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Original article

EFFECTS OF CUPPING THERAPY BASED ON STABILIZATION CORE EXERCISES ON LOW BACK PAIN FOR SOCCER PLAYERS IN STATE OF UNITED ARAB EMIRATES

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Abstract

Aim. Cupping treatment is the process of drawing blood from the skin surface using cups especially so, after making scratches superficial simple, scalpel sterile surface of the skin in certain positions for each disease or specific injury, there are two types of cupping, cupping wetlands which uses striping and dry cupping uses a suction without bring striping on the skin surface. The aim of this study was to determine effectiveness of cupping therapy on low back pain for soccer players in state of United Arab Emirates.

Methods. Twenty athletes. Recruited for the study were between the ages of 22 and 25 years old, with a mean age of 24 years. Divided into two groups, experimental group consisted of (10) soccer players. Control group consisted of (10) soccer players. All two groups had chronic low back pain. Cupping Therapy were one-week period for experimental group. Two days weekly.

Results. The experimental group showed improvement increase in lumbar spine flexion and extension but not significant between the pre and Post measurement.

Conclusions. Cupping Therapy can be used to recovery from sports injury.

Keywords: Cupping Therapy, low back pain, soccer

Introduction

Chinese cupping launched on the way century, and dates back cupping in Europe to the ninth century, when Arabs brought cupping in Spain. Then the Europeans and the Americans are using this therapy for the treatment of diseases until 1860, and was the type used is cupping the rain, and after 1860, increasing attention to dry cupping (O'Sullivan, 2005), adding that the ancient Egyptians used the cups in therapy, also showed that the graphics on the tombs and temples. It was written on papyrus as the first book for the treatment of cupping 1550 BC. The old Arab surgeon son to stop 685 Hegira, cupping clarified in his book mayor, and divided it into essential and non-essential terms of the type of non-essential use the method in the second half of the lunar month, while the base used at any time as needed.

Low back pain (LBP) is a major cause of disability in many societies (G. Waddell, 1998) and is the most common diagnosis for patients treated in outpatient physiotherapy settings (Jette, Davis, 1991). Approximately 10-20% of sufferers of LBP develop chronic LBP (CLBP), which is described as pain and disability persisting for more than three months (Maher, et al., 1999). The origins and predisposing factors of chronic low back pain are unclear, but it appears that muscular dysfunctions have an important role to play in the aetiology of low back disorders. (Kirkaldy-Willis, Farfan, 1982).

Treatment for low back pain varies from over-the-counter anti-inflammatory to surgery. Because of the invasive nature of surgery, side effects, and low success rate many patients and their healthcare providers chose to turn to more conservative options if they are able. Exercise is an intervention that has been shown to play a major role in the successful management of CLBP (Maher, 2004, Tulder, et al., 1997). One exercise approach, Cupping treatment is one of those options and has been shown to be effective in the treatment of low back pain.

There is little doubt that back pain can start as a physical problem in the back. It has been argued that non-specific LBP arises from dysfunction or physiologic impairment (Waddell, 2004).

Dysfunction depends on the level of demand or stress, and the capacity of the musculoskeletal system to respond to physiological and biomechanical demands or stresses. Any position that increases the physical stress to the joints may be called "faulty posture" (Kendall, 1983).

Mechanical factors are frequently reported to be associated with the initial onset and recurrence of LBP (O'Sullivan, 2005). There are multiple risk factors associated with the occurrence of LBP, some of these factors are: repetitive motion; curvature and torsion of the spine; pushing and pulling activities; stumbles; falls; and static or sitting work posture (Cholewicki, McGill, 1996). However the presence of these does not

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necessarily lead to the occurrence of back pain, and absence of these factors does not necessarily prevent LBP from occurring.

Cupping treatment is the process of drawing blood from the skin surface using cups especially so, after making scratches superficial simple, scalpel sterile surface of the skin in certain positions for each disease or specific injury, there are two types of cupping, cupping wetlands which uses striping and dry cupping uses a suction without bring striping on the skin surface. (Chang 2000).

