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# Hijama (Wet cupping) an ancient traditional healing: A review

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#### Abstract

Hijama is an Arabic word that means to suck, it is an ancient traditional healing method that is practiced since antiquity and in today's scenario, and there is growing evidence of its potential benefits in the management of lifestyle and pain-related disorders. Its use has been documented in early Egyptian and Chinese medical practices. Diverse human civilizations have contributed too much to the development of Hijama (wet cupping). Hijama is one of the important regimens (procedures) of Ilaj Bit Tadbeer (Regimental therapy) to prevent and treat the diseases by diverting (Imala-e-mawad) and evacuating (Istefragh-e-mawad) the disease-causing substances (morbid matter) from the site of application of cups on the body. Ilaj Bit Tadbeer is one of the important modes of treatment of Unani medicine. Unani Medicine is based on the four humoral theory of Akhlate Arba (four-body humor) viz Balgham, Safra, Dam & Sauda (Phlegm, bile, blood & black bile). The imbalance in the quality and quantity of these humor leads an individual prone to diseases whereas restoration of this balance maintains the health of a person. Restoration of the equilibrium and balance of natural body humor is done through evacuation and diversion of morbid matter from the site of the disease. Hijama (wet Cupping) is an Unani mode of treatment which is carried out by application of cup-shaped glass vessels on the skin, from which air has been exhausted by heat or special suction apparatus, to divert and evacuate the morbid humor, from the diseased part of the body, to return a displaced organ to its natural position or to encourage the blood flow to the site of Hijama. In Islamic Prophetic medicine an emphasis was given to go for Hijama for the prevention and management of lifestyle and pain-related disorders. In this paper, a detailed review of Hijama will be discussed.

Keywords: Hijama, wet cupping, Hijama bil shart, Akhlat e arba, Imala e mawad

#### Introduction

Hijama (Wet Cupping) is an ancient, holistic method for the treatment of a variety of diseases. It is one of the oldest traditional procedures in holistic folk therapy around the world <sup>[1, 2]</sup>. Although the beginning of cupping therapy is shrouded in controversies, the practice has assisted in curing medical and surgical ailments and was an important component of the effective therapeutic methods of ancient times. Traditional cupping therapy methodologies have been passed from generation to generation, by its practitioners <sup>[3-5]</sup>.

Hijama is performed by applying cups to the selected skin points and creating a sub-atmospheric pressure, either by heat or by suction <sup>[6]</sup>. Recently interest in cupping has Reemerged and subsequently, several studies have begun to investigate the mechanism underpinning cupping therapy.

#### **Historical Background**

Several Scholars in Unani Medicine have defined cupping (Hijama Bil Shart) in their own words.

"Razi" [7] stated that cupping was a process in which toxic blood from superficial small vessels located in the muscles is released.

"Sheikh" [8] described the process of making an incision, known as Pachhna (prick or puncture) in Hijama.

"Jurjani" [9] clarified that Cupping was a process by which superficial bleeding was initiated from the smaller vessels or their branches, situated within the muscle to decrease congestion. Furthermore, "Jurjani" [9] believed that this process did not produce weakness in the vital organs.

"Baghdadi" [10] defined cupping as a process that helped in blood removal from the small vessels of the skin and muscles, reducing congestion in the area where cups were applied.

"Kabiruddin" [11] added that cupping at the lower extremities, especially at the ankle joints,

Corresponding Author: Saif Ali Siddiqui PG Scholar, AMU, Aligarh, Uttar Pradesh, India was similar to venesection as he believed that normal blood and noxious matter move downwards.

According to "ibne Sina" [12] cupping was the process of making an incision used to release toxic matter accumulated close to the skin.

#### Sources of Hijama

The earliest recorded references to Cupping Therapy use, are found in the Ebers papyrus, written by ancient Egyptians in Hieroglyphics, about 1550 BC <sup>[13]</sup>. The Ebers Papyrus, an ancient medical textbook discussed the application of cups for fever, Pain, Vertigo, Dysmenorrhoea, lack of appetite, and constipation.

