

THE EFFECT OF BUGNET EXERCISE AND WILLIAM FLEXION EXERCISE ON PAIN REDUCTION IN LOW BACK PAIN PATIENTS

Nana Aulia Massakuta^{1*}

¹Makassar State University, Makassar

*Corresponding Address: nana.aulia@unm.ac.id

Received: October 02, 2024

Accepted: October 12, 2024

Online Published: October 31, 2024

ABSTRACT

Low Back Pain (LBP) is a pain syndrome that occurs in the lower waist region and is a *work related musculoskeletal disorders*. LBP is pain that is felt in the lower hip area, which is local or radicular pain or both. **Method:** This study using a pre-experimental design with a one-group pretest posttest design method which aims to determine the effect of giving microwave diathermy, bugnet exercise and william flexion exercise on reducing pain in patients with low back pain which was carried out at Inggit Medical Center Makassar with a population of 35 people with low back pain cases and a sample of 10 respondents in one treatment group that is Bugnet Exercise and William Flexion Exercise. The measuring instrument used is the Oswestry Disability Index (ODI). **Results:** The results of this study based on the Wilcoxon test obtained p value = 0.005 ($p < 0.05$) with a mean reduction in pain after the treatment of 15.00 from the pretest value of 54.80 and then decreased to 39.80. This means that, Bugnet Exercise and William Flexion Exercise can have a significant effect on changes in pain levels in Low Back Pain sufferers. **Conclusion:** The conclusion of this study is that giving bugnet exercise and william flexion exercise can produce a significant effect on reducing pain in patients with low back pain.

Keywords: *Bugnet Exercise, William flexion exercise, Pain and Low Back Pain*

INTRODUCTION

Low back pain (LBP) is a common disorder in daily life that affects all individuals without exception. LBP is a pain syndrome occurring in the lower back region and is categorized as a work-related musculoskeletal disorder. (Kalangi et al., 2015). Low back pain (LBP) is a common clinical syndrome in society, characterized by pain around the lower back region. Non-specific LBP is the most frequently occurring type, with an estimated 70-80% of the population experiencing it at some point in their lives. The annual prevalence varies between 15% and 45%. Non-specific LBP often leads to limitations in performing daily activities, resulting in high rates of absenteeism in various parts of the world, as well as significant economic burdens on individuals, families, communities, industries, and governments. (Wayan, 2017).

The number of LBP sufferers is relatively similar across populations worldwide. According to data from the National Health Interview Survey (NHIS, 2009), a study in 2012 revealed that nearly 80% of Indonesians experienced low back pain. The incidence based on new patient visits to doctors was around 14.3%, while the percentage of LBP patient visits to several hospitals in Indonesia ranged from 3% to 7%. The annual prevalence varies between 14% and 15%, with an average point prevalence of 30%. Approximately 80%-90% of LBP patients reported not making any effort to treat their condition. (Tila Ayu, 2012). There are many alternative physiotherapy interventions available to manage low back pain cases. Among the common interventions used are Bugnet Exercise and William Flexion Exercise. In this study, the author aims to investigate the effects of Bugnet Exercise, and William Flexion Exercise on pain reduction in patients with low back pain at Inggit Medical Center, Makassar

METHODS

The research conducted is experimental in nature, using a pre-experimental design. In this study, the researcher employed a one-group pretest-posttest design, where a single treatment group received interventions, including Bugnet Exercise, and William Flexion Exercise. The study was carried out at Inggit Medical Center, 2024

RESULTS AND DISCUSSION

Populasi and Sampel

The population of this study consists of all patients with low back pain at Inggit Medical Center, Makassar, with a total population of 35 people. The sample in this study is patients with non-specific low back pain aged 20-65 years at Inggit Medical Center, Makassar, according to the inclusion criteria for sample selection. The method used is purposive sampling, where the sample selection is based on specific considerations made by the researcher.

Inclusion Criteria

1. Patients diagnosed with non-specific LBP.
2. Patients aged 20-65 years, both male and female.
3. Patients who are cooperative and willing to be subjects of the study until its completion.

Sample Size

Based on the sampling formula, which is:

$$n = \frac{NZ^2 \frac{1-a}{2\sigma^2}}{(N-1)d^2 + Z^2 \frac{1-a}{2\sigma^2}}$$

The sample size obtained is 7.9, which is rounded up to 8 people. However, in this study, an additional 2 participants were added, bringing the sample size to 10 people. This was done to avoid the possibility of participants dropping out (not meeting the criteria) during the study.

