univariate and bivariate analysis techniques.

RESULT AND DISCUSSION

This research was conducted in three locations in South Jakarta, namely, Duren Tiga, Tebet, and Kuningan. More than a few *ojek* drivers have become part of the online motorcycle taxi company, so many respondents are not from the area. *ojek* drivers live in the Jabodetabek area and receive pending orders. Based on a survey, most *ojek* drivers use automatic type motorbikes for reasons that are more practical, economical, and lighter to use when stuck in traffic. However, some use a motorcycle for motorsport.

¹ Table 1. Distribution of Frequency and Characteristics of Low Back Pain on *ojek* Drivers in South Jakarta

Variable	Number	%
Sex		
Male	92	100
Age		
<35 years old	42	45.7
>35 years old	50	54.3
BMI		
<25 Kg/m ²	56	60.9
>25 Kg/m ²	36	39.1

Variable	Number	%
Years of service		
<5 years	82	89.1
Variable	Number	%
>5 years	10	10.9
Working Duration		
<8 hours	30	32.6
>8 hours	62	67.4
Distance		
<80 km	28	30.4
>80 km	64	69.6
Body Position		
hunchback (<90°)	45	48.9
upright (90°)	47	51.1
Main job		
Ojek as the primary job	10	10.9
Ojek is not the main job	82	89.1
The Family's Main Breadwinner		
The primary breadwinner of the family	88	95.7
Not the primary breadwinner of the family	4	4.3
Frequency of LBP Symptoms		
Often	82	89.1
rarely	10	10.9
LBP Disrupts Work		
Yes	74	80.4
No	18	19.6
Difficulty Body Bending		
Yes	40	43.5
No	52	56.5
Difficulty Body Straightening		
Yes	40	43.5
No	52	56.5
Changing Sitting Position		
Often	72	78.3
rarely	20	21.7
Pain After Rest		
yes	58	63
No	34	37
Pain When Sneezing/Coughing		
No	50	54.3
Yes	42	45.7
Pain that radiates to the lower extremities		
No	67	72.8
Yes	25	27.2
Pain radiates to the abdomen		
No	91	98.9
Yes	1	1.1
Burning Pain		
No	37	40.2
Yes	55	59.8
There's a Vacation day		
Yes	83	90.2
No	9	9.8
Stress in the Last 6 Months		
Yes	74	80.4
No	18	19.6
Comfortable with the Motorcycle Used		
Yes	59	64.1
No	33	35.9
Driving When Traffic is Congested		
Yes	79	85.9
No	13	14.1
Accident History		
Never	67	72.8
Mild	15	16.3
Severe	10	10.9

Variable	Number	%
Heavy	0	0
Decreased Appetite		
Variable	Number	%
No	42	45.7
Yes	50	54.3
Drinking-Water Consumption		
>2 litre	65	70.7
<2 litre	27	29.3
Sports Routine		
Yes	20	21.7
No	72	78.3
Smoking Cigarette		
Yes	68	73.9
No	24	26.1
Alcohol		
Yes	27	29.3
No	65	70.7
Adequate sleep (8 hours/day)		
Yes	35	38
No	57	62
Pain increases when you wake up		
Yes	41	44.6
No	51	55.4
Comfortable Sleep		
Yes	48	52.2
No	44	47.8

Table 1. shows the distribution and frequency of the research sample. The number of respondents is 92 online and conventional *ojek* drivers active in the South Jakarta area. All respondents studied were male. Most of the respondents studied were over 35 years old; namely, 54.3% (50 people) and the rest (42 people), as many as 45%, were less than 35 years old.

The respondents' body mass index mainly was less than 25 Kg/m², as many as 60.9% (56 people) and those more than 25 Kg/m² were 39.1% (36 people). 89.1% (82 people) of respondents have worked as an *ojek* for less than five years, and 10.9% have worked as an *ojek* for more than five years. *ojek* drivers with a work duration of more than eight hours were 67.4% (62 people) and 32.6% (30 people) for less than eight hours. This number shows that more *ojek* drivers exceed the practical time limit at work.