Ge Hong [14] (281-341 A.D) a well-known Taoist alchemist and herbalist from China are also known to have written on cupping therapy. The earliest discovered record of cupping in China was in the Wu Shi Er Bing Fang, an ancient book written on silk, This book was discovered in an ancient tomb of the Han Dynasty in 1973 [15] early written records in China (28 A.D) strongly support the use of Cupping Therapy and acupuncture. It stated that more than half of the illness will be cured by acupuncture and cupping [11, 16-18] Cupping has also been known as "Jiao Fa" which means the horn technique [19, 20]. In this method, hollowed horns were used in cupping therapy Practice. Its use in Egypt dates to 3500 B.C and its practice is documented in hieroglyphic writing [21].

The practice of cupping therapy in Arabic Medicine began around 3500 B.C and Assyrians were the first recorded Arab practitioners. In the Arabic medical content, cupping therapy is a technique that returns from the ill state to its original state <sup>[8]</sup>. Cupping therapy was used in the treatment of Hypertension, polycythemia, Headache, Migraine, and drug intoxication among Arabian Communities <sup>[22, 23, 24, 25]</sup>.

In ancient Greece, Hippocrates advocated Cupping therapy for many ailments <sup>[26]</sup>, Hippocrates (The father of Modern Medicine) described both Dry and Wet Cupping in his treatise "Guide to Clinical Treatment" which has been widely employed for the cure of a variety of medical conditions <sup>[16]</sup> "Galen", a prominent Greek physician, Surgeon, and Philosopher in the Roman empire was a known practitioner of cupping therapy <sup>[11, 15, 16]</sup>.

Herodotus, a Greek Historian, wrote the Egyptian physician used both Wet cupping and Dry cupping for a variety of diseases including inflammatory disease in 400 B.C [26, 15, 20, 27, 28]

Prophetic Medicine is a term given to the knowledge gained from teachings, advice, and sayings (Hadiths) of Prophet Mohammad PBUH (570 C.E) related to hadith and the treatment of diseases [29].

Prophetic medicine has both preventive and curative values and addresses the problems of body and soul. The Prophet Mohammad PBUH recommended many forms of therapies, including Hijama and Honey, He also recommended cautery as the last choice of treatment [30,31].

Many Arabic companions of the Prophet have reported his hadiths concerning cupping therapy. In Sahih Bukhari, the messenger said, "Indeed the best of remedies you have is cupping (Hijama) [17, 18, 32, 33]. The author of the book entitled Al-Qanoon, Ibne-Sina [34] (980-1037 B.C) said "Cupping is neither preferred at the beginning nor the end of the month. It is preferred in the middle of the month when the toxic substances accumulate. Furthermore, "Ibne Sina," said that

cupping therapy can treat more than 30 different diseases. A different hadith states that the Prophet used to have cupping done on the 17th, 19th, and 21st day of the lunar month. European and American physicians were widely using cupping therapy during the 19th century (1800-1900). Wet Cupping was the most used cupping therapy modality.

#### Historical and modern cupping instruments

The earliest cupping instruments were hollowed animal horns with a small hole at the top through which the therapist would suck out the air [35]. Subsequently, various natural objects began to be used for cupping practice.

For Example Natives along the west coast of North America, in the vicinity of veneer island, used shells, In Europe, Asia, Africa, and North America, animal horns were fashioned into an effective cupping instrument by slicing off the apex of a buffalo horn to make a hole [15, 37]. The base of the horn was then placed on a specific skin area and the air was sucked out by mouth. After creating a vacuum, the opening of the horn was closed off with a piece of wax. In the Barylon-Assyrian empire, Cupping therapy was also conducted with buffalo horns. This information was found inscribed on clay tablets, which may have dated back to nearly 700 B.C  $^{[16]}$  Cupping and bleeding instruments, Such as various scalpels and cupping vessels, were found at the temple of Asclepius at Athens[38] The use of horns slowly gave way to bamboo glass and plastic cups [21, 35, 36, 37]. Since the 17th century, different types of cups have been used in cupping therapy around the world

Medical equipment manufacturers produce cupping sets from the middle part of the 20th century. Instruments and tools have been further developed to include new glass cups, magnetic cups, manual pumps, and electrical suction devices. Now, new cupping devices continue to be developed. Overall, this trend reflects the continuing innovative progress in Cupping procedures, Their types, Instruments, and classification [5, 13, 40].

