Volume 5, Number 3, December 2023 p-ISSN 2656-5285
Binawan Student Journal (BSJ) e-ISSN 2715-1824

LENGTH OF TIME RETURN TO WORK IN WORKERS WITH LOW BACK PAIN AND ASSOCIATED FACTORS

Wening Tri Mawanti[1], Dewi S.Soemarko[2], Aria Kekalih[2]
[1]Occupational Medicine Specialist Program, Universitas Indonesia
[2]Department of Community Medicine, Universitas Indonesia

Corresponding author: wening_occupationalmed@uhamka.co.id

Abstract

Low back pain is one of the musculoskeletal disorders often associated to work. Based on previous research, 70.3% low back pain was found in manual handling workers and 22.98% in female nurses in hospital wards. The effects of low back pain are disability, decreased productivity and attendance rate, and loss of working hours. Returning to work as soon as possible after illness in a certain capacity is a highly recommended action. Until now in Indonesia there is no data on the length of time return to work on workers with low back pain and related factors. This study used cross-sectional design to determine the length of time return to work and its relation to individual factors, work, and work environment. It used the Oswestry questionnaire and the population is workers who have low back pain and treated in a hospital,given sick leave, by the doctor as outpatient or inpatient. Workers with low back pain treated at the hospital (November 2016-April 2017), obtained a doctor's rest and or hospitalization letter amounting to 40 people (total sampling). The average value of the duration of return to work is 3 days (1-15 days) although clinical complaints have not fully disappeared. Factors relating to the length of the return to work were age (OR 9,71, 95% CI 1.08-87.31) and disability level before treatment (OR 2.50, 95% CI1.25-4.99). Length of time return to work due to low back pain is 3 days and has association to age and disability level.

Keywords : *return to work, low back pain, workers, hospital*

INTRODUCTION

Low back pain is one of the most frequent musculoskeletal disorders (Anderson BG, 1999). In Indonesia, the prevalence of low back pain in manual lifting workers is 70.3%, and 22.98% of female nurses in the hospital's inpatient wards (Shiely HA, 2009, Widiyanti ECL, 2009). Low back pain is a pain felt in the lower back area, in the form of local pain or radicular pain, or both. The pain is felt between the lower ribs and the bottom of the buttocks in the lumbar or lumbosacral region. Lower back pain can be distinguished into simple backache, nerve root irritation, and other severe spinal cord abnormalities/possible serious spinal pathology (Maliawan S.et.al., 2009, Palmer KT.et.al., 2007)

Low back pain has an important consequences in terms of disability, sickness absence and early retirement. A high risk of absenteeism in low back pain is found in blue-collar workers. Extreme and very extreme body flexion and whole-body vibration were predictors of longer sick leave duration. Workers with low back pain may keep working or resting and then return to work within a few days or a few weeks, although there are still symptoms and no need to wait until the pain is gone perfectly (Murtezani A., et.al. 2010, ACOEM, 2014).

Return to work has the sense that the patient is safe to return to a job or task. Workers with low back pain may return to work within one week to one month (about 67% -84%), and about 10% returned to work for more than 60 days, and 4% were absent for six months. (Talmage J.B., et.al. 2006, ACOEM,2014). In addition, based on a systematic study and meta-analysis, it was found that almost one fifth of workers with back pain take some absence over a period of 6 months or longer (Murtezani A, et.al. 2010)

Workers' success to return to work after a work-related illness or occupational accident is safely and sustainably supported by a work-back program involving various sick workers, doctors, employers, and supporters such as insurance. Based on several studies, some factors also affect them sooner or later after a worker returns to work after experiencing low back pain (Palmer KT., et.al., 2007, Steenstra IA., et.al., 2017)

There is no research about low back pain return to work, special for determining the length of time. Therefore, this study aims to determine the length of time return to work for low back pain workers and to know the individual and occupational risk factors associated to the length of time return to work.

