

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Is cupping therapy effective in neck pain patients? A systematic review and meta-analysis
<b>AUTHORS</b>	Kim, Seoyoun; Lee, Sook-Hyun; Kim, Me-riong; Kim, Eun-jung; Hwang, Deok-Sang; Lee, Jinho; Shin, Joon-Shik; Ha, In-Hyuk; Lee, Yoon Jae

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Jianping Liu 1. Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, Beijing, 100029, China; 2. NAFKAM, UiT, The Arctic University of Norway, Tromso, N-9037, Norway
<b>REVIEW RETURNED</b>	08-Feb-2018

<b>GENERAL COMMENTS</b>	<p>The review topic is interesting and clinically relevant. I have several concerns or questions to this review.</p> <ol style="list-style-type: none"><li>1. The end date of searching is July 2016. This seems to be outdated as normally we would like to ask the authors providing searched results within six months.</li><li>2. Why authors used SMD (standardized mean difference) rather than weighted mean difference to estimate the effect size? Please give a justification for using SMD.</li><li>3. Is there any trials comparing cupping with usual care? I think "active control" is too general, for neck pain, especially chronic neck pain, what are the active treatment? I believe for acute or chronic, the interventions might be different.</li><li>4. I don't think use of "efficacy" in this review is appropriate as for efficacy, we usually take placebo as control intervention to identify specific effect from the intervention. However, for cupping therapy, it is almost not possible to design a sham cupping, especially for those patients who had previous experience to cupping treatment. Maybe "effectiveness" would be better term to be used.</li><li>5. I would recommend authors to add one more reference in their discussion, which was published in PLoS One in 2012 by Cao H, etc. The title is: An updated review of the efficacy of cupping therapy.</li></ol>
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<b>REVIEWER</b>	Alipasha Meysamie Tehran University of Medical Sciences, Tehran, Iran
<b>REVIEW RETURNED</b>	08-Feb-2018

<b>GENERAL COMMENTS</b>	<p>The study Mou 2015 shows evidences of fail in randomization because of large difference in number of participants in groups. The major limitation in all included RCTs (except one which had sham control group) is the absence of blindness, so placebo effect</p>
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	<p>of receiving the intervention may play a role in self-reported results.                  In summary evidences are all low so the conclusion can not be acceptable.                  So the discussion shall be revised according to those limitations in out come measurement (self report), no control of placebo effect in studies and low level of evidence according to sample size. And all shall be mentioned in conclusion part, plus suggestions for future studies.</p> <p>Decision: major revision</p>
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<b>REVIEWER</b>	Dr.Naseem Akhtar Qureshi National Center for Complementary and Alternative Medicine (NCCAM), Riyadh, Kingdom of Saudi Arabia
<b>REVIEW RETURNED</b>	12-Mar-2018

<b>GENERAL COMMENTS</b>	<ol style="list-style-type: none"> <li>1.No reserach question is raised!</li> <li>2.Why neck pain decreases after age 50?</li> <li>3. Cupping therapy (Hijama) practitoners mostly do not use bamboo cups, so delete bamboo from the paper. See this refernce for history of cupping (hijama) see our reference:[Qureshi NA, Ali GI, Abushanab TS, El-Olemy AT, Alqaed MS, El-Subai IS, Al-Bedah AMN. History of cupping (Hijama): a narrative review of literature. J Integr Med. 2017; 15(3): 172–181.</li> <li>4. Cup or cups could be placed on normal skin concerning prevention and promotion of health in healthy subjects like atheletes</li> <li>5. If the word *scarification" used to differentiate dry from wet cupping will make better precise difference between the two.</li> <li>6. Acute vs. chronic pain may make difference regarding outcome?please comment.</li> <li>7. Typo error or else my understanding is poor: "with control group" repeated in features of studies included.</li> <li>8. Safety issues: prolapsed intervertebral disc, blurred vision- we think these are new side-effects, and need some explanations?</li> <li>9. Cupping therapy (hijama) side-effects: are really its side effects or therapists' proficiency/training/experience? We feel the contribution to the side effect profile of cupping is from lack of proficient practitioners. Let us not blame Cupping/hijama but the concerned therapists.</li> <li>10.wet cupping is invasive or non-invasive a bit contentious? It is not as invasive as major surgeries or metastatic cancers? what is your views?</li> </ol> <p>Thank you all very much and good luck!</p>
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<b>REVIEWER</b>	PD Dr. Tobias Romeyke University of Health Sciences, Medical Informatics and Technology, Austria
<b>REVIEW RETURNED</b>	16-Mar-2018

