



Review Article

Cupping Therapy: An Overview from a Modern Medicine Perspective

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Abstract

Cupping therapy is an ancient traditional and complementary medicine practice. Recently, there is growing evidence of its potential benefits in the treatment of pain-related diseases. This article gives an overview of cupping therapy practice. Furthermore, this article suggests a new classification of cupping therapy sets, a new classification of cupping therapy adverse events, and an updated classification of cupping therapy types.

1. Introduction and brief history

Cupping therapy is an ancient technique of healing [1]. Cupping is performed by applying cups to selected skin points and creating a subatmospheric pressure, either by heat or by suction [2].

Eber's papyrus (1550 BC) from Ancient Egypt is one of the oldest medical texts to mention cupping therapy. Cupping therapy is part of numerous ancient healing systems, such as Chinese, Unani, traditional Korean, Tibetan, and Oriental medicine [3]. The ancient Greek physician Hippocrates compiled extensive descriptions of the cupping application.

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He described two different types of cups: one with a narrow opening and a long handle and the other with a wider opening. The first type was used to treat deep accumulation of fluids, while the second type was used to treat the spread of pain [4]. Cupping therapy was a popular historical treatment in Arabic and Islamic countries. It was recommended by Arabic and Islamic physicians such as Ibn Sina (AD 980–1037), Al-Zahrawi (AD 936–1036), and Abu Bakr Al-Razi (AD 854–925). Al-Zahrawi described cupping sites and illustrated cupping tools with diagrams [5]. Cupping therapy practice spread to Italy and, subsequently, the rest of Europe between the 14th and 17th centuries, during the Renaissance. Cupping was a very popular treatment of gout and arthritis in Italy during this period [6].

2. Mechanisms of action and reported effects of cupping therapy

The mechanism of action of cupping therapy was not clear until now [7]. The main proposed mechanisms of action were effects of subatmospheric pressure suction, promoting peripheral blood circulation, and improving immunity. [8].

Reported effects of cupping therapy include promotion of the skin's blood flow [9], changing of the skin's biomechanical properties [10], increasing pain thresholds, improving local anaerobic metabolism [11], reducing inflammation [12], and modulation of the cellular immune system. [13].

Many theories explain the mechanism of action of cupping. Guo et al. suggested the immunomodulation theory, suggesting that cupping and acupuncture had the same mechanisms of action. Immunomodulation theory suggests that changing the microenvironment by skin stimulation could transform into biological signals and activate the neuroendocrine immune system [14]. Shaban and Rarvalia proposed the genetic theory, which suggested that skin's mechanical stress (due to subatmospheric pressure) and local anaerobic metabolism (partial deprivation of O₂), during cupping suction could produce physiological and mechanical signals which could activate or inhibit gene expression. In wet cupping therapy, superficial scarifications could activate the wound-healing mechanism and gene-expression program [15]. Modulation of genetic expression was reported in various acupuncture studies [16,17].

In summary, there is no clear identified mechanism of action of cupping therapy. Clinical studies in the field of cupping therapy mechanisms of action are highly recommended.

3. Classification of cupping therapy types

Early classification of cupping therapy categorized it broadly into dry and wet cupping [18]. Another classification of cupping therapy was developed in 2013, categorizing cupping into five categories. The classification was updated in 2016 [19]. The updated classification categorized cupping therapy into six categories. The first category is "technical types", which 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 "materials 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 [19].

This article suggested a new update of cupping therapy classification by merging category five and six into one main category: "condition and area treated". The name of the fourth category was changed from "materials inside cups" to "added therapy types", and aquatic cupping was added to this category. The aim of this update is to give a precise classification of cupping therapy types [Fig. 1].

4. Classification of cupping therapy sets

A typical cupping therapy set should contain six or more different-sized cups and a method of suction. Cupping therapy sets can be classified into three main categories: the first category is "cupping sets related to the types of cups", which includes plastic, glass, rubber, bamboo, ceramic, metal, and silicone cupping sets. The second category is "cupping sets related to the methods of suction", which includes manual, automatic, and self-suction cupping sets. The third category is "cupping sets related to uses", which includes facial, female, male, and massage cupping sets [Fig. 2] [20].