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METHODS

This study used a cross-sectional design with the accessible population of workers who experience low back pain and seek treatment in two hospitals in Jakarta. The data were collected for six months (November 2016-April 2017), and the required sample size was 40 people. The inclusion criteria are workers with low back pain who are prescribed to rest or were hospitalized; in the medical record, the patient's telephone number is stated, and the patient consented to participate in the research by signing the informed consent. The sampling technique is consecutive sampling which means that every worker with low back pain and treatment to the hospital who meet the inclusion criteria was taken as a sample.

The definition of Length of time return to work in this research is the number of days calculated starting from the first absence from work until returning to work at the original job is based on the neurologist's leave letter (for patients who are controlled according to time) or according to statements from workers via in-person or telephone interviews (for patients who are not controlled again).

Instruments used are questionnaires about the characteristics of respondents, Oswestry disability questionnaire, and patient medical records. Data analysis was carried out using univariate, bivariate (Chi-square test), and multivariate. All data analysis techniques used SPSS program version 20.0.

RESULTS

1) Characteristics of Respondents

There were 40 respondents who met the inclusion criteria with characteristics as shown in the table below.

Table 1. Distribution of Respondents by Respondent's Characteristics

Variable	Category	n	%
Age	<44 y.o	18	45%
	≥44 y.o	22	55%
Gender	Male	21	52,5%
	Female	19	47,5%
Radiating pain	None	14	35,0%
	Yes	26	65,0%

p-ISSN 2656-5285
e-ISSN 2715-1824

Variable	Category	n	%
Pain intensity before treatment	Mild	1	2,5%
	Moderate	21	52,5%
	Severe	18	45,0%
Disability before treatment	Minimum	9	22,5%
	Medium	18	45,0%
	Severe	9	22,5%
	Crippled	3	7,5%
	Bedrest	1	2,5%
Pain intensity after treatment	Mild	35	87,5%
	Moderate	5	12,5%
	Severe	0	0,0%
Disability after treatment	Minimum	27	67,5%
	Medium	13	32,5%
	Severe	0	0,0%
	Crippled	0	0,0%
	Bedrest	0	0,0%
Work	Sedentary	21	52,5%
	Light	8	20,0%
	Medium	8	20,0%
	Heavy	2	5,0%
	Very heavy	1	2,5%
Treatment type*	Outpatient	36	90,0%
	Inpatient	4	10,0%

Note:
*In addition to the data in this study, the researchers distinguish the origin of respondents based on the treatment type which are outpatient care (neurological clinic) and inpatient care.

Based on Table 1 it can be seen that 65% of respondents experienced radiating lower back pain. Likewise the level of pain and disability, before treatment 97.5% respondents had moderate-severe pain and 77.5% of respondents had a moderate-severe disability, but after treatment, 87.5% of respondents had mild pain and 67.5% of respondents had a minimum level of disability. The type of treatment was differentiated based on the treatment room, 90% of the respondents were from the outpatient room (neurology polyclinic) and 10% of the respondents were from the inpatient room. Moderate-very heavy types of work were found in 27.5% of respondents.

2) Prevalence of Length of Time Return to Work

The average period for workers to return to work after undergoing low back pain treatment in the hospital was 3 days, range 1-15 days.

Table 2. Prevalence of Length of Time Return to Work

Length of Time Return to Work	n	%
≤3 days	31	77,5
>3 days	9	22,5

3)The Association Between Demographic, Clinical Complaints, and Work Factors with Length of Time Return to Work

The bivariate analysis results show that age and disability before treatment variables have a p-value <0,05. It shows that both variables significantly affect the length of time return to work. The individual pain tolerance factor and the work environment are not subject to bivariate analysis because almost all respondents have the same answer, as shown in table 3.

