



Review Article

Cupping Therapy: An Overview from a Modern Medicine Perspective

Tamer S. Aboushanab ^{1,*}, Saud AlSanad ^{1,2}

¹ National Center for Complementary and Alternative Medicine, Ministry of Health, Riyadh, Saudi Arabia

² College of Medicine, Al Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia

Available online 7 February 2018

Received: Nov 9, 2017

Revised: Nov 25, 2017

Accepted: Feb 1, 2018

KEYWORDS

Cupping therapy;
Hijama;
Types;
Classification;
Adverse events;
Indications

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.

* Corresponding author. National Center for Complementary and Alternative Medicine, Ministry of Health, 11662, P.O 88300, Riyadh, Saudi Arabia.

E-mail: tamer.shaban@gmail.com (T.S. Aboushanab), s.alsanad@nccam.gov.sa (S. AlSanad).

pISSN 2005-2901 eISSN 2093-8152

<https://doi.org/10.1016/j.jams.2018.02.001>

© 2018 Medical Association of Pharmacopuncture Institute, Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

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

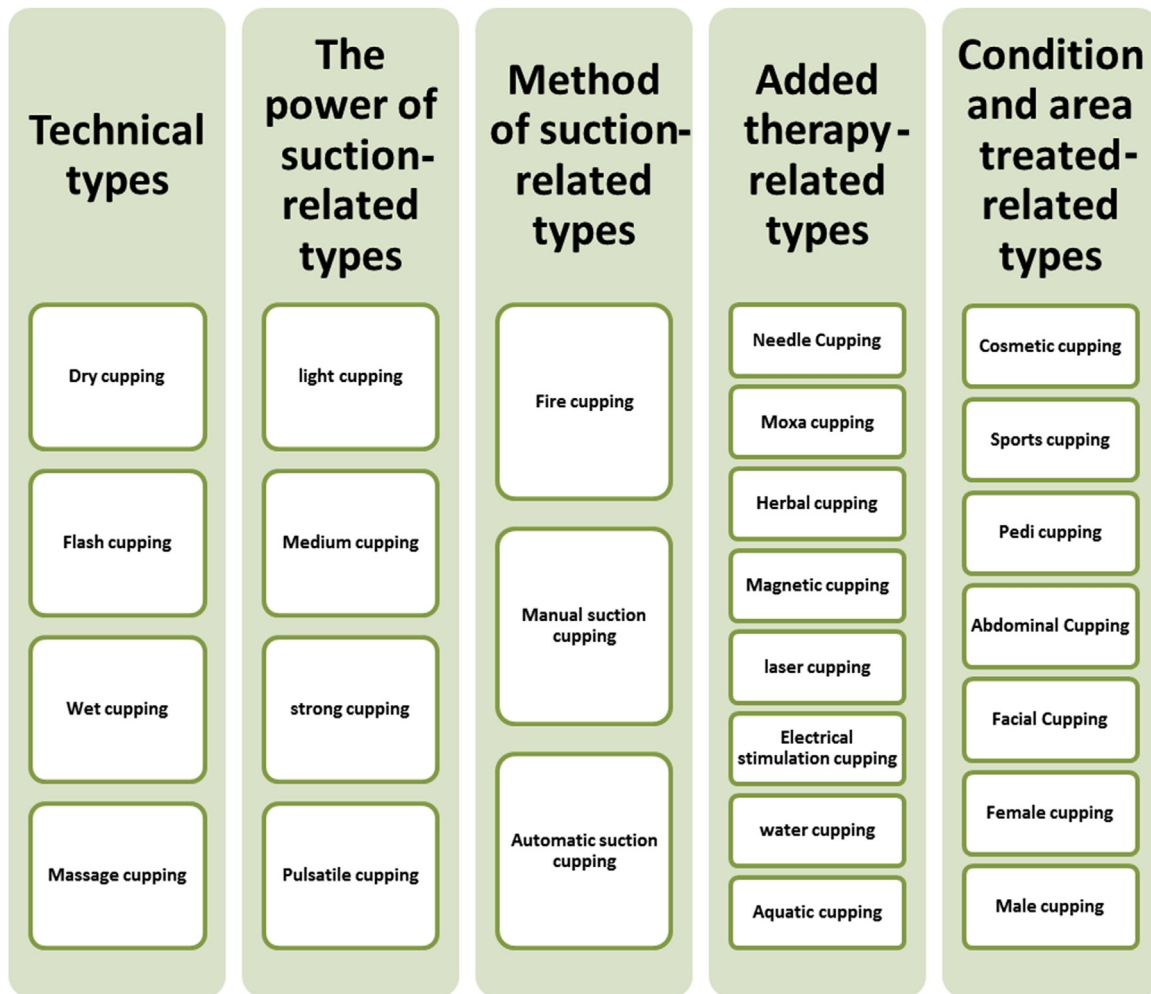


Figure 1 Classification of cupping therapy types.