<b>GENERAL COMMENTS</b>	<p>Thank you for the opportunity to review the manuscript.                  The authors submitted a paper concerning the important topic cupping.                  This systematic literature review and meta-analysis of randomized controlled trials aimed to investigate the effects of cupping on neck pain.                  However some parts of the review must be carefully revised.</p>
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	<p>One of my concerns related to the current review, continues to be related to the introduction literature. Greater details about previous studies results are needed than currently provided that builds the case for having conducted the current study. This could also strengthen the discussion, as it is quite common to refer to findings from those studies relative to the current study findings in the discussion and conclusions sections.</p> <p>Line 23/24 the authors show side effects. Another point is the problem of drug intolerance of some patients. Also the authors have to add in the introduction that cupping gets more and more part of a holistic approach and it is important in the context of complementary interdisciplinary therapies.</p> <p>So the authors have to cite important reference: "Evidence-Based Complementary and Alternative Medicine in Inpatient Care: Take a Look at Europe" (Journal of Evidence-Based Complementary &amp; Alternative Medicine)</p> <p>Methods: The search strategy and the methods for data extraction, quality assessment and meta-analysis seems appropriate.</p> <p>Discussion: It would also be helpful to explain how the current study differs from previous studies in more detail. This section should be streamlined to focus specifically on key findings. The implications described should be included in the main discussion since they relate to the key findings and it is important to discuss how this findings relates to previous studies.</p> <p>Some parts of the discussion should put in the conclusion section (page 39,line 34-43).</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: Jianping Liu

Institution and Country: 1. Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, Beijing, 100029, China; 2. NAFKAM, UiT, The Arctic University of Norway, Tromso, N-9037, Norway

Please state any competing interests: None declared.

Please leave your comments for the authors below

The review topic is interesting and clinically relevant. I have several concerns or questions to this review.

1. The end date of searching is July 2016. This seems to be outdated as normally we would like to ask the authors providing searched results within six months.

( A new search was conducted as of January 2018, and the contents of the manuscript were revised and updated accordingly.

2. Why authors used SMD (standardized mean difference) rather than weighted mean difference to estimate the effect size? Please give a justification for using SMD.

( Through the new search and analysis, the effect size was estimated with mean difference in light of

the reviewer's comment.

3. Is there any trials comparing cupping with usual care? I think "active control" is too general, for neck pain, especially chronic neck pain, what are the active treatment? I believe for acute or chronic, the interventions might be different.

\ In defining the active control, previous analyses on the usual care and clinical guidelines were consulted; relevant papers were cited as references in the Methods section. According to these citations, the usual care provided in Korea did not show much difference between that for sprain of the cervical spine (acute) and cervicgia (chronic). Even though the first line of treatment may have varied between the two conditions, the types of conservative care were similar; no differentiation was thus made in regard to the active control whether it be chronic or acute.

4. I don't think use of "efficacy" in this review is appropriate as for efficacy, we usually take placebo as control intervention to identify specific effect from the intervention. However, for cupping therapy, it is almost not possible to design a sham cupping, especially for those patients who had previous experience to cupping treatment. Maybe "effectiveness" would be better term to be used.

\ The authors are in agreement with the reviewer's comment, and thank the reviewer for bringing this point to their attention. The term 'efficacy' has been uniformly changed to 'effectiveness' throughout the manuscript.

5. I would recommend authors to add one more reference in their discussion, which was published in PLoS One in 2012 by Cao H, etc. The title is: An updated review of the efficacy of cupping therapy.

\ The reference was according added to the Discussion section as kindly suggested by the reviewer.

Reviewer: 2

Reviewer Name: Alipasha Meysamie

Institution and Country: Tehran University of Medical Sciences, Tehran, Iran

Please state any competing interests: I have no competitive interest.

Please leave your comments for the authors below

The study Mou 2015 shows evidences of fail in randomization because of large difference in number of participants in groups.

\ Assessment of risk of bias was newly conducted together with a new updated search, and the point aptly raised by the reviewer has been addressed accordingly in the revised analysis.

The major limitation in all included RCTs (except one which had sham control group) is the absence of blindness, so placebo effect of receiving the intervention may play a role in self-reported results. In summary evidences are all low so the conclusion can not be acceptable.

So the discussion shall be revised according to those limitations in out come measurement (self report), no control of placebo effect in studies and low level of evidence according to sample size. And all shall be mentioned in conclusion part, plus suggestions for future studies.

\ The Discussion and the Conclusion sections were accordingly revised to include mention and discussion of the suggested limitations. The authors thank the reviewer for helping improve the reporting quality of the manuscript.

Decision: major revision

Reviewer: 3

Reviewer Name: Dr.Naseem Akhtar Qureshi

Institution and Country: National Center for Complementary and Alternative Medicine (NCCAM), Riyadh, Kingdom of Saudi Arabia

Please state any competing interests: I do not have any competing interest

Please leave your comments for the authors below

1.No reserach question is raised!

\ The manuscript has been revised to raise the research question.

2.Why neck pain decreases after age 50?

\ The fact that neck pain decreases after age 50 has been reported in a previous epidemiology study, but the phrase was removed as it seemed less relevant and not critical to explaining the study.

3. Cupping therapy (Hijama) practitoners mostly do not use bamboo cups, so delete bamboo from the paper. See this refernce for history of cupping (hijama) see our reference:[Qureshi NA, Ali GI, Abushanab TS, El-Olemy AT, Alqaed MS, El-Subai IS, Al-Bedah AMN. History of cupping (Hijama): a narrative review of literature. J Integr Med. 2017; 15(3): 172–181.