The fatigue one of the main reasons for the reduction of the continuity of the player in performance as interpreted by many scientists fatigue phenomenon as a physiological phenomenon leads to a decrease in the sports efficiency and can be identified through several aspects of internal and external. (Péronnet, et al., 1981; Mazzeo, 1991).

fatigue is the perception of pain, and this feeling is accompanied by the low speed of movement, and is the probable cause of the occurrence of fatigue is a decrease in muscle stock of the CP and lack of speed, as the ATP - CP is the energy needed frees muscle contraction reaction, and a buildup of lactic acid on muscle fibers working that causes fatigue in competitions with a distance of 100 meters and medium distances, where the accumulation of lactic acid in the working muscles when you reach the quantity to a certain extent occurring acidic, decreases Algelkzh anaerobic rate, and become the movement during exercise slow and less powerful and more painful it is, and be fatigue in long-distance competitions as a result of the depletion of glycogen in muscle or liver. (Latey, 2001).

There are different forms of fatigue including

- Acute fatigue - during pregnancy is relatively short-term, if the intensity of more than physical preparation of the individual level.
- Chronic Fatigue - result of hospitalization after the completion of the effort.
- General fatigue -tab arise during the pregnancy and physical, which shares in the performance of large muscle groups.
- Topical fatigue-shows when the physical load Almaid intensity on individual muscle groups.C. Maher (2004) Spinal stability exercise has been shown to improve pain and disability in CLBP. (Ferreira, et al.2006)

The research in trunk control has been an important contribution to the understanding of neuromuscular reorganization in back pain and injury. As long as four decades ago it was shown that motor

strategies change in injury and pain (Freeman, et al., 1965).

Low back pain and its associated disability poses an economic burden to society, mainly in terms of the large number of work days lost (indirect costs) and to a lesser extent by direct treatment costs (Krismer et al., 2007; Dagenais, et al., 2008). In New Zealand it is estimated that 20 – 25% of all workplace injuries are related to LBP (Firth, et al., 2002). With the total cost to New Zealand's society (including indirect costs) estimated to be NZD \$500 million annually (McBride, et al., 2004). In Australia, the total cost of LBP has recently been estimated to be more than AUD\$9 billion per year, with a national prevalence of 65% annually (Dagenais et al., 2008).

Cupping treatment have many similarities to stability but lack strong research evidence of effectiveness. The knowledge of Cupping treatment and degree of training under taken for its use in the management of chronic low back pain (CLBP) amongst Irish physiotherapists is currently un clear. Hence, the aim of this study was to determine the Effect of Cupping treatment in decreasing of low back pain and urine catecholamine levels.

Methods

Twenty patientathletes recruited for the study were between the ages of 22 and 25 years old, with a mean age of 24 years. Divided into twogroups, experimental group consisted of (10) patientathletes. Control group consisted of (10) patientathletes. All two groups had chronic low back pain. Cupping treatment were eight-week period for experimental group.4 days weekly. There were no drop-outs as all 10 patient athletes in each group completed the study.In Table (1): the mean and standard deviation values of height, weight, age and duration of pain and baseline scores of the Roland Morris Disability Questionnaire for each group are presented.

Selection of the sample:

The subjects volunteered to be part of the study. Those who complied with the selection criteria were randomly allocated to the Cupping treatment or control group using a process of concealed random allocation.

Inclusion criteria:

- Recurrent low back pain for longer than three months with no sign of abating.
- With or without pain into the lower limbs.
- The subjects fell into the age group of 20 to 65 years.

Exclusion criteria:

Subjects were excluded for the following reasons:

- Previous spinal surgery
- Diagnosed inflammatory joint disease
- Red flag signs and symptoms. These patients were sent for further investigations.
- Motor or sensory neurological signs



- No informed consent
- Inability to adhere to the exercise programme. These were subjects that were excluded as they anticipated that attendance would be problematic or difficult.
- Previous or current participation in a Cupping treatment or back class program.

