

The Effect of Lumbar Support on Lower Back Pain in Ojek Online Drivers in Solo Indonesia

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ABSTRACT

Online motorcycle taxi drivers (Ojek Online) work long hours driving motorbikes. the driver experiences low back pain. The use of elastic lumbar support when driving is expected to reduce pain when sitting too long in a two-wheeled vehicle and when lifting weights. Therefore, the authors are interested in conducting research on the effect of use of lumbar support on lower back pain in ojek online drivers. This type of qualitative research is quasi-experimental with one group pretest-posttest design test approach. This research will be conducted at the online motorcyclist basecamp of Solo, Central Java, Indonesia in February to March 2020. The sample used in this study is 80 people with back discomfort due to pain when sitting while riding a two-wheeled vehicle on a motorcycle taxi driver online that fulfills inclusion and exclusion. The measurement tool used is Visual Analog Scale. Normality test data used Normality test using Kolmogorov-Smirnov. Hypothesis testing in this study uses Wilcoxon on the value of the degree of pain at the beginning and at the end of the study. The results of the study are that there is an influence of the use of lumbar corset on online back pain of motorcycle taxi drivers online. There is a decrease in low back pain to the online motorbike driver after being treated with elastic lumbar support.

Keywords: Ojek Online, Lumbar Support, Low Back Pain, Indonesia

INTRODUCTION

Along with the development of technology, science and communication facilities at this time the field of online transportation services has also emerged transportation services easily and quickly in meeting the needs of the community in Indonesia. There are various kinds of online transportation services for two-wheeled vehicles that appear such as Gojek, Grab, Get-jek, M-jek and others. The menus offered are various such as delivery services, delivery of goods, delivery of food, shopping and cleaning services. [1]

The workload of each worker is different, according to the type of work. Workloads can be mental, physical and social. Physical burden is found when doing physical work as the main tool such as driving on a motorized vehicle. In online transportation service work, lowering and carrying goods

carried out directly without the aid of any tools can be a risk factor for accidents to workers such as pain or injury on the lower back. [2]

Complaints in the lower back or musculoskeletal complaints are complaints on the skeletal muscles that are felt with different pain intensities, from mild pain to very painful pain felt by each individual. Muscles that receive both static and dynamic loads repeatedly and for a long time can cause serious problems that must be dealt with immediately. Therefore, to reduce the heavy burden on the lower back muscles, treatment is given using Lumbar Support as a back base in do activities. [3]

Lumbar support in this condition is very important in reducing pain, especially during activities, in addition to lumbar stabilization as well as partial takeover of weight support [4]. Lumbar Support is a device that is mounted on the lower back. Lumbar Support is to provide muscle support in the lower back and direct protection of extensive body movements to prevent injury and with abdominal pressure makes the body upright and reduce the degree of kyphosis when doing work on the vehicle or lifting weights. The use of elastic lumbar support when driving is expected to reduce pain when sitting too long in a two-wheeled vehicle and when lifting weights. Therefore, the authors are interested in conducting research on the effect of the use of the effect of the use of lumbar support for lower back pain on Ojek Online Drivers.

METHOD

The type of research design design used was quasi experiment with one group pretest-posttest design test approach. This research was conducted in the online motorcyclist basecamp of the city of Solo in February to March 2020. The population in this study 202 people were sufferers of discomfort in the back due to pain when sitting riding a two-wheeled vehicle on an Ojek online driver Solo city in Indonesia. The sample used in the study was 80 people with back discomfort due to the onset of pain when sitting while driving a two-wheeled vehicle on an online motorcycle taxi driver who met the specified inclusions and exclusions.

Groups were determined by non probability purposive sampling. The inclusion criteria of this study were: 1) Subjects experienced discomfort in the back with the onset of pain when sitting two-wheeled driving. 2) Subjects are aged between 20-50 years. 3) Subjects are willing to cooperate and participate in research programs. 4) Subjects are willing to wear elastic Lumbar Support during the study period except during breaks, showers or when not working. 5) Subjects are not taking pain medication, undergoing therapy or using other tools except for the prescribed lumbar support.