Result

Table 1. Distribution of Pain Intensity Difference Before and After Treatment

ODI Score Value						Z	p
Before Intervention		After Intervention		Difference			
mean	SD	Mean	SD	Mean	SD		
37,80	4,60	20,75	2,86	18,97	1,71	-2,816	0,005

Based on the results of the Wilcoxon test above, a p-value < 0.05 was obtained, which means that the administration of Bugnet Exercise, and William Flexion Exercise over 6 sessions in 10 respondents aged 35 to 60 years resulted in a significant reduction in low back pain in patients with low back pain.

CONCLUSION

The result of measuring low back pain intensity using the Oswestry scale before the administration of, Bugnet Exercise, and William Flexion Exercise was 54.80, indicating that the pain was felt constantly and interfered with daily activities. The result of measuring low back pain intensity using the Oswestry scale after the administration of Bugnet Exercise, and William Flexion Exercise showed a decrease to 39.80, where pain was only felt at. Based on

the results of the analysis of the data obtained, it can be concluded *Bugnet exercise dan william flexion exercise* can have a significant effect on reducing pain in patients with low back pain.

REFERENCES

- Anshar, Sudaryanto, Andi. H., Hendrik. (2016). *Thesis Guidebook for the D.IV Physiotherapy Program*. Makassar: Poltekkes Kemenkes Makassar.
- Bogduk, Nikolai. (2005). *Clinical Anatomy of the Lumbar Spine and Sacrum* (Fourth Edition). Edinburgh: Elsevier.
- Fahrurazi. (2012). *No Difference in the Effects of William's Flexion Exercise and Core Stability with Segmental Gapping and Core Stability on Pain Reduction Due to Lumbar Spondyloarthritis*. Journal of Physiotherapy, Volume 12, No. 1, pp. 41-55.
- Kalangi, Patricia, Angliadi, Engeline, Gessal, Joudy. (2015). *Comparison of Walking Speed in Patients with Acute and Chronic Mechanical Low Back Pain Using the Timed Up and Go Test*. Sam Ratulangi University Journal, Manado.
- Kapandji. (2010). *The Physiology of The Joint* (Sixth Edition). Churchill Livingstone, New York, pp. 76-80.
- Mujianto. (2017). *Integrated Hands-On Therapy for Musculoskeletal Disorders*. Physical Therapist, Bali, pp. 488-506.
- Paalane, N. (2011). *Postural Balance, Isometric Trunk Muscle Strength, and Low Back Symptoms Among Young Adults*. University of Oulu, Oulu, Finland.
- Pramita, Pangkahila, Sugijanto. (2015). *Core Stability Exercise Is More Effective in Improving Functional Activity Than William's Flexion Exercise in Patients with Myogenic Low Back Pain*. Sport and Fitness Journal, Vol. 3, No. 1, pp. 35-49.
- Remon, Utami, G.T., Dewi, A. P. (2015). *The Relationship Between Working Posture and the Occurrence of Low Back Pain (LBP) in Oil Palm Farmers*. Journal of Physical Therapy, Vol. 2, No. 2, pp. 1396-1401.
- Rosnani, A. (2017). *The Effect of Bugnet Exercise on Abdominal Muscle Strength in Postpartum Mothers at Sudiang Raya Health Center, Makassar*. Thesis, Poltekkes Kemenkes Makassar.
- Sugijanto, Hifzillah Army. (2015). *Effectiveness of Posture Correction Exercises on Disability and Neck Pain in Female Upper Trapezius Myofascial Syndrome Students at Esa Unggul University*. Journal of Physiotherapy, Volume 5, No. 2, pp. 75-77.
- Susilowati, S.T., Kuntono, H.P. (2014). *The Effect of Lumbar Corset and Back Exercise on Non-Specific Low Back Pain Patients*. Journal of Integrated Health Sciences, Volume 5, No. 1, pp. 7-13.
- Syaribulan. (2009). *Comparing the Effect of Friction and Bugnet Exercise with Friction and William Flexion Exercise on the Reduction of Lower Back Pain Due to Muscle Spasm at Labuang Baji General Hospital*. Thesis, Poltekkes Kemenkes Makassar.

Wayan, N., Andayani, Artini G. A. (2017). *Mulligan Bent Leg Raise Intervention Is More Effective in Reducing Functional Low Back Pain (LBP) Non-Specific Than McKenzie Exercise in Rice Porters in Mengesta Village, Tabanan*. Indonesian Scientific Journal of Physiotherapy, Volume 2, pp. 24-28.