Procedures:

One examiner who had previously been instructed made the measurements about how to carry out the tests. The examiner, using a simple goniometer, such that all the volunteers performed each movement, obtained the flexion and extension measurements on the lumbar spine consecutively twice. To avoid the variations, consecutive measurements were made during the same period of the day by same examiner.

The evaluations on the flexion and extension range of motion of the lumbar spine were made using a simple goniometer after instructing the volunteer regarding positioning and the correct way of doing the test. The individuals began the test in an upright standing position, with the knees completely extended and arms in front of the body. Then, upon a verbal command from the examiner, they made slow and gradual movements for flexion and extension as far as the maximum amplitude, at which point the goniometer measurement was made. To evaluate lumbar flexion, the arms had to be flexed at 90 degrees, and to evaluate lumbar extension, the arms had to be kept fixed behind the neck. For these measurements, the iliac crest was taken as the fixed reference point, while the mobile point used was the axillaries line collateral to the iliac crest interiorly, such that the fixed arm of the goniometer remained central in the lateral region of the trunk. (Carla, et al., 2010)

Sorensen's Test

This test measures the time a subject can keep the unsupported trunk (from the upper border of the iliac crest) horizontal while lying prone on an examination table until they can no longer control the posture, or can no longer tolerate the procedure or until symptoms of fatigue are reached. (Moreau et al. 2001) Of the assessment strategies available, isometric endurance testing seems to be cost-effective and requires little or no equipment at all.

The procedure was carried out as follows:

- The patients had to lie prone on a plinth with the trunk (from the upper border of the iliac crest) unsupported, with the hands either behind the head or placed across the chest
- The researcher held down the patients' legs with the researcher's body weight This was done to reduce time in the patient set-up when performing the test
- The patients were required to extend the trunk until the back was in line with the rest of the body
- This position was to be maintained until the posture could no longer be controlled, or no more tolerance

for the procedure or symptoms of fatigue are reached

The examiner recorded the time held by each patient (in seconds) for the test. A Swatch Irony watch was used to record the times for all 20 patient athletes to maintain continuity.

Cupping treatment Training protocol

A Cupping treatment mat was used during training sessions for subject comfort.

1. You must use devices such as a cup and hood and a scalpel for each patient.
2. Determine the desired location cupping it based on the study of energy pathways points in China's specific disease needles.
3. Clean the place with disinfectant solution.
4. placed the cup on the skin and the air is unloaded through the hood.
5. The striping by a sterile scalpel or a sterile needle.
6. For the dry method is not striping.
7. Survival of the cup for extended lasts 5-7 minutes depending on the situation.

Instruments used in cupping:

- The tool used in the past was either a bull horn or flask of bamboo.
- At present, using a soft plastic cup and a small crater and ample body and nozzle with lips facing out and the cup size differs according to the appropriate position to use it.
 - Do something wet cupping using the cup and hood?
 - It was conducted in the laboratory cupping private medical research lab

Statistical analysis

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference \pm 95% confidence intervals (mean-diff \pm 95% CI). Student's t-test for independent samples was used to determine the differences in fitness parameters between the two groups. The $p < 0.05$ was considered as statistically significant.

Results

Table 1. Mean \pm SD values of age, height, weight and duration of pain and baseline scores of the Roland Morris Disability Questionnaire (RMDQ) for each group

	Groups	Age (years)	Height (cm)	Weight (kg)	Duration (months)	RMDQ (deg)
Mean \pm SD	Cupping treatment	23.45 \pm 2.4	171.05 \pm 5.5	70.76 \pm 8.4	15.78 \pm 8.4	7.4 \pm 1.2
Mean \pm SD	Control	26.22 \pm 3.6	168.32 \pm 7.3	68.11 \pm 11.2	17.65 \pm 10.5	6.5 \pm 0.9
p value		0.232	0.547	0.332	0.475	0.651

The p value for all variables between the two groups not differed significantly in this regard.

