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Effectiveness of Cupping Therapy for Physical, Psychological, and Immunodeficiency Conditions

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Abstract

Cupping therapy is the most cooperative historical harmonizing therapy that has been practiced for millions of decades for a diversity of common medical conditions. Cupping is included in Prophetic medicines which consist of medical acquaintance attained from sayings, teachings, and advices of Prophet Mohammad (Peace be upon Him). It is a simple technique of quick and rhythmical setbacks for stimulating muscles and is especially valuable in the treatment of pains and aches linked with several illnesses. Cupping therapy has been suggested by various physicians for cardiovascular diseases (CVDs), immunity strengthening, stress relief, better sleeping, facial paralysis, common cold, asthma, soft tissue injury, urticaria, cervical spondylosis, pain in neck, shoulder, carpal tunnel, and low back. In this review article, it has been tried to investigate and identify diversity of medical conditions simultaneously with effective outcomes of cupping therapy to help academics and clinicians for improved practices.

Keywords: Cupping therapy, Traditional medicine, Prophetic medicine, Chinese medicine

Introduction

Cupping therapy is an old mode of therapy which has been practiced for the curing an extensive diversity of disorders. Cupping therapy has several kinds; but, wet and dry techniques are the two major kinds (Lowe, 2017). In dry cupping, the skin is pulled in the cup without scarifications; whereas the skin is lacerated in wet cupping in order to draw blood into the cup (El Sayed, Mahmoud, & Nabo, 2013). Though cupping has been a therapeutic technique from ancient times, and had been used by several civilizations and cultures, its mode of action is well recognized. In recent times, importance of cupping has reemerged and successively, a number of studies have initiated to examine the modes of action and applications of cupping therapy (Aboushanab & AlSanad, 2018).

For the conventional consultants proficient in western medical disciplines, the concentration is mostly on the biomedical origins of disease, whereas conventional medicine doctors take an all-inclusive approach (Mehta & Dhapte, 2015). Remarkably, cupping therapy probably produces abundant effects through an excess of mechanisms. Scientific community tends to explain a specific effect or phenomenon of a device or drug or cupping therapy by explaining its fundamental modes of actions and successful treatment evidences (El Sayed et al., 2014). In fact, description of therapeutic mechanisms in wide range of medical conditions including physical, psychological, and immunodeficiency disorders is never complete as details of interrelated processes are difficult to identify (Brinkhaus & Dobos, 2019). In this review article, it has been tried to investigate and identify diversity of medical conditions simultaneously with effective outcomes of cupping therapy to help academics and clinicians for improved practices.

Historical Background

Cupping is one of the ancient time treatments for a lot of diseases (Chirali, 2014). All over the history, methods and ways of cupping have often vary with different geographic locations where practiced in, in addition to exploiting an area's local resources such as animal horns, ceramic, bamboo, glass, plastic, and metal have all been utilized in this practice in Ancient Egypt, China, Greece, Korea, Tibet, and Latin American civilizations, all of which have helped the purpose of

assisting the body's capability to cure itself (Qureshi et al., 2017). In 1550 BC, cupping therapy was first documented in North Africa on Papyrus ebers, where the cup was an Egyptian symbol for designating a physician. In 281-341 CE, during the Jin dynasty in Asia, the Ge Hong mentioned the animal horns and their uses as a source to drain fluids from the human body.

In the Islamic and Arabic nations, cups (Hijama) are suggested in the Al-Qanun fit-Tibb 1025CE, Canon of Medicine for the treatment of menstrual disorders. Prophet Mohammed (Peace be Upon Him) is also found to be a practiced as well as advocated the cupping therapy in several quotes or Hadiths (Al-Rawi & Fetters, 2012). According to Claudius Galenus, the medical principle for bloodletting is to exclude divert blood or residues from one region to another (AlBedah, Khalil, Elolemy, Elsubai, & Khalil, 2011). In Chinese medicine, cupping and other related treatments follow the Daoism philosophy of holism. Holism is the theory that different structures and their characteristics should be viewed together, not only as a collection of different parts (El-Wakil, 2011). Daoists insisted that no human or single being could be existent except they are seen with respect to nature, as an annex of the universe and by itself are influenced by natural spectacles, such as the climate and seasons, in addition to the internal conditions, such as emotional tension. An illness, according to this theory, is the consequence of emotions, trauma, and climate that disturb balance of the body (Refaat, El-Shemi, Ebid, Ashshi, & BaSalamah, 2014).

In recent times, it has also reported that understanding grown from religious manuscripts (Quran and Hadith) can guide consideration of researchers to initiate the exploration and acquire certain advantages when relating such information with up-to-date therapeutic facts (Khalil, Al-Eidi, Al-Qaed, & AlSanad, 2018). Cupping is included in Prophetic medicines which consist of medical acquaintance attained from sayings, teachings, and advices of Prophet Mohammad (Peace be upon Him), who recommended several statements of cupping therapy, such as

“If there is a benefit in any of your treatment modalities, benefit will be in the blade puncture in cupping therapy, a gulp of honey and cauterizing, but I do not like cauterization” (Al-Bukhari, 1996)

Ibn Umar (RA) reported that the Holy Prophet (PBUH) said,

“Hijamah on an empty stomach is best. In it is a cure and a blessing. It improves the intellect and the memory. So cup yourselves with the blessing of Allah on Thursday. Keep away from Hijamah on Wednesday, Friday, Saturday and Sunday to be safe. Perform Hijama on Monday and Tuesday for it is the day that Allaah saved Ayoub from a trial. He was inflicted with the trial on Wednesday. You will not find leprosy except (by being cupped) on Wednesday or Wednesday night.” [(Al-Qazwinî & bin Yazid, 1995)(3487)].

Anas ibn Maalik (RA) reported that the Holy Prophet (PBUH) said,

“Whoever wants to perform Hijamah then let him search for the 17th, 19th and 21s” ((Al-Qazwinî & bin Yazid, 1995)3486)

Abdullaah ibn Abbas (RA) reported that a Jewish woman gave poisoned meat to the Holy Prophet (PBUH) so He (PBUH) sent her a message saying,

“What caused you to do that?” She replied, “If you really are a Nabi then Allah will inform you of it and if you are not then I would save the people from you!”(Refaat et al., 2014)

Salma (RA), the servant of the Holy Prophet (PBUH) said,

“Whenever someone would complain of a headache to the Rasul of Allah (PBUH), he (PBUH) would advise them to perform Hijamah.” (Dawud, 2002)3858)

Abdullaah ibn Abbas (RA) reported that the Holy Prophet (PBUH) said,

“I did not pass by an angel from the angels on the night journey except that they all said to7 me: Upon you is Hijamah, O Muhammad.” ((Albani, 1987)3477)

Since Chinese pharmaceutical scholars concentrate on evident principles of balance investigated in living organisms, their traditional medicinal practices are regarded “alternate” by the leading medical classifications, regardless of having been adapted for several eras in countries and cultures across the globe (Cui & Cui, 2012). Alternate medicine is referred as “the use or promotion of systems which are disproven, unproven, incredible to verify, or disproportionately dangerous with respect to their effects.” Regrettably, medicines, especially Western allopathic drugs, have been observed exclusively from an epistemological context (Li, Li, Lin, & Li, 2017). This context institutes a theory of knowledge which differentiates right belief from judgment.

