

# Correlation of Pain Intensity and Disability in Low Back Pain Patients in Pirngadi General Hospital

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**Keywords:** Low Back Pain, Pain Intensity, Disability.

**Abstract:** Low back pain ( LBP ) is one of the most common health problems among all the populations in the world (2). Objective : The Goal is to determine the correlation between pain intensity and disability in patients with low back pain. Materials and Methods : This study was a descriptive, analytical research with a cross sectional design. Thirty Low Back Pain outpatients that have visited Physical Medicine and Rehabilitation Clinic in Pirngadi General Hospital. Patient from June to July 2019 were selected by concecutive sampling. a questionnaire was used that contained the items to collect sociodemographic, questions regarding the perceived pain, and the Oswestry Disability Index (ODI). Result : Using pearson correlation test was found a moderate correlation among pain intensity and disability ( $p=0,004$ ,  $r = 0,507$ ). Conclusion : Pain intensity in outpatients with low back pain in the Physical Medicine and Rehabilitation Clinic at Pirngadi General Hospital correlates with Disability.

## 1 INTRODUCTION

Low back pain (LBP) is defined as pain and discomfort below the the costal margin and above the inferior gluteal folds, with or without referred leg pain (Duthey, 2013), and one of the most common health problems among all the populations in the world (Ramdas, 2018). In 2013, WHO(World health organization) estimates the prevalence of LBP reaches to 60-70% in indutrialized countries (Ehrlich, 2003). More than 70% of persons in developed countries will experience LBP at least ones in their lives (Chour, 2011). In Indonesia (2013) a lifetime prevalence of LBP between 59,3-62,4% and annual prevalence within 20,9-31,2%. LBP not only suffered by physical discomfort, but also functional limitation that might cause disability and interfere with their quality of life (Bukit, 2011).

According to The Global Burden of Disease 2010 study (GBD 2010), out of the 291 conditions studied, LBP was ranked as the greatest contributor to global disability measured in years lived with disability (YLD), and the sixth in terms of overall burden measured in disability-adjusted life year (DALY). DALY is the standard metric used to quantify burden (Hoy et al, 2014).

Sagmanli et al (2009) in his study of 118 patient in Turkish found a strong relationship between level of pain intensity and disability in patient with chronic low back pain (CLBP) (Sagmanli et al, 2009). Similarly, a study by Guclu et al in 2012 found a correlation a pain intensity with the quality of life that is the physical limitations due to physical problems. The results of his study indicate that the increased intensity of pain, the less physical function of the patients (Guclu et al, 2012). A study in Brazil found weak correlation between pain intensity and disability in chronic back pain patients (Stefane et al, 2013).

Therefore, the researches are interested in examining the relationship between pain intensity and disability in low back pain patients in Pirngadi general hospital.

## 2 METHODS

### 2.1 Participants

The research participants were from outpatient clinics of the Department of Physical Medicine and Rehabilitation in Pirngadi General Hospital. The

data were collected between June and July 2019 (n=30). The following inclusion criteria were LBP outpatient at Pirngadi General Hospital PMR clinic . The exclusion criteria were spinal tumor, infection and pregnancy.

## 2.2 Methods

To achieve the objectives, a questionnaire was used that contained the items to collect sociodemographic, questions regarding the perceived pain, and the Oswestry Disability Index (ODI) .

The patients were asked about their last day pain intensity score using the Numerical Categorical Scale (0 to 10 points), with 0 indicating "no pain", 10 "maximum pain", while the other scores, from 2 to 9, indicate intermediary perceived pain levels .

The Oswestry Disability Index (ODI) mainly assesses activity limitations and contains 10 different items-pain intensity, personal hygiene, lifting, walking, sitting, standing, sleeping, sexual activity, social activity and traveling which all were scored on a six-point scale, with 0 representing no limitation and 5 representing maximal limitation. A percentage score from 0 to 100 is calculated (higher score shows higher disability). The 0 to 20% - minimal disability 20 to 40% - moderate disability, 40 to 60% - severe disability, 60 to 80% - crippled, 80 to 100% - bed bound (or exaggerating symptoms).

## 3 RESULTS

### 3.1 The Demographic Profile of the Studied Population

The age range of participants generally was 24-87 years with the mean age of 61,96 and standart deviation(SD) 13,64. In LBP group, 70% were female (n=21), and 30% were male (n=9), In the term of marital status 96,7% were married and 3,3 % were single, and the range of the body mass index(BMI) was 16-33 kg/m<sup>2</sup> with the mean 25,13 and standard deviation 4,34 which the higher percentage of BMI was overweight (43,3%) (Table 1)

Table 1: Demographic Group.

Variables	n	%
Gender		
Male	9	30
Female	21	70
Ages		
<50	5	16,7
≥ 50	25	83,3
Married		
Yes	29	96,7
No	1	3,3
Body Mass Index		
Underweight	3	10
Normoweight	9	30
Overweight	13	43,3
Obesity	5	16,7

### 3.2 Pain Intensity and Disability Scale

The value of pain intensity (mean=6,53, SD=2,19) and value of ODI ( mean = 40,5, SD = 12,12) (Table 2)

Table 2: Pain intensity and disability.

Variables	Mean	SD
Pain Intensity	6,53	2,19
Disabilities	40,5	12,12

### 3.3 Correlation between Pain Intensity and Disability

Data were calculated using IBM SPSS Statistic for Windows, Version 17.0. On overall subjects, the normality value was measured using Kolmogrov Smirnov test, Which we found that the distribution was normal (p>0,05).

The correlation were calculated using Pearson Correlation and has found moderate correlation between pain intensity and disability ( p = 0,004 , r = 0,507)

## 4 DISCUSSIONS

Low back pain is the leading cause of activity limitation and work absencethroughout much of the world, and it causes an enormous economic burden on individuals, families, communities, industry and governments (Duthey, 2013)

LBP is associated with multiple risk factors, including individual (e.g., gender, age, lifestyle, physical capacity, and body weight), psychosocial (e.g., anxiety, depression, social support, and job

satisfaction), and physical factors (e.g., hard manual work, heavy weight lifting, bending down or twisting, etc.) (Sribatay et al, 2018), In this study, the result showed that LBP more prevalent among the female rather than the male,  $\geq 50$  years age group, married participant and overweight individuals seemed affected mostly. Present study was corroborated by a study by Hoy et al, who observed females to be more affected by back pain than males (Hoy et al, 2018), The study of Septiana M et al in 2013 of 51 LBP patients, 74,5 % were aged  $\geq 50$  years and 51% were overweight (Setyaningrum, 2014).

In this study showed there's a moderate correlation between pain intensity and disability, A study conducted by Kim G et al that there's a significant correlation between pain intensity and disability using Oswestry (Kim et al, 2015). Similarly, the study of Stefane T et al have found weak to moderate positive correlation between pain and disability (Stefane et al, 2013)

The current study has several limitations, for instance the small sample size and the patient's pain perception that is very subjective, so sometimes the result obtained are not appropriate especially patients were given questionnaires before physiotherapy.

## 5 CONCLUSIONS

This study shows that pain intensity in outpatients with low back pain in the Physical Medicine and Rehabilitation Clinic at Pirngadi General Hospital correlates with disability.

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