

## 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>	Internet-based acceptance and commitment therapy programme “Happiness Mom” for well-being: A protocol for a randomized controlled trial
<b>AUTHORS</b>	Sasaki, Natsu; Imamura, Kotaro; Nishi, Daisuke; Watanabe, Kazuhiro; Sekiya, Yuki; Tsuno, Kanami; Kobayashi, Yuka; Kawakami, Norito

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Päivi Lappalainen University of Jyväskylä, Department of Psychology, Finland
<b>REVIEW RETURNED</b>	17-Sep-2020

<b>GENERAL COMMENTS</b>	<p>Internet-based Acceptance and Commitment Therapy program “Happiness Mom” for well-being: A protocol for a randomized controlled trial</p> <p>This was a protocol for an ACT-based RCT for enhancing the well-being of working mothers, Happiness Mom. Globally, working mothers are often under psychological and physical pressure from their many responsibilities, why this is an important study. So far, no study has investigated the effect of iACT for improving the well-being of working mothers.</p> <p>Overall, the manuscript was very interesting, however, there are some points I would like to take up:</p> <p>In general:</p> <p>I wonder whether the manuscript has been edited by an English-speaking native? Please carefully proof-read to make the manuscript easier to read.</p> <p>p. 13, lines 28-40 You wrote: Four articles are the basis of optional essays. Participants can read them at any time during the intervention. These are (1) parenting skills are introduced based on the Positive Parenting Program (Triple P) [73]; (2) the essence of couple therapy based on assertive communication; (3) relaxation skills (i.e., 4-7-8 breathing [74], progressive muscle relaxation [75]) and behavioral activation techniques; and (4) how to contact third-party mental health services.</p> <p>I understand that the intervention is underway. However, I would have left the optional essays (!) out, because they are not ACT-based - it is difficult to assess whether it is the ACT or the optional essays that make the difference. At least you need to discuss this in your Discussion.</p> <p>p. 14, lines 12-17:</p>
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	<p>You wrote "Upon request, participants in the control group will receive the iACT program after the six-month follow-up. The participants in the intervention group and the control group will be able to undergo treatment as usual (TAU), such as stress management education or medical care". Please clarify what is meant by this? Does this mean that after the f-up, participants can get access to other treatment if the iACT is not sufficient?</p> <p>p. 14, lines 22- You have a wide range of different measures which is positive. Also, for further studies investigating ACT I would suggest that you would include some of the measures assessing different aspects of psychological flexibility (incl. mindfulness), such as AAQ-II, the Parental Acceptance Questionnaire (6-PAQ), CompACT, FFMQ or WBSI. They may give you more information about the psychological processes. Of course, the new Euthymia-scale looks interesting, however, it has not been widely used so far which makes it difficult to compare the results of your study with other studies.</p> <p>p. 17, lines 8-15: You wrote: "Duration This program is scheduled to start recruiting in April 2020 and run until the end of June. The research will end in January 2020 with the follow-up assessment. In March the whole program will be presented to the control group". I assume that you mean January 2021? Please add the year such as In March 2021,..</p> <p>p. 19 You do not discuss the possible contribution of this study to the field in any way. You might want to add a paragraph about this at the end of the manuscript (and possibly in the abstract).</p> <p>I look forward to hearing from the results of this study.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: Päivi Lappalainen

This was a protocol for an ACT-based RCT for enhancing the well-being of working mothers, Happiness Mom. Globally, working mothers are often under psychological and physical pressure from their many responsibilities, why this is an important study. So far, no study has investigated the effect of iACT for improving the well-being of working mothers.

Overall, the manuscript was very interesting, however, there are some points I would like to take up:

In general:

I wonder whether the manuscript has been edited by an English-speaking native? Please carefully proof-read to make the manuscript easier to read.