#### **Mechanism of Action**

The mechanism of action of cupping therapy was not clear until now [41], the main proposed mechanism was the effects of sub-atmospheric pressure suction, promoting peripheral blood circulation, and improving immunity [42].

Many theories have been suggested to explain numerous effects of cupping therapy and its mechanism of action [43], several types of research proposed biological and mechanical processes associated with the cupping session. For instance, reduction of pain may result from changes in biomechanical "Pain-Gate-Theory (PGT)" [44], Diffuse Noxious Inhibitory Controls (DNICs) [45], and "Reflex Zone Theory (ZRT)" [46]. Muscle relaxation, specific changes in local tissue structures, and increase in blood circulation could be explained by the "Nitric Oxide Theory" [47]. The immune-modulatory effects of cupping therapy could be attributed to the "Activation of Immune System Theory (AIST) [48]. Releasing of toxins and removal of wastes and heavy metals might be attributed to the "Blood Detoxification Theory (BDT)" [49, 50]. These theories may have been interesting harmoniously to produce the beneficial effects of cupping in treating patients with various diseases and promoting well-being in healthy people.

#### Reported effects of Hijama

There is evidence that cupping can induce comfort and relaxation on a systemic level and the resulting increase in endogenous opioid production in the brain leads to improved pain control [51].

Other researches proposed that the main action of cupping therapy is to enhance the circulation of blood and to remove toxins, and waste from the body [52], which could be achieved through improving micro-circulation, promoting capillary endothelial cells repair, accelerating granulation and angiogenesis in the regional tissues, thus helping normalize the patient's functional state and progressive muscle relaxation [53, 54]. Cupping also removes noxious materials from the skin, micro-circulation, and interstitial compartment [55], which benefit the patient. Cupping may be an effective method of reducing low-density lipoprotein (LDL) in men and consequently may have a preventive effect against atherosclerosis [56] and Cardio-vascular diseases (CVDs). Cupping is known to significantly decrease total cholesterol, Low-Density Lipoprotein (LDL), High-Density Lipoprotein (HDL) Ratio [57]. Cupping therapy can significantly lower the number of lymphocytes in the local blood related to the affected area with an increase in the number of neutrophils, which is one of the anti-viral mechanisms that reduce the pain scores [58].

Loss of blood along with vasodilation tends to increase the parasympathetic activity and relaxes the body muscles which benefit the patient and could also be associated with the after-effects of cupping. Furthermore, the loss of blood is thought to increase the quality of the remaining blood that improves pain symptoms <sup>[59]</sup>. It has also been found that increases red blood cells (RBCs) <sup>[60]</sup>. It has been claimed that cupping therapy tends to drain excess fluids and toxins, loosen adhesions and revitalize connective tissue, increase blood flow to the skin and muscles, stimulate the peripheral nervous system, reduce pain, control high blood pressure, and modulates the immune system <sup>[52,61]</sup>.

Some researchers believe that the build-up of toxins is the main reason for illness development. In the cupped region, blood vessels are dilated by the action of certain vasodilators, Such as Adenosine, Nor-adrenaline, and histamine. Consequently, there is an increase in the circulation of blood to the ill area, this allows the immediate elimination of trapped toxins in the tissues, and hence the patient feels better <sup>[62]</sup>. Cupping has been found to improve subcutaneous blood <sup>[52, 63]</sup> flow and to stimulate the Autonomic Nervous System. Cupping is reported to restore sympatho-vagal balance and might be cardio-protective by stimulating the peripheral sympathetic and parasympathetic nervous systems <sup>[64]</sup>.

