Journal of Islamic Nursing, 2024, 9(1), 13-18
DOI : https://doi.org/10.24252/join.v9i1.46584 pISSN 2528-2549; eISSN 2545127
Received 18 April 2024, Revised 13 June 2024, Accepted 29 July 2024, Published 30 July 2024

EFFECT OF CUPPING THERAPY FOR LOW BACK PAIN (LBP) IN LECTURER OF MANDALA WALUYA UNIVERSITY

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Abstract

Cupping therapy is a complementary treatment option that can be administered to individuals suffering from Low Back Pain (LBP), a condition that is commonly experienced by workers. LBP is frequently experienced by office professionals who spend extended periods working in a seated position, which can lead to reduced productivity and a decline in overall health. The objective of this research was to assess the impact of cupping therapy on LBP among lecturers at Mandala Waluya University. This research entails a quantitative approach, employing a quasi-experimental one-group pre and post-test design. The research population comprises all lecturers at Mandala Waluya University, totaling 166 individuals, with a sample size of 30 respondents selected through purposive sampling techniques, as determined by the Lameshow formula. Result: The study's findings indicate that 80.8% of the total sample of Mandala Waluya University lecturers between the ages of 30-40 years suffer from LBP. Through paired t-test analysis, it was established that $_{\varphi}$ value was 0.000, which is smaller than the alpha value. Consequently, cupping therapy can alleviate pain in LBP patients by promoting muscle relaxation and stimulating the release of beta hormones, which, in turn, reduces pain. Cupping therapy demonstrates its effectiveness in alleviating LBP and enhancing the daily functioning of lecturers at Mandala Waluya University.

Keywords: Cupping Therapy, LBP, Lecturer

Abstrak

Terapi bekam merupakan salah satu bentuk pengobatan komplementer yang dapat diberikan kepada individu yang mengalami Low Back Pain (LBP), suatu kondisi yang sering dialami oleh pekerja. LBP kerap terjadi pada pekerja kantoran yang menghabiskan waktu lama dalam posisi duduk, sehingga dapat menurunkan produktivitas dan kualitas kesehatan secara keseluruhan. Penelitian ini bertujuan untuk menilai pengaruh terapi bekam terhadap LBP pada dosen Universitas Mandala Waluya. Penelitian ini menggunakan pendekatan kuantitatif dengan desain kuasi-eksperimen menggunakan model one-group pretest–posttest. Populasi penelitian mencakup seluruh dosen Universitas Mandala Waluya yang berjumlah 166 orang, dengan sampel sebanyak 30 responden yang dipilih melalui teknik purposive sampling sesuai dengan perhitungan rumus Lemeshow. Temuan penelitian menunjukkan bahwa 80,8% dosen Universitas Mandala Waluya berusia 30–40 tahun mengalami LBP. Analisis menggunakan uji paired t-test menunjukkan nilai p sebesar 0,000 yang lebih kecil dari nilai alfa. Hal ini menunjukkan bahwa terapi bekam dapat menurunkan nyeri pada pasien LBP melalui mekanisme relaksasi otot dan stimulasi pelepasan hormon beta yang berperan dalam pengurangan nyeri. Terapi bekam terbukti efektif dalam menurunkan nyeri LBP dan meningkatkan fungsi aktivitas sehari-hari pada dosen Universitas Mandala Waluya.

Kata kunci: *Terapi bekam, LBP, Dosen*

Introduction

Lower back pain is a common complaint, particularly among office workers, and is often attributed to the predominantly sedentary nature of office work. According to data from the World Health Organization (WHO) in 2013, as cited by Duthey B. in 2014, the highest prevalence of low back pain is observed in the age group of 45-59 years, with an estimated 9.1 million sufferers, and the age group of 50-54 years with approximately 8.8 million sufferers. This data highlights that the productive age range is at a high risk of developing low back pain(Rahmadiani et al., 2021).

According to WHO data from 2022, musculoskeletal disorders worldwide amount to 1.71 billion cases, with low back pain ranking as the 3rd most significant global health issue, following osteoarthritis with 528 million cases in 2022, and rheumatoid arthritis with 335 million cases in 2020. In 2022, low back pain affected 17.3 million people globally. Every year, 2-5% of the global workforce, particularly in the industrial sector, experiences lower back pain (WHO, 2020).