Response: Dear Dr. Lappalainen, thank you for your effort and time to review our manuscript. We have read your articles and learned a lot about iACT. So, it was our great pleasure that you accepted to review our manuscript. Regarding the English editing, the previous manuscript was edited by the English native. But we apologize that it was below acceptable readability. We revised and improved the English throughout the manuscript. We hope that it is improved.

p. 13, lines 28-40

You wrote: Four articles are the basis of optional essays. Participants can read them at any time during the intervention. These are (1) parenting skills are introduced based on the Positive Parenting Program (Triple P) [73]; (2) the essence of couple therapy based on assertive communication; (3) relaxation skills (i.e., 4-7-8 breathing [74], progressive muscle relaxation [75]) and behavioral activation techniques; and (4) how to contact third-party mental health services.

I understand that the intervention is underway. However, I would have left the optional essays (!) out, because they are not ACT-based - it is difficult to assess whether it is the ACT or the optional essays that make the difference. At least you need to discuss this in your Discussion.

Response: Thank you for your valuable comments. As you indicated, the “pure” effect of ACT will not be able to be assessed. We added Discussion section and mentioned it as one of the limitations.

#### **(P17. LN419) Discussion**

An internet-based, fully automated, eight-module self-help ACT program “Happiness Mom” designed for working women with pre-school children was developed to improve psychological well-being. This study is the first randomized controlled trial to examine the effectiveness of iACT for psychological well-being among working population. There are some limitations in the study: first, the program has small-optional sessions (e.g., parenting, relaxation skills). The intervention effectiveness will not be identified as the difference between iACT and those other optional components. The study will examine the effectiveness of the intervention “Happiness Mom” as a whole package.

p. 14, lines 12-17:

You wrote “Upon request, participants in the control group will receive the iACT program after the six-month follow-up. The participants in the intervention group and the control group will be able to undergo treatment as usual (TAU), such as stress management education or medical care”. Please clarify what is meant by this? Does this mean that after the f-up, participants can get access to other treatment if the iACT is not sufficient?

Response: Thank you for your comments. TAU means all participants (both intervention and control groups) will not be prohibited to access any mental health service even during the research period. We clarified it below. Besides, we provide the “Happiness Mom” to all participants including the control group. We revised the sentence below.

**(P12. LN282)** Participants in the control group will receive the iACT program after the six-month follow-up. The participants in the intervention group and the control group can seek any mental health treatment as usual (TAU), such as stress management education or medical care, throughout the research period.

p. 14, lines 22-

You have a wide range of different measures which is positive. Also, for further studies investigating ACT I would suggest that you would include some of the measures assessing different aspects of psychological flexibility (incl. mindfulness), such as AAQ-II, the Parental Acceptance Questionnaire (6-PAQ), CompACT, FFMQ or WBSI. They may give you more information about the psychological processes. Of course, the new Euthymia-scale looks interesting, however, it has not been widely used so far which makes it difficult to compare the results of your study with other studies.

Response: Thank you very much for your comments. We considered the AAQ-II etc as a process evaluation before submitting this protocol. We agreed with your opinion that the scales can provide more information about the psychological processes. But filling a long questionnaire would be a burden for participants who are busy working mothers. We abandoned this plan in regard of limited items in our questionnaire, in prior to the outcome measurements. We added the sentence in the Discussion, as a limitation of this study.

**(P18. LN426)** Second, this study will not assess multiple aspects of psychological flexibility using validated scales (e.g., Acceptance and Action Questionnaire-II) to know a psychological process connecting between the intervention and the outcomes. We would not be able to identify what psychological process most important if the intervention is found effective.

p. 17, lines 8-15:

You wrote: "Duration This program is scheduled to start recruiting in April 2020 and run until the end of June. The research will end in January 2020 with the follow-up assessment. In March the whole program will be presented to the control group".

I assume that you mean January 2021? Please add the year such as In March 2021,...

Response: Thank you for your suggestions. We apologize to provide wrong year, and corrected the sentence.