Thus, evidence-based medication has been the adopted manner used, mainly depending upon bodily cutting up over any other type of methodology or inference in evaluating a treatment and diagnosis (Zhang et al., 2017).

Mechanism of treatment

Cupping is a simple technique of vigorous, quick, and rhythmical blows for stimulating muscles and is especially valuable in the treatment of pains and aches linked with several illnesses. As a result, cupping carries the capability to improve the value of life (Xu, Zhang, Xie, & ZHAO, 2013). There are a number of areas that should not be bled for the purpose of Hijamah. Some of these lie in close proximity to arteries; others are empirically not suited to bleeding therapies (El-Domyati, Saleh, Barakat, & Mohamed, 2013). These include the following areas (Moura et al., 2018):

- Over the radial artery at the wrist.
- Over the axillary artery (in the armpit).
- Over the posterior tibial artery.
- Over the external iliac artery on the lower abdomen.
- Over the carotid artery in the neck.

Every cupping session takes approximately 20 mints and can be conducted in five phases. The 1st phase consists of key suction. In this stage, the therapist allocates particular areas or points for disinfects and cupping the region. A cup with an appropriate size is positioned on the certain sites and the therapist sucks inside the air by flaming the cup, manual or electrical suction. Afterwards, the cup is placed onto the skin and allotted for an interval of 3 to 5 mints. The 2nd phase is about puncturing or scarification. Posturing scratches are made on the skin by means of surgical scalpel blades or pricking with a simple needle, a plum-blossom needle, or auto-lancing devices. The 3rd phase is around bloodletting and suction. The cup is sited back on the skin with the help of same procedure mentioned above for 3 to 5 mints. The 4th phase comprises the elimination of the cup; subsequently the 5th phase that consists of dressing the body part after disinfecting and cleaning with FDA ratified skin disinfectants (Emerich, Braeunig, Clement, Lüdtkke, & Huber, 2014).

Moreover, appropriate sized adhesive strips are formerly practiced to the scratched part that remains there for 48 hours. It is necessary to be acquainted that the scarification and suction are the two major approaches of wet cupping therapy. Every cupping type may be useful for different modifications at the body level of organ, tissue or cell. Particular interventions can suppress or enhance body hormones, or it may modulate or stimulate the immunity, or it can dispose of harmful materials from the body, and ultimately it can comfort the pains (Mohammad, Fasihuzzaman, & MA, 2014).

On the whole, cupping is carried out within 2 to 6 blood cups and it depends on the constituents of the patients, their current condition of health and the variation in the color of the blood throughout the cupping process (Bilal, Khan, & Afroz, 2011). The pulse feeling is the ideal way to evaluate the current condition of individual well-being. Over-all, there are three points of pulse strengthening; which can be stated as normal force, forceful, and forceless. With respect to the color of blood, the variety is from dark purple to bright red blood (Mohammad, Jabeen, & Siddiqui, 2019).

Types of Cupping Therapy

Primary classification of cupping therapy characterized it generally into wet and dry cupping. In 2013, an additional classification of cupping therapy was developed and categorized into five classes. In 2016, this classification was also updated (Abdullah Mohammad Al-Bedah et al., 2016). There are six categories of cupping therapy according to updated classification system. The first class is “technical kinds” that comprises wet, dry, flash, and massage cupping. The second class is “power of suction” that comprises strong, medium, and light cupping. The third class is “method of suction” that comprises fire, electrical vacuum, and manual vacuum cupping. The fourth class is the “materials inside cups” that comprises herbal, ozone, water, moxa, magnetic, and needle cupping. The fifth class is “area treated” that comprises male, female, facial, orthopedic, and abdominal cupping. The sixth class is “other cupping types” that comprises sports, aquatic, and cosmetic cupping (Y.-T. Wang et al., 2017).

A classic cupping therapy system must involve six or more diverse sized cups and a technique of blood drawn (Abdullah Mohammed Al-Bedah et al., 2016). Cupping therapy system can be categorized into three major groups: the first group is “cupping setup linked with the kinds of

cups”, which involves plastic, rubber, glass, bamboo, metal, silicone, and ceramic cupping systems. The second group is “cupping system linked with the suction method”, which involves manual, self-suction, and automatic cupping systems. The third group is “cupping systems linked with uses”, which consist of male, female, massage, and facial cupping systems (Cao, Han, Zhu, & Liu, 2015).

Pain Relief Evidences

Pain is the most general cause to seek therapeutic options to traditional medicines and the more acute the pain, the more recurrent is the practice of such treatments (Chi et al., 2016). Cupping therapy can decrease intensity of pain by manipulating the pain communication and transmission pathways from a stimulating region to the brain and spinal cord. In the region of pain, the inflection takes place with the help of a network of presynaptic and interneurons pain accesses (Seoyoun Kim et al., 2018). The slight fibers have a disruptive effect on the inhibitory cells hence allow the transmission neurons flowing to the pain pathways of spino-thalamo-cortex and ultimately to the brain. Whereas the larger fibers accelerate the inhibitory cells and have a tendency to inhibiting the pain signals transmission. Therefore, pain intensity is predictable to be decreased when on stimulation of larger nerve fibers by pressure, vibration, or touching (Lauche et al., 2012).

Shoulder and Neck Pain

The occurrence of long lasting neck pain is reported within the range of 14.2 and 71 percent and it is more prevalent in the groups of labour and working groups mostly people within age of 35 to 49 years. It was reported to be related to increased medical expenses and adversative impacts on personal efficiency. The frequently used treatments for neck pain comprise the physiotherapy and use of analgesics. Furthermore, surgery can be helpful in certain specific conditions. However, such choices are not continuously efficient, and occasionally are linked with critical side-effects. Thus, individuals have been continuously in search of other alternate options such as traditional drugs (Arslan, Gökgöz, & Dane, 2016).

Cupping is used frequently by individuals for relieving neck pain particularly for the non-specific kinds. Studies performed on shoulder and neck pain patients examined the efficiency of

cupping by determining different outcomes such as quality of life, pain intensity, and disability scores (Umar, Tursunbadalov, Surgun, Welcome, & Dane, 2018). The presently available evidences indicate that cupping is operative for subjects with non-specific chronic neck pain with respect to decrease in pain scores, enhancement in the quality of life indices and disability scores comparative to no therapy and active controls for example acupuncture medicine, non-steroidal anti-inflammatory medications, physical therapy, and heat pack therapy (Subadi, Nugraha, Laswati, & Josomuljono, 2017).

