



## The Relationship Between Sitting Duration While Working in the Office With Complaints of Lower Back Pain in General Administration at Saiful Anwar Hospital Malang

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### ABSTRACT

Administration officer is a profession that sits for a long duration, working on a computer device. Sitting for a long time can cause low back pain. Low back pain is one of the diseases that can cause disability and disorders. This disease can reduce effectiveness in work. This pain arises from a long sitting position causing continuous spasms on muscle. Research Objective: Knowing the relationship between sitting duration while working with lower back pain in administration officers. Research Method: This study used Cross-Sectional research methods with a total sample in this study of 202 people. Sample were given Rolland Morris questionnaires and responded directly. The data was analyzed using Chi-Square Test. Results: 16.7% of people with a long sitting duration <4 hours had complaints of low back pain, and as many as 48% of respondents with a working duration of > 4 hours had complaints of back pain. Statistical test results using the Chi-Square Test obtained a  $p = 0.026 < 0.05$ . Thus it can be concluded that there is a long-standing relationship of sitting with complaints of low back pain in Administration officer of Saiful Anwar Malang Hospital. Conclusion: Long sitting duration done for several years can cause disorders in the body. The working period causes a continuous static load, and workers who ignore ergonomic factors can cause low back pain.

**Keywords :** low back pain, sitting duration.

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### INTRODUCTION

As time goes by, competition in various fields will become more challenging. In the face of increasingly fierce competition, quality human resources (HR) and good work efficiency are needed. Human resources are of sufficient quality; even if health problems are found, it will reduce work efficiency. A health problem affecting work efficiency is low back pain, among other causes, also known as low back pain. Low back pain contributes to many musculoskeletal diseases caused by

muscles, which are caused by repeated and continuous use of supporting static loads for a long time (Umami et al., 2014). One of the leading causes of disability is low back pain, a common health problem (Lionel, 2014).

According to research results, one of the leading causes of disability globally from the ten most common diseases in the United States and ranks fifth in the list of reasons why patients seek medical attention is the incidence of low back pain (Minghelli, 2017). In Indonesia, non-specific low back pain prevalence is estimated to be between 60% and 70%. (Syahada et al., 2018). At the Saiful Anwar Hospital Medical Rehabilitation Center Malang, the highest number of visits was for low back pain. Data for 2019 shows that the number of visits for low back pain is 49% among all visits to the Medical Rehabilitation Installation. And 9.5% of visitors are hospital employees. Saiful Anwar himself, especially the one managing the employees. Staff Management Staff spends a lot of time in the office, 4 - 7 hours working in a sitting condition, doing various activities, and prolonged static sitting postures. Many forward movements, leaning postures, backward, standing too long, sitting or non-ergonomic body positions found in daily activities can cause non-specific low back pain (Harianto, 2010). If left unchecked, it will be very detrimental to the employee and, of course to the hospital where the employee works because his work performance will decrease due to illness.

Physical therapy plays an active role in prevention, healing, and rehabilitation to treat and reduce low back pain. Physiotherapy is a dynamic profession with various theoretical foundations and clinical applications in maintaining, restoring, and developing optimal body functions (Fricke Moni, 2010). Physical therapists provide some exercises to help a person stay healthy and achieve or maintain their physical health. Physical exercise is a way to stay healthy. From research, children or adolescents under 18 years need 60 minutes of physical activity with moderate to high intensity every day. Meanwhile, adults need 30 minutes of moderate-intensity exercise, with details five days a week or 20 minutes of high-intensity exercise 3 times a week to stay healthy. (Gutin Ulina, 2010). I hope physical therapy can help reduce low back pain complaints.