It seems to play a role in the activation of the complement system as well as modulation of the cellular part of the immune system <sup>[65]</sup>. There is also a significant reduction in blood sugar in diabetic patients after cupping <sup>[66]</sup>.

Overall, Cupping is reported to effect changes in the biomechanical properties of the skin <sup>[67]</sup>, increase immediate pain threshold in patients with neck pain and a healthy subject as well <sup>[68]</sup>, and reduce significantly peripheral and local 'P' substance <sup>[69]</sup> and reduce the inflammation <sup>[70]</sup>.

#### Classification

Early classification of cupping therapy categorized it broadly into Dry and Wet cupping [71]. Another classification of cupping therapy was developed in 2013,

Categorizing cupping into '5' Categories. The classification was updated in 2016 [72]. The updated classification categorized cupping therapy into size categories. The first category i.e "Technical types", includes Dry, Wet, Massage, and flash cupping. The second category is "power of suction", which includes light, medium, and strong cupping. The third category is "Method of Suction", which includes fire, manual vacuum, and electrical vacuum cupping. The fourth category is the "material inside cups", which includes herbal, water, ozone, moxa, needle, and magnetic cupping. The fifth category is "Area treated", which includes facial, abdominal, Female, Male, and orthopedic cupping. The sixth category is "Other cupping types", which includes Sports, Cosmetic, and Aquatic Cupping [72].

#### **Duration**

(A) The cups are left in place anywhere from 5-12 minutes depending on the nature of the individual's condition.

(B) A general course of treatment involves 4 - 6 sessions in intervals starting from 3 - 10 days gaps [73].

#### **Indications**

- Pain
- Stiffness
- Muscular Spasm
- Congestion due to trauma
- Skin disorder
- Digestive complaints
- Lung disorders
- Diseases that come under cupping therapy are Lumber Disc herniation, Cervical Spondylitis, Cough, Bronchial Congestion, Asthma, Anxiety, Paralysis, Depression, Back Pain, Varicose Vein, High blood pressure, Eczema, Acne, Fertility, Arthritis, Fibromyalgia, Diabetes, Anemia, Shingles(Herpes Zoster), Insomnia, and Gout [74].

#### Contraindications

- For patients with bleeding disorders such as hemophilia, or who are being treated with anticoagulants, Cupping may not be the best treatment option.
- Cupping should not be performed on skin sites with active inflammation, Burns, Infection, and Open wounds.
- Childhood
- Elderly
- Pregnant
- Menstruation [75]

#### **Adverse Events**

Cupping therapy adverse events can be divided into local and systemic adverse events [70]

### **Local Adverse Events**

- Bruises (Hematoma)
- Marks on the skin
- Minor to severe burn
- Panniculitis
- Abscess formation
- Irritation (After treatment)
- Pain at the incision site (After treatment)
- Infection at the incision site (After treatment)

#### **Systemic Adverse Events**

- Anemia
- Dizziness
- Vasovagal attack
- Insomnia
- Headache
- Nausea

# Infection control

#### Measures

Following infection control measures is an essential part of the clinical practice for preventing cupping therapy-related infection. Hand washing is a critical component of any infection control program. Wearing personal protective equipment such as Gloves, Mask, Protective Eyewear, and Gowns is important. Disinfection of patient's bed or using disposable plastic bed covers is very important after treating each patient. Following medical waste segregation and disposal guidelines is essential. Using disposable cups, vacuum pumps, and surgical blades is recommended. Try to use a secondary disposable container for lubricants/Skin disinfectants used on a single patient before disposal. Use on another patient is prohibited [77, 78, 79].

#### Conclusion

Cupping therapy traditional is an ancient complementary medicine practice. There is growing evidence of its potential benefits in the treatment of some diseases, Especially Pain-related conditions. Following infection control measure is a very important component of the cupping therapy practice. Though the exact origin of cupping therapy is a matter of controversy and its mechanism of action is not well understood. This article suggested historical aspects, Sources, Instruments, Mechanism of action, Its effects, Classification, Duration, Indications, Contra-indications, Adverse effects, Infection Control Measures related to Cupping therapy in brief.