A meta-analysis and systematic review reported outcomes of cupping for pain reduction. Total 18 studies were included, out of which 11 studies used dry cupping as an intervention while 7 studies used wet cupping. There were 40 to 240 subjects were included in each study. The outcomes of cupping subjects reported significant decrease in pain scores, and considerable development with respect to quality and functioning of life as compared to active control and group with no intervention. Another study explored the effects of cupping for up to 2 years in subjects with acute neck pain and reported significantly positive effects on quality of life and physical functions for the entire period of time in addition to the maintained effects on pain intensity (Azizkhani, Ghorat, Soroushzadeh, Karimi, & Yekaninejad, 2018). As a whole, the latest evidences support the practices of cupping therapy for the treatment of neck pain and improved quality of life in available researches. Upcoming better study designs are prerequisite to authorize the valuable effects in such patient groups (Cramer et al., 2011).

Knee and Joints Pain

Arthritis is another prevailing medical problem often reported in clinical practices. It is an expression of several joint disorders such as osteoarthritis, rheumatoid arthritis, gout, and many others (Cramer et al., 2011). Cupping has been found to be decreasing the joint pain linked with osteoarthritis, ankylosing spondylitis, and gout. Osteoarthritis is a common and acute disease of joint degeneration. The frequently degenerated joints are hips, shoulders, and knees. It may existent with stiffness, pain, and reduced mobility because of the effects on joint stability and function (Umar et al., 2018). A recent study determined that the practices with a combination of Western medication (analgesics) and cupping is more efficient comparative to unaided Western medicine in people with knee osteoarthritis pertaining to stiffness and pain reduction and enhancement in the domains of physical function of osteoarthritis index (Cao et al., 2014).

However, the use of cupping therapy unaided comparative to Western medication treatment was greater in reducing intensity of pain (Subadi et al., 2017).

Another inflammatory arthritis is gout, which causes due to deposition of crystal monosodium urate inside the spaces of joints. It characteristically occurs with painful inflammations in joints, mostly in the major metatarsophalangeal joints (Azizkhani et al., 2018). Another research study which was performed in China examined the combined effects of herbal medicine and cupping in contrast to the use of non-steroidal anti-inflammatory drugs in severe gout arthritis. The researchers reported that the treatment effects of both herbal and cupping medicine were similar to anti-inflammatory medicines however the variances were not significant statistically. Ankylosing spondylitis (AS) is an enduring inflammatory condition that causes severe back pain. The common dominating symptoms are stiffness and back pain because of spinal fusion (T. Kim et al., 2012).

Another systematic review included 5 RCTs, every one with a sample size of every experiment within the range of 42 to 280. Majority of such trials were of low practical value. It was established that the use of a combine therapy of Western medicines and cupping was more efficient comparative to Western medicine alone in regard to stiffness and pain reduction, physical function progress, inflammatory marker's serum levels (ESR and CRP), and disease activity (Y.-L. Wang, An, Song, Lei, & Wang, 2018). In inference, there were strong indications which support the use of cupping therapy for different kinds of arthritis derived pain management (Al-Shidhani & Al-Mahrezi, 2020).

Low Back Pain

It is another major medical orthopedic condition that has an approximated prevalence of one-year about 38% in the wide-ranging population. The existing management possibilities include bed rest throughout the severe phase, physiotherapy, analgesia, traction, health awareness, and alternate therapies to prevent the imminent episodes (J.-I. Kim et al., 2011). Wang et al conducted a systematic review of randomized controlled trials (RCTs). In total six RCTs, the overall participants were 458 (230 with cupping and 228 with normal curative measures). Five RCTs comprised patients with non-specific low back pain and only one RCT encompassed post-partum females with low back pain. Diverse kinds of cupping were practiced in these trials

including one moving cupping, two wet cupping, and three dry cupping. This systematic review concluded that cupping therapy was more efficient comparative to other clinical interventions on decreasing the visual analog scale (VAS) scores, and Oswestry Disability Index (ODI) scores (Hanan & Eman, 2013).

A multiple armed RCT in people with chronic low back pain examined the efficiency of two different methods of cupping (dry minimal and pulsatile) paralleled to medicine (paracetamol) on needs only. After four weeks of treatment, overall 110 patients were enrolled in this research and both kinds of cupping were found to be proficient comparative to the control group and verified by VAS scores. After 12 weeks, patients in pulsatile cupping class only reported positive effects as recognized by the physical component scale and the VAS scores on the short-form questionnaire of healthy quality of life (Al Bedah et al., 2016).

Majority of the studies which comprised patients with low back pain examined the short-period effects of cupping and were directed for 2 to 12 weeks. Furthermore, all of these trails underwent some foremost limitations which comprised high heterogeneity, different inclusion criteria, different tools of assessment, small sample size, different number of treatment sessions, and different types of cupping therapy (Hanan & Eman, 2013). Regardless of these restrictions, the existing studies support the practices of cupping therapy in subjects with low back pain but higher standard randomized clinical trials of long period and exploiting standardized evaluation tools are required to ratify these small-duration valuable results (Cao, Li, & Liu, 2012).

Carpal Tunnel syndrome

It is a medical condition also recognized as the median nerve syndrome that occurs because of pressure on the median nerve which leads towards nerve pinching or compressing inside the carpal tunnel (Lowe, 2017). The origin of median nerve is the lateral and medial cord of brachial plexus inside the cervical spine, moves down the entire arm and stimulates the carpal tunnel through the wrist passage in the hands. The treatment of carpal tunnel pain comprise surgery, splinting, physiotherapeutic relief of the transverse ligament of carpal, and prescribed orally or injected steroids and other oral medicines. The valuable effects of cupping therapy were reported during both conditions, individually and in combination with physiotherapy (Mohammadi, Roostayi, Naimi, & Baghban, 2019).

(Al Bedah et al., 2016) examined the cupping effects on carpal tunnel patients along with physiotherapy combination and compared alone cupping therapy. In this study, the modified cups were used for accommodating the structural figure of the wrist joint. There was 50 mmHg pressure level applied throughout the therapeutic sessions and the cups were placed for four mints. As a whole, ten sessions were applied and the outcomes were evaluated after termination of all the terms. Total of four carpal tunnel-related parameters were estimated including symptom severity, distal sensory latency, distal motor latency, and functional status. The study established that there was an important perfection of symptom severity scale in the cupping group along with decrease in the distal sensory latency more than that of control group.