Table 2. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the pre-post measurements for experimental group.

Variables	Experimental group			Sig.
	pre	post	change%	
Goniometer flexion	109.7 \pm 9.13	117.25 \pm 8.58		Sig.
Goniometer extension	37.65 \pm 3.54	44.23 \pm 6.32		Sig.
Sorensen's Test	41.76 \pm 7.98	52.27 \pm 9.64		Sig.
RMDQ	7.41 \pm 1.2	4.65 \pm 2.8		Sig.

Is clear from Table (2) the post tests for experimental group had significantly higher than the pre tests in all variables and Significant improvements were observed in RMDQ

Table 3. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the pre-post measurements for control group.

Variables	Control group			Sig.
	pre	post	change%	
Goniometer flexion	110.21 \pm 10.15	112.38 \pm 7.87		No Sig.
Goniometer extension	38.64 \pm 6.68	40.11 \pm 5.45		No Sig.
Sorensen's Test	40.11 \pm 4.91	42.59 \pm 4.38		No Sig.
RMDQ	6.5 \pm 0.9	6.35 \pm 1.3		No Sig.

Is clear from Table (3) no significant differences between the post tests and pre tests for control group in all variables

Table 3. Mean \pm SD and the significant for Goniometer flexion, Goniometer extension, Sorensen's Test and (RMDQ) between the post measurements for experimental and control groups.

Variables	Control post	Experimental post	Sig.
Goniometer flexion	112.38 \pm 7.87	117.25 \pm 8.58	Sig.
Goniometer extension	40.11 \pm 5.45	44.23 \pm 6.32	Sig.
Sorensen's Test	42.59 \pm 4.38	52.27 \pm 9.64	Sig.
RMDQ	6.35 \pm 1.3	4.65 \pm 2.8	Sig.

Baseline results showed that: The experimental group had significantly higher than the control group in all variables and Significant improvements were observed in RMDQ for the experimental group when comparative with the control group.

Discussion

In this study, it was observed that flexion and extension of trunk presented higher values among individuals who practiced Cupping treatment. This has importance in detecting spinal diseases, and in the response among individuals undergoing treatment.

Cupping treatment For Low Back Pain is a great exercise for low back pain because it emphasizes

movement by core muscles, those closest to the spin. Instead of performing more reps, Cupping treatment focuses on performing fewer, more precise movements that require concentration, control, and proper form. Due to its focus on developing the core muscles as well as postural awareness, Cupping treatment is especially successful at alleviating back pain. By integrating the trunk, pelvis, and shoulder girdle Cupping treatment



enables you to develop a strong core. Adding to Cupping treatment are very smooth and controlled movements, so there is little danger of getting injured while exercising.

In recent years, there has been a growing number of reports on the benefits of Cupping treatment -based for lowback pain. (Bryan, Hawson, 2003; Dolan et al., 2001; Donzelli et al., 2006; Gladwell et al., 2006; Herrington, Davies 2005; Lange et al., 2000; Schroeder et al., 2002)

Concomitantly, an increasing number of healthcare practitioners are using the Cupping treatment -based approach for rehabilitation. (Anderson and Spector, 2000) Despite the limited number of randomized controlled trials investigating this exercise approach, proponents have claimed improved torso or core strength, with mentions of greater range of motion, muscle symmetry, flexibility, (Schroeder et al., 2002) spinal and joint mobility, and proprioception, balance, and coordination. (Bryan, Hawson, 2003)