If a relationship is found between prolonged sitting and complaints of lower back pain, it is necessary to change habits; for example, lower back pain can be minimized by paying attention to how to get up from a chair so that it can help the body flex tense muscles, rotate the body to move, use a chair that is following the table location In the correct position, a balanced bodyweight that is not excessive will help reduce the burden on the spine and immediately rest the body when tired (Davies, 2014)

The author is interested in taking the title of the study, The relationship between the length of sitting and complaints of lower back pain in general administrative staff at Saiful Anwar Hospital Malang, so it needs to be studied further. The author chose Saiful Anwar Hospital as a place of research because, apart from the author, he is an employee at the Medical Rehabilitation Installation at Saiful Anwar Hospital Malang, making it easier for the author to conduct observations and research. Saiful Anwar Hospital Malang is also the largest hospital in Malang Raya with various cases.

Likewise, the most significant number of employees is around 3800 employees, and the number of administrative employees is 406 people.

Based on another study, it was explained that 35 people studied (87.5%) had the longest sitting time, which was more than 4-8 hours, and five people (12.5%) had at least more than 8 hours of sitting. Sitting for long periods is the most common cause of low back pain. Tension also stretches the ligaments and spinal muscles, which can cause low back pain (Samara D, 2004 in Pamungkas et al., 2016). Previous studies have investigated the risk factors for complaints of low back pain and lack of physical activity. Still, the relationship between complaints of low back pain and length of sitting for general administrators at Saiful Anwar Hospital Malang has never been reported.

## **METHODS**

This research is an analytical preliminary survey research using a cross-sectional design. This design is a study that examines the calculation of causal factors and effect factors that are carried out simultaneously to determine the relationship, length of work in a sitting position, and low back pain in general administrators in hospitals. Saiful Anwar Malang.

### **Population and Sample**

The population is the whole object or subject selected by the researcher (Sugiyono, 2019). The population in this study were all general administrators at dr Saiful Anwar Hospital Malang as many as 406 people.

The sample is part of the number and characteristics possessed by the population. The sample of this research is the general administrator at RSUD, Dr. Saiful Anwar Malang, who sits a lot at work. This sampling was carried out by purposive sampling, where the technique of determining the sample was with specific considerations (Sugiyono, 2019). The consideration is that general administrative employees at Saiful Anwar Hospital Malang work more sitting. With the Slovin formula, the number of samples is 202 people.

The research was conducted using a Rolland Morris questionnaire distributed to the research sample. This method is considered effective in determining the low back pain felt by general administrators due to prolonged sitting while working in the office. Instruments from independent or independent variables are in the form of questionnaires or questionnaires whose contents have been determined and limited to make it easier for respondents to respond to answers. Respondents only gave answers to the checklist on the distributed questionnaire. The responses were chosen according to the complaints felt by the respondents. Positive questions are scored 1, while negative questions are scored 0. Then the data obtained are added together to obtain the desired category, namely acute and chronic low back pain. The dependent or dependent variable instrument is in the form of a closed questionnaire.

The questionnaire was tested with SPSS regarding its validity and reliability. Then univariate and bivariate analysis of the data obtained. The results are drawn conclusions and suggestions for further research.

## RESULTS AND DISCUSSION

From all general administrators at Saiful Anwar Hospital Malang, a sample of 202 people was taken. At the time of data collection, some subjects did not meet the inclusion criteria. The research subjects not included in the inclusion criteria were then randomly replaced by other general administrators of Saiful Anwar Hospital Malang.

**Table 1.** Characteristics of respondents related to long sitting in the office

Characteristics of respondents	Frequency (n)	Percentage (%)
Sitting duration		
> 4 hours	98	48,50%
< 4 hours	104	51,50%

### Roland-Morris Questionnaire Validity and Reliability Test

The Roland-Morris Disability Questionnaire has conducted validity and reliability tests on 202 people. A validity test was conducted on 24 items of questionnaire statement with Pearson moment. The result is 24 valid questions, ( $r < 0.139$  significance 5%). From the results obtained, the Cronbach Alpha reliability test was carried out. From the reliability test results giving an Alpha value that is greater than the  $r$ -table value  $> 0.6$  ( $r$  a week = 0.742 and  $r$  a year = 0.877), the Roland-Morris questionnaire has been translated by the researcher into Indonesian is declared reliable.

