

ANALGESIC EFFECT OF CUPPING THERAPY TO REDUCING PAIN CEPHALGIA PATIENTS

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ABSTRACT

Nowadays, headache or cephalgia is a problem that often occurs in adults. This can interfere with daily activities and if left untreated can lead to decreased quality of life. As technology advances, many treatment methods are developed, one of which is cupping therapy. Cupping can have an effect on increasing local blood circulation and affect muscle pressure, thereby reducing pain. This study was to determine the effect of cupping therapy on pain in patients with cephalgia. This study used quasi experimental approach method. Sampling technique with purposive sampling and obtained 20 respondents. The measuring instrument used to measure pain is NRS and the intervention given is cupping therapy. Data analysis using Wilcoxon test. Results showed that there was a statistically significant and significant effect of cupping therapy on reducing pain in patients with cephalgia. In conclusion, knowledge about cupping therapy for pain is important to know for the development of new therapies to solve pain problems that have not yet reached a satisfactory stage. Based on the results of this study, it is expected to be a reference for further research on complementary nursing management (wet cupping therapy) on pain intensity by adding wider and different variables.

INTRODUCTION

Headache is one of the symptoms most commonly felt and experienced by people in everyday life. Until now, headache is still a serious problem if not addressed immediately because if it is not handled properly it can reduce the quality of life of the sufferer (Haryani, et al., 2018). Headache can occur because in the blood vessels a process occurs that allows organs to determine their own blood supply known as autoregulation. This is due to an increase in blood pressure. This process leads to the narrowing of blood vessels, which is the main reason for the occurrence of head pain (Hadjistavropoulos et al., 2014).

The World Health Organisation (WHO) in 2016 found that 50-75% of adults aged 18 - 65 years in the world experienced headaches during the past year. 10% of these experienced Cephalgia and 1.7- 4% of the adult population suffered from headache pain for 15 days or more each month. As much as 50% of the world's population experiences headache every year and more than 90% of the world's population has a history of headache during their lifetime (International Association for the Study of Pain, 2011).

Risk factors that cause chepalgia include: adolescent, adult and elderly age factors, depression, anxiety, fatigue, weather changes, and sleep disorders (Ganong, 2008; Dodick, et al., 2008). Headache frequency, headache intensity, and headache onset have a significant relationship with the incidence of specific sleep disorders, including nightmares, difficulty falling asleep, waking up too early, and poor sleep quality (Burch, et al., 2021). Headache pain that occurs can have negative impacts on society if not addressed, namely reducing quality of life, reducing the ability to carry out activities and increasing the socio-economic burden on society (Rains, et al., 2008; Freedom, 2015).

Treatment of headache pain is most often by administering non-steroidal anti-

inflammatory drugs or better known as Non Steroidal Anti-inflammatory Drugs (NSAIDs) such as antipyretic analgesic drugs, for example paracetamol. However, these drugs have side effects, namely gastrointestinal irritation in the use of NSAIDs and liver damage due to the use of paracetamol (Maund, et al., 2011).

Most non-steroidal analgesics (NSAIDs) act to prevent the formation of these prostaglandins to inhibit the sending of pain signals to the brain. non-steroidal analgesic drugs such as profen, piroxicam, diclofenac, etc. or steroidal ones such as cortisone and its derivatives, cause dangerous side effects to the stomach, because they can cause inflammation or stomach ulcers. These drugs will also cause harmful side effects to the kidneys as they can cause kidney failure, weakening of the kidneys' ability to filter out metabolic waste in the blood, or inflammation of the kidneys. It can also cause a decrease in bone marrow activity in producing red blood cells and cause loss of appetite and nausea (Maund, et al., 2011; Domiati, et al., 2016).

Another therapeutic method that can be used to treat headache pain is complementary therapy. There are many types of complementary therapy, one of which is cupping therapy. Cupping therapy can be used to help heal chronic sufferers who are difficult to cure with any treatment method (Sharaf, 2012). Cupping is a therapeutic method of applying suction by creating a vacuum. The mechanism of cupping will create a vacuum in the skin which then causes capillaries to burst and then the skin of the local area turns red or even has petechiae and bruises (Chi, 2016).

Since ancient times cupping therapy has been widely used to relieve pain complaints. Cupping therapy has been used in many countries in the world as a traditional treatment. In fact, some of these countries have used cupping as pain therapy in hospitals. Cupping reduces pain through its antinociceptive effect, by stimulating the peripheral nervous system

and reducing oxidative stress. Recent studies have shown that wet cupping therapy can increase the expression of β -endorphin and HSP70 in keratinocytes at the cupping site. In daily practice neurologists deal with pain cases. Almost 80% of patients come to the doctor with one of the complaints directly related to pain. Knowledge of cupping therapy for pain is important to know for the development of new therapies to solve pain problems which until now have not reached a satisfactory stage (Ahmad et al., 2022; Hidayati, et al., 2019; Tabatabaee, et al., 2014; Tagil, et al., 2014).