#### References

- Love AH, Ahmad T, Anwar M, Hasib S, Sofi G, Imam H. Leech therapy- a holistic approach of treatment in Unani (Greeko- Arab) medicine. Anc Sci Life. 2011;31(1):31-35.
- 2. AL-Shamma YM, Abdil Razzaq A. Al-hijamah cupping therapy. Kufa med J. 2009;12(1):49-56.
- 3. Akhtar J, Siddiqui MK. Utility of cupping therapy Hijamat in Unani medicine. Indian J Tradit know. 2008;7(4):572-574.
- 4. Ullah K, Younis A, Wali M. 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. 2007;4(1):1-9.
- EL Sayed SM, Mahmoud HS, Nabo MNH. Methods of wet cupping therapy (Al-Hijamah): in light of modern medicine and prophetic medicine. Altern Integr Med. 2013;(2):1000111.
- 6. Mehta Piyush, Dhapte Vinidha. Cupping therapy: A prudent remedy for a plethora of medical ailments. J Tradit Complement Med 2015;5(3):127e34.
- Razi AMBZ. Kitab Al Mansoori. Translated by the Central Council of Research in Unani Medicine. New Delhi: Ministry of Health and Family Welfare, Govt. of India. 2002: 284, 391-394. Urdu.
- 8. Shaikho MA. Cupping: a prophetical medicine appears

- in its new scientific perspective. North Charleston: create space Independent Publishing Platform, 2011, 12-15.
- 9. Jurjani I. Zakheera Khwarzam Shahi. Translated by Khan HH. Lucknow: Munshi Naval Kishore, 1996, 225-226, 637-651. Urdu.
- Bhaghdadi IH. Kitab-al-mukhtarat-fit-tib. Translated by the Central Council of Research in Unani Medicine. New Delhi. Ministry of Health and Family Welfare, Govt. of India, 2005, 277-278. Urdu.
- Kabiruddin M. Kulliyat-e-Nafisi. New Delhi Idaarakitab-ul-shifa. 1954. 514-516. Urdu.
- 12. Sina I. Alqanoon-fit-tib. Translated by the Department of Islamic Studies Jamia Hamdard. New Delhi: Hamdard University Publication, 1995, 364-367. Urdu.
- 13. Nickel JC. Management of urinary tract infections: historical perspective and current strategies: Part-I<sup>st</sup> before antibiotics. J Urol. 2005;173(1):21-26.
- 14. Baird S. Cupping Hijamah Times. (2010-11). [2016-10-09]. https://www.scribd.com/document/93802410/09/cuppin g-Hijama-Times-vol2.
- 15. Chirali IZ. The cupping procedure. In;traditional Chinese medicine Therapy. London: Churchill Livingstone, 1999, 3.
- 16. Iqbal MN, Ansari AA. Al-Hijamah (cupping): the natural holistic healing art- a review. Int. J Adv. Ayurveda, yoga, Unani, Siddha, Homeopathy. 2013;2(1):23-30.
- 17. Wikipedia. Cupping therapy. (2010-06-28) [2016-10-16]. http://en.Wikipedia. Org/wiki/fire is equals to cupping.
- 18. Al-Munajjid SMS. Al-hijamah (cupping): What Islam says about it, its benefits and the times when it should be done. [2016-10-03]10 <a href="http://www.islamqa.com/en/ref/3268">http://www.islamqa.com/en/ref/3268</a>.
- 19. Sultana A, Rahman K, Rahman S. Concept of conception and infertility in realm of history. J Int. Soc. Hist. Islamic Med. 2019-2010;8-9(15-18):38-41.
- 20. Ansari AA, Nasreen J, Ansari AH. Hijamah (cupping) the ancient way of healing. Hamdard Med. 2007;50(2):100-104.
- 21. History of Hijamah. In: cupping therapy (2016-08-19) [2016-11-03]. https://puretherapyclinic\_Wordpress.com/tag/cupping-therapy/page/2/.
- 22. Hasan I, Ahmad T, Ahmad S. Management of hypertension by wet cupping therapy (Al-Hijamah): a case study. Int. J Pharmacol Toxicol. 2014;4(1):24-27.
- 23. Ahmadi A, Schwebel DC, Rezaci M. The efficacy of wet-cupping in the treatment of tension and migraine headache. Am J Chin Med. 2008;36(1):37-44.
- 24. Omar SAH. Al- Hijamah (cupping thearpy): Sunnah and therapy. Jeddah: Dar Ommah for Publication. 2009. Arabic.
- 25. Mc Mullin MF, Bareford D, Campbell P, Green AR, Harrison C, Hunt B, *et al.* General Hematology task force of the British Committee for Standards in Hematology. Guidelines for the diagnosis, investigations and management of polycythemia/erythrocytosis. Br J Haematol. 2005;130(2):174-195.
- 26. Turk JL, Allen E. Bleeding and cupping. Ann R Coll Surg Engl. 1983;65(2):128-131.
- 27. David K, Obsom L. Hijamah or cupping. [2016-10-23].