The exclusion criteria of this study are: 1) Pain caused by other disorders such as using other tools. 2) Are taking pain medication. 3) Unable to attend. Measuring instruments in the study of patients with back discomfort with the onset of lower back pain use the Visual Analogue scale, a scale in the form of a straight line that is usually 10cm (or 100 mm) in length, with depictions of verbs at each end, such as the number 0 (without pain) to number 10 (heaviest pain).

Measuring tool used in the Visual Analog Scale. Visual Analog Scale (VAS) is the most widely used way to assess pain. This linear scale visually illustrates the degree of pain that a patient may experience. The range of pain is represented as a 10 cm long line, with or without markings in each centimeter. Signs at both ends of this line can be numbers or descriptive statements. One end

represents no pain, while the other end represents the worst possible pain. The scale can be made vertical or horizontal. VAS can also be adapted to a scale of pain loss / relief. Visual Analog Scale is used in adult patients. The main benefit of VAS is that it is very easy and simple to use [5]

The operational definitions of this study, 1) lower back pain is pain due to the activity of sitting down riding a two-wheeled vehicle. Pain that is measured using Visual Analog Scale in the form of an ordinal scale. 2) Using lumbar support, this study uses an elastic lumbar support intervention mounted on the lower back to cover the lumbosacral. This lumbar support is in the form of elastic lumbar corset which is used on respondents' low back pain when they are sitting riding on a wheel vehicle during working hours.

The stages in conducting the research are as follows: Listing the subjects included in the inclusion and exclusion criteria, the subject is willing to be the subject of the study and the subject fills out an informed consent form. Taking initial data starts with observing the subject's activities and factors that the subject must do in more detail and see the work system when receiving orders. Subjects were asked to ride a motorbike without being given treatment, then did an initial VAS test before the treatment was given, after taking within the initial data period the subject was treated using Lumbar Support for 10 hours in one day, asked to carry out work activities as usual until the day to 10 from the beginning were given treatment.

On the 10th day the post test data retrieval of the subject was re-tested using VAS to find out the results of the treatment using Lumbar Support and began collecting data from the subjects. After the research data has been collected both through pre-test and post-test, then the data is edited and entered. Data processing using SPSS statistical analysis program. Normality test using Kolmogorov-Smirnov. Hypothesis testing in this study uses Wilcoxon on the value of the degree of pain at the beginning and at the end of the study.

RESULT

Overview and Research Results

Data collection in this study was conducted in February - March 2020, this study aims to determine the effect of the use of elastic lumbar corsets on low back pain in online motorbike drivers. The subjects in this study were online motorcycle drivers in the city of Surakarta, aged 20-50 years, as many as 80 subjects were taken as samples from a total population of 202 people in one community. The youngest respondent age is 22 years. The age of the oldest respondent is 50 years. The average age of respondents / study subjects was 35.39 years. Characteristics of respondents by age can be seen in Table 2.

Online motorcycle drivers in the city of Surakarta are still dominated by male, in this study male online motorcycle drivers numbered 74 people (92.5%) and 6 women (7.5%). The majority of drivers use matic type vehicles. 74 people (92.5%) used automatic motorcycles and 6 people (7.5%) used manual motorcycles. Characteristics of respondents by gender and type of vehicle can be seen in Table 1.

This study aims to determine the effect of using elastic lumbar corsets on low back pain in online motorbike drivers. In the research process went smoothly from the beginning to the end of the research program conducted, obtained by subjects who met the inclusion criteria totaled 80 people.

In the process of this research went smoothly. 80 respondents were measured pain pre test with VAS. then the respondent wore a lumbar corset for 10 days, after which a post test was measured, i.e. measured pain using a VAS. Measurement results showed the average pain before treatment was 33.8. The average measurement of pain after treatment was 22.31. The pretest and post test pain data can be seen in table 2. Subjects who complained of low back pain were collected from a community and had a profession as an online motorbike driver in the city of Solo. In this research process subjects from the beginning of planning to the end of the research process are cooperative and willing to follow the directions and recommendations well.