Cupping has been widely used to relieve pain in several disorders such as: musculoskeletal pain (including sprain, traumatic strain and post-fracture), shingles-related symptoms, low back pain and lumbar pain, skeletal pain, neck pain, shoulder pain, migraine and other headaches, dysmenorrhoea, gouty arthritis, rheumatoid arthritis, chronic fatigue syndrome, fibromyalgia, knee osteoarthritis, and fatigue in athletes (Cao, et al., 2014). Based on the results of research comparing the effects of dry cupping on cancer pain with conventional drug therapy, it was found that cupping had a beneficial effect after a 3-day intervention (Cao, et al., 2015).

Cupping therapy (CT) has been applied as a treatment method for centuries and is incorporated in traditional medicine in several countries. In Chinese medicine, various forms of cupping are known, including retained (basic suction), bleeding (wet cupping), moving, empty (flush), needle, water, and medicinal (herbal) cupping (Ersoy & Benli, 2020).

Based on the above phenomenon, researchers are interested in conducting research with cupping complementary therapy interventions to determine their effectiveness in reducing head pain or cephalgia. This study aims to determine the effect of cupping therapy on the pain scale in patients with headache or cephalgia.

METHOD

This type of research is quasy experimental with a one group pre and post test design approach without control, in this design measurements are taken twice, namely before and after cupping. The intervention used wet cupping therapy which was given 2 times for 1 month or per 2 weeks. The research was conducted at the Pondok Ngadirojo village clinic, Wonogiri. Respondents were obtained as many as 20 samples with purposive sampling selection. The inclusion criteria are respondents who suffer from head pain, the first time doing alternative treatment with bekam and the exclusion criteria are respondents who have open wounds at the cupping point, and respondents who do not consume painkillers (analgesics).

The measuring instrument used to measure the pain scale variable is the Numeric Rating Scale (NRS) developed by Breivik, et al., (2008). The Numerical Rating Scale (NRS) pain scale contains numerical ratings from 0-10 given to patients before and after cupping therapy. The assessment of the pain scale based on the NRS is: 0 = no pain (green), no complaints of pain, 1-3 = mild pain (yellow), there is pain, starting to terrace and can still be endured, 4-6 = moderate pain (orange), there is pain, feels disturbing with enough effort to endure it, 7-10 = severe pain (red), there is pain, feels very disturbing, unbearable so you have to grimace, scream and even shout.

Measurement of pain scale variables was carried out 5 minutes before cupping therapy and 10 minutes after completion of cupping therapy. Furthermore, the respondent's data was tested for normality with the Shapiro-Wilk test because the data sample was less than 50 samples ($N < 50$), then the data was analysed with the Wilcoxon test to test the mean difference of the 2 measurement results (pretest and posttest).

RESULTS

This study was conducted at Pondok Ngadirojo village clinic, Wonogiri. This research was conducted from December 2022 to January 2023. Based on the method of selecting respondents, the number of respondents was 20 patients who experienced chepalgia. The following is a table describing the characteristics of research respondents, the results of the data normality test and bivariate analysis with the Wilcoxon test.

Table. 1 Characteristics of study respondents (n=20)

Catagory	frequency (f)	Prosentase (%)
Sex		
Female	14	70
Male	6	30
Age		
17-25 (teenager)	5	25
26-35 (early adulthood)	1	5
36-45 (last adulthood)	3	15
46 (adulthood)	11	55
Education		
Elementary School	5	25
Secondary School	3	15
Senior Secondary School Academy (D3)	11	55
Bachelor (S1)	1	5
Chepalgia pain level		
Before cupping		
No pain (scale 0)	0	0
Mild (scale 1-3)	0	0

Moderate (scale 4-6)	8	40
Severe (scale 7-10)	12	60
After cupping		
No pain (scale 0)	0	0
Mild (scale 1-3)	0	0
Moderate (scale 4-6)	18	90
Severe (scale 7-10)	2	10
Total	20	100

(Source : Primary data, 2023)

Table 2. Pain Scale Data Normality Test Using Shapiro Wilk

Catagory	Z	p value
Pre-test	0,800	0,001*
Post-test	0,845	0,004*

*Shapiro wilk

Table 2 above shows data from both the pre-test and post-test head pain scale with a p value = <0.05) so that the data is not normally distributed.

Table 3. The effect of cupping therapy on head pain in chepalgia patients continued using the Wilcoxon test.

Item	Mean	SD	Min- Max	p value
Pre-test	6,80	0,767	6-8	0,001*
Post-test	5,05	0,944	4-7	

*Wilcoxon test

Table 3 shows that the p value is 0.001 (<0.005) which means statistically there is an effect of cupping therapy on the head pain scale or chepalgia. There are meaningful results and a significant effect of cupping therapy on reducing the pain scale of chepalgia patients.

