

THE EFFECTIVENESS OF GINGER WATER ON LOW BACK PAIN (LBP)

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Abstract

Low Back Pain (LBP) is a symptom of lower back pain and is a work related musculoskeletal disorder. Giving ginger water is a non-pharmacological method that is considered very effective in reducing pain or muscle spasm (Pharmaceutics, 2013). Heat can be transferred by conduction, convection, and conversion. The purpose of this study was to determine the effectiveness of ginger water on complaints of low back pain (LBP) in workers at the Tanah Putih Rokan Hilir sub-district office. The study used a quasi-experimental design with a nonequivalent control group design. The population in this study were 45 workers and 37 workers had met the criteria as a sample. The data collection technique used was interview and observation. The data analysis method used was the dependent t test. The results showed that before giving ginger water, there was a decrease in the level of pain complaints in workers where before being given ginger water the average level of pain was 61.51 and after being given ginger water it decreased to 57.14 the level of workers who experienced low back pain only. Dependent t test results obtained $p\text{-value} = (0.005) < (0.050)$ so that regular administration of ginger water is effective in reducing complaints of low back pain at the Tanah Putih Rokan Hilir sub-district office. Based on the results of the study, it is recommended for workers who have complaints of low back pain to be able to drink ginger water 2-4 grams of boiled ginger every day until the pain is reduced.

Keywords: Low Back Pain (LBP), Ginger Water, Worker

INTRODUCTION

The office is a workplace environment which must meet the provisions in the workplace (Health, Safety and Welfare). Although offices are generally considered safe, there are still dangers to health which can cause serious injury (Zaman, 2014). Philosophy of Occupational Health and Safety (K3) is a thought and effort to ensure integrity and perfection. The philosophy is the workforce and humans in general, both physically and spiritually. (Revelation, 2019). Occupational Health and Safety (K3) is a program created for workers by employers or workers' field providers as an effort to prevent work-related accidents and occupational diseases (Sujono, 2018).

Low Back Pain (LBP) is a symptom of lower back pain and is a work related musculoskeletal disorder. The pain can be local pain, radicular pain, or both, which is felt between the lower rib angle to the lower buttocks which is often referred to as the lumbar or lumbo-sacral area which is often accompanied by radiating pain to the legs and feet.

International Labor Organization (ILO) in 2013, one worker in the world dies every 15 seconds due to a work accident, 160 workers experience work-related illness (Ministry of Health of the Republic of Indonesia, 2014) in (Hardi, 2018). One survey has reported that there are 17.3

million Britons had experienced Low Back Pain (LBP). Meanwhile, about 26% of adults in America have been recorded to experience Low Back Pain (LBP) on at least one day for three months (NISMAT and Bull). The prevalence of musculoskeletal diseases in Indonesia has been diagnosed by health workers, which is around 11.9% and based on diagnosis or symptoms, which is 24.7% (Risksedas, 2013) in (Hardi, 2018). The World Health Organization (WHO) states that from 2-5% of employees in industrialized countries each year experience Low Back Pain (LBP), and 15% of absenteeism in the steel industry and trade industry is caused by low back pain. Statistical data taken from the United States shows the incidence rate ranging from 15-20% per year. As many as 90% of back pain cases are not caused by organic disorders, but are caused by an error in body position at work (Budiono, 2003) in (Bilondatu, 2018).

In Indonesia, a study conducted by PERDOSSI (Indonesian Association of Neurologists) in 14 cities in Indonesia in 2002 found that 18.1% of people with low back pain had low back pain. Generally, this pain must be related to depression, so it can interfere with the quality of life and reduce the level of activity of workers (Riza, 2016) in (Bilondatu, 2018). According to Anderson (2007) in (Warti, 2016) existing reports and the results of his research state that occupational diseases, especially Low Back Pain (LBP), which is also called low back pain, are the most common diseases experienced by workers, where this incident does not occur. Recognize differences in age, gender, occupation, social status, or level of education or knowledge, all can be affected.