Table 1. Descriptive statistics on the characteristics of respondents based on gender and type of vehicle

Variable	n	%
Gender		
Male	74	92.5
Female	6	7.5
Total	80	100
Transportation Type		
Matic	74	92.5
Manual	6	7.5
Total	80	100

Table 2. Descriptive statistics of respondent characteristics based on age, pretest pain and post test

Variable	n	Min.	Max.	Mean	Std.dev
Usia	80	22,00	50,00	35,39	7,30
LBP_pretest	80	10,00	67,00	33,84	11,34
LBP_posttest	80	10,00	45,00	22,31	10,14

Data normality

The normality test results used were the Kolmogorov Smirnov test because the number of samples in this study were 80. Because the research subjects / samples numbered 80 (> 50), they used the normality of the data using the Kolmogorov Smirnov test. The results of data normality with the Kolmogorov Smirnov test showed that both the pretest and posttest variables showed that the data were not normally distributed, because the p value was < 0.05 . So the data analysis uses non-parametric statistics, the Wilcoxon test. Statistics on normality test data using Wilcoxon can be seen in Table 3.

Table 3. Statistics normality test data using Wilcoxon

Variable	p value	A	Conclusion
LBP pretest	0,000	0,05	Abnormal
LBP posttest	0,000	0,05	Abnormal

Wilcoxon different test results

The results showed there was a different effect of using elastic lumbar support for lower back pain of -8.173 where with p value = 0.000 (<0.05), so it can be concluded that there was a statistically significant effect of using elastic lumbar support on low back pain before and after treatment. Wilcoxon different test results can be seen in table 4.

Table 4. Wilcoxon different test

Variable	Mean	Z	p value
LBP Pretest	33.84	-8.173	0.000
LBP Posttest	22.31		

With a significant difference in the hypothesis test conducted to determine the effect of the use of lumbar support for low back pain online motorbike drivers with one group pretest and post test design with the Kolmogorov Smirnov normality test showed normal results followed by the Wilcoxon hypothesis test with significant results can be interpreted that there is an influence of the use of lumbar support for lower back pain online motorcycle taxi drivers. There is a decrease in low back pain for online motorbike drivers after being treated with lumbar support.

DISCUSSION

This research was conducted to determine the effect of using elastic lumbar corsets on low back pain in online motorcycle drivers in the city of Solo. The data in this study are primary data. The data obtained is based on direct expression from research subjects using VAS measurement tools before and after treatment. This research was conducted on online motorbike drivers in the city of Solo as many as 80 people with purposive sampling technique from 202 total populations that fit the inclusion and exclusion criteria. The data taken is primary data taken with agreement as stated in the consent sheet and the measurement of low back pain. Then given a treatment in the form of elastic lumbar corset for 10 days.

At this time the discussion is the development of information technology towards the application-based ojek business that is modern by using technological sophistication in the virtual world. There are several companies that use this technological sophistication to create an application-based motorcycle taxi business. These companies include Gojek, Grab Bike, and Uber [6]. The existence of TNC online motorcycle taxi is able to open employment opportunities in the transportation sector, but the impact on reducing unemployment must still be studied further considering that most online motorcycle taxi drivers previously had jobs. In terms of its impact on the welfare of online motorcycle taxi drivers, the existence of online motorcycle taxis in general is able to increase the income of online motorcycle taxi drivers [7]. Advice can be given that online motorcycle taxi

companies still provide safety riding to prospective online motorcycle taxi in Surakarta. In addition to increasing the knowledge of motorists, it can also increase the image of good name for online motorcycle taxis among the public [8]. The presence of Ojek Online who applies appropriate communication technology when people need safe transportation facilities and can be a solution when traffic jams is the focus of research that is deemed necessary to be constructed in this study. What's more, by combining transportation services with the sophistication of Internet technology so that people more easily place an order, find out the rate of transportation costs, destination locations and identification of drivers which is a new form of innovation in the world of transportation business [9].