Furthermore, patients in the cupping group had an enhancement in the functional status scale and decrease in the distal motor latency however the inconsistencies were not significant statistically. The study limitations comprised the deficiency of regular time intermissions to evaluate the effects, and the random patient distribution with acute disease between the two study arms. In addition, two cases had reported the positive effects of cupping in carpal tunnel patients. The first reported case used wet cupping and found extreme decrease in pain, paresthesia, and numbness (El Sayed et al., 2013).

These clinical outcomes were established significant enhancement in the electrophysiological trials as confirmed by both electromyography and velocity of nerve conduction. The second reported case used self-applied cupping no less than once every day for 3 to 5 mints for a duration of 90 days in a patient with slight symptoms of carpal tunnel syndrome. The patient reported a progress in the carpal tunnel pain after 7 days of therapy and completely dismissal of all indications after 6 to 8 weeks. The study of nerve conduction presented that distal motor latency had reverted back to the ordinary range later 90 days (Mehta & Dhapte, 2015).

Respiratory and Cardiovascular Benefits

Cupping therapy is recognized for multiple respiratory and cardiac benefits such as for improvement of blood flow and lymph energy for promoting curative mechanism in the affected region. It is also helpful for stimulating vital organs particularly lungs to speed up clearing of phlegm. When an individual cough, accumulated phlegm and mucus is brought up in order to expel out of the body (Antush, 2019). Phlegm and mucus that accommodates in the lungs when a

person becomes sick and can be potentially perilous due to the bacteria which inhibits the lungs. Meanwhile, cupping therapy develops an adverse pressure through vacuum suction to supports relax congestion form lungs by rising lymph and blood flow to the cupping region. Lungs obtain crucial nutrients and fresh oxygenated blood which cleanses the lymphatic area of cellular debris along with related contaminations (Zeng & Wang, 2016).

Cupping therapy has been suggested by various physicians for cardiovascular diseases (CVDs). A systematic review and meta-analysis has reported that cupping therapy is helpful in lowering and controlling blood pressure. Comparable outcomes were also reported for average arterial pressure. In addition, another study established that cupping shows positive effects on blood pressure and anthropometric parameters in combination with diet management in patients with hypertension and depression (Emerich et al., 2014). Furthermore, cupping therapy combined with acupuncture could increase other symptoms, improve exercise tolerance, decrease frequency of angina, and reduce consumption and duration of nitrates of the patients with exertion of stable angina with minimum side effects. Also, cupping has been reported in rehabilitation of stroke with prospective advantages (Ghods, Sayfour, & Ayati, 2016).

Immunity Improvement

In the recent years, the effects of cupping therapy on immunity strengthening have also been studies. A recent study reported bidirectional effect of cupping therapy which induced on the human immunoglobulins. It adjusts the irregular level of immunoglobulin without any internal disturbance and disruption the functional status (Guo et al., 2017). It has also been found that cupping therapy can up-regulate the level of both deoxyhemoglobin and oxyhemoglobin. As a hemoglobin carrier, the red blood cell is a significant protective coordination, which works to identify the antigens and remove immune complex, effector cells, and tumor cells, in addition to binding viruses and germs, and control immune functions. It has been discovered that the total value of C3b receptor, immune complex, and rosette phenomena of red blood cell considerably increased with cupping therapy that showed that cupping can recover the defensive system of red blood cells (Liu et al., 2018).

(Mohammadi et al., 2019) believes that suggillation with cupping therapy is the indicator of autohemolysis that can generate substances like histamine and subsequently make stronger the

activity of organs and tissues in addition to improving the immunity (Hou et al., 2020). Cupping therapy is also beneficial in several conditions like lumbago and as epithelial grafts for the management of vitiligo and melanocytes disruption. It is also frequently used in muscle inflammation and improving a variety of motions (Zeng & Wang, 2016). Cupping therapy is not restricted only to these pharmacological movements, but it is also cooperative to regulate both acquired and innate immune response. In comparative analysis, wet cupping therapy has been reported to be more active as compared to dry cupping therapy, as it is capable to remove the causative pathological substances (CPS) and reestablish the ordinary physiology, whereas dry cupping therapy is dependent upon redistribution and dilution of CPS to different places (Ghods et al., 2016).

Mental and Emotional Benefits

Prophet Mohammad (Peace be upon Him), who recommended several statements of cupping therapy treatment, such as

*“If there is a benefit in any of your treatment modalities, benefit will be in the blade puncture in cupping therapy, a gulp of honey and cauterizing, but I do not like cauterization” ((Al-Bukhari,)
1996)*

The accurateness of using the word (blade puncture in cupping remedy) originates from the facts that in the technique of wet cupping that is also known as prophetic cupping therapy method, the tissue fluids accumulate inside the skin and elevates with gradual accumulations of tissue fluids and upsurge in the fluids pressure inside the skin uplifting. The scalpel blade is the leading step in cutting the skin blockade to permit the excretion of chemicals, wastes, drugs. When wet cupping therapy is implemented, the interstitial fluid starts to be excreted instantaneously as soon as the blade makes skin puncture (Sungchul Kim, Kim, Jung, Lee, & Kim, 2019).

There is confirmation of a higher occurrence of sleeping disorders in patients with low back pain, and majority of these studies specifies that over 50 percent of patients have sleeplessness linked complications. The obsessive foundation of insomnia, no matter it is due to excess or deficiency is the restiveness (Akbarzade et al., 2016). Over burden induced insomnia is triggered by trouble of cerebral activities and insufficiency-induced insomnia is instigated by hypofunction of cerebral functions. In addition, cupping therapy stimulates the Bladder acupuncture points

including BL23, BL24 and BL25, which can regulate the functions of heart, liver, spleen, lungs, stomach, intestines, bladder and kidney, which ultimately provide allay excitement and tranquilization. Moreover, sleep disturbances were also found to be reliant on pain intensity, so, decreasing pain intensity must reduce the incidences of sleeping disorders (Vender & Vender, 2015).

Cupping Benefits for Stroke

Cupping therapy is frequently used for rehabilitation of strokes in many countries especially Asian regions (Lim et al., 2015). Tibb practices cupping with optimistic outcomes for patients suffering with a stroke. The organs are stimulated by cupping directly under the location being treated. It helps for functional regulation of organs by supporting in the exclusion of waste products (Lim et al., 2015). The removal of abnormal and excessive toxin is accomplished in the cases of post stroke disability by means of bringing the cups onto the skin surface. After that, all toxins are eliminated certainly from the route of skin surface or through small and apparent scratches made with lancet devices or surgical blades (Lee, Choi, Shin, Han, & Ernst, 2010). In general, cupping is directly performed on the affected organ except face. It provides relief to swelling of brain in the cases of post-stroke by distributing the region with blood circulation that consecutively relieves stagnation and congestion (Ullah, Younis, & Wali, 2007). Moreover, cupping encourages the meridians that are important energy systems work with acupuncture. It shows that particular points have a remedial effect distant to the location being treated (Y.-S. Kim et al., 2005).