Several risk factors associated with Low Back Pain (LBP) are categorized into three, namely individual factors, occupational factors, and environmental factors. According to (Tarwaka, 2010) in (Andi, 2020). Risk factors for the occurrence of Low Back Pain (LBP) which can be in the form of individual factors (gender, age, Body Mass Index (BMI), education history, smoking habits, work activities, and history of trauma), occupational factors (work attitudes, years of work, length of work, workload, repetition and manual material handling), as well as environmental factors (work stress, job satisfaction, ergonomics, mental and psychological). Age is the number of years calculated from the respondent's birth to the time of data collection. Someone who will start to feel the complaint of Low Back Pain (LBP) at the age of 25-65 years or working productive age. The emergence of complaints of Low Back Pain (LBP) begins to occur at the age of 35 years, the older you get, the level of complaints will increase, muscle strength and endurance begin to decrease so that the risk of complaints and muscle pain increases. Muscle strength will decrease when you are 60 years old (Tarwaka, 2010) in (Andi, 2020).

According to research conducted by (Hardi, 2018) on the factors that influence the incidence of Low Back Pain (LBP) with a P value of 0.005, it is concluded that age has a relationship with the incidence of Low Back Pain (LBP). Working time for a person determines which health is concerned, efficiency, effectiveness, and work productivity. Extending working time more than the ability to work long hours is usually not accompanied by optimal efficiency, effectiveness or work productivity, in fact it is usually seen that a decrease in work quality and results and working for a long time can trigger a tendency to fatigue, health problems, illness and accidents and dissatisfaction (Suma'mur, 2009) in (Bilondatu, 2018). A person works well

in general only 6-8 hours and the rest is for rest or gathering with family. Working excessively (within normal limits) can cause a decrease in work efficiency, fatigue, illness and accidents can occur. Research has shown that reducing working hours from 8 hours to 8 hours can increase work efficiency and increase productivity results by 3-10% (Suma'mur, 1996) in (Bilondatu, 2018). Research conducted by (Farras, 2017) found that there was a significant relationship between length of work and Low Back Pain (LBP) with a P value of 0.044. In line with research (Bilondatu, 2018) which states that there is a significant relationship between length of work and Low Back Pain (LBP) with a P value of 0.018, it can be concluded that length of work has a significant relationship between the incidences of Low Back Pain (LBP). According to Sunarto (2005) in (Andi, 2020), that a worker whose working period is less than 5 years has a lower risk of Low Back Pain (LBP) compared to workers who have a working period of more than 5 years which this can trigger The risk of low back pain (LBP) is quite high. A person who has a longer working period will be exposed to risk factors for Low Back Pain (LBP) which are quite frequent or more. If someone who works but has exposure to Low Back Pain (LBP), the longer it takes, the disc cavity will become narrower and can trigger permanent. This will lead to spinal degeneration. Bone degeneration is also followed by the age of the workers. Research conducted by (Riningrum Hanif, 2016) found that there was a significant relationship between tenure and the incidence of Low Back Pain (LBP) with a P value of 0.040. In line with research that has been done (Koesyanto, 2013) which states that there is a significant relationship between tenure and the incidence of Low Back Pain (LBP) with a P value of 0.02, it can be concluded that tenure has a significant relationship with the incidence of Low Back Pain. (LBP).

From the results of a preliminary survey conducted on workers at the Tanah Putih Rokan Hilir sub-district office regarding Low Back Pain (LBP) there were 7 people. Initial data obtained 5 people (71.4%) experienced Low Back Pain (LBP) while 2 people (28.5%) did not experience Low Back Pain (LBP).

Based on the initial data survey above, Low Back Pain (LBP) can be experienced by all workers, including workers in the sub-district office. Because the sub-district office has a work system and activities that can be said to be dense almost every day, and monotonous work is a factor causing Low Back Pain (LBP). Therefore, the purpose of this study was to determine the factors associated with low back pain (LBP) in workers at the Tanah Putih Rokan Hilir sub-district office.

