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

TITLE (PROVISIONAL)	Feasibility, Qualitative Findings, and Satisfaction of a Brief Tai Chi Mind-Body Program for Veterans with Posttraumatic Stress Symptoms
AUTHORS	Niles, Barbara; Mori, DeAnna; Polizzi, Craig; Pless Kaiser, Anica; Ledoux, Annie; Wang, Chenchen

VERSION 1 - REVIEW

REVIEWER	Carol E Fletcher, PhD, RN VA Ann Arbor Medical Center Ann Arbor, MI, US
REVIEW RETURNED	25-May-2016

GENERAL COMMENTS	It was a pleasure to read this well written paper. Promotion of complimentary and integrative therapy is now a goal of the VA, not only for diagnoses such as PTSD but to also help stem the tide of opioid use/dependence. As I am sure you know, as part of the VA's effort evidence maps have been published regarding some of the more well known therapies such as acupuncture and yoga. Your pilot study will add to the knowledge about one of the less well publicized complimentary therapies and hopefully spur funding for a larger study. As a side note, it would have been informative to know why the second person attended only one session. It was interesting to learn that the subjects related to the warrior aspect of Tai Chi. That makes sense, but many people may not make the association on their own.

REVIEWER	Anka Vujanovic, Ph.D. University of Houston, USA
REVIEW RETURNED	20-Jun-2016

GENERAL COMMENTS	This manuscript reports upon preliminary feasibility results of an innovative Tai Chi program for veterans with posttraumatic stress. This is the first study to date to pilot Tai Chi for military veterans. The manuscript is well-written and summarizes the methodology well. The forthcoming comments are meant to support a revision of the manuscript so as to make it more suitable for publication: (1) Please clarify the second inclusion criterion for PTSD (p. 7) further. It is currently unclear. (2) Please orient readers to Table 1 (in text), perhaps as early as the Participants section of the Method.

	(3) Please include descriptives (M, SD) for all study measures, especially the PCL-5. (4) One consideration might be to present the qualitative data in a table grouped by type of feedback. This might increase readers' accessibility of the information. (5) Please include a point in the Discussion section as to how the compliance and retention rates compare to other complementary and alternative programs, generally. Minor Issues: (1) Apostrophe after 'Veterans' is not necessary: first study aim (p. 6). (2) The Practice Log Completion Rates table could be presented in text.

REVIEWER	Olivia Metcalf Phoenix Australia - Centre for Posttraumatic Mental Health, University of Melbourne, Australia
REVIEW RETURNED	25-Jun-2016

GENERAL COMMENTS	This study investigates the feasibility of Tai Chi for veterans with PTSD. This is an important issue, as evidence-based treatments for PTSD have limitations and there is significant interest in emerging/novel interventions that provide an alternate style of treatment to traditional psychotherapy. I commend the authors for detailing in the introduction the putative mechanisms via which Tai Chi may improve PTSD symptoms, as this can be lacking in investigations of emerging/novel interventions. The paper is well written and my concerns relate to the article overall rather than specific sections. I have the following concerns with the article. 1. The study does not assess the feasibility of a full treatment session of Tai Chi. Rather, the authors have assessed the feasibility of a brief Tai Chi intervention. Four sessions compared to 24 is a marked difference and retention rates were 76.4% for three out of four sessions, and 52.9% for all sessions. Is there any information about when the non-attendance was occurring (i.e. systematically or randomly over the 4 sessions?) The rate may decline exponentially with each further session. Even with the positive qualitative findings, in my view at this point the feasibility of a full treatment session of Tai Chi remains unknown and this study only provides evidence for the feasibility of a brief intervention. 2. The study does not have a pre-post assessment of PTSD symptom change. The study would be significantly improved by reporting on change in PCL scores after receiving a brief intervention of Tai Chi. While I realise this may not be possible, more quantitative information about the effect of the intervention on PTSD symptoms is needed. What % of participants reported a benefit for PTSD symptoms, depression and pain? What % of participants reported no benefit for the above? The qualitative findings alone are not sufficient. The quantitative finding that 68.8% of participants found that Tai Chi helped them “deal more effectively with their problems” (p.18, line 3) is too vague. 3. The $160 payment to participants introduces a potential bias to

	the recruitment and maintenance levels of the study. Some more information about how this significant financial incentive may have influenced the high recruitment rate is needed. 4. The lack of clinical diagnosis of PTSD at intake, and the fact that only 64.7% of the sample had a probable diagnosis of PTSD is an issue. The authors did not address probable vs sub-threshold differences in the feasibility i.e., were the veterans with probable PTSD more or less likely to complete the protocol? 5. Were the veterans also receiving any type of concurrent psychological treatment (did the authors measure this?) outside of this study?