Cupping is also reported to release endorphins, which are considered as the natural painkillers of body. The endorphins are released in responding to the tight action of vacuum cups on the superficial incisions or the skin designed in wet or blood cupping. Cupping is not practiced as a private rehabilitation in the cure of stroke induced disabilities (Xin, Xue-Ting, & De-Ying, 2015). The practitioners of Tibb adopt an all-inclusive approach directing on all aspects of lifestyle including emotional health, exercise, and diet. Furthermore, in another recent systemic review, which included 22 randomized controlled trials on adults demonstrate that increasing intake of potassium decreases diastolic and systolic blood pressure in addition to improving the control and prevention of stroke (Lee, Kim, & Ernst, 2011).

The Tibb way of therapeutic is an integrate science that purposes to apply all accessible resources of health, including western allopathic along with harmonizing methods for the maintenance and improvement of health. Supposing that cupping is valuable for stroke recovery, its mode of action might be of high importance (Zaki & Hussin, 2019). The proposed mechanism of action includes draining toxins and excessive fluids and can be completed through exchanging gas between the outside and inside that also progresses subcutaneous circulation of blood flow. Potential effects of cupping can arise from the draining of toxins and additional fluids, stimulating of connective tissues, relaxing of adhesions, carrying out blood flow to muscles and stationary skins and providing tangible neuromuscular stimulations by negative or contact pressure for promoting rehabilitation of stroke (Nimrouzi, Mahbodi, Jaladat, Sadeghfard, & Zarshenas, 2014).

Cupping Benefits for Neural degeneration and related Complications

Headache and migraine can be cured by wet cupping therapy and it can be clarified consistent with many recent medical models such as Taibah theory, in which cupping therapy persuades effect of plasma clearance with the help of capillary filtration to eliminate causative pathological substances that cause headache. These may comprise neuropeptides triggering headache, vasoactive and prostaglandin substances, inflammatory mediators, and excessive fluids with metabolic wastes (Turtay, Turgut, & Oguzturk, 2014). Along with that, cupping therapy reduces pressure of interstitial fluid and modifies predisposing dynamics for headache such as acute trigeminal neuralgia and hypertension. It is necessarily noticing that neuropeptides are chemical bodies that might be concerned in producing headache such as vasoactive intestinal polypeptide (VIP), calcitonin gene-related peptide (CGRP), and substance P that are significant mediators in the migraine pathogenesis and related major mental health complications. VIP concentrations along with CGRP were found to be enlarged in jugular venous plasma in the course of attacks of cluster migraine and headache (J.-E. Kim et al., 2017).

Cupping is also useful together with several kinds of traditional Chinese medicines, such as acupuncture for stress relief and better quality of sleeping. Several patients reported that cupping therapy leads to a relaxed time and come to end all stresses at night (Volpato et al., 2020). Cupping has plentiful benefits as it can support eliminate toxins from the body and speed up the flow of lymph, fresh blood, and air to the affected region all over the body. Although cups are

not placed to inflamed parts, It frequently works spectacles for patients with the colds, flu, coughs, muscle back and pain, anxiety, red itchy skin conditions, poor circulation, allergies, aches myriad, fevers, and other pains (Cao, Zhu, & Liu, 2010).

Cupping therapy also reported to be efficient for many facial disorders, particularly cervical spondylosis, herpes zoster and linked acne, pain, and facial paralysis. Wet cupping therapy along with conservative treatment is also reported to efficiently cue the genital and oral ulceration in people with Behcet's disease. In hypertension patients, cupping therapy for up to four weeks is operative for decreasing systolic blood pressure without any critical side effects. In addition, cupping therapy is successful in the cellulitis treatment. It has been found useful in several slight conditions for example cough, common cold, asthma, soft tissue injury, urticaria, and cervical spondylosis (Al-Rubaye, 2012).

Cupping Benefits for Multiple Diseases

The blade puncture word also appears to precise the skin puncture places and the pathway from where negative pressure of cupping therapy comes in the skin and spreads around the capillaries of skin to establish pressure gradients for filtering capillaries that leads to excretion of excessive fluids containing causative pathological substances and ultimately helpful to treat the severe migraine and headache (Y.-J. Kim et al., 2008). Cupping therapy has been effective for a long period for both chronic and acute low back pain as well as fibromyalgia. Number of studies has revealed significant decrease in pain intensity scores and enhancement in functional performance with cupping comparative to other modes of treatment including medications or usual cautions (AlBedah et al., 2015). These illnesses can be classified into localized illnesses (neck pain, knee pain, and lower back pain) and systematic illnesses (diabetes mellitus, rheumatoid arthritis, and hypertension). The sites of cupping therapy are selected consistent with the treated disease. The most common application site is the back, subsequently the chest, buttocks, legs, and abdomen. Other regions, such as the face, can also be cured with cupping (Ersoy et al., 2019). Cupping therapy has been applicable for health prevention, promotion, and therapeutic objectives. It has reported multiple benefits in the cure of lower back pain, shoulder and neck pain, migraine, headache, knee pain, brachialgia, facial paralysis, fibromyalgia, carpal tunnel syndrome, diabetes mellitus, hypertension, asthma, and rheumatoid arthritis (Bamfarahnak, Azizi, Noorafshan, & Mohagheghzadeh, 2014). Cupping therapy has been found to be decreasing the joint pain linked

with osteoarthritis, ankylosing spondylitis, and gout. Osteoarthritis is a common and acute disease of joint degeneration (Cramer et al., 2011). Many studies established that cupping shows positive effects on blood pressure and anthropometric parameters in combination with diet management in patients with hypertension, fibromyalgia and depression (Emerich et al., 2014).

Complications

Generally, cupping therapy is regarded as a harmless curative measure with slight complications and side-effects. However, the wellbeing of cupping therapy is under consideration till at the present time. Majority of the studies that were performed principally addressed its effectiveness but only limited studies reported its technical hitches (Lauche et al., 2016). In general, there are two types of complications reported in medical science including preventable and non-preventable. The frequently recognized side-effects are edema, ecchymosis, and erythema that are openly caused by cupping (Kordafshari et al., 2017). Cases of skin burning have also been described. They might occur due to the multiple causes such as unnecessary use of alcohol, elongated experience of cupping therapy, delicate skin particularly in old aged individuals and the fire induced cupping with inexperienced person. There are possibilities of separating the dermal base from the epidermal layer of the skin because of long time exposure of in excess of 20 mints to high pressure vacuum throughout cupping process. These complications were precisely reported mostly with pumping cupping therapy (Cao, Han, et al., 2010).