Giving ginger water is a non-pharmacological method that is considered very effective in reducing pain or muscle spasm (Pharmaceutics, 2013). Heat can be transferred by conduction, convection, and conversion. Pain resulting in bruising, muscle spasm, arthritis, respond well to an increase in temperature because it dilates blood vessels and increases local blood flow. Ginger has some special ingredients, such as gingerols, polyphenols, flavonoids, and tannins. It also contains antioxidants and vitamin C. All of these combinations of ingredients make ginger an ingredient that can help reduce inflammation and pain. A recent study from the University of Maryland Medical Center said that consuming 2-4 grams of ginger per day can help relieve back pain. Therefore, an increase in temperature that is transmitted through boiling

warm ginger water can relieve pain by getting rid of inflammatory products, such as bradykinin, histamine, and prostaglandins which will cause local pain (Price & Wilson, 2005) in (Indah, 2020). Ginger water is used to dilate blood vessels, stimulate blood circulation, and reduce stiffness. In addition, giving ginger water also serves to relieve the sensation of pain. To overcome Low Back Pain (LBP) can make behavioral changes. Low Back Pain (LBP) occurs when it is caused by various diseases and poor body activities, a perceived imbalance between pressure and sources to cope with certain situations (Farras, 2015).

RESEARCH METHODS

This research uses experimental methods or research aims to find the effect of certain treatments on others under controlled conditions. The approach used in this study is a quasi-experimental design. The population in this study were 45 workers at the Rokan Hilir sub-district office and 37 workers who met the criteria for the sample.

In this study, the inclusion criteria were willing to be respondents, male and female workers of productive age (18-65 years), experiencing complaints of low back pain, respondents not following other treatment programs, and respondents not taking medication.

The instrument used by researchers to obtain changes in workers' complaints is the Nordic Body Map, questionnaires and observation sheets. Data collection techniques used by observation and interviews. The data analysis method used is the t-test dependent test using SPSS.

RESULTS AND DISCUSSION

Based on the results of univariate and bivariate analysis. This univariate analysis was conducted to describe the characteristics of each research variable, namely age, length of work, years of service, and administration of ginger water. Meanwhile, bivariate analysis was carried out on the results of two measurements.

Table 1: Distribution of Low Back Pain Complaints before and after being given ginger water

variable	Mean	SD	SE	P value	N
Low back Pain					
Before giving ginger water	61.51	20.732	3.408	0.005	37
After giving ginger water	57.14	18.201	2.992		

Based on research that has been conducted on workers at the Tanah Putih Rokan Hilir sub-district office, it can be seen that from 37 respondents who were assessed for low back pain, before being given ginger water, the average measurement results for workers' pain complaints was 61.51 points. After being given ginger water, the pain measurement results decreased to 57.14 points. The results of this study are in line with research conducted by (Saputri et al, 2021) regarding the effect of ginger water decoction on low back pain in brick-making workers.

This study is also in line with research (Oresye, 2020) on the Effect of Ginger Water on Low Back Pain in Palm Oil workers with a p value of 0.000.

From various sources, ginger is very useful as a natural therapist, one of which is pain. In this study, researchers used ginger by mashing and boiling it and then drinking the boiled water to the respondents. When the intervention was carried out, the respondent stated that there was warmth in the body, it also decreased the pain. From an evaluation for two weeks, it showed that giving ginger water could reduce the intensity of LBP pain. Ginger has a pharmacological effect, namely a hot and spicy taste, where this heat can relieve pain, stiffness, and muscle spasms or the occurrence of vasodilation of blood vessels, maximum benefits will be achieved within 20 minutes after heat application (Margono, 2016). Besides that, ginger can relax muscles, inhibit inflammation, give a feeling of comfort, stimulate the release of endorphins and inhibit the transmission of pain impulses to the brain.

CONCLUSION

From the results of research that has been carried out on workers at the Tanah Putih Rokan Hilir sub-district office in 2021, regarding the effectiveness of ginger water on low back pain, it can be concluded that giving ginger water can affect the decrease in the pain threshold value felt by respondents by measuring using NBM with p value. $0.005 < 0.05$. Giving ginger water can be one of the complementary therapies to reduce the pain intensity of Low Back Pain.

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