**Table 2.** Roland Morris Questionnaire Reliability Test

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X01	77.0000	397.000	.446	.978
X02	78.0968	396.414	.399	.979
X03	76.7312	379.981	.865	.976
X04	76.5806	386.485	.760	.976
X05	76.5376	383.882	.858	.976
X06	77.1613	378.898	.685	.977
X07	76.5591	383.227	.811	.976
X08	76.6989	379.278	.827	.976
X09	76.5914	379.418	.873	.976
X10	76.7097	381.426	.798	.976
X11	76.9570	378.172	.751	.977
X12	76.5269	381.709	.864	.976
X13	76.7204	382.464	.790	.976
X14	76.7204	377.312	.877	.975
X15	76.5161	382.622	.884	.976
X16	76.6344	378.713	.911	.975
X17	76.6667	377.442	.906	.975

X18	76.8280	379.796	.762	.976
X19	76.5054	382.209	.897	.975
X20	76.7097	376.730	.866	.976
X21	77.0645	379.757	.746	.977
X22	76.5699	383.030	.846	.976
X23	76.8065	378.875	.840	.976
X24	76.5806	380.898	.906	.975

### Univariate Analysis

From the results of data collection, it was found that the incidence of low back pain in the general administration of Saiful Anwar Hospital Malang.

**Table 3.** The incidence of low back pain in the general administration of Saiful Anwar Hospital in 2021

	Acute Lower Back Pain	Chronic Low Back Pain
General administrator	55	44
Percentage	27 %	21 %

### Bivariate Analysis

The Relationship of Sitting Length with the Incidence of Acute Low Back Pain in the General Administration of Saiful Anwar Hospital Malang. Pearson correlation test was carried out, and the following data were obtained:

**Table 4.** Correlation of the incidence of acute low back pain with long sitting in the general administrator of Saiful Anwar Hospital in 2021

Correlations			
		Acute Lower Back	
		Pain	Sitting Duration
Acute Lower Back Pain	Pearson Correlation	1	.862**
	Sig. (2-tailed)		.000
	N	202	202
Sitting Duration	Pearson Correlation	.862**	1
	Sig. (2-tailed)	.000	
	N	202	202

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the table above, the correlation value is declared significant if the 2-tailed 0.01 number from the 0.000 table means significant. And the Pearson correlation number shows that 0.862 is significant if 0.81 to 1 is stated as a perfect correlation.

Relationship of Sitting Duration with Chronic Low Back Pain Incidence in General Administration of Saiful Anwar Hospital Malang

Correlations			
		Chronic Lower	
		Back Pain	Sitting Duration
Chronic Lower Back Pain	Pearson Correlation	1	.863**
	Sig. (2-tailed)		.000
	N	203	203
Sitting Duration	Pearson Correlation	.863**	1
	Sig. (2-tailed)	.000	
	N	203	203

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The data generated from this bivariate test shows that the correlation result is below 0.01 and 0.000 is below it. This means that there is a relationship between sitting length and chronic low back pain. And the Pearson correlation shows the number 0.863, which means a perfect correlation between chronic low back pain and prolonged sitting.

## CONCLUSION

The conclusion obtained from this study is that sitting longer than 4 hours without changing the position from sitting to standing or walking will cause complaints of low back pain according to the hypothesis theory H1 = There is a relationship between the length of sitting and complaints of low back pain in the general administrator of Saiful Hospital Anwar Malang. In the last week, the incidence of low back pain in general administration was 27% and low back pain in the previous year in the general administrator of Saiful Anwar Hospital Malang was 21%.

The author advises general administrators always to change their working position dynamically; when sitting has reached 4 hours, you should immediately change positions from sitting to standing or walking; it can also do light stretching of the back and leg muscles so that the cause of lower back pain does not cause complaints.

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