- http://www.greek<u>medicine.net/therapies/Hijamah-or-</u>Cupping.html.
- 28. Bentley B. A brief history of cupping. (2008-02-11) [2016-10-23]. http://www.cuppingtherapy.org/downloads/bb-article.pdf.
- Al Jauziyah IIQ. Prophetic medicine. Healing with the medicine of the Prophet (PBUH). Translated by Jalal Abual Rub. New York: Darussalam Publishers and Distributors, 1999.
- 30. Loukas M, Saad Y, Tubbs RS, Shoja MM. The heart and cardiovascular system in the Quran and Hadith. Int. J Cardiol. 2010:140(1):19-23.
- 31. Al Bukhari MI. The English translation of Sahih Al Bukhari with the Arabic Text. Translated by Khan MM. Baltimore: Al- saadawi publications, 1996.
- 32. Al-Almany M. Sahih Bukhari. Translated by Khan MM. Hoston: Darussalam publisher, 2009, 1273-1276.
- 33. Moe. T, Al Obaidly FA. Al Khoder R, Schmid D. Folk medicine and integrative healing in west Asia: Analysis of historical and modern practice and perceptions. Avicenna. 2014:1:1-13.
- 34. Sina I. Al Qanoon. Translated by Hussain GH. Delhi: Idara Kitabul Shifa, 2007, 234-408. Urdu.
- 35. Cupping Therapy. A cup of history. 2015. [2016-10-09]. http://www.cuppingtherapy.org/.
- 36. Gao LW. Practical Cupping Therapy. Beijing: Academy Press, 2004, 4-7. Chinese.
- 37. Zhao XM. Supplements to compendium of material medica. Beijing: People's Medical Publishing House, 1963. Chinese.
- 38. Christopoulou- Aletra H, papavamidou N. Cupping: an alternative surgical procedure used by Hippocratic physicians. J. Altern Complement Med. 2008;14 (8): 899-902.
- 39. Al-Hijamah. therapy (cupping therapy). The effects and benefits of the ancient art of cupping therapy. [2016-11-21]. http://www.alhijamah.co/cupping-therapy-ancient-art.html.
- 40. Al-Bedah AM, Aboushanab TS, Alqaed MA, Qureshi NA, Suhaibani A, Gazzaffi I, *et al.* Classification of cupping therapy: a tool for modernization and standardization. J complement Altern Med Res. 2016;1(1):1-10.
- 41. CaOH Lix, LiU J. An updated review of the efficacy of cupping therapy. PLOS one. 2012 Feb 28;7(2):e31793.
- 42. Zeng K, Wang JW. Clinical applications and research progress of cupping. J Acupunct Tuina Sci 2016 Jul 1;14(4):300e4. Wei.L.I.U.
- 43. Albedah Evaluation of wet cupping therapy: systematic review of randomized clinical traials, the journal of alternative and complementary medicine. 2016;22:768-777.10.
- 44. Moayedi M, Davis KD. Theories of pain: from specificity to gate control. J Neurophysiol. 2012;109:5-12.1.
- 45. Le Bass D, Villanueva L, Willer J.C. Diffuse noxious inhibitory controls (DNIC) in animals and in man. Acupunct Med. 1991;9:47-56.
- 46. Ann Lett RM. Reflex Zone Therapy for Health Professionals. First ed, 2000, 2-20. Amazon .com.
- 47. Moncada S, Palmer RM, Higgs EA. Nitric oxide: physiology, pathophysiology, and pharmacology. Pharmacology. 1991;43:109-142.

