

Cupping Care Effectiveness on Flection Range of Motion

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ABSTRACT

Low back pain is one of Musculoskeletal problem that cause many complaints when moving, especially when looking down, squatting, even standing, so it is very disturbing both in daily activities and during work activities. This study aims to nalyzing whether cupping is effective in increasing the flection range of motion of low back pain clients. Methods: This study is quassy experimental with one group pre-post test design, cupping care was carried out by a certified nurse giving therapy during the pandemic. This study using 30 acute low back pain clients. ROM was measured before and 15 minutes after cupping care was given. Result: Before cupping 96.7% flection ROM was on 3th degree, 15 minutes after cupping care, the flection ROM of 96.7% respondents increased to 4th. Analysis: using the Wilcoxon test, P value is (0.000) smaller than alpha (0.05). Discussion: based on the study the changes of flection ROM are significant due to the increase in endogenous opiates such as endorphins, encephalins, and dinorphins in the body. The opiate is produced during cupping care, so that the concentration of tension decreases and the blood flows properly.

Keywords: ROM, Cupping Care, Low Back Pain

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BACKGROUND

Low back pain or lower back pain is one of the most often suffered by the human being regardless of the economic and occupational strata, it happened just because the people doing their daily activities or their job not in proper ergonomic position of the body, especially for the root workers doing their job most often not in proper ergonomic position and the do this position for a long time. Farmers (farm laborers) are an example of hard workers requires a long bowing position of the body when hoeing or cleaning plants from weeds. They do this for more than 2 hours a day, and they repeat it every day for their life. This condition can cause musculoskeletal complaints, namely low back pain. According to years of lived with disability, low back pain is the highest ranking cause of disability in musculoskeletal disorders.

Low back pain is evenly distributed throughout the world, regardless of strata of work. It can be happened to anybody doing their activities or their job just according to their mood not according to proper ergonomic body position. It is reported that more than 80% of the world's 7.7 billion people have experienced low back pain (WHO, 2013). Meanwhile, in Indonesia, it is estimated that 37% of Indonesia's population has experienced complaints of low back pain (Nurindasari, 2016). Banyuwangi is one of regency of East Java, which is an area with the majority of its livelihoods being agriculture and plantations, especially in Kalibaru sub-district, It is surrounded by rubber garden, rice field etc. Most of people working as a farmer or gardener. They spent their time in the static position for hours a day. Holistical Care Clinic, Kalibaru Banyuwangi, is a independent health service that provides a different menu compared to other health care providers. Cupping care is one of the main service menus provided to its clients. This service is provided especially to clients with musculoskeletal complaints, one of them is low back pain. This condition is influenced by many risk factors including heredity, age, gender, posture deformity, physical activity, years of work, and work portion. Low back pain associated with work is influenced by many things, including worker demographic factors, body position at work, work environment, and type of work.

Management of low back pain is pharmacology (analgesic) and non pharmacology, including acupuncture, acupressure, relaxation techniques, and cupping. Cupping consists of dry and wet cupping. Wet cupping is an act of suctioning the skin, pricking or cutting and removing the CPS (causative pathological substances) from the surface of the skin, which is then collected in a cupping glass (Widada, 2011).

METHODS

This study was a quasi-experimental design with one group pre-post test was applied by the therapist and as the owner of the Holistical Care Clinic by paying attention to health protocols in preventing the spread of Covid-19 (Notoatmodjo, 2012). Quota sampling was applied in this study while the sample recruitment mechanism was carried out with an odd-even system after being screened of the inclusion and exclusion criteria. Respondents were the clients of therapist and came voluntarily.

The first flection range of motion of the respondents were measured before cupping using a goniometer and the ROM level of each respondent was determined. Then the therapist performs wet cupping care according to the PBI (Perkumpulan Bekam Indonesia /Indonesian cupping association) standard operational procedure on thirteen sunnah points; 2 al-akhda'in points, 2 al-katifain points, 1 al-kaahil point 2 maq'idah points, 2 'ala warik point, 2 points ala dzohril washati, and 2 points ala dzohril qodam. According to PBI standard the steps of Cupping care are; 1. Sliding the cupping cup on clients skin surface

after applying olive oil for several moments, 2.The first suctioning is carried out for approximately 3 to 5 minutes, so that the causative pathological substantive (CPS) gathers at the cupping point earlier, 3. Then do a puncture or incision on the skin layer of the epidermis, 4. Second suctioning for 3 to 5 minutes so that the CPS comes out through the puncture wound and incision. 5. Then the third suctioning is carried out after the blood cleaned and smeared with olive oil, this third vacuum is done for 3 to 5 minutes or until the serum comes out from the puncture or incision area, having the third suction then cleaned and trimmed while still observing the protocol health in order to prevent the spread of covid-19. After the cupping care is done, the respondent is rested for 15 minutes, then the flection range of motion is measured for the second time using a goniometer.

The results of the cupping care and ROM measurement using a goniometer were sent to the author via online, this method was done do to pandemic conditions that made it impossible to come face to face during pandemic.