According to the Basic Health Research data from the Ministry of Health in 2021, there were 12,914 reported cases of low back pain in Indonesia, accounting for 3.71% of health issues in the country, ranking second only to influenza. Supported by the Indonesian Association of Neurologists across 14 educational hospitals, out of 819 total visits, 4,456 patients suffered from lower back pain (KEMENKES, 2018).

In Central Java, based on the Department of Health (DINKES) data from 2018, there were 314,492 cases of low back pain or lower back pain complaints in the region. It is estimated that 40% of the population aged 20-65 in Central Java suffer from low back pain, with a prevalence of 18.2% in men and 13.6% in women. Central Java has 35 districts, and one of them is Sukoharjo, where the majority of the population works in garment factories due to the relatively high wages, totaling Rp. 2,138,247. According to the Central Statistics Agency (Badan Pusat Statistik), Sukoharjo had 458,859 employees in 2018, 460,954 in 2019, and 454,419 in 2020, the reduction is attributed to downsizing during the pandemic(Anisa et al., 2021).

Low back pain can significantly affect the efficiency and health of workers, making it essential to implement human resource management and ergonomic work systems to reduce the number of sufferers. Currently, low back pain is a leading cause of activity limitations and work absences. This can lead to an increased economic burden on individuals, families, communities, workplaces, and governments. In the UK, low back pain is identified as the most common cause of disability among adults, resulting in the loss of over 100 million working days per year. Additionally, it is estimated that 149 million working days are lost annually in the United States due to low back pain, resulting in losses ranging from $100 billion to $200 billion per year (Pangestu & Kurniawati, 2022).

Office workers, including lecturers, are at risk of experiencing low back pain due to prolonged periods of sitting, which often leads to complaints of lower back pain. This can adversely affect the productivity of lecturers in carrying out their work and may even lead to long-term health problems.

Management is essential to address low back pain and prevent its negative impacts. Cupping therapy is one of the therapies that can alleviate lower back pain. Research conducted by Ramadhian & Adha (2017) shows that cupping therapy is effective in rapidly reducing lower back pain(Ramadhian & Adha, 2017). A similar finding is reported by Sirotujani and Kusbaryanto, who suggest that cupping therapy not only reduces lower back pain but also improves the quality of sleep for patients (Sirotujani & Kusbaryanto, 2020).

Mandala Waluya University is one of the largest private universities in Southeast Sulawesi, with a significant number of lecturers. Based on preliminary research conducted by the researcher, more than 50% of lecturers report experiencing lower back pain. In interviews with 10 lecturers, 100% reported having lower back pain complaints, and some even had to seek hospital treatment due to pinched nerves caused by untreated low back pain. Based on these findings, the researcher is interested in providing cupping therapy to lecturers at Mandala Waluya University.

Method

Research design is a framework used by researchers as a guide to finding answers to their research questions and as a means to control variables that influence the research. In this study, a Quasi-Experimental design with a one-group pre

and post-test design (Sugiyono, 2016) was employed. This research was conducted to determine the effects of cupping therapy in alleviating low back pain. The study was carried out at Mandala Waluya University in Kendari The population in this study consists of 120 lecturers from Mandala Waluya University and The sample for this study consisted of 30 individuals, selected using purposive sampling techniques, with the sample size determined using the Lameshow formula.

Cupping therapy is administered in one session on the respondents' back and waist areas. This therapy will last for 15 minutes. The level of LBP (lower back pain) in respondents is measured before and after the therapy. To conduct the data analysis, A nonparametric paired t-test with a 95% confidence level or alpha of 0.05 was employed to derive hypotheses in this research. The research instrument utilized was an observation sheet designed to measure the pain scale before and after the administration of therapy. Pain scale measurements were conducted using the Visual Analog Scale (VAS) with a range of 0-10, to represent the level of pain experienced by an individual. Pain intensity was assessed within a range of 0-10 cm on the classification scale, where 0 = no pain, 1-2 = mild pain, 3-4 = moderate pain, 5-6 = severe pain, 7-8 = very severe pain, and 9-10 = worst possible pain. This Study was approved by research ethic commitee, Mandala Waluya University No. 036/KEP/UMW/VII/2023

Results

This study involved 30 respondents who were lecturers from Mandala Waluya University. The demographic data of the respondents in this study are as follows: The majority of respondents fall into the 30-35 age group, comprising 12 respondents (40%), while there were no respondents in the 41-46 age category.