Conclusion

Cupping therapy is an admiring sort of rehabilitation which is extensively used across the globe. The current review is recommending that cupping therapy can be effective in treatment of common and long-lasting painful disorders in a small period. Up till now, most of obtainable studies have confirmed the effectiveness with principle outcomes and verified assessments for the treatment of physical, metabolic, neural, psychological, and immunosuppressive conditions. Publication bias can be a significant limiting factor, as most of the accessible studies were conducted in a lot of countries.

Limitations and Future Directions

There were certain limitations reported in different studies including issues with sample selection, inadequate sample size for statistical calculation, deficiency of previous studies, limited access to data, conflicts of cultural bias, time constraints, and other individual matters. Good quality and compound clinical trials with long follow-up should be utilized in future for a standardized protocol of research.

References

- Aboushanab, T. S., & AlSanad, S. (2018). Cupping therapy: an overview from a modern medicine perspective. *Journal of Acupuncture and Meridian Studies*, 11(3), 83–87.
- Akbarzade, M., Ghaemmaghami, M., Yazdanpanahi, Z., Zare, N., Mohagheghzadeh, A., & Azizi, A. (2016). Comparison of the effect of dry cupping therapy and acupressure at BL23 point on intensity of postpartum perineal pain based on the short form of McGill pain questionnaire. *Journal of Reproduction & Infertility*, 17(1), 39.
- Al-Bedah, Abdullah Mohammad, Shaban, T., Suhaibani, A., Gazzaffi, I., Khalil, M., & Qureshi, N. A. (2016). Safety of cupping therapy in studies conducted in twenty one century: a review of literature. *Journal of Advances in Medicine and Medical Research*, 1–12.
- Al-Bedah, Abdullah Mohammed, Aboushanab, T. S., Alqaed, M. S., Qureshi, N. A., Suhaibani, I., Ibrahim, G., & Khalil, M. (2016). Classification of cupping therapy: a tool for modernization and standardization. *Journal of Complementary and Alternative Medical Research*, 1–10.
- Al-Bukhari, M. I. (1996). Al-Bukhari S (1996). *Translated by Khan MM. Alexandria (VA): Al-Saadawe Publications*, 7, 609.
- Al-Qazwinî, I. M., & bin Yazid, M. (1995). Sunan Ibn Majah. *Lebanon: Dar Ihya Al-Kutub Al-'Arabiyyah, Nd.*
- Al-Rawi, S., & Fetters, M. D. (2012). Traditional Arabic & Islamic medicine: a conceptual model for clinicians and researchers. *Global Journal of Health Science*, 4(3), 164.
- Al-Rubaye, K. Q. A. (2012). The clinical and histological skin changes after the cupping therapy (Al-Hijamah). *J Turk Acad Dermatol*, 6(1), 1261a1.

- Al-Shidhani, A., & Al-Mahrezi, A. (2020). The Role of Cupping Therapy in Pain Management: A Literature Review. *Pain Management*.
- Al Bedah, A. M. N., Khalil, M. K. M., Posadzki, P., Sohaibani, I., Aboushanab, T. S., AlQaed, M., & Ali, G. I. M. (2016). Evaluation of wet cupping therapy: systematic review of randomized clinical trials. *The Journal of Alternative and Complementary Medicine*, 22(10), 768–777.
- Albani, M. N. (1987). Sahih Sunan Ibn Majah. *Maktabat Al-Tarbiyyah Al- 'Arabi Li-Duwal Al-Khalij, Ed, 1*, 1317.
- AlBedah, A., Khalil, M., Elolemy, A., Elsubai, I., & Khalil, A. (2011). Hijama (cupping): a review of the evidence. *Focus on Alternative and Complementary Therapies*, 16(1), 12–16.
- AlBedah, A., Khalil, M., Elolemy, A., Hussein, A. A., AlQaed, M., Al Mudaiheem, A., ... Essa, A. (2015). The use of wet cupping for persistent nonspecific low back pain: randomized controlled clinical trial. *The Journal of Alternative and Complementary Medicine*, 21(8), 504–508.
- Antush, M. (2019). *Effect of Cupping Therapy on Respiratory Gas Exchange in Trained Endurance Runners*.
- Arslan, M., Gökgöz, N., & Dane, Ş. (2016). The effect of traditional wet cupping on shoulder pain and neck pain: A pilot study. *Complementary Therapies in Clinical Practice*, 23, 30–33.
- Azizkhani, M., Ghorat, F., Soroushzhadeh, S. M. A., Karimi, M., & Yekaninejad, S. (2018). The effect of cupping therapy on non-specific neck pain: A systematic review and meta-analysis. *Iranian Red Crescent Medical Journal*, 20(7).
- Bamfarahnak, H., Azizi, A., Noorafshan, A., & Mohagheghzadeh, A. (2014). A tale of Persian cupping therapy: 1001 potential applications and avenues for research. *Complementary Medicine Research*, 21(1), 42–47.
- Bilal, M., Khan, R. A., & Afroz, S. (2011). Partial evaluation of technique used in cupping therapy. *Journal of Basic & Applied Sciences*, 7(1).

- Brinkhaus, B., & Dobos, G. J. (2019). The crisis of medicine and the benefits of complex pain therapy procedures such as cupping: more research needed. *Complementary Medicine Research*, 26(3), 145–147.
- Cao, H., Han, M., Li, X., Dong, S., Shang, Y., Wang, Q., ... Liu, J. (2010). Clinical research evidence of cupping therapy in China: a systematic literature review. *BMC Complementary and Alternative Medicine*, 10(1), 1–10.
- Cao, H., Han, M., Zhu, X., & Liu, J. (2015). An overview of systematic reviews of clinical evidence for cupping therapy. *Journal of Traditional Chinese Medical Sciences*, 2(1), 3–10.
- Cao, H., Li, X., & Liu, J. (2012). An updated review of the efficacy of cupping therapy. *PloS One*, 7(2), e31793.
- Cao, H., Li, X., Yan, X., Wang, N. S., Bensoussan, A., & Liu, J. (2014). Cupping therapy for acute and chronic pain management: a systematic review of randomized clinical trials. *Journal of Traditional Chinese Medical Sciences*, 1(1), 49–61.
- Cao, H., Zhu, C., & Liu, J. (2010). Wet cupping therapy for treatment of herpes zoster: a systematic review of randomized controlled trials. *Alternative Therapies in Health and Medicine*, 16(6), 48.
- Chi, L.-M., Lin, L.-M., Chen, C.-L., Wang, S.-F., Lai, H.-L., & Peng, T.-C. (2016). The effectiveness of cupping therapy on relieving chronic neck and shoulder pain: a randomized controlled trial. *Evidence-Based Complementary and Alternative Medicine*, 2016.
- Chirali, I. Z. (2014). *Traditional Chinese Medicine Cupping Therapy-E-Book*. Elsevier Health Sciences.
- Cramer, H., Lauche, R., Hohmann, C., Choi, K.-E., Rampp, T., Musial, F., ... Dobos, G. (2011). Randomized controlled trial of pulsating cupping (pneumatic pulsation therapy) for chronic neck pain. *Complementary Medicine Research*, 18(6), 327–334.
- Cui, S., & Cui, J. (2012). Progress of researches on the mechanism of cupping therapy. *Zhen Ci Yan Jiu= Acupuncture Research*, 37(6), 506–510.