Table 3. The association between demographic, clinical complaints, and work factors with length of time return to work

Variable	Category	Length time to return to work				Total	p	ORc (95% CI)
		≤3 days		>3 days				
		n	%	n	%			
Age	<44 y.o.	17	94,4	1	5,6	18		
	≥44 y.o.	14	63,6	7	36,6	22	0,042	9,71(1,08-87,31)
Gender	Male	16	76,2	5	23,8	21		
	Female	15	78,9	4	21,1	19	1,00*	0,85(0,19-3,79)
Radiating pain	No	13	92,9	1	7,1	26		
	Yes	18	69,2	8	30,8	14	0,124*	5,78 (0,64-52,03)
Pain intensity before treatment	Mild to medium	19	86,4	3	13,6	22		

p-ISSN 2656-5285
e-ISSN 2715-1824

Variable	Category	Length time to return to work				Total	p	ORc (95% CI)
		≤3 days		>3 days				
		n	%	n	%			
	Severe	12	66,7	6	33,3	18	0,137*	1,29 (0,98-1,89)
Disability before treatment	Minimum tomedium	26	96,3	1	3,7	27		
	Severe to bedrest	5	38,5	8	61,5	13	0,001**	2,50 (1,25-4,99)
Work	Sedentary tolight	23	79,3	6	20,7	29		
	Medium to very heavy	8	72,7	3	27,3	11	0,68	1,09 (0,73-1,63)

*Fisher test
**Chi-square

A multivariate analysis was carried out to determine the most dominant factor associated with the length of time to return to work. The analysis was carried out on factors or variables that had p<0.25 values: age, radiating pain, pain intensity before treatment, and disability before treatment. Using the stepwise method, two factors most related to the length of time back to work are age and disability. The result is in table 4.

Table 4. Related Factors of Length of Time Return to Work

Variable	p	ORa	95% CI
Age	0,035	26,02	1,25-537,97
Disability before treatment	0,002	91,812	4,931-1709,557

R^2=0,69

The ≥44 years old has a risk of 26.02 times greater than the age <44 years old to have a longer working period of more than three days. The severe level of disability before treatment has a risk of 2.50 higher than with mild disability before treatment to return to work within> 3 days.

DISCUSSION

In this study, the average time to return to work was three days. The results are relatively faster when compared to literature sources or some studies in other countries. Here the calculation of the length of time back to work is based on the length of time for a doctor's note (sick leave) determined by a neurologist, and the duration of the return to work program, causing differences in results with studies in England.

The over 44 -years old of respondent showed a longer time to return to work because the increasing age of workers decrease the strength and elasticity of bones; intervertebral discs begin to lose fluid and flexibility, which can degrade their ability to protect the spine. Respondents with a severe disability have a longer time to return to work. The presence of disability or severe activity limitations on workers with lower backs requires thorough management ranging from bed rest in inpatient wards to medical treatment and medical rehabilitation (physiotherapy). This will increase the length of time off illness or sick leave, so the time to return to work will also take longer.

Work factors in this research did not significantly relate to the total days to come back to work. In reality total number off-days from the neurologist specialist is the basis for the length of time return to work. In this study the respondents were only selected from Neurologic outpatient and inpatient care. There may be a possibility that low back pain patients went to the orthopedic or internal outpatient clinic. The length of time return to work in this study is seen from a letter of rest given by a neurologist in accordance with the competence he got. Research about period of time return to the work among workers who seek treatment at this hospital is the first study conducted in Indonesia. Data collection in this

study used primary data directly from the patient. The results of this study can also be used as reference data in the field of occupational medicine.

CONCLUSION and RECOMMENDATION

The length of time to return to work among workers with low back pain after seeking treatment at the hospital is in average 3 days. Two factors had a significant relationship with the length of time to return to work that is the age and the level of disability before treatment. In this study, the work factors had no significant association with the length of time return to work. It should be calculated for length time return to work based on sick leave and duration of return to work program.

ACKNOWLEDGEMENT

We would like to thank the hospitals that have been willing to be the place for this research. I also thank the paramedics at the outpatient (neurology clinic), inpatient, and medical record staff, who have been willing to take the time to help screen samples and interviews to produce well-presented data. We also thank all those who have assisted in completing this research.

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