RESULT

ROM Degrees Before Cupping

Table 1. Clients ROM before cupping care, Banyuwangi, 2020

ROM	N	%
Level 1	0	0.0
Level 2	1	3.3
Level 3	29	96.7
Level 4	0	0.0
Level 5	0	0.0
Total	30	100%

Based on the above showing that the majority of 30 respondents the majority were on level 3, meaning they can perform ROM in full against gravity, but cannot fight any resistance.

ROM Degrees After Cupping

Table 2. Clients ROM after cupping care, Banyuwangi, 2020

ROM	N	%
Level 1	0	0.0
Level 2	0	0.0
Level 3	1	3.3
Level 4	29	96.7
Level 5	0	0.0
Total	30	100%

Based on the table above shows that the majority of 30 respondents can do a full Range of Motion (ROM) and can fight light resistance, level 4.

The Effect of Cupping Care on ROM**Table 3. ROM measurements before and after cupping care, Banyuwangi, 2020**

ROM	Before		After	
	N	%	N	%
Level 1	0	0.0	0	0.0
Level 2	1	3.3	0	0.0
Level 3	29	96.7	1	3.3
Level 4	0	0.0	29	96.7
Level 5	0	0.0	0	0.0
Total	30	100%	30	100%

Wicoxon test P = 0.000

The table above indicating that the majority of their ROM level is increased. It is showed and obviously cleared by seeing p value, $p\text{-value} = 0.00 < 0.05 (\alpha)$, meaning that there is a significant effect of cupping care on the range of motion of the low back pain client.

DISCUSSION**ROM Degrees Before Cupping**

The results above explaining that their ROM having many limitations when carrying out their daily activities. The limitations of respondent ROM are influenced by several factors, including the type of work, work attitude, and years of service.

They work for hours continuously everyday for many years in a static improper ergonomic body position. This happens because all respondents work as farmer (laborer). The static improper ergonomic body position cause back pain, more often they do not realize it just because it becomes their bad work habit and awkward (Andini, 2015). An awkward positions are body positions that deviate significantly from the normal body position while doing work. Working in awkward positions can increase the amount of energy more than needed at work. An awkward position can lead to inefficient transfer of energy from muscles to skeletal tissue so that it is easy to cause fatigue. Those positions are repetitions or long periods of time, turning, tilting your body, kneeling, squatting, bending holding in a static position and pinching with your hands. These positions involve several areas of the body such as the shoulders, back and knees because these are the areas that are most often injured. As happened to those workers, for example farm laborers, porters and others, they do work in a poor ergonomic position. For farmers they do their work in a continuous bow for quite a long time from morning to evening. This can cause the muscles in the back area to become tense, spasm. Continuous tense muscles will cause decreased microcirculation, ischemic occurs in the tissue, and will cause decreased circulation so that lack of nutrients and oxygen and accumulation of metabolic waste produce an inflammatory process. In addition, the work attitude that is carried out statically also results in the compression and tension phase being longer than relaxation, and there is a situation that exceeds the limit (critical load) (Suarsyaf, 2012; Purnama, 2012, 2018).

The work period also plays an important role, according to Pratiwi in Nurrahman (2016), which states that a long work period will result in degeneration of the spine which will cause low back pain. Low back pain is a chronic disease that takes a long time to develop and

manifest. So the longer the working time or the longer the person's working period, the greater the risk of experiencing low back pain due to muscle tissue fatigue.

ROM Degrees After Cupping

In this study, after cupping care was carried out according to standard operating procedures adopted from PBI (Indonesian Cupping Association) at 13 sunnah points. After cupping care the respondent rested for about 15 minutes, then the ROM measurement was carried out for the second time using a goniometer and the results shows that most of the respondents were able to do the full Range of Motion (ROM) and could fight light resistance (level 4).

The Effect of Cupping Care on ROM

Changes of the ROM level of respondents with complaints of low back pain before cupping and after cupping care showed a significant change, this was because the pain was reduced after cupping.

This condition is in line with research conducted by Eko (2017), states that back pain decreases after cupping care is done on heavy workers, the results are measured using the VDS (Verbal Descriptor Scale). The new pain stimulus caused by the suction of the cupping device will block the delivery of the old pain stimulus, so that the client no longer feels the pain. This condition is better known as the Gate Control Theory. Cupping also increases level of endogenous opiates. As explained by Sharewood (2011) endogenous opiates were released when there was pain stimulation in the periaqueductal gray matter, specific nuclei in the medulla, and reticular formation. This region then forms an analgesic system in the human body, known as the descending analgesic pathway. The stimulated periaqueductal gray matter will be responded to by the specific nuclei in the medulla and the reticular formation. Furthermore, the impulse will be continued through inhibitory interneurons in the dorsal horn of the spinal cord. The endogenous opiates that are produced such as endorphins, enkephalins, and dynorphins are finally released to afferent nerve endings. The opiate then binds to opiate receptors so that the secretion of P is inhibited, then the transmission of pain impulses is blocked along the ascending pain pathway. So that when the pain is reduced due to obstruction of the ascending pain pathway, it will provide a sense of comfort for the client and the client can do better activities because the client's ROM improves.

CONCLUSION

Proper cupping care by certified therapist according to PBI standard give benefit in increasing flexion range of motion by decreasing pain scale on low back pain clients. It can happened by increasing endogenous opiates level and or by gate control theory mechanism.

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