5. Indications

Cupping therapy has been used for health promotion, preventive, and therapeutic purposes. Cupping therapy has reported benefits in the treatment of lower back pain [21,22,23], neck and shoulder pain [24,25,26,27], headache and migraine [28,29], knee pain [30], facial paralysis [31,32], brachialgia [33], carpal tunnel syndrome [34], hypertension [35,36], diabetes mellitus [37], rheumatoid arthritis [38], and asthma [39,40]. These diseases can be categorized into localized diseases (neck pain, lower back pain, and knee pain) and systematic diseases (diabetes mellitus, hypertension, and rheumatoid arthritis).

Cupping therapy sites are selected according to the treated ailment. The back is the most common site of application, followed by the chest, abdomen, buttocks, and legs. Other areas, such as the face, may also be treated by cupping [41].

6. Contraindications

In general, cupping is contraindicated directly on veins, arteries, nerves, skin inflammation, any skin lesion, body orifices, eyes, lymph nodes, or varicose veins. Cupping is also contraindicated on open wounds, bone fractures, and sites of deep vein thrombosis.

Cupping therapy contraindications can be classified into absolute and relative contraindications. Until we have sufficient information regarding the safety of cupping therapy, it is absolutely contraindicated in cancer patients and those

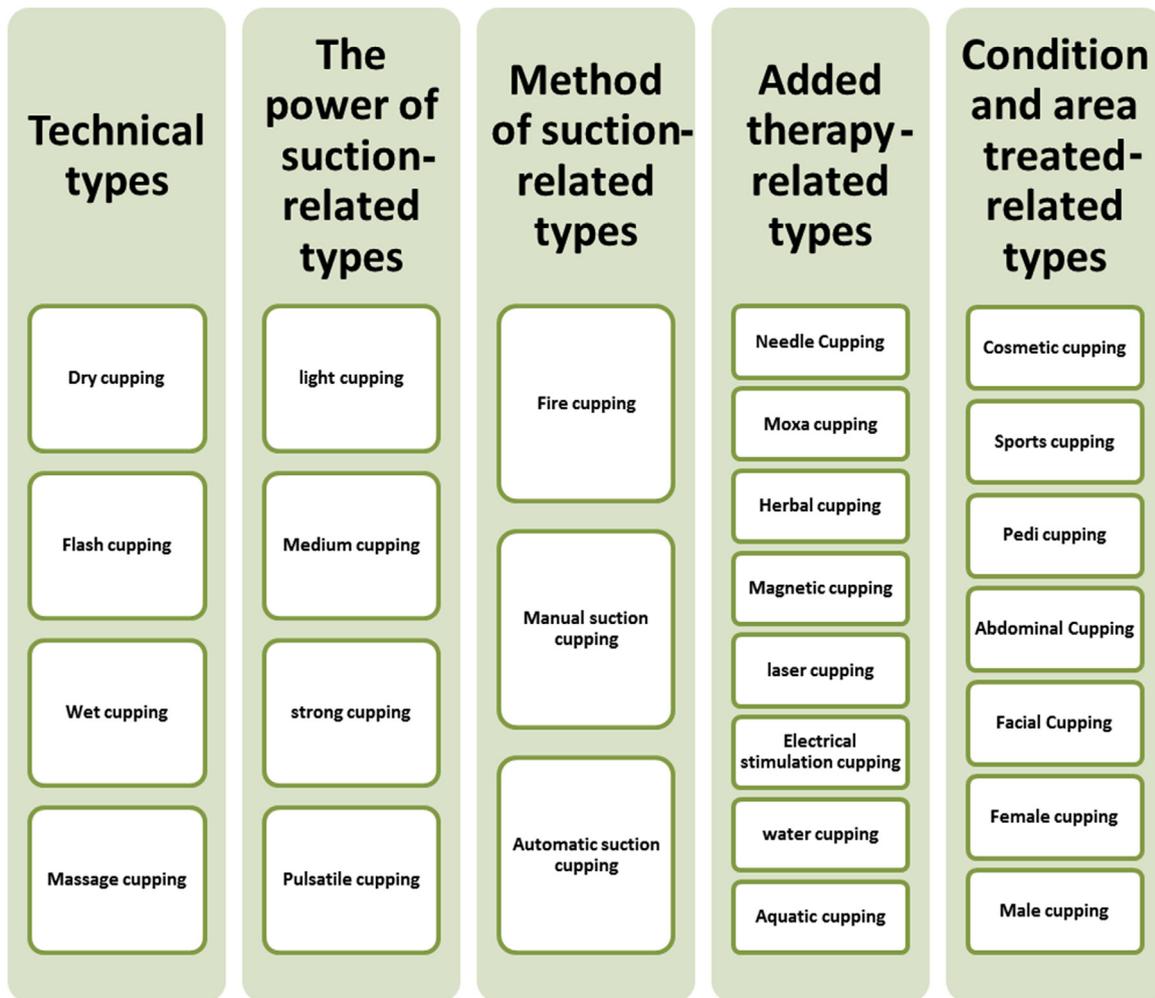


Figure 1 Classification of cupping therapy types.