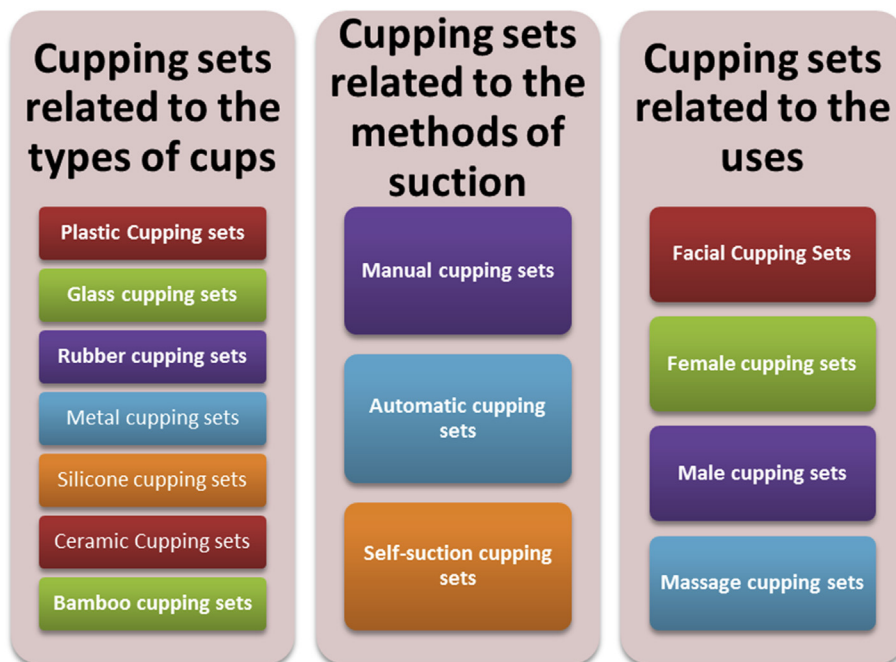


Figure 2 Classification of cupping sets.

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.

References

- [1] Arslan M, Yeşilçam N, Aydın D, Dane Ş. Wet cupping therapy restores sympathovagal imbalances in cardiac rhythm. *J Altern Complement Med* 2014 Apr 1;20(4):318–21.
- [2] Mehta Piyush, Dhapte Vividha. Cupping therapy: a prudent remedy for a plethora of medical ailments. *J Tradit Complement Med* 2015;5.3:127–34.
- [3] Qureshi NA, Ali GI, Aboushanab TS, El-Olemy AT, Alqaed MS, El-Subai IS, et al. History of cupping [Hijama]: a narrative review of literature. *J Integr Med* 2017 May 31;15(3):172–81.
- [4] Christopoulou-Aletra H, Papavramidou N. Cupping: an alternative surgical procedure used by hippocratic physicians. *J Altern Complement Med* 2008 Oct 1;14(8):899–902.
- [5] Iari A, Nayab M, Tausif M, Lari J, Alam A. Therapeutic potentials of hijama-bila-shart (dry cupping therapy): A review. *Int J Unani Integr Med* 2017;1(1):21–4.
- [6] Turk JL, Allen E. Bleeding and cupping. *Ann R Coll Surg Engl* 1983 Mar;65(2):128.
- [7] Cao H, Li X, Liu J. An updated review of the efficacy of cupping therapy. *PLoS One* 2012 Feb 28;7(2):e31793.
- [8] Zeng K, Wang JW. Clinical application and research progress of cupping. *J Acupunct Tuina Sci* 2016 Jul 1;14(4):300–4. Wei, L. I. U.,.
- [9] Wei LI, Piao SA, Meng XW, Wei LH. Effects of cupping on blood flow under skin of back in healthy human. *World J Acupunct Moxibustion* 2013 Sep 30;23(3):50–2.
- [10] Saha FJ, Schumann S, Cramer H, Hohmann C, Choi KE, Rolke R, et al. The effects of cupping massage in patients with chronic neck pain—a randomised controlled trial. *Complement Med Res* 2017;24(1):26–32.
- [11] Emerich M, Braeunig M, Clement HW, Lütke R, Huber R. Mode of action of cupping—local metabolism and pain thresholds in neck pain patients and healthy subjects. *Complement Ther Med* 2014 Feb 1;22(1):148–58.
- [12] Lin ML, Lin CW, Hsieh YH, Wu HC, Shih YS, Su CT, et al. Evaluating the effectiveness of low level laser and cupping on low back pain by checking the plasma cortisol level. *IEEE International Symposium on Bioelectronics and Bioinformatics (IEEE ISBB)*. 2014 Apr 11. p. 1–4. Chung Li, Taiwan.
- [13] Khalil AM, Al-Qaoud KM, Shaqqour HM. Investigation of selected immunocytogenetic effects of wet cupping in healthy men. *Spatula DD* 2013 Jul;3(2):51–7.
- [14] Guo Y, Chen B, Wang DQ, Li MY, Lim CH, Guo Y, et al. Cupping regulates local immunomodulation to activate neural-endocrine-immune worknet. *Complement Ther Clin Pract* 2017 Aug 31;28:1–3.
- [15] Shaban T, Ravalía M. Genetic theory—a suggested cupping therapy mechanism of action. *F1000Res* 2017 Sep 14;6. On-line: <https://f1000research.com/slides/6-1684>.
- [16] Wu HG, Zhou LB, Pan YY, Huang C, Chen HP, Shi Z, et al. Study of the mechanisms of acupuncture and moxibustion treatment for ulcerative colitis rats in view of the gene