A total of 30.4% (28 people) of *ojek* drivers cover a distance of less than 80 km in a day, and 69.6% (64 people) of *ojek* drivers cover a distance of more than 80 km in a day. *ojek* drivers who drive in an upright position are 51.1% (47 people) and 48.9% (45 people) who drive in a stooped

position. It shows that more *ojek* drivers ride with their thighs and back seated at 90 degrees than those who do not. 89.1% (82 people) chose *ojek* as their primary job, while 10.9% (10 people) had other jobs besides being an *ojek*. As many as 95.7% (88 people) are the primary breadwinner in the family, and 4.3% (4 people) are not the primary breadwinner in the family. There is 89.1% (82 people) history of *ojek* driver who often experiences low back pain, and 10.9% (10 people) rarely feel low back pain while working as a motorcycle taxi. 80.4% (74 people) felt disturbed by low back pain that interfered with their work, while 19.6% (18 people) did not feel disturbed.

As many as 43.5% (40 people) of *ojek* drivers find it difficult to bend down due to low back pain, and 56.5% (52 people) find it difficult to straighten their body, and 43.5% (40 people) did not find it difficult.

78.3% (72 people) and 21.7% (20 people) did not do so. As many as 63% (58 people) of *ojek* drivers still feel low back pain even after resting, and as many as 37% (34 people) no longer feel low back pain after resting. A total of 54.3% (50 people) of *ojek* drivers felt pain when sneezing or

coughing, and as many as 45.7% (42 people) did not feel pain when sneezing or sneezing or coughing. As many as 15.2% (14 people) did not feel that low back pain interfered with their daily activities, while 84.8% (78 people) felt that their daily activities were disturbed due to low back pain. A total of 27.2% (25 people) of *ojek* drivers felt pain radiating from the lower back to the legs, while 72.8% (67 people) did not feel pain radiating.

The burning pain was felt by 59.8% (55 people) of *ojek* drivers who experienced low back pain. A total of 40.2% (37 people) did not feel pain like burning. A total of 90.2% (83 people) of *ojek* drivers have a day off in a week, and 9.8% (9 people) do not have a day off. 80.4% (74 people) experienced stress in the last six months, and 19.6% (18 people) did not experience stress in the last six months. This number shows that more *ojek* drivers with low back pain experienced stress in the last six months. 64.1% (59 people) and 35.9% (33 people) did not feel comfortable with their motorbikes. As many as 85.9% (79 people) of *ojek* drivers drive when the traffic is heavy/congested, and 14.1% (13 people) choose to avoid driving when the traffic is heavy/congested. Traffic jams in South Jakarta increased from 7.00-10.00 and 16.00-20.00. Traffic jams also occur outside these hours caused by many traffic factors. There are 72.8% (67 people) of *ojek* drivers who have never experienced a traffic accident and experienced trauma. 16.3% (15 people) of *ojek* drivers experienced minor accidents, namely accidents that did not cause injury and could still carry out their activities. 10.9% (10 people) had a moderate accident that caused an injury that interfered with their activities but did not need to be hospitalized. No *ojek* driver has had serious accidents and had to be hospitalized and stop their activities. A total of 54.3% (50 people) of *ojek* drivers experienced decreased appetite due to perceived low

back pain, and 45.7% (42 people) did not experience a decrease in appetite. *ojek* drivers who consume more than two litres of drinking water a day are 70.7% (65 people), and *ojek* drivers who consume less drinking water are 29.3% (27 people). It is recommended that 2 litres of drinking water be consumed in a day to meet the fluid needs of the human body.

ojek drivers who regularly exercise in a week are 21.7% (20 people) and 78.3% (72 people) who do not exercise. 73.9% (68 people) of *ojek* drivers smoked, and 26.1% (24 people) did not smoke. This number shows that more *ojek* drivers are active smokers. 29.3% (27 people) consumed alcohol, and 70.7% (65 people) did not consume alcohol. This number shows that more *ojek* drivers do not consume alcohol. 38% (35 people) of *ojek* drivers sleep enough, and 62% (57 people) don't. Adequate sleep is meant to sleep for at least 8 hours a day. An increase in lower back pain when waking up was felt in 44.6% (41 people), and 55.4% (51 people) did not feel an increase in pain. 52.2% (48 people) of *ojek* drivers feel comfortable sleeping, and 47.8% (44 people) do not feel comfortable sleeping.