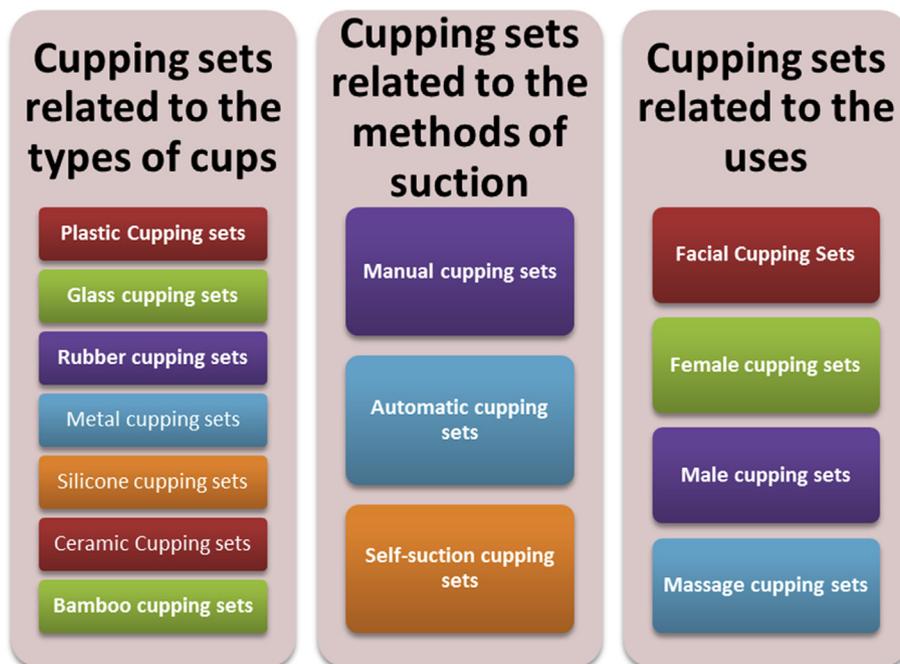


Figure 2 Classification of cupping sets.

Table 1 Classification of cupping therapy adverse events.

Preventable cupping adverse event	Nonpreventable cupping adverse event
Scar formation	Koebner phenomenon
Burn	Headaches
Bullae formation	Dizziness
Abscess and skin infection	Tiredness
Pruritus	Vasovagal attack
Anemia	Nausea
Panniculitis	Insomnia

with any organ failure (renal failure, hepatic failure, and heart failure). It is also absolutely contraindicated in patients using a pacemaker and those suffering from hemophilia or similar conditions. Relative cupping therapy contraindications include acute infection, using anticoagulants, severe chronic disease (such as heart diseases), pregnancy, puerperium, menstruation, anemia, recent wet cupping session, recent blood donation, medical emergencies, and patient's refusal of the procedure [42,43,44].

7. Adverse events

Cupping therapy is relatively safe. Cupping therapy adverse events (AEs) are infrequently reported but are not rare. Most AEs are mild to moderate in severity [45].

Most AEs related to cupping therapy are scar formations, followed by burns. Other observed AEs are headache, pruritus, dizziness, tiredness, muscle tension, anemia, nausea, bullae formation, small hematoma or pain at cupping site, abscess formation, skin infection, insomnia, hyperpigmentation, and vasovagal attack [46]. This article suggested a new classification of cupping therapy AEs into those that are preventable and nonpreventable [Table 1].

8. 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, masks, protective eyewear, and gowns is important. Disinfection of the skin before cupping by US Food and Drug Administration (FDA)-approved or hospital-grade solutions is very important. Disinfection of patients' beds 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 [47,48,49].

9. Summary

In summary, cupping therapy is an ancient traditional and complementary medicine practice. There is growing

evidence of its potential benefits in the treatment of some diseases, especially pain-related conditions. Following infection control measures is a very important component of the cupping therapy practice. This article suggested a new classification of cupping therapy sets, a new classification of cupping therapy AEs, and an updated classification of cupping therapy types.

Disclosure statement

None declared.

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