



## Original article

# Relationship between sleep quality and pain intensity in patients with chronic low back pain<sup>☆</sup>

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## ABSTRACT

**Objective:** The general objective of this study was to determine the relationship between sleep quality and pain intensity in chronic low back pain patients.

**Method:** Cross-sectional analytic study with consecutive sampling. Chronic patients who met the inclusion criteria at clinic neurology Wahidin Sudirohusodo Makassar. Independent variable: sleep quality, measured by the Pittsburgh Sleep Quality Index (PSQI) score. Dependent variable: pain intensity, measured by the Visual Analog Scale (VAS) score. Data analysis using a Chi-Square test.

**Result:** A total of 29 samples met our inclusion criteria and divided into two groups, 23 samples of poor sleep quality, and six samples of good sleep quality. Within the poor sleep quality group, five patients (21.7%) had mild pain intensity, 11 patients (47.8%) had moderate pain intensity, and seven patients (30.4%) had severe pain intensity. In good sleep quality, five patients (83.3%) had mild pain intensity, one patient (16.7%) had moderate pain intensity, and no samples with severe pain intensity. A significant relationship found between sleep quality and pain intensity ( $p = 0.017$ ).

**Conclusion:** There is a relationship between sleep quality and pain intensity. Poor sleep quality is associated with increased pain intensity in patients with chronic low back pain.

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## Introduction

Sleep is defined by the Sleep Disorders Management Guide (2017) by the Sleep Disorders Study Group of the Indonesian Neurologist Specialist Association (PERDOSSI). Sleep is defined by the Sleep Disorders Management Guide (2017), the Sleep Disorders Study Group of the Indonesian Neurologist Specialist Association (PERDOSSI) is a reversible decrease in consciousness that is a physiological and recurrent form, usually, a decline in cognitive function globally, so the brain does not respond to surrounding stimuli. The function of sleep can be seen by the fact that people spend about a third of their lives sleeping. Sleep quality has several components that involve a variety of domains, including assessments of sleep duration, sleep latency, sleep efficiency, sleep dysfunction, and the use of sleeping pills, if one or more of the disrupted domains will result in decreased sleep quality. Poor sleep quality has been associated with increasing age, low socioeconomic

status, poor general health, poor lifestyle behavior. Changes in terms of quality, quantity, and sleep patterns cause sleep disturbance. Sleep disorders that occur continuously and repeatedly are important predisposing factors for the development of chronic diseases, such as heart disease, diabetes mellitus, obesity, depression, cancer, stroke, chronic back pain, and decreased quality of life. Sleep disturbance is proven to increase the stress response so that it can delay the healing process, causing sequelae that are detrimental to the cardiovascular system, metabolism, and endocrine. Moreover, it can cause hyperalgesia and contribute to the dysregulation of emotional reactivity.<sup>1-6</sup>

In the United States, there are 50–70 million adults who have sleep disorders with the proportion of insomnia of 6–10% and sleep apnea of 10–25%. The Center on Sleep Disorders Research estimates that 38,000 deaths occur per year for cardiovascular cases due to sleep disorders. Another study conducted in the Netherlands with a total of 20,000 patients aged 12 years or older showed an alarming prevalence, with 21.2% of men and 33.2% of women having some type of sleep disorder.<sup>3,7</sup>

Based on the Alsaadi et al. study, data for 1936 patients were taken from 13 other author studies between 2001 and 2009, found the prevalence of sleep disorders in patients with low back pain by 58.9%. Another study conducted by Franca et al., in 51 patients with chronic low back pain found 82.35% of patients with sleep disorders.

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