- Dawud, A. (2002). Sahih sunan Abi Dawud. *Al-Kuwayt: Mu'assasat Garas Li-n-Nasr Wa-t-Tawzi*, 7.
- El-Domyati, M., Saleh, F., Barakat, M., & Mohamed, N. (2013). Evaluation of cupping therapy in some dermatoses. *Egyptian Dermatology Online Journal*, 9(1), 2.
- El-Wakil, A. (2011). Observations of the popularity and religious significance of blood-cupping (al-ḥijāma) as an Islamic medicine. *Contemporary Islamic Studies*, 2011(1), 2.
- El Sayed, S. M., Al-quliti, A.-S., Mahmoud, H. S., Baghdadi, H., Maria, R. A., Nabo, M. M. H., & Hefny, A. (2014). Therapeutic benefits of Al-hijamah: in light of modern medicine and prophetic medicine. *American Journal of Medical and Biological Research*, 2(2), 46–71.
- El Sayed, S. M., Mahmoud, H. S., & Nabo, M. M. H. (2013). Methods of wet cupping therapy (Al-Hijamah): in light of modern medicine and prophetic medicine. *Alternative & Integrative Medicine*, 1–16.
- Emerich, M., Braeunig, M., Clement, H. W., Lüdtke, R., & Huber, R. (2014). Mode of action of cupping—local metabolism and pain thresholds in neck pain patients and healthy subjects. *Complementary Therapies in Medicine*, 22(1), 148–158.
- Ersoy, S., Altinoz, E., Benli, A. R., Erdemli, M. E., Aksungur, Z., Bag, H. G., & Engin, V. S. (2019). Investigation of wet cupping therapy's effect on oxidative stress based on biochemical parameters. *European Journal of Integrative Medicine*, 30, 100946.
- Ghods, R., Sayfour, N., & Ayati, M. H. (2016). Anatomical features of the interscapular area where wet cupping therapy is done and its possible relation to acupuncture meridians. *Journal of Acupuncture and Meridian Studies*, 9(6), 290–296.
- Guo, Y., Chen, B., Wang, D., Li, M., Lim, C. H., Guo, Y., & Chen, Z. (2017). Cupping regulates local immunomodulation to activate neural-endocrine-immune worknet. *Complementary Therapies in Clinical Practice*, 28, 1–3.
- Hanan, S., & Eman, S. (2013). Cupping therapy (al-hijama): It's impact on persistent non-specific lower back pain and client disability. *Life Sci J*, 10(4), 631–642.

- Hou, X., He, X., Zhang, X., Liao, F., Hung, Y., & Jan, Y. (2020). Using laser Doppler flowmetry with wavelet analysis to study skin blood flow regulations after cupping therapy. *Skin Research and Technology*.
- Khalil, M. K. M., Al-Eidi, S., Al-Qaed, M., & AlSanad, S. (2018). Cupping therapy in Saudi Arabia: from control to integration. *Integrative Medicine Research*, 7(3), 214–218.
- Kim, J.-E., Cho, J.-E., Do, K.-S., Lim, S.-Y., Kim, H.-J., & Yim, J.-E. (2017). Effect of cupping therapy on range of motion, pain threshold, and muscle activity of the hamstring muscle compared to passive stretching. *Korean Society of Physical Medicine*, 12(3), 23–32.
- Kim, J.-I., Kim, T.-H., Lee, M. S., Kang, J. W., Kim, K. H., Choi, J.-Y., ... Jung, S.-Y. (2011). Evaluation of wet-cupping therapy for persistent non-specific low back pain: a randomised, waiting-list controlled, open-label, parallel-group pilot trial. *Trials*, 12(1), 146.
- Kim, Seoyoun, Lee, S.-H., Kim, M.-R., Kim, E.-J., Hwang, D.-S., Lee, J., ... Lee, Y. J. (2018). Is cupping therapy effective in patients with neck pain? A systematic review and meta-analysis. *BMJ Open*, 8(11).
- Kim, Sungchul, Kim, E., Jung, G., Lee, S., & Kim, J. G. (2019). The hemodynamic changes during cupping therapy monitored by using an optical sensor embedded cup. *Journal of Biophotonics*, 12(5), e201800286.
- Kim, T., Kang, J. W., Kim, K. H., Lee, M. H., Kim, J. E., Kim, J., ... Kim, A. (2012). Cupping for treating neck pain in video display terminal (VDT) users: a randomized controlled pilot trial. *Journal of Occupational Health*, 54(6), 416–426.
- Kim, Y.-J., Kim, D.-H., Yeom, S.-C., Lim, B.-C., Choi, Y.-S., Lee, G.-H., ... Lee, G.-M. (2008). Experimental study on the pressure characteristics in the cupping therapy. *Journal of Acupuncture Research*, 25(1), 121–130.
- Kim, Y.-S., Wang, J., Mann, D., Gaylord, S., Lee, H.-J., & Lee, M. (2005). Korean oriental medicine in stroke care. *Complementary Health Practice Review*, 10(2), 105–117.
- Kordafshari, G., Ardakani, M. R. S., Keshavarz, M., Esfahani, M. M., Nazem, I., Moghimi, M., ... Kenari, H. M. (2017). Cupping therapy can improve the quality of life of healthy people