Table 2. Frequency Distribution of Low Back Pain Classification on *ojek* Drivers in South Jakarta

LBP Classification	Number	%
Acute	43	46.7
Sub Acute	35	38.0
Chronicle	14	15.2
Total	92	100

Table 2 shows the frequency distribution of low back pain in *ojek* drivers classified into three acute, sub-acute, and chronic. A total of 46.7% (43 people) of *ojek* drivers experienced acute low back pain for less than five weeks, 38% (35 people) experienced subacute low back pain for 5-12 weeks, and 15.2% (14 people) experienced chronic low back pain for more than 12 weeks.

Table 3. Distribution of the Effect of Risk Factor with Low Back Pain Incidence on ojekDrivers in South Jakarta

		Low Back Pain Classification			Asymp. Sig (2-sides)
		Acute	Sub Acute	Chronicle	
Usia					
	< 35 years old	22	12	8	0.213
	> 35 years old	21	23	6	
Total		43	35	14	
BMI					
	< 25 Kg/m ²	27	19	10	0.507
	> 25 Kg/m ²	16	16	4	
Total		43	35	14	
Years of service					
	< 5 Tahun	41	32	9	0.004
	> 5 Tahun	2	3	5	
Total		43	35	14	
Working duration					
	< 8 jam	19	9	2	0.063
	> 8 jam	24	26	12	
Total		43	35	14	
Smoking cigarette					
	Yes	28	31	9	0.043
	No	15	4	5	
Total		43	35	14	
Physical Activity					
	Routine	12	6	2	0.396
	Not a routine	31	29	12	
Total		43	35	14	
Body Position					
	Upright	28	15	4	0.028
	hunchback	15	20	10	
Total		43	35	14	

Table 3. shows the results of statistical tests using Chi-Square on the age factor does not affect the incidence of low back pain seen from the Asymp. Sig results of 0.213. In the body mass index (BMI) factor, the Asymp. Sig value of 0.507 indicates that BMI does not affect the incidence of low back pain. The work period factor was obtained from Asymp. Sig of 0.004 indicates that the length of service affects low back pain in ojek drivers. On the work duration factor, the Asymp. Sig result of 0.063 shows no relationship between the length of work duration and the incidence of low back pain.

Likewise, the physical activity factor obtained an Asymp. Sig of 0.396 indicates no influence between physical activity and the incidence of low back pain in ojek drivers. However, the work attitude factor and smoking habit obtained Asymp. Sig values of 0.000 and 0.045, respectively. It shows an influence of work attitude with smoking habits on ojek drivers.

1. Age

Ho: There is no relationship between age and the incidence of low back pain in ojek drivers in South Jakarta.

Ha: There is a relationship between age and the incidence of low back pain in ojek drivers in South Jakarta.

In this study, the chi-square test results for the age factor were $p=0.213$ (>0.05), proving H_0 , namely, there was no relationship between the respondent's age and the incidence of low back pain in ojek drivers in South Jakarta.

Respondents aged less than 35 years, 22 of whom experienced acute low back pain, 12 people experienced subacute low back pain, and eight people experienced chronic low back pain. Respondents aged over 35 years, 21 experienced acute low back pain, 23 experienced subacute low back pain, and six experienced chronic low back pain. It is supported by the research of Riningrum H and Widowati E, who

examined the relationship between years of service and the incidence of low back pain in garment sewing workers in Semarang with $p=0.554$ (<0.05).

However, this result contradicts the theory by Tarwaka that complaints of low back pain begin to be felt at the age of more than 35 years [24]. Muscle strength begins to decline when a person reaches the age of 25 years, but the number of muscle fibres also influences this. If the muscles are large, the energy generated from the metabolic process is also high so that the strength is relatively constant. Good muscle strength at over 35 can be influenced by a healthy lifestyle and endurance [24].