In a previous systematic review, (La Touche, et al., 2008) highlighted the importance of distinguishing Cupping treatment -based exercises from the classic Cupping treatment Method. The Cupping treatment Method is an exercise form that has been popular for decades among choreographers and dance instructors in the field of dance medicine, (Anderson and Spector, 2000) which addresses the causes of dance injuries, promotion of care, prevention, as well as safe post rehabilitation return to dance. (Miller, 2006) The neuromuscular demands of the traditional Cupping treatment Method can be high, and, therefore, its application to physiotherapeutic interventions necessitates modifications. (Rydeard, et al., 2006) As such, the Cupping treatment -based exercises, as described in the current literature, are adapted and simplified from the traditional Cupping treatment Method, when used for rehabilitation purposes. (Gladwell, et al., 2006) The modified Cupping treatment Method was designed with the intent to improve posture and control of movement via neuromuscular control techniques believed to improve lumbar spine stability through targeting the local stabilizer muscles of the lumbar-pelvic region or "core muscles." (Gladwell, et al., 2006)

In addition to Cupping treatment that achieve stability, which are aimed at retraining transverse abdominal and lumbar multifidus (Maher, 2004). Patients are taught how to activate these muscles independently from the more superficial trunk muscles in isolation first, then during more functional tasks (Richardson, et al., 1995). (Maher, et al., 2005).

Stabilization exercises can promote muscular control around the lumbar spine. The knee stretch exercises from the Cupping treatment method have been used in clinical practice to increase lumbar stability. (Bergson et al., 2009)

P. O'Sullivan, et al. (1997) demonstrated effectiveness of a specific stabilization exercise approach in a CLBP population with a specific diagnosis of spondylolisthesis or spondylolysis.

Within the group who received specific exercise (SEG, specific exercise group) a significant reduction in pain intensity ($p=0.0006$, effect sizes: CG $d=0.21$ 'trivial'; SEG $d=1.78$ 'very large') and functional disability levels (ODI) ($p=0.0001$, effect size CG $d=0.06$ 'trivial', SEG $d=0.88$ 'large') was observed, with maintenance of this effect at 30-month follow up. No significant changes were seen in a control group receiving usual care. However, despite being often cited this study has not been replicated to date.

Purify the blood and increase the red blood cells, white and detox. And that by pulling the skin surface air suction manner within the user's cup and then stripping surface process. And thus the expansion of blood vessels in and out toxins through the skin and blood purifier is happening and this is reflected on the increase in the number of red blood cells and white.

Increase the level of calcium in blood: where to get rid of the weak blood cells elderly lead to an increased level of calcium in blood. And change the pH of the blood (pH) from 03.07 to 04.07, a healthy level moderate.

Contribute to ease the blood flow: by reducing the level of carbon dioxide and increase oxygen levels in blood.

Strengthen the immune system: through the ease of blood flow, which helps to rid the body of waste metabolic waste metabolites more efficient manner, which improves the immune system and increase resistance to disease.

Increase the activity of the cells: The increased secretion of hormones and this helps in delaying the aging of cells in the body.

Reducing the pressure on different parts of the body, which leads to soothe the pressure on the nerves, muscles, and the disappearance of pain, and experimentally observed that cupping has eased the symptoms of the following diseases such as rheumatism, dyspepsia, headache and blood pressure as well as colic.

Re-entry into the balance of power in its tracks, thus increasing the efficiency of the body's internal functions. This is due to the disappearance of symptoms may increase the secretion of three of morphine materials (Ankiflin, internal morphine, as well as Dinorvin). (Mazzeo, 1991) main factors are referred to in the literature: neural and hypertrophic. (Green, 1990)



Conclusion

According to the results:

Cupping treatment -based exercises are superior to minimal intervention for reduction of pain in individuals with nonspecific low back pain. However, Cupping treatment -based exercises are more effective to reduce pain. In addition, Cupping treatment are more effective than minimal intervention or other exercise interventions to reduce disability related to chronic low back pain. To have a more accurate representation of the extent of pain or disability reduction in such musculoskeletal pain condition, studies with better methodological qualities are needed.

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