- in Tehran. *Journal of Traditional Chinese Medicine*, 37(4), 558–562.
- Lauche, R., Cramer, H., Haller, H., Musial, F., Langhorst, J., Dobos, G. J., & Berger, B. (2012). My back has shrunk: the influence of traditional cupping on body image in patients with chronic non-specific neck pain. *Complementary Medicine Research*, 19(2), 68–74.
- Lauche, R., Spitzer, J., Schwahn, B., Ostermann, T., Bernardy, K., Cramer, H., ... Langhorst, J. (2016). Efficacy of cupping therapy in patients with the fibromyalgia syndrome—a randomised placebo controlled trial. *Scientific Reports*, 6, 37316.
- Lee, M. S., Choi, T.-Y., Shin, B.-C., Han, C., & Ernst, E. (2010). Cupping for stroke rehabilitation: a systematic review. *Journal of the Neurological Sciences*, 294(1–2), 70–73.
- Lee, M. S., Kim, J.-I., & Ernst, E. (2011). Is cupping an effective treatment? An overview of systematic reviews. *Journal of Acupuncture and Meridian Studies*, 4(1), 1–4.
- Li, T., Li, Y., Lin, Y., & Li, K. (2017). Significant and sustaining elevation of blood oxygen induced by Chinese cupping therapy as assessed by near-infrared spectroscopy. *Biomedical Optics Express*, 8(1), 223–229.
- Lim, K. G., Chuah, S. W., Too, M. E. S., Wong, Z. G., Murugesan, A., & Azman, S. A. B. S. (2015). A cross sectional study of chronic pain relief after bekam (traditional malay “cupping”) therapy. *INTERNATIONAL ADVISORS*, 32.
- Liu, Z., Chen, C., Li, X., Zhao, C., Li, Z., Liang, W., & Lin, Y. (2018). Is cupping blister harmful?—A proteomic analysis of blister fluid induced by cupping therapy and scald. *Complementary Therapies in Medicine*, 36, 25–29.
- Lowe, D. T. (2017). Cupping therapy: An analysis of the effects of suction on skin and the possible influence on human health. *Complementary Therapies in Clinical Practice*, 29, 162–168.
- Mehta, P., & Dhapte, V. (2015). Cupping therapy: A prudent remedy for a plethora of medical ailments. *Journal of Traditional and Complementary Medicine*, 5(3), 127–134.
- Mohammad, S. H., Fasihuzzaman, A. J., & MA, S. (2014). Unani Concept and Management of

- Waja-Ul-Mafasil (Arthritis) with Special Reference to Hijamah (Cupping Therapy). *Indo Am J Pharm Res*, 4, 1098–1103.
- Mohammad, S. H., Jabeen, A., & Siddiqui, M. A. (2019). Al Hijamah (Cupping Therapy): A Brief Introduction with Modern Perspective. *Research & Reviews A Journal of Pharmacognosy*, 1(1), 8–12.
- Mohammadi, S., Roostayi, M. M., Naimi, S. S., & Baghban, A. A. (2019). The effects of cupping therapy as a new approach in the physiotherapeutic management of carpal tunnel syndrome. *Physiotherapy Research International*, 24(3), e1770.
- Moura, C. de C., Chaves, É. de C. L., Cardoso, A. C. L. R., Nogueira, D. A., Corrêa, H. P., & Chianca, T. C. M. (2018). Cupping therapy and chronic back pain: systematic review and meta-analysis. *Revista Latino-Americana de Enfermagem*, 26.
- Nimrouzi, M., Mahbodi, A., Jaladat, A.-M., Sadeghfard, A., & Zarshenas, M. M. (2014). Hijamat in traditional Persian medicine: risks and benefits. *Journal of Evidence-Based Complementary & Alternative Medicine*, 19(2), 128–136.
- Qureshi, N. A., Ali, G. I., Abushanab, T. S., El-Olemy, A. T., Alqaed, M. S., El-Subai, I. S., & Al-Bedah, A. M. N. (2017). History of cupping (Hijama): a narrative review of literature. *Journal of Integrative Medicine*, 15(3), 172–181.
- Refaat, B., El-Shemi, A. G., Ebid, A. A., Ashshi, A., & BaSalamah, M. A. (2014). Islamic wet cupping and risk factors of cardiovascular diseases: effects on blood pressure, metabolic profile and serum electrolytes in healthy young adult men. *Altern Integ Med*, 3(1), 151.
- Subadi, I., Nugraha, B., Laswati, H., & Josomuljono, H. (2017). Pain relief with wet cupping therapy in rats is mediated by heat shock protein 70 and ss-endorphin. *Iranian Journal of Medical Sciences*, 42(4), 384.
- Turtay, M. G., Turgut, K., & Oguzturk, H. (2014). Unexpected lumbar abscess due to scarification wet cupping: A case report. *Complementary Therapies in Medicine*, 22(4), 645–647.
- Ullah, K., Younis, A., & Wali, M. (2007). An investigation into the effect of cupping therapy as

- a treatment for anterior knee pain and its potential role in health promotion. *Internet J Altern Med*, 4(1), 1–9.
- Umar, N. K., Tursunbadalov, S., Surgun, S., Welcome, M. O., & Dane, S. (2018). The effects of wet cupping therapy on the blood levels of some heavy metals: a pilot study. *Journal of Acupuncture and Meridian Studies*, 11(6), 375–379.
- Vender, R., & Vender, R. (2015). Paradoxical, cupping-induced localized psoriasis: a Koebner phenomenon. *Journal of Cutaneous Medicine and Surgery*, 19(3), 320–322.
- Volpato, M. P., Breda, I. C. A., de Carvalho, R. C., de Castro Moura, C., Ferreira, L. L., Silva, M. L., & Silva, J. R. T. (2020). Single cupping therapy session improves pain, sleep, and disability in patients with nonspecific chronic low back pain. *Journal of Acupuncture and Meridian Studies*, 13(2), 48–52.
- Wang, Y.-L., An, C.-M., Song, S., Lei, F.-L., & Wang, Y. (2018). Cupping therapy for knee osteoarthritis: a synthesis of evidence. *Complementary Medicine Research*, 25(4), 249–255.
- Wang, Y.-T., Qi, Y., Tang, F.-Y., Li, F.-M., Li, Q.-H., Xu, C.-P., ... Sun, H.-T. (2017). The effect of cupping therapy for low back pain: A meta-analysis based on existing randomized controlled trials. *Journal of Back and Musculoskeletal Rehabilitation*, 30(6), 1187–1195.
- Xin, Z., Xue-Ting, L., & De-Ying, K. (2015). GRADE in systematic reviews of acupuncture for stroke rehabilitation: recommendations based on high-quality evidence. *Scientific Reports*, 5, 16582.
- Xu, J., Zhang, Y. P., Xie, W. J., & ZHAO, Z. (2013). Effect of Fu's cupping therapy on transdermal absorption of tetrahydropalmatine patches. *Chin J Exp Tradit Med Formulae*, 19, 43–46.
- Zaki, F., & Hussin, S. (2019). Malay Massage and Leech Cupping Treatment for Stroke Patients. *INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS AND SOCIAL SCIENCES*, 9(5).
- Zeng, K., & Wang, J. (2016). Clinical application and research progress of cupping therapy. *Journal of Acupuncture and Tuina Science*, 14(4), 300–304.

Zhang, Y.-J., Cao, H.-J., Li, X.-L., Yang, X.-Y., Lai, B.-Y., Yang, G.-Y., & Liu, J.-P. (2017).
Cupping therapy versus acupuncture for pain-related conditions: a systematic review of
randomized controlled trials and trial sequential analysis. *Chinese Medicine*, 12(1), 21.