2. BMI

Ho: There is no relationship between body mass index and the incidence of low back pain in ojek drivers in South Jakarta.

Ha: There is a relationship between body mass index and the incidence of low back pain in ojek drivers in South Jakarta.

The results of the chi-square test on the body mass index factor obtained $p=0.505$ (>0.05), clarifying that there is no relationship between body mass index (BMI) and the incidence of low back pain in ojek drivers in South Jakarta. So H_0 is declared proven. The results are different from the research by Wijaya MP in Kendari, which obtained a value of $p = 0.011$ (<0.05), indicating that there is a relationship between body mass index and the incidence of low back pain in furniture workers. Overweight workers are 51.2%, while those who are non-overweight are 48.8%. More workers are overweight [26]. Motor riders can cause this difference in results with low back pain who have a low BMI (<25 Kg/m²) found in the field, which is as much as 60.9%. The difference in results may also be influenced by the method of obtaining data by simply asking the respondent their weight and height (questionnaire) so that many of the respondents' weight and height do not match their original weight and height.

3. Years of service

Bivariate analysis was carried out to prove the hypothesis:

Ho: There is no relationship between years of service and the incidence of low back pain among ojek drivers in South Jakarta.

Ha: There is a relationship between years of service and the incidence of low back pain among ojek drivers in South Jakarta.

The chi-square test result showed $p = 0.004$ (<0.05), indicating a relationship between years of service and the incidence of low back pain in ojek drivers in South Jakarta. So, the null hypothesis is rejected. The same result in the study conducted by Fashihullisan regarding the relationship between years of service and low back pain on weavers, obtained $p = 0.000$. These results indicate a relationship between tenure and the incidence of low back pain [27].

Then, when it is related to the theory, it said that the longer the working period, the longer the exposure at work to the disease caused is higher the risk [24].

4. Working Duration

Bivariate analysis was carried out to prove the hypothesis:

Ho: There is no relationship between work duration and the incidence of low back pain among ojek drivers in South Jakarta.

Ha: There is a relationship between work duration and the incidence of low back pain among ojek drivers in South Jakarta.

The chi-square test results obtained $p = 0.063$ indicate that there is no relationship between work duration and the incidence of low back pain in ojek drivers in South Jakarta, so H_0 can be said to be proven. In contrast to the previous study by Anggraini M T regarding work duration increasing the incidence of low back pain in cigarette factory workers, the result was $p = 0.042$, indicating a relationship between

work duration and the incidence of low back pain [28]. Respondents' inaccuracy in answering questions and differences in the duration of work each day allow differences in research results with existing theories.

5. Smoking Cigarette

Bivariate analysis was carried out to prove the hypothesis:

Ho: There is no relationship between smoking habit and the incidence of low back pain in ojek drivers in South Jakarta.

Ha: There is a relationship between smoking habits and the incidence of low back pain in ojek drivers in South Jakarta.

The chi-square test results obtained a value of $p = 0.045$ (<0.05), indicating a relationship between smoking habits and the incidence of low back pain in ojek drivers in South Jakarta, so H_a is proven. A study conducted by Septadina IS regarding low back pain and the risk factors that influence it obtained a p -value = 0.04 (<0.05) on the smoking variable on low back pain. It shows similar results where there is a relationship between smoking habits and the incidence of low back pain [29].

6. Physical Activity

Bivariate analysis was carried out to prove the hypothesis:

Ho: There is no relationship between physical activity and the incidence of low back pain among ojek drivers in South Jakarta.

Ha: There is a relationship between physical activity and the incidence of low back pain in ojek drivers in South Jakarta.

The chi-square test resulted in a p -value = 0.396 (> 0.05), indicating that there was no relationship between physical activity and the incidence of low back pain, so H_o proved that there was no relationship between physical activity and the incidence of low back pain in ojek driver in South Jakarta. In a study in Konawe Regency, Southeast Sulawesi, the results obtained $p =$

1,000 (> 0.05) showed no relationship between physical activity and the incidence of low back pain. These results have similarities to strengthen the statement that there is no relationship between physical activity and the incidence of low back pain [30].