Tabel 1 The socio-demographic characteristic of participants (n: 30)

Characteristics		Total (n-30)	Weighted (%)
Age (Year)	Mean ± SD	38,07 ± 5,977	
	30-35	12	40
	36-40	11	36.7
	41-45	5	16.7
	46-50	0	0
	51-55	2	6.7
Gender	Male	4	13,3
	Female	26	86,7
Marital Status	Married	26	86,7
	Single	4	13,3

Furthermore, out of the 30 respondents suffering from Low Back Pain (LBP), 26 individuals (86.7%) are female, and an equal number of 26 respondents are married.

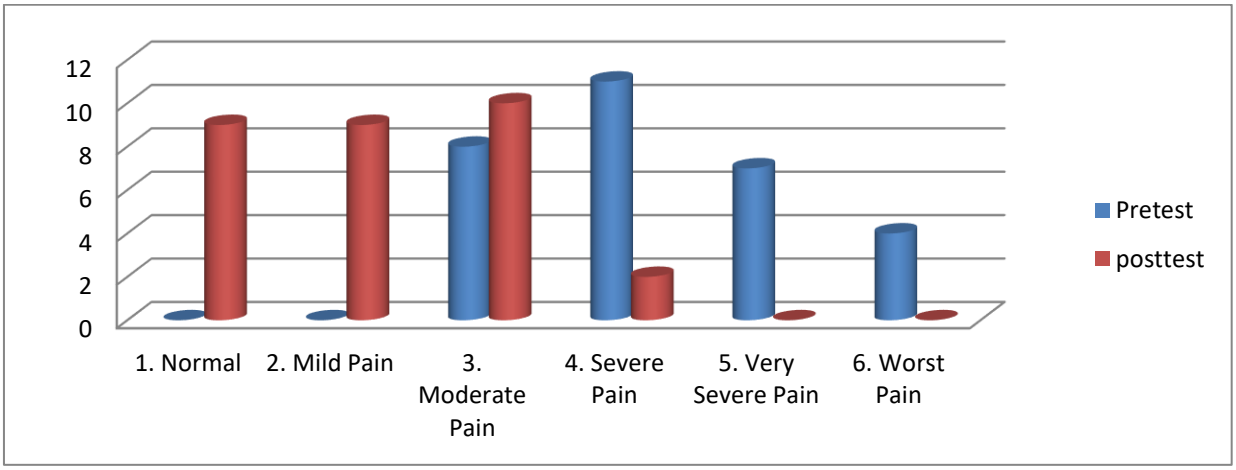

Figure 1 Distribution Participant Based on Pain Level Before & After Cupping Therapy

According to Figure 1, out of 30 respondents, there was a change in the pain scale before and after receiving cupping therapy. Before receiving cupping therapy, there were 7 respondents (23.3%) in the category of severe pain and 4 respondents (13.4%) in the category of worst pain. After receiving the therapy, there were 9 respondents (30%) in each category of Normal and moderate pain. Meanwhile, there were no respondents in the categories of severe and worst pain.

Table 2. Effect Of Cupping Therapy On Low Back Pain In Lecturer

Low Back Pain	Variable	Mean	SD	t	*p*
	Pre	-11.538	3.679	-15.990	
	Post	1.962	.445	22.451	0.00

Based on Table 2, it can be observed that the calculated t-value is greater, specifically 22.451, compared to the critical t-value. Furthermore, the phi value, which is 0.00, is smaller than the significance level alpha of 0.05. Therefore, it can be concluded that cupping therapy has a significant effect on the back pain of lecturers at Mandala Waluya University.

Discussions

Characteristics of Respondents

Experiencing Back Pain: This study indicates that the majority of respondents experiencing back pain fall within the age range of 30-40 years. This is attributed to the onset of bone degeneration that begins around the age of 30. Bone degeneration refers to the damage to bone tissue due to the replacement of tissue and a decrease in bone fluid (Utami, 2017). Similar findings were described in the study by Syalsabila, Silitonga, and Utami (2021), which emphasized the close relationship between age and the incidence of lower back pain(Syalsabila et al., 2021). In line with these findings, Kasih (2023) also expounded in their research results that a person's age can influence the occurrence of low back pain (Aditya & Kasih, 2023).