- expression of cytokines. *World J Gastroenterol* 1999 Dec 15; 5(6):515.
- [17] Manneras L, Jonsdottir IH, Holmang A, Lonn M, Stener-Victorin E. Low-frequency electro-acupuncture and physical exercise improve metabolic disturbances and modulate gene expression in adipose tissue in rats with dihydrotestosterone-induced polycystic ovary syndrome. *Endocrinology* 2008 Apr 3; 149(7):3559–68.
- [18] Teut 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.
- [19] 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):1–10.
- [20] Shaban T. *Cupping therapy Encyclopedia*. 1st Ed. California: On-Demand Publishing; 2013. P55.
- [21] Kim JI, Kim TH, Lee MS, Kang JW, Kim KH, Choi JY, et al. Evaluation of wet-cupping therapy for persistent non-specific low back pain: a randomised, waiting-list controlled, open-label, parallel-group pilot trial. *Trials* 2011 Jun 10;12:146.
- [22] AlBedah A, Khalil M, Elolemy A, Hussein AA, AlQaed M, Al Mudaiheem A, et al. The Use of wet cupping for persistent nonspecific low back pain: randomized controlled clinical trial. *J Altern Complement Med* 2015 Aug 1;21(8):504–8.
- [23] Farhadi K, Schwebel DC, Saeb M, Choubsaz M, Mohammadi R, Ahmadi A. The effectiveness of wet-cupping for nonspecific low back pain in Iran: a randomized controlled trial. *Complement Ther Med* 2009 Jan 31;17(1):9–15.
- [24] Lauche R, Cramer H, Hohmann C, Choi KE, Rampp T, Saha FJ, et al. The effect of traditional cupping on pain and mechanical thresholds in patients with chronic nonspecific neck pain: a randomised controlled pilot study. *Evid Based Complement Alternat Med* 2012;2012:429718.
- [25] Cramer H, Lauche R, Hohmann C, Choi E, Rampp T, Musial F, et al. Randomized controlled trial of pulsating cupping [pneumatic pulsation therapy] for chronic neck pain. *Forsch Komplementmed* 2011;18(6):327–34.
- [26] Lauche R, Cramer H, Choi KE, Rampp T, Saha FJ, Dobos GJ, et al. The influence of a series of five dry cupping treatments on pain and mechanical thresholds in patients with chronic non-specific neck pain—a randomised controlled pilot study. *BMC Complement Altern Med* 2011;11(1):63.
- [27] Lauche R, Materdey S, Cramer H, Haller H, Stange R, Dobos G, et al. Effectiveness of home-based cupping massage compared to progressive muscle relaxation in patients with chronic neck pain—a randomized controlled trial. *PLoS One* 2013;8(6), e65378.
- [28] Ahmed AF, Hssanien MMR. Effect of cupping therapy in treating chronic headache and chronic back pain at Al heijamah clinic HMC. *World Fam Med J* 2010 Apr;99(289):1–7.
- [29] Ahmadi A, Schwebel DC, Rezaei M. The efficacy of wet-cupping in the treatment of tension and migraine headache. *Am J Chin Med* 2008;36(1):37–44.
- [30] Khan AA, Jahangir U, Urooj S. Management of knee osteoarthritis with cupping therapy [2013] *J Adv Pharm Technol Res* 2013 Oct;4(4):217–23.
- [31] Cao H, Liu J. Cupping therapy for facial paralysis: a systematic review of randomized controlled trials. *BMC Complement Altern Med* 2012;12(Suppl 1):P316.
- [32] Zhang CY, Wang YX. Comparison of therapeutic effects between plum-blossom needle tapping plus cupping and laser irradiation in the treatment of acute facial palsy patients with concomitant peri-auricular pain. *Zhen Ci Yan Jiu* 2011 Dec; 36(6):433–6.