- 48. Khalil Ahmad Mohammad, Al Qaoud Khalid Mahmoud, Shaqqour Hiba Mohammad. Investigation of selected immunocytogenetic effects of wet cupping in healthy men. Spatula DD. 2013;3:51-57.2.
- Daniali F, Vaeze Mahdavi MR, Ghazanfari T, Naseri M. comparing of venous blood with Hijamah blood according to biochemical and hematological factors and immunological responses. J Physiol Pharmacol. 2008;13:78-87.1.
- 50. Gok Sumeyye, Liyagil Kazanci Fatma nur Haciev, Erdawar Husamettin, Gokgoz Nurcan. It is possible to remove heavy metals from the body by wet cupping therapy (Al- Hijamah)? Indain J. Tradit. Knowl. 2016;15:700-704.
- 51. Rozenfeld Evgeni, Kalicharan Leovid. New is the well-forgetten old: the use of dry cupping in the musculoskeletal medicine. J Bodyw Mov Ther. 2016;20(1):173-178.
- 52. Yoo Simon S, Tausk Francisco. Cupping: east meets west. Int J Dermatol. 2004;43:664-665. 9.
- 53. Lauche R, Materdey S, Cramer H, Haller H, Strange R. 8. Effectiveness of Home-Based Cupping Massage Compared to Progressive Muscle Relaxation in patients with Chronic Neck Pain- a Randomized Controlled Trial, 2013, 65378.6.
- 54. Cui S, Cui J. Progress of researchers on the mechanism of cupping therapy. Zhen ci yan jiu. Acupunct. Res. 2012;37:506-510.6.
- 55. Goodwin J. Alternative Therapy: Cupping for asthma. Chest. 2011;139:475.
- Niasari Masjid, Kosari Farid, Ahmadi Ali. The effect of wet cupping on serum lipid concentartions of clinically healthy young men: a randomized controlled trial. J Alternative Compl Med. 2007;13:79-82.1.
- 57. Mustafa Layla A, Dawood Rukzan M, Al-Saboawy Osama M. Effects of wet cupping on serum lipids profile levels of hyperlipidemic patients and correlation with some metal ions. Raf. J.Sci. 2012;23: 128-136.3.
- 58. Hao P., Yang Y., Guan L. Effects of bloodletting pricking, cupping and surrounding acupuncture on inflammation related indices in peripheral and local blood in patients with acute herpes zoster. Zhongguo zhen jiu. 2016;36:37-40.1.
- 59. Vaski Lampi T, Hanninen O. cupping as an indigenous treatment of pain syndromes in Finnish culture and social context. Soc. Sci. med. 1982;16:1893-1901, 21.
- 60. Aeeni Z, Afsari A, Rezvan H. an investigation of the effects of wet cupping on hematology parameters in mice. Pejouhesh. 2013;37:145-150.
- 61. Chirali Alkay Zihni. Traditional Chinese Medicine Cupping Therapy, third ed. ChurchillLivingstone. Elsevier; Philadelphia, 2014, 47-64.
- 62. Lauche Romy. Evidence based Complementary and Alternative Medicine. The effects of traditional cupping on pain and mechanical thresholds in patients with chronic nonspecific neck pain: A randomized controlled pilot study, 2012.
- 63. Lund I, Lundeberg T. Are minimal, superficial or sham acupuncture procedures acceptable as inert placebo controls? Acupunct Med. 2006;24:13-15. 1.
- 64. Arslan M, Yesilcam N, aydin D, Ramzan Y, Sensol D. Wet cupping therapy restores sympathovagal imbalance in cardiac rhythm. J Alternative Compl Med. 2014;20:318-321.