7. Body Position

Bivariate analysis was carried out to prove the hypothesis:

Ho: There is no relationship between work attitude and the incidence of low back pain among ojek drivers in South Jakarta.

Ha: There is a relationship between work attitude and the incidence of low back pain in ojek drivers in South Jakarta.

The result is $p = 0.028$ (<0.05) in the chi-square test, so H_o is rejected. These results indicate a relationship between work attitude and the incidence of low back pain in ojek drivers in South Jakarta. In a study conducted in Medan, which Nurzanna conducted, $p = 0.039$ (<0.05) showed a relationship between work attitude and the incidence of low back pain in loading and unloading workers [29]. These results strengthen the statement that there is a relationship between work attitude and the incidence of low back pain in ojek drivers in South Jakarta. According to theory, working in an awkward position will cause excessive energy expenditure and inefficient distribution of energy from the muscles to the framework so that it is easy to feel tired; in this study, the awkward position is described as a stooped sitting position where the hips and back form an angle $<90^\circ$ [31].

CONCLUSION

Based on research conducted to describe the risk factors for low back pain among ojek drivers, it can be concluded as follows: a) The results of the study on 92 ojek drivers spread across South Jakarta who experienced low back pain, 46.7% (43 people) experienced low back pain and the acute pain for less than five weeks, 38% (35 people) experienced subacute low back pain

for 5-12 weeks, and 15.2% (14 people) experienced chronic low back pain for more than 12 weeks; b) There is a relationship between years of service, smoking habits, and work attitudes with the incidence of low back pain among ojek driver in South Jakarta; and c) There is no relationship between age, body mass index, duration of work and physical activity with the incidence of low back pain among ojek driver in South Jakarta. Thus, it is essential to increase education about maintaining health and identifying risk factors for low back pain in ojek drivers to work more effectively and efficiently.

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REFERENCES

1. Litman T. Autonomous vehicle implementation predictions. Victoria, Canada: Victoria Transport Policy Institute; 2017 Feb 27.
2. Karmegam K, Ismail MY, Sapuan SM, Ismail N. Conceptual design and prototype of an ergonomic back-leaning posture support for motorbike riders.
3. Laksana PA. *A Research on the Factors That Make Indonesian Government's Slow Response In Regulatory Arrangements of Motorbike Taxi Online Transportation* (Doctoral dissertation, 서울대학교대학원).
4. Novitasari DD, Sadeli HA, Soenggono A, Sofiatin Y, Sukandar H, Roesli RM. Prevalence and characteristics of low back pain among productive age population in Jatinangor. *Althea Medical Journal*. 2016 Sep 30;3(3):469-76.
5. Yoshikawa H, Aber JL, Beardslee WR. The effects of poverty on the mental, emotional, and behavioral health of children and youth: implications for prevention. *American Psychologist*. 2012 May;67(4):272.
6. World Health Organization. Global status report on road safety 2018: summary. World Health Organization; 2018.
7. Santosa SP, Mahyuddin AI, Sunoto FG. Anatomy of injury severity and fatality in Indonesian traffic accidents. *Journal of Engineering and Technological Sciences*. 2017 Aug;49(3):412-22.
8. Wandani FP, Siti M, Yamamoto M, Yoshida Y. Spatial econometric analysis of automobile and motorcycle traffic on Indonesian national roads and its socio-economic determinants: Is it local or beyond city boundaries?. *IATSS research*. 2018 Jul 1;42(2):76-85.
9. Martimo KP, Shiri R, Miranda H, Ketola R, Varonen H, Viikari-Juntura E. Effectiveness of an ergonomic intervention on the productivity of workers with upper-extremity disorders-a randomized controlled trial. *Scandinavian journal of work, environment & health*. 2010 Jan 1:25-33.
10. Ostelo RW, de Vet HC. Clinically important outcomes in low back pain. *Best practice & research clinical rheumatology*. 2005 Aug 1;19(4):593-607.
11. Ng JY, Mohiuddin U. Quality of complementary and alternative medicine recommendations in low back pain guidelines: a systematic review. *European Spine Journal*. 2020 Aug;29(8):1833-44.
12. Adams MA, Bogduk N, Burton K, Dolan P. *The Biomechanics of Back Pain-E-Book*. Elsevier health sciences; 2012 Nov 19.
13. Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, Shibuya K, Salomon JA, Abdalla S, Aboyans V, Abraham J. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The lancet*. 2012 Dec 15;380(9859):2163-96.
14. Deyo R. a., Weinstein JN: Low Back Pain. *N Engl J Med*. 2001;344:363-70.
15. Hollingworth W, Todd CJ, King H, Males T, Dixon AK, Karia KR, Kinmonth AL. Primary care referrals for lumbar spine radiography: diagnostic yield and clinical guidelines. *British journal of general practice*. 2002 Jun 1;52(479):475-80.
16. Davis SF. Anatomy of intraoperative monitoring. In *Principles of Neurophysiological Assessment, Mapping, and Monitoring 2020* (pp. 13-48). Springer, Cham.
17. Souissi M, Hugel V, Blazevic P. Influence of the number of humanoid vertebral column pitch joints in flexion movements. In *The 5th International Conference on Automation, Robotics and Applications 2011 Dec 6* (pp. 277-282). IEEE.

