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# An overview of systematic reviews of clinical evidence for cupping therapy



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#### **KEYWORDS**

Cupping therapy; Overview; Systematic review; Randomized clinical trials **Abstract** *Background:* As a traditional treatment method, cupping therapy is widely used in Asian countries. This overview of systematic reviews (SRs) investigated the effectiveness and safety of cupping therapy through an evidence-based approach.

*Methods:* SRs that assessed the effectiveness of cupping therapy for any type of disease were searched through 6 electronic databases. Target diseases, cupping methods, numbers and types of included studies, quality of included trials, main results (including meta-analysis results), and authors' conclusions of SRs were extracted. The Assessment of Multiple Systematic Reviews measurement was used to evaluate methodologic quality of the SRs. Results Eight SRs met the inclusion criteria and effectiveness and safety of cupping therapy for 11 diseases were assessed. All included SRs were of good methodologic quality. However, quality of trials included in the SRs was generally poor. Meta-analysis was performed in 4 studies.

*Results*: showed cupping therapy (alone or combined with other interventions) was better than medications (or other interventions alone) for herpes zoster, acne, facial paralysis, low back pain, or cervical spondylosis. One review reported adverse events, including hematoma, increased pain and tingling following cupping treatment.

*Conclusions*: Cupping therapy may be beneficial for pain-related conditions, acne, and facial paralysis. However, a firm conclusion could not be drawn due to the insufficient number of included reviews and the low quality of the original studies.

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# Introduction

Several systematic literature reviews have investigated the therapeutic effect of cupping therapy. In our previous review we evaluated 550 clinical studies on cupping treatment, and summarized the types of cupping therapy used in traditional Chinese medicine (TCM) in China and the target conditions.<sup>1</sup> We found that diseases in which cupping was commonly applied were pain-related conditions, herpes zoster, cough, and asthma. Our results also indicated a significant increase in the number of randomized controlled trials (RCTs) during past 5 decades. Our follow-up systematic review (SR) further assessed the effectiveness of cupping therapy for specific diseases.<sup>2</sup> Of 135 included trials, 4 were meta-analyses that indicated the potential benefit of cupping for herpes zoster, acne, facial paralysis, and cervical spondylosis. However, due to the poor quality of included trials, our review could not draw any positive conclusion for the clinical efficacy of cupping treatment.

A 2011 overview of SRs on cupping therapy by Lee et al, found that cupping appeared to be beneficial only for pain, albeit evidence was less than convincing.<sup>3</sup>

Given the lack of conclusive results in systematic reviews on the efficacy of cupping therapy published in the past years, we report on an updated review that we undertook to investigate the efficacy and safety of cupping therapy, especially in light of SRs that have recently been published.

# Methods

PubMed (1966-2014), Cochrane Library (Issue 1, 2014), China Network Knowledge Infrastructure (CNKI: 1979–2014), Chinese Scientific Journal Database VIP; (1989-2014), Wan Fang Database (1985-2014), and China Biomedical Literature Service System (Sino-Med; 1978-2014) were searched for systematic reviews with at least one included study that assessed the effectiveness and/or safety of cupping therapy for any disease/condition regardless of whether or not the meta-analysis was conducted. All searches were ended on December 31, 2014. "Systematic review" or "meta-analysis" combined with "cupping" were used as search terms. Reviews without systematic methodology were excluded. SRs that evaluated the combination of cupping therapy and other complementary and alternative medicine (CAM) treatments (such as acupuncture, massage, tai chi) compared with non-CAM therapies were also excluded. There was no limitation on language or publication type.

Two authors (HJC and MH) independently extracted the data from the included SRs, and any disagreement was discussed with a third author (JPL). The extracted data included title of study, year of publication, type of disease, type of cupping therapy, number and type of included studies, quality of included trials, main results (including meta-analysis results), and authors' conclusions.

Methodologic quality of an included SR was evaluated using the Assessment of Multiple Systematic Reviews (AMSTAR) measurement.<sup>4</sup> AMSTAR is a 11-item assessment tool that was developed from 37 items by combining the enhanced Overview Quality Assessment Questionnaire (OQAQ),<sup>5</sup> a 10-item checklist created by Sacks,<sup>6</sup> and three additional items judged to be of methodologic importance. The 11 items of AMSTAR consist of specific questions that assess the processes of design, literature search, data extraction, quality assessment, data analysis, decision (conclusion) making, and reporting in each included SR (Table 1). Each question has the multiple-choice answers of "Yes," "No," "Can't answer," and "Not applicable." Two authors (HJC and MH) applied AMSTAR to independently assess the quality included SRs and discussed their results with a third author (JPL).

# Results

#### Characteristics of reviews

Following the literature search, 8 SRs<sup>2,7–13</sup> were identified and included. Of the 8 SRs, 4 were conducted by Korean researchers,<sup>9–13</sup> 3 were conducted by our team<sup>2,7,8</sup> (mainland China), and the remaining SR<sup>9</sup> was conducted by Taiwan authors. All of the included SRs were published in English. Five studies<sup>7–11</sup> were published in complementary and alternative medicine journals. Characteristics of the 8 SRs are presented in Table 2.

# Types of reviews

Four SRs<sup>2,7,8,10</sup> included only RCTs, 2 SRs<sup>12,13</sup> included both RCTs and non-randomized observational studies, 1 review<sup>11</sup> included both RCTs and non-RCTs, and the remaining review<sup>9</sup> included RCTs, non-RCTs, case reports, and mechanism-based reasoning studies. Numbers of included studies of the 8 reviews varied from 2 to 135. However, for each disease, the evaluations from included reviews were based on 1 to 17 studies.

### Types of medical conditions

Eighteen diseases were evaluated in the included SRs, of which 13 were pain-related conditions (herpes zoster, low back pain, cancer pain, brachialgia paraesthetica nocturna, acute trigeminal neuralgia, headache, postapoplectic shoulder-hand syndrome, carpal tunnel syndrome. neck pain, osteoarthritis, shoulder pain, scapulohumeral periathritis, and ankle sprain). The remaining diseases included acne, facial paralysis, hypertension, stroke rehabilitation, and cervical spondylosis. Only 2 SRs assessed the effectiveness of wet cupping therapy (also called bleeding cupping during which small incisions are made to induce slight bleeding before applying cupping), and the remaining reviews focused on other types of cupping therapy. Controls included waiting list, usual care, heat therapy, medications, and acupuncture. Cupping therapy combined with other interventions (such as acupuncture, medications) compared to other interventions alone was assessed in 4 SRs.

#### Outcome measurements

Five reviews<sup>2,8,10,12,13</sup> used risk of bias criteria to assess the quality of included RCTs as recommended by the *Cochrane* Handbook for Systematic Reviews of Interventions<sup>14</sup>; 1

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