- 65. Khalil Ahamd Mohammad, Al-Qaoud Khaled Mahmoud, Shaqqour Hiba Mohammad. Investigation of selected immunocytogenetic effects of wet cupping in healthy men. Spatula DD. 2013;3:51-57.2.
- 66. Akbari A, Zadeh SMAS, Ramezani M, Zadeh SMS. The effects of Hijamah (cupping) on oxidative stress indexes and various blood factors in patients suffering from diabetes type 2. Switzerland Res Park J. 2013;102:788-793.
- 67. Norouzali T, Roostayi MM, Dehghan MF, Abbasi M, Akbarzadeh BA, Khaleghi MR. The effects of cupping therapy on biomechanical properties in Wistar rat skin. J Res Reghab Sci. 2014;9:841-851.
- 68. Emerich M, Braeunig M, Clement HW, Ludtked R, Hubera R. Mode of action of cupping- local metabolism and pain thresholds in neck pain patients and healthy subjects. Compl Ther Med. 2014;22:148-158.
- 69. Tian H, Tian YJ, Wang B, Yang L, Wang YY, Yang JS. Impacts of bleeding and cupping therapy on serum P substance in patients of postherpatic neuralgia. Z Hongguo Zhen Jiu. 2013;33:678-681.
- Linn ML, Lin CW, Hsieh YH. Bioelectronics and Bioinformatics (ISBB), IEEE International Symposium on IEEE: Evaluating the effectiveness of low level laser and cupping on low back pain by checking the plasma cortisol level, 2014, 1-4.
- 71. Taut M, Kaiser S, Ortiz M, Roll S, Binting S, Willich SN, *et al.* Pulsatile dry cupping in patients with osteoarthritis of the knee: a randomized controlled exploratory trial. BMC Complement Altern Med. 2012 oct 12:12:184.
- 72. Al-Bedah AM. Aboushanab TS. Alqaed MS. Qureshi NA. Suhaibani I, Ibrahim G, *et al.* Classification of cupping therapy: a tool for modernization and standardization. J Complement altern Med Res. 2016;1(1):1e10.
- 73. Dnyaneshwar KJ. Cupping Therapy: An Ancient Alternative medicine. J Phy Fit Treatment and sports. 2018;3(1):555601.
- 74. Piyush Methata, Vividha Dhapane. cupping therapy: A prudent remedy for a plethora of medical ailments. Journal of traditional and complemenatry medicine. 2015;5(3):127-134.
- 75. http://www.medicinenet.com/cupping/article.html.
- 76. Al Bedah Abdullah, Shaban Tamer, Suhaibani Amen, Gazzaffi Ibrahim, Khalil Mohammad, *et al.* Safety of cupping therapy in studies conducted in twenty one century: A review of literature. British Journal of Medicine and Medical Research. 2016;15(8):1-12.
- 77. Kim TH, Kang JW. A good policy for guaranteed safe practice of complementary and alteranative medicine, usage of disposable cupping cups. Evid Based Complement Alternat Med, 2015, 970327.
- 78. Nielsen A, Kligler B, Koll BS. Safety protocols for Gua sha (press-stroking) and Baguan (cupping). Complement Thei Med. 2012 oct 31;20(5):340e4.
- CCAOM clean Needle Technique Manual. 7<sup>th</sup>ed. Maryland: Council of Colleges of Acupuncture and Oriental Medicine, 2016, 36e7.