Lower back pain can occur anywhere, can be in poor countries, developed and advanced. Low back pain can occur at any age, from small children to old people. Because lower back pain is projected in the future disability can occur, especially if the health system does not support good clinical practice[10]. Low back pain (LBP) is a complaint that is often found in the community, a problem in the community because it often results in sufferers being disrupted or unable to perform daily tasks. Mechanical LBP is the most common cause of disability associated with occupational trauma. Patients with LBP mechanics often experience decreased ability to perform certain activities because of the pain. Objective: To determine the description of functional disorders and quality of life in patients experiencing mechanical low back pain [11]. Age 44-54 years has a percentage of 63.0%, Type of Employment Private employees get a percentage of 48.2%, Gender 55.6% are Men, Roland-Morris questionnaire results show 21 Respondents get a percentage above 51.85% is a mild disability category. In the SF-36 questionnaire results there were 4 categories which included poor quality of life from a total of 8 categories. Conclusion: In this study, most patients with mechanical LBP experienced mild disabilities from the results of the Roland-Morris questionnaire and from the SF-36 questionnaire results obtained a balanced result between quality of life good and bad [11].

Treatment of low back pain using lumbar support in line with the research of Chris Maher [12]. Management consists of education and reassurance, analgesic medicines, non-pharmacological therapies, and timely review. The clinical course of low back pain is often favorable, thus many patients require little if any formal medical care. Two treatment strategies are currently used, a stepped approach beginning with more simple care that is progressed if the patient does not respond, and the use of simple risk prediction methods to individualise the amount and type of care provided.

In the research process in the elastic lumbar corset field used during driving and doing daily activities in line with the research Hashimoto [13] . Wearing a lumbar support while swinging a golf club can viably diminish lumbar expansion and revolution edges from sway until the finish of the swing. These impacts were altogether upgraded while wearing a Lumbar Support. Lumbar Corset itself is made of elastic and porous material so that it is not hot when used and given support or support on the back of aluminum plate on both sides of the vertebra.

This study is inline with research done by Susilowati [14]. The study was conducted on 40 households mother, in Fitasoma Physiotherapy Clinic Surakarta, Data collection done from January to December 2014. The result was found that the decrease of pain in the first two weeks, in a group of patient using lumbar corset and in group of patient who got exercise treatment. In addition,

functional improvements in lumbar corset administration group after the first week, and the provision of back exercise group after the second week.

This reaseach is not inline with research by Zoia [15]. The examination looked to confirm whether Lumbar support selection could improve the present moment and midterm result scores of patients after single-level lumbar discectomy. A monocentric, randomized controlled preliminary of 54 back to back patients who experienced single-level lumbar discectomy at the creators' establishment was performed from September 2014 to August 2015. Patients were haphazardly allocated to utilize or not utilize a lumbar undergarment in the upstanding position. Patients with past mediations for plate herniation or with corresponding waterway or foramina stenosis were barred. The visual simple scale, Oswestry Disability Index, and Roland Morris Disability Questionnaire were utilized to think about gatherings at the 1-and half year follow-up time focuses. The outcomes was no huge contrasts between the 2 gatherings were accounted for at either time point for some random result independent of the scale utilized. It very well may be reason that Lumbar support selection doesn't improve the present moment and midterm results of patients after single-level lumbar discectomy[15].

Research conducted by Million shows that patients who use lumbar support experience a significant increase in pain relief than those who don't. lumbar corsets that have back support show a significant contribution to the reduction in back pain symptoms [16]. this also supports my research whose results is shows that Wilcoxon hypothesis test with significant results, that can be interpreted that there is an influence of the use of lumbar support for lower back pain Ojek online drivers. Lumbar support shows the impact in reducing pain From result and discussion, it can be concluded that lumbar support is very helpful to reduce low back pain caused by a long sitting position while working as an online motorcycle taxi. the majority of online motorcycle taxi riders are men, because men have a duty to provide a living. men also tend to be stronger.

CONCLUSION

There is an influence of the use of lumbar corset on lower back pain Ojek online motorcycle drivers. There is a decrease in low back pain to the online motorbike driver after being treated with lumbar support. Online motorcycle taxi drivers are advised to wear a corset lumbar when feeling low back pain for 10 days. The most widely used motor is the automatic motor. The majority of drivers are male.

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