REVIEWER	Terri L. Yost Walter Reed National Military Medical Center Bethesda, MD, USA
REVIEW RETURNED	27-Jun-2016

GENERAL COMMENTS	This manuscript describes the beginning of a program of research examining Tai Chi as a potential treatment for symptoms associated with PTSD. Because this work is preliminary, qualitative analysis was very appropriate as a means to better plan future more rigorous research. I very much agree that the martial arts context of Tai Chi appeals to military service members/veterans and may indeed "provide positive associations with warrior identities". Although payment to subjects was not excessive, this incentive, (relative to the short duration of the intervention compared to usual Tai Chi programs) was likely a factor in both recruitment and retention. Did subjects have to complete to earn the financial incentive? Otherwise, the limitations are well described and appropriate with qualitative, inductive research. The findings are also appropriate for the scope of the project and described so as to provide justifications for planning future research studies. Overall, the manuscript is well written and the style easy to read. Thank you for allowing me the opportunity to read and provide review of this interesting program of research.

VERSION 1 – AUTHOR RESPONSE

In Response to Reviewer 1

(1) As a side note, it would have been informative to know why the second person attended only one session.

The second person attended only the final session due to difficulties with transportation and scheduling and we have added this information on Page 14: “Another participant only attended the final session due to difficulties with transportation and scheduling.” [Note: In reviewing the sessions attended for each participant, we found that one of the participants who we had previously reported attended 2 sessions actually attended 3 sessions (arrived late for the session and was miscounted) and we have edited the manuscript to reflect the corrected attendance rates.]

In response to the Reviewer 2
(1) Please clarify the second inclusion criterion for PTSD (p. 7) further. It is currently unclear.

On Page 7 we edited this inclusion criterion for clarity: “(2) a PTSD diagnosis in the electronic medical

record or endorsement of at least one of the DSM-5 reexperiencing symptoms of PTSD during the telephone screening."

(2) Please orient readers to Table 1 (in text), perhaps as early as the Participants section of the Method.

We have made this change on Page 8.

(3) Please include descriptives (M, SD) for all study measures, especially the PCL-5.

We refer the readers to Table 1 for these descriptives.

(4) One consideration might be to present the qualitative data in a table grouped by type of feedback. This might increase readers' accessibility of the information.

We thank the reviewer for this suggestion and we have now presented the qualitative data in a table grouped by theme. Please see Table 2 on Page 16.

(5) Please include a point in the Discussion section as to how the compliance and retention rates compare to other complementary and alternative programs, generally.

We have incorporated more information in the discussion section on Page 19 that compare our findings to other PTSD treatments for Veterans in general and to another CIH study in particular. "These rates of recruitment, attendance, and retention compare favorably to studies of treatments for Veterans with PTSD symptoms, where dropout rates are frequently high and range up to 50%. In comparison to other studies of CIH treatments, our rates are good. For example, a recent large scale study of a 9-session mindfulness intervention for Veterans with PTSD reported that 81% completed treatment and participants attended 77.3% of the sessions."

(6) Minor Issues: Apostrophe after 'Veterans' is not necessary: first study aim (p. 6). The Practice Log Completion Rates table could be presented in text.

We have made these changes.

In response to the Reviewer 3

(1) The study does not assess the feasibility of a full treatment session of Tai Chi. Rather, the authors have assessed the feasibility of a brief Tai Chi intervention. …. Even with the positive qualitative findings, in my view at this point the feasibility of a full treatment session of Tai Chi remains unknown and this study only provides evidence for the feasibility of a brief intervention.

We agree with the reviewer that our study does not assess the feasibility of a typical-length trial (24 sessions or more) of Tai Chi. In the strengths and limitations section at the beginning of the manuscript on Page 3, we modified the text to emphasize this limitation: "The small sample and short 4-session program did not allow conclusions to be drawn regarding feasibility and efficacy of a typical, longer-length Tai Chi intervention."

In order to highlight the qualitative nature of this study we also added: "This study provides preliminary indications that Veterans with PTSD symptoms are interested in Tai Chi and suggests possible mechanisms of change (e.g., reducing physiological arousal, improving comorbid conditions, increasing positive associations with warrior identity) that may be examined in future, rigorous trials."

In the discussion section on page 20 we state “the 4-session introduction to Tai Chi was substantially shorter than a typical Tai Chi program. It may be more difficult to enroll and retain participants in a longer or more intensive intervention.”

(2) Is there any information about when the non-attendance was occurring (i.e. systematically or randomly over the 4 sessions?) The rate may decline exponentially with each further session.

We have included each session attendance rate in the results on page 14. “Attendance at sessions 1 through 4 was 14 (82.35%), 15 (88.24%), 10 (58.82%), and 16 (94.12%) respectively.”