18. Mahadevan V. Anatomy of the vertebral column. Surgery (Oxford). 2018 Jul 1;36(7): 327-32.
19. Gkasdaris G, Kapetanakis S. Clinical anatomy and significance of the lumbar intervertebral foramen: A review. Journal of the Anatomical Society of India. 2015 Dec 1;64(2):166-73.
20. Urits I, Burshtein A, Sharma M, Testa L, Gold PA, Orhurhu V, Viswanath O, Jones MR, Sidransky MA, Spektor B, Kaye AD. Low back pain, a comprehensive review: pathophysiology, diagnosis, and treatment. Current pain and headache reports. 2019 Mar;23(3):1-0.
21. Peng BG. Pathophysiology, diagnosis, and treatment of discogenic low back pain. World journal of orthopedics. 2013 Apr 18;4(2):42.
22. Cummings M, Baldry P. Regional myofascial pain: diagnosis and management. Best practice & research clinical rheumatology. 2007 Apr 1;21(2): 367-87.
23. Duthey B. Background paper 6.24 low back pain. Priority medicines for Europe and the world. Global Burden of Disease (2010),(March). 2013 Mar 15:1-29.
24. Tarwaka S, Sudiajeng L. Ergonomics for safety, health and productivity. Uniba, Surakarta. 2004;34-50.
25. Kysel P, Haluzíková D, Doležalová RP, Laňková I, Lacinová Z, Kasperová BJ, Trnovská J, Hrádková V, Mráz M, Vilík Z, Haluzík M. The influence of cyclical ketogenic reduction diet vs. Nutritionally balanced reduction diet on body composition, strength, and endurance performance in healthy young males: A randomized controlled trial. Nutrients. 2020 Sep;12(9):2832.
26. Widjaya MP, Aswar H, Pala'langan S. Factors associated with the incidence of low back pain in furniture workers. Medula: Scientific Journal of the Faculty of Medicine, Halu Oleo University. 2014;1(2): 152277.
27. Fashihullisan M. Relationship between Age and Working Period on the Risk of Myogenic Low Back Pain in Sand Miners in Kalimujur, Lumajang Regency (Doctoral dissertation, University of Muhammadiyah Malang).
28. Anggraini MT, Jenie MN, Ronica DW. The duration of work increases the incidence of low back pain in cigarette factory workers. Muhammadiyah Medical Journal. 2014;3(2).
29. Nurzannah N. The relationship of risk factors with the occurrence of low back pain in loading and unloading workers (Tkbm) at the port of Belawan Medan in 2015. Work Environment and Safety. 2015;4(1):14553.
30. Widiawati D. Relationship between Work Posture, Work Duration, and Physical Activity on Low Back Pain Incidence in Rice Farmers in Puumbinisi Village, Pondidaha District, Konawe Regency, Southeast Sulawesi Province. Makassar: 2016.
31. Andini F. Risk Factors Of Low Back Pain In Workers. Lampung. Jurnal, Faculty of Medicine. 2015.

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