DISCUSSION

Data on the characteristics of the research respondents were found to be 70%

male. This is because almost all of them who visit the clinic are women. This condition is not in accordance with Yang, et al., (2010) in his research with the results of episodic migraine women as much as 87.1% while chronic episodic women 76.3%. Researchers argue that the female sex experiences more headache attacks because women experience menstruation every month and women also experience pregnancy which bleeds more so that it can affect changes in estrogen hormones in the body. This agrees with research conducted by Ojini, et al., (2007) on that the incidence of head pain is more common in women due to hormonal factors (hormonally-driven), namely the hormone estrogen. In age characteristics dominated by respondents with 46 years and above. The results of the same study in Silberstein, et al., (2008) also revealed that the first migraine headache attack was mostly experienced in the first 3 decades of life and the highest incidence rate was obtained at productive age, namely in the age range of 25-55 years.

Headache sufferers sometimes have a history of the disease in their family. This is also due to the increasing age of the organs in the body experiencing a decrease in function, one of which is the loss of elasticity in the arteries which can cause increased blood pressure in the head so that blood flow is reduced which causes obstruction of oxygen which eventually experiences head pain (Westlund, 2014). There is a link between age and gender to head pain. This was revealed by Burch, et al., (2021) that women who experience premenopause (age > 40 years) begin to lose little by little the hormone estrogen which causes reduced elasticity of blood vessels.

The results of research by Iliopoulos, et al (2015) state that primary headache is more common in highly educated people, namely at high school level or above, this is related to the use of electronic devices such as mobile phones or computers in

supporting daily activities including learning and completing school / college assignments. Research by Livingston, et al (2011) shows that people who use mobile phones tend to suffer from high blood pressure, and other symptoms including burning ears, headaches, fatigue.

King and Katherina (2015) explain that head pain or cephalgia is an unpleasant sensation in the head area precisely at the top of the head that extends from the orbita to the back of the head and part of the nape area. The results of the study obtained pain scale data before cupping therapy as much as 60% entered into the severe category and after being given cupping therapy, the pain category was dominated by moderate pain by 90%.

Cupping or hijamah is a therapy aimed at cleansing the body of blood containing toxins with small punctures on the surface of the skin (Sangkur, et al, 2016). The decrease in pain intensity to the respondents of this study can occur due to the basis of a good mechanism of cupping that stimulates the nerves where the cupping points which are meridian points are areas that contain many mitochondria, blood vessels and contain a lot of myoglobin. The tissue around the cupping point also has many mast cells and also plexus nerve fibres. All these are factors that make the cupping point more sensitive to stimulation. Cupping here has an effect on neurotransmitters which will stimulate the release of endorphins that reduce sensitivity to pain.

Cupping therapy can reduce the serum concentration of substance P (pain-related pathway), which is confirmed as an anti-nociceptive effect. The tactile effect of cupping can stimulate large A β -type fibres originating from tactile receptors in the periphery. The stimulation of these receptors will suppress the sending of pain signals from the same body region. This occurs due to localised lateral inhibition in the spinal cord. In addition, tactile stimulation is reported to induce the

release of the hormone β -endorphin. β -endorphins are opium-like substances that play a role in the inactivation of pain fibres by causing presynaptic and postsynaptic inhibition of type C and type A β pain fibres (Guyton, 2011; Tarique, 2016; Mahmoud, 2013).

Cupping at certain points can stimulate the strong nerves of the skin surface which will be continued at the posterior cornu of the spinal cord through the A-delta and C nerves, as well as the spinothalamicus tract towards the thalamus which will produce endorphin. While some other stimuli will be forwarded through sympathetic afferent fibres to motor neurons and cause pain intubation reflexes (Ridho, 2015). Cupping therapy can stimulate the release of the hormone Endhorpin. Endhorpin provides a relaxing and refreshing effect on all limbs and it is this relaxed position that lowers the stimulus to the reticular activation system (SAR), which is located at the top of the brain stem that can maintain alertness and wakefulness. Thus it will be taken over by another brainstem called the bulbar synchronizing region (BSR) whose function is the opposite of SAR, so that it can cause sleep which is expected to improve sleep quality (Sirotujani & Kusbaryanto, 2019).

The results of this study are in line with research conducted by Perdana and Sutysna in 2020 which found that wet cupping therapy was able to reduce the pain scale and improve the quality of life of chepalgia patients. The results of other supporting research conducted by Purnama (2012) state that the average pain in patients with chepalgia after being given cupping therapy at Al-Kaahil Jember cupping house is 1.70 or mild pain category.

CONCLUSIONS AND RECOMMENDATION

The results of this study indicate that cupping therapy is able to help reduce the intensity of pain experienced by respondents. Cupping carried out according to applicable procedures makes

respondents who previously experienced severe pain intensity can decrease to moderate intensity, therefore it can be concluded that research on the effect of cupping therapy on headache pain in chepalgia patients can be proven correct. The public needs to be given information that cupping complementary therapy treatment can reduce headache pain symptoms, and improve their quality of life.

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