(3) The study does not have a pre-post assessment of PTSD symptom change. The study would be significantly improved by reporting on change in PCL scores after receiving a brief intervention of Tai Chi. While I realise this may not be possible, more quantitative information about the effect of the intervention on PTSD symptoms is needed. What % of participants reported a benefit for PTSD symptoms, depression and pain? What % of participants reported no benefit for the above? The qualitative findings alone are not sufficient.

In order to determine useful psychometric measures for future rigorous trials, we piloted these measures in the current study but did not use them to assess change over this short program. We included information about symptom severity for participants in order to describe the sample. We agree with the reviewer that it would be a significant improvement for this study to have included a typical-length Tai Chi intervention and to have assessed symptom change over time. By design, this brief qualitative study examined a “taste” of Tai Chi and therefore did not provide an adequate dose to address PTSD, depression, and pain symptoms. This study provides preliminary information regarding ease of use and psychometric properties of the measures in this population that will assist us in future research.

(4) The quantitative finding that 68.8% of participants found that Tai Chi helped them “deal more effectively with their problems” (p.18, line 3) is too vague.

In this paragraph we were limited by the wording used in the Satisfaction Questionnaire. “Have the services you received in the Tai Chi program helped you to deal more effectively with your problems?” was one of the questions. We agree with the reviewer that this is vague and we utilized the focus groups and individual interviews to provide more specificity about the benefits participants attributed to the Tai Chi program. To clarify that these were items from a questionnaire, we renamed the heading of the section (to “Satisfaction Questionnaire Findings”) and edited the text on pages 17 and 18 to add quotation marks to indicate the language used in the questionnaire.

(5) The $160 payment to participants introduces a potential bias to the recruitment and maintenance levels of the study. Some more information about how this significant financial incentive may have influenced the high recruitment rate is needed.

We agree with the reviewer that the typical practice of providing compensation to research participants for their time and inconvenience introduces potential bias regarding recruitment and maintenance. We have added this caveat to the limitations section on Page 20. “Also, the monetary compensation provided to participants for transportation, time, and inconvenience may have acted as an incentive for participation and potentially enhanced recruitment, attendance, and retention rates. However, recent research with Veterans indicates that these remuneration rates are consistent with current recommendations.”

How to engage Iraq, Afghanistan Veterans in health research: Lessons from focus groups. U.S. Department of Veteran Affairs Office of Research and Development, Research Currents. 2016.

http://www.research.va.gov/currents/0416-5.cfm (accessed 3 Aug 2016).

(6) The lack of clinical diagnosis of PTSD at intake, and the fact that only 64.7% of the sample had a probable diagnosis of PTSD is an issue. The authors did not address probable vs sub-threshold differences in the feasibility i.e., were the veterans with probable PTSD more or less likely to complete the protocol?

On page 7 we added our rationale for inclusion of individuals who experience subthreshold PTSD symptomology. “Individuals with subthreshold PTSD symptomatology frequently experience significant impairment in functioning. Thus, we included both Veterans with subthreshold symptomatology as well as Veterans with diagnosed PTSD in order to represent the full range of Veterans with post-deployment trauma-related distress.” We agree that diagnostic status and the role it plays in attendance and completion of treatment is an important and interesting issue. In future studies we plan to examine whether diagnostic status is a reliable predictor of attendance and completion; we feel that this small sample size qualitative study was inadequate to examine this issue.

Mota, N. P., Tsai, J., Sareen, J., Marx, B. P., et al., High burden of subthreshold DSM-5 post-traumatic stress disorder in U.S. military Veterans. World Psychiatry 201;15:185–186. doi:10.1002/wps.20313.

(7) Were the veterans also receiving any type of concurrent psychological treatment (did the authors measure this?) outside of this study?

We added this information to Table 1 and to the description of the participants on Page 13. “Approximately two thirds (64.7%) were engaged in individual and/or group psychological treatment.”

In response to the Reviewer 4
(1) Although payment to subjects was not excessive, this incentive, (relative to the short duration of the intervention compared to usual Tai Chi programs) was likely a factor in both recruitment and retention. Did subjects have to complete to earn the financial incentive?

Please see the above response to comment 5 from Reviewer 3. We have also included the compensation schedule on page 6 indicating how much participants were compensated for each portion of the study. “Participants were compensated $40 for each assessment, $20 for the focus group, $20 for the individual interview, and $10 for travel for each Tai Chi session attended.”

VERSION 2 – REVIEW

REVIEWER	Olivia Metcalf Phoenix Australia, University of Melbourne, Australia
REVIEW RETURNED	28-Aug-2016

GENERAL COMMENTS	The authors have satisfactorily addressed my original concerns. Thank you for the opportunity to review this manuscript.