**(P15. LN358)** This program is scheduled to start recruiting in April 2020 and run until the end of June. The research will end in January 2021 with the follow-up assessment. In March 2021 the whole program will be presented to the control group.

p. 19

You do not discuss the possible contribution of this study to the field in any way. You might want to add a paragraph about this at the end of the manuscript (and possibly in the abstract).

Response: Thank you for your valuable suggestions. We added the sentences about the possible contribution both in the abstract and the end of the manuscript.

Abstract

**(P2. LN49)** Discussion: This study will contribute to develop an internet-based self-care program which is effective, feasible, low-cost, and accessible to improve well-being of working mothers.

**(P18. LN430)** In spite of some limitations, this study will contribute to develop an internet-based self-care program which is effective, feasible, low-cost, and accessible to improve well-being of working mothers. Newly-developed program may provide psychological support for women to pursue their life-career according to their value. Web-based program can be easily available in other countries through translation in the future.

I look forward to hearing from the results of this study.

Response: Thank you very much for your support. We certainly report the findings through publications.

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Päivi Lappalainen Department of Psychology, University of Jyväskylä, Finland
<b>REVIEW RETURNED</b>	03-Jan-2021

<b>GENERAL COMMENTS</b>	<p>Internet-based Acceptance and Commitment Therapy program “Happiness Mom” for well-being: A protocol for a randomized controlled trial</p> <p>Thank you for replying to all points in my earlier review. I would, again, recommend that the manuscript undergoes language proof reading by a native speaker. I myself am not a native speaker, but have found several grammatical errors in the manuscript. Therefore, I would suggest the authors to send the manuscript to, for example, Scribendi Editing and Proofreading services which I personally have found very good. I would pay attention, in particular, to the language in the Discussion.</p> <p>Here are some points (also language) I would like to take up:</p> <p>Abstract p 3, line 40 Participants in the intervention groups 40 will be asked to complete the programs within 12 weeks of the baseline survey &gt; Should this be program, not programs?</p> <p>p. 6, lines 114—115 As there are some studies investigating ACT and iACT + group among working population, I would talk about “working mothers” only. See studies below, for example: However, no study has investigated the effect of iACT for 115 improving PWB among workers, including working mothers &gt; among working mothers Kinnunen, S. M., Puolakanaho, A., Tolvanen, A., Mäkikangas, A., &amp; Lappalainen, R. (2020). Improvements in mindfulness facets mediate the alleviation of burnout dimensions. <i>Mindfulness</i> (online first publication, doi: 10.1007/s12671-020-01490-8). Kinnunen, S. M., Puolakanaho, A., Tolvanen, A., Mäkikangas, A., &amp; Lappalainen, R. (2019). Does mindfulness-, acceptance-, and</p>
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	<p>valuebased intervention alleviate burnout? - A person-centered approach. <i>International Journal of Stress Management</i>, 26(1), 89–101.</p> <p>Kinnunen, S. M., Puolakanaho, A., Mäkikangas, A., Tolvanen, A., &amp; Lappalainen, R. (2020). Does a mindfulness-, acceptance-, and valuebased intervention for burnout have long-term effects on different levels of subjective well-being? <i>International Journal of Stress Management</i>, 27(1), 82–87.</p> <p>Discussion, p. 17-18 – please pay attention language in the Discussion.</p> <p>Please, formulate the sentence This study is the first randomized controlled trial to examine the effectiveness of iACT for psychological well-being among working population &gt; among working mothers</p> <p>There are some limitations in the study: first, the program has small-optional essays (e.g., parenting, relaxation skills). &gt; What are small-optional essays? Should that be small, optional sessions?</p> <p>The intervention effectiveness will not be identified as the difference between iACT and those essays. &gt; please formulate this better, and use another word for essay.</p>
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### VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Paivi Lappalainen, University of Jyväskylä

Comments to the Author:

Thank you for replying to all points in my earlier review. I would, again, recommend that the manuscript undergoes language proof reading by a native speaker. I myself am not a native speaker, but have found several grammatical errors in the manuscript. Therefore, I would suggest the authors to send the manuscript to, for example, *Scribendi Editing and Proofreading services* which I personally have found very good. I would pay attention, in particular, to the language in the Discussion.