\ Reference to bamboo cups was accordingly removed in the revised version. Also, the reference kindly suggested by the reviewer was added to the Discussion section to cover the history of cupping therapy in more detail.

4. Cup or cups could be placed on normal skin concerning prevention and promotion of health in healthy subjects like atheletes

\ The topic has accordingly been addressed in the revised version of the Discussion section. The authors thank the reviewer for the helpful suggestion.

5. If the word "scarification" used to differentiate dry from wet cupping will make better precise difference between the two.

\ The term "scarification" was used to clarify the distinction between the two types of cupping: dry and wet. Thank you for your comment.

6. Acute vs. chronic pain may make difference regarding outcome?please comment.

\ As most of the studies were conducted only in chronic pain patients, it was not possible to assess whether cupping displays different therapeutic properties in subjects with acute or chronic pain. This limitation was accordingly given mention in the revised Discussion section.

7. Typo error or else my understanding is poor: "with control group" repeated in features of studies included.

\ Redundant phrases and typographical errors were removed through revision of the manuscript in observance of the reviewer's comment.

8. Safety issues: prolapsed intervertebral disc, blurred vision- we think these are new side-effects, and need some explanations?

\ The original authors' remarked that prolapsed intervertebral disc did not seem to be caused by cupping, and this point was accordingly added to the manuscript. Likewise, the blurred vision case was more elaborated to minimize any possible confusion.

9. Cupping therapy (hijama) side-effects: are really its side effects or therapists' proficiency/training/experience? We feel the contribution to the side effect profile of cupping is from lack of proficient practitioners. Let us not blame Cupping/hijama but the concerned therapists.

\ The authors would like to thank the reviewer for the helpful suggestion. The point was addressed in compliance with the reviewer's comment in revision of the Discussion section.

10. wet cupping is invasive or non-invasive a bit contentious? It is not as invasive as major surgeries or metastatic cancers? what is your views?

\ The authors believe that wet cupping – even with scarification - carries minimal risk when performed by educated and fully trained practitioners when using adequate aseptic techniques. The term 'non-invasive' however was removed from the revised manuscript, as it appeared to be somewhat misleading.

Thank you all very much and good luck!

Reviewer: 4

Reviewer Name: PD Dr. Tobias Romeyke

Institution and Country: University of Health Sciences, Medical Informatics and Technology, Austria

Please state any competing interests: none declared

Please leave your comments for the authors below

Thank you for the opportunity to review the manuscript.

The authors submitted a paper concerning the important topic cupping.

This systematic literature review and meta-analysis of randomized controlled trials aimed to investigate the effects of cupping on neck pain.

However some parts of the review must be carefully revised.

One of my concerns related to the current review, continues to be related to the introduction literature. Greater details about previous studies results are needed than currently provided that builds the case for having conducted the current study. This could also strengthen the discussion, as it is quite common to refer to findings from those studies relative to the current study findings in the discussion and conclusions sections.

\ More context was provided in the revised manuscript in light of the reviewer's comments.

Line 23/24 the authors show side effects. Another point is the problem of drug intolerance of some patients. Also the authors have to add in the introduction that cupping gets more and more part of a holistic approach and it is important in the context of complementary interdisciplinary therapies.

\ The implications of cupping as a holistic approach and its importance in complementary and interdisciplinary therapies has been elaborated further in the revised manuscript in accordance with

the reviewer's kind suggestion.

So the authors have to cite important reference: "Evidence-Based Complementary and Alternative Medicine in Inpatient Care: Take a Look at Europe" (Journal of Evidence-Based Complementary & Alternative Medicine)

\ The Introduction section was revised to include citation of the suggested reference.

Methods: The search strategy and the methods for data extraction, quality assessment and meta-analysis seems appropriate.

Discussion: It would also be helpful to explain how the current study differs from previous studies in more detail. This section should be streamlined to focus specifically on key findings. The implications described should be included in the main discussion since they relate to the key findings and it is important to discuss how this findings relates to previous studies.

Some parts of the discussion should put in the conclusion section (page 39,line 34-43).

\ The Discussion and the conclusion sections were accordingly revised to explain the significance of the current study and elaborate with focus on the key findings. The authors thank the reviewer for the constructive comments helping enhance the quality of the manuscript.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Jianping Liu Beijing University of Chinese Medicine
<b>REVIEW RETURNED</b>	19-May-2018
<b>GENERAL COMMENTS</b>	No further comments.
<b>REVIEWER</b>	PD Dr. Tobias Romeyke University of Health Sciences, Medical Informatics and Technology, Austria.
<b>REVIEW RETURNED</b>	28-May-2018
<b>GENERAL COMMENTS</b>	Now, this work is of publishable quality and is consistent with the journal's guidelines.

#### VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: Jianping Liu

Institution and Country: Beijing University of Chinese Medicine

Please state any competing interests: None declared

Please leave your comments for the authors below

No further comments.

Reviewer: 4

Reviewer Name: PD Dr. Tobias Romeyke

Institution and Country: University of Health Sciences, Medical Informatics and Technology, Austria.

Please state any competing interests: none declared

Please leave your comments for the authors below

Now, this work is of publishable quality and is consistent with the journal's guidelines.