- [33] Lüdtke R, Albrecht U, Stange R, Uehleke B. Brachialgia parasthetica nocturna can be relieved by “wet cupping”—results of a randomised pilot study. *Complement Ther Med* 2006 Dec; 14(4):247–53.
- [34] Michalsen A, Bock S, Lüdtke R, Rampp T, Baecker M, Bachmann J, et al. Effects of traditional cupping therapy in patients with carpal tunnel syndrome: a randomized controlled trial. *J Pain* 2009 Jun;10(6):601–8.
- [35] Lee MS, Choi TY, Shin BC, Kim JI, Nam SS. Cupping for hypertension: a systematic review. *Clin Exp Hypertens* 2010; 32(7):423–5.
- [36] Aleyeidi NA, Aseri KS, Matbouli SM, Sulaiamani AA, Kobeisy SA. Effects of wet-cupping on blood pressure in hypertensive patients: a randomized controlled trial. *J Integr Med* 2015 Nov; 13(6):391–9.
- [37] Vakiliina SR, Bayat D, Asghari M. Hijama [wet cupping or dry cupping] for diabetes treatment. *Iran J Med Sci* 2016 May;41(3 Suppl):S37.
- [38] Ahmed SM, Madbouly NH, Maklad SS, Abu-Shady EA. Immunomodulatory effects of blood letting cupping therapy in patients with rheumatoid arthritis. *Egypt J Immunol* 2005;12(2):39–51.
- [39] Al-Jawad MEMA, Saeed AM, Badawy AE, Elfattah NMM. Evaluation of wet cupping therapy [Hijama] as an adjuvant therapy in the management of bronchial asthma. *Indian J Physiother Occup Ther* 2011;5:122–6.
- [40] Aboushanab TS, Daif MKA, Mahmoud RA. The role of cupping therapy as a complementary therapy on the pulmonary functions and quality of life of asthmatic children. Master thesis. Egypt: Childhood Postgraduate Institute. Ain Shams University; 2010.
- [41] Yoo SS, Tausk F. Cupping: east meets west. *Int J Dermatol* 2004 Sep 1;43(9):664–5.
- [42] Ahmedi M, Siddiqui MR. The value of wet cupping as a therapy in modern medicine — an Islamic perspective. *Webmedcentral* 2014;5(12). WMC004785.
- [43] Cupping therapy regulation rules for practitioners and facilities. Saudi Arabia: National Center for Complementary and Alternative medicine- Ministry of Health; 2015. p. 14.
- [44] Traditional and complementary medicine practice guidelines: on bekam. Malaysia. Kuala Lumpur: Traditional and Complementary medicine division. Ministry of Health; 2011. p. 4.
- [45] Kim TH, Kim KH, Choi JY, Lee MS. Adverse events related to cupping therapy in studies conducted in Korea: a systematic review. *Eur J Integr Med* 2013;6(4):434–40.
- [46] Al-Bedah AM, Shaban T, Suhaibani A, Gazzaffi I, Khalil M, Qureshi NA. Safety of cupping therapy in studies conducted in twenty one century: a review of literature. *Br J Med Med Res* 2016;15(8):1–12.
- [47] Kim TH, Kang JW. A good policy for guaranteed safe practice of complementary and alternative medicine, usage of disposable cupping cups. *Evid Based Complement Alternat Med* 2015;2015:970327.
- [48] Nielsen A, Kligler B, Koll BS. Safety protocols for Gua sha [press-stroking] and Baguan [cupping]. *Complement Ther Med* 2012 Oct 31;20(5):340–4.
- [49] CCAOM Clean Needle Technique Manual. 7th Ed. Maryland: Council of Colleges of Acupuncture and Oriental Medicine; 2016. p. 36–7.