Here are some points (also language) I would like to take up:

Response: Thank you for your careful consideration and big effort to improve our manuscript. Our revised manuscript has been reviewed by a native speaker of *Scribendi Editing and Proofreading services*. We hope the manuscript has been much improved in regard of English.

Abstract

1. p 3, line 40

Participants in the intervention groups 40 will be asked to complete the programs within 12 weeks of the baseline survey > Should this be program, not programs?

Response: Thank you for your suggestion. We revised “the programs” to “the programme”.

Manuscript

2. p. 6, lines 114—115

As there are some studies investigating ACT and iACT + group among working population, I would talk about “working mothers” only. See studies below, for example:

However, no study has investigated the effect of iACT for 115 improving PWB among workers, including working mothers > among working mothers

Kinnunen, S. M., Puolakanaho, A., Tolvanen, A., Mäkikangas, A., & Lappalainen, R. (2020). Improvements in mindfulness facets mediate the alleviation of burnout dimensions. *Mindfulness* (online first publication, doi: 10.1007/s12671-020-01490-8).

Kinnunen, S. M., Puolakanaho, A., Tolvanen, A., Mäkikangas, A., & Lappalainen, R. (2019). Does mindfulness-, acceptance-, and valuebased intervention alleviate burnout? - A person-centered approach. *International Journal of Stress Management*, 26(1), 89–101.

Kinnunen, S. M., Puolakanaho, A., Mäkikangas, A., Tolvanen, A., & Lappalainen, R. (2020). Does a mindfulness-, acceptance-, and valuebased intervention for burnout have long-term effects on different levels of subjective well-being? *International Journal of Stress Management*, 27(1), 82–87.

Response: Thank you for introducing your current works on ACT intervention studies at workplace. We carefully considered the literature and cited them in our manuscript. We found that the RCT included the employees with high burnout scores (i.e., indicated population) and the intervention was combined with face-to-face and iACT. We thus would like to address the originality of our paper as follows:

**(P.4, LN 108-113)** For the working population, randomized-controlled trials (RCTs) showed the effectiveness of ACT-based intervention (combined iACT and face-to-face group sessions) for improving negative mood outcomes (e.g., depression, burnout) among employees with psychological symptoms [59-62]. One RCT showed the significant effectiveness of improving Ryff's PWB at post-follow-up (Cohend's  $d = 0.32$ ,  $p < 0.01$ ), but not at 6- or 12-month follow-up [60, 63].

**(P.5, LN115-116)** However, no study has investigated the effect of fully automated iACT without face-to-face sessions for improving PWB among workers regardless of psychological symptoms.

**(P.6, LN 145-146)** This study is “a universal prevention programme”; thus, the participants will be recruited regardless of psychological symptoms or current regular psychotherapeutic treatment.

3. Discussion, p. 17-18 – please pay attention language in the Discussion.

Please, formulate the sentence This study is the first randomized controlled trial to examine the effectiveness of iACT for psychological well-being among working population > among working mothers

Response: Thank you for your careful considerations. We revised the sentence following the revised sentence in introduction above, corresponded to your comment no.2.

**(P.17, LN 431-433)** This study is the first randomized controlled trial to examine the effectiveness of a fully automated iACT without face-to-face sessions for the psychological well-being of a working population regardless of psychological symptoms.

4. There are some limitations in the study: first, the program has small-optional essays (e.g., parenting, relaxation skills). > What are small-optional essays? Should that be small, optional

sessions? The intervention effectiveness will not be identified as the difference between iACT and those essays. > please formulate this better, and use another word for essay.

Response: Thank you for your careful considerations. We revised “essays” to “sessions”.