This study also shows that most of the lecturers suffering from LBP (lower back pain) are women. This is due to hormonal differences, as estrogen in women plays a crucial role in bone and muscle health. Hormonal fluctuations during the menstrual cycle, pregnancy, and menopause can affect pain sensitivity and muscle weakness, making women more prone to LBP. Additionally, women often have to juggle dual roles, such as working and managing household responsibilities, which can lead to physical and mental exhaustion. This excessive workload can cause muscle strain and contribute to LB(Wijayaningrum et al., 2019)P.

Based on the researcher's assumption, the high prevalence of back pain among lecturers at Mandala Waluya University is not only due to age but is also primarily attributed to work position and duration. Lecturers at UMW often engage in prolonged sitting positions for approximately 6 hours. Furthermore, 86.7% of individuals with Low Back Pain (LBP) are women, with the remaining being men, and a majority (86.7%) of them are married. According to a study by Fatih, Widyastuti, and Mahmud (2021) conducted on 200 nurses at Sarjito Hospital, characteristics such as Age, Gender, and

Marital Status were found to have no significant correlation with the occurrence of LBP(Fatih et al., 2021). However, a different finding was reported by Bento et al. (2018), who described that a majority of LBP sufferers are women and marital status also impacts the occurrence of LBP, with individuals who are divorced or without a partner being at a higher risk of experiencing LBP. This research was conducted on 600 samples in the city of Bauru, Sao Paulo, Brazil(Paulo et al., 2020).

The occurrence of LBP in women is further influenced by work positions that involve prolonged sitting and a lack of ergonomic support. Similarly, other activities such as sleeping can exert excessive strain on the spine, potentially leading to muscle injury over time.

The Influence of Cupping Therapy on Back Pain in Lecturers at Mandala Waluya University

The results of this study demonstrate a significant influence between the administration of cupping therapy and back pain in lecturers at Mandala Waluya University, as indicated by the phi value of 0.00, which is smaller than the alpha value of 0.05. As mentioned earlier, cupping therapy is a treatment method involving the use of a cupping instrument that suctions the skin and underlying tissue, causing blood components to accumulate beneath the skin without bloodletting. Cupping therapy results in the dilation of capillaries and arterioles in the treated area. Capillary dilation can also occur in areas distant from the cupping site. As a result, microcirculation in blood vessels is improved, leading to muscle relaxation effects. In addition to muscle relaxation, cupping therapy can also relax nerves, thereby reducing pain in the treated back (Agustin et al., 2018).

With cupping therapy, inflammatory mediators and pain mediators are released from the body, leading to a reduction in the stimulation of pain nerve fibers. Furthermore, the release of β-endorphins plays a role in reducing pain perception. The study by Ramadhian & Adha (2017) states that there is a significant influence of cupping therapy on reducing pain scale in low back pain patients, with a phi value of 0.00 (Ramadhian & Adha, 2017). A similar statement is also made by Sirotujani and Kusbaryanto, emphasizing that cupping therapy is highly effective in reducing back pain scale and can also improve the quality of patients' sleep (Sirotujani & Kusbaryanto, 2020) With cupping therapy, the skin and underlying tissues are drawn into the cups, which increases blood flow to the treated area. Enhanced blood circulation can help accelerate the healing process and reduce muscle tension. The vacuum effect can relax tight muscles and decrease tension, which helps reduce pain caused by muscle tightness. By improving blood circulation and reducing tension, cupping therapy can also help alleviate inflammation in the affected area. Additionally, cupping therapy may influence the nervous system by stimulating acupuncture points or meridians, which can reduce pain

Conclusion

Cupping therapy has proven to be a beneficial treatment for individuals suffering from Low Back Pain (LBP). Based on the results of this study, it can be concluded that cupping therapy is effective in reducing pain in LBP patients. Cupping helps relax the muscles and alleviate pain sensations, while also improving physical activity for the individuals.

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