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) | Effects of a hybrid digital Cognitive Behavioural Therapy for Insomnia and Emotion Regulation in the workplace (SLEEP): Study protocol for a randomised waitlist-control trial |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|
| AUTHORS             | Moukhtarian, Talar Rita; Patel, Krishane; Toro, Carla; Russel, Sean; Daley, Guy; Walasek, Lukasz; Tang, Nicole; Meyer, Caroline |

VERSION 1 – REVIEW

| REVIEWER                      | Kai Spiegelhalder                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------|
|                               | University Medical Center Freiburg, Psychiatry and Psychotherapy                  |
| REVIEW RETURNED               | 25-Nov-2021                                                                        |
| GENERAL COMMENTS              | Manuscript bmjopen-2021-058062 (‘Effects of a hybrid digital Cognitive Behavioural Therapy for Insomnia and Emotion Regulation in the workplace (SLEEP): Study protocol for a randomised waitlist-control trial”) reports a study protocol for a two-arm randomised controlled clinical study investigating the efficacy of cognitive behavioural therapy for insomnia combined with treatment for improving emotion regulation abilities against a waitlist condition. In my view, this is an excellent manuscript describing a potentially impactful clinical study conducted by well-known and highly respected scientists. It was a great pleasure to read this manuscript, I have no specific comments that could help improving this manuscript. |

| REVIEWER                      | Hsiao-Yean Chiu                                                                   |
|-------------------------------|-----------------------------------------------------------------------------------|
|                               | Taipei Medical University, Nursing                                                |
| REVIEW RETURNED               | 17-Feb-2022                                                                        |
| GENERAL COMMENTS              | Background                                                                        |
|                               | 1. Background information is sound. Recent evidence from network meta-analysis showed that web-based CBT-I with therapist prolonged TST, shortened SOL, reduced WASO, and enhanced sleep efficiency relative to others digital strategies for insomnia. Please add the reference in paragraph 4 page 3. |
| Reference:                    | 1. Hasan F, Tu YK, Yang CM, Gordon CJ, Wu D, Lee HC, Yuliana LT, Herawati L, Chen TJ, Chiu HY. Comparative efficacy of digital cognitive behavioral therapy for insomnia: A systematic review and network meta-analysis. Sleep medicine reviews. 2022 Feb 1:61:101567. |
|                               | 2. Based on your hypothesis, the dCBTi will be adopted as your intervention. The delivery method should be mentioned clearly in the background as well as for research purposes. |
Methods
1. In the section on Digital Hybrid CBT intervention, did “online” mean “computer-based”?
2. How do you retain participants in the waitlist arm to? Any strategies will be used?

**VERSION 1 – AUTHOR RESPONSE**

Reviewer: 1
Dr. Kai Spiegelhalder, University Medical Center Freiburg
Comments to the Author:

Manuscript bmjopen-2021-058062 („Effects of a hybrid digital Cognitive Behavioural Therapy for Insomnia and Emotion Regulation in the workplace (SLEEP): Study protocol for a randomised waitlist-control trial”) reports a study protocol for a two-arm randomised controlled clinical study investigating the efficacy of cognitive behavioural therapy for insomnia combined with treatment for improving emotion regulation abilities against a waitlist condition. In my view, this is an excellent manuscript describing a potentially impactful clinical study conducted by well-known and highly respected scientists. It was a great pleasure to read this manuscript, I have no specific comments that could help improving this manuscript.

We thank Dr. Kai for taking the time to read our manuscript and providing amazing and very encouraging feedback.

Reviewer: 2
Dr. Hsiao-Yean Chiu, Taipei Medical University
Comments to the Author:

Background
1. Background information is sound. Recent evidence from network meta-analysis showed that web-based CBT-I with therapist prolonged TST, shortened SOL, reduced WASO, and enhanced sleep efficiency relative to others digital strategies for insomnia. Please add the reference in paragraph 4 page 3.

Reference:
1. Hasan F, Tu YK, Yang CM, Gordon CJ, Wu D, Lee HC, Yuliana LT, Herawati L, Chen TJ, Chiu HY. Comparative efficacy of digital cognitive behavioral therapy for insomnia: A systematic review and network meta-analysis. Sleep medicine reviews. 2022 Feb 1;61:101567.

We thank Dr. Chiu for pointing out to the recent publication, which further supports the strong evidence and need for our intervention. We have now added the reference, along with a brief summary of the results on page 3.

“A recent network meta-analysis shows that dCBT-I with therapists support improves sleep parameters, with prolonged total sleep time, shortened sleep onset latency, reduced wake after sleep onset, and enhanced sleep efficiency compared to fully self-guided dCBT-I programmes.[16]”

2. Based on your hypothesis, the dCBTi will be adopted as your intervention. The delivery method should be mentioned clearly in the background as well as for research purposes.

We clarify the delivery method highlighting the element of therapist support in the intervention on page 4-

“This study will examine the efficacy of a new hybrid dCBT-I with therapist support for mild to severe insomnia and symptoms of depression and anxiety delivered to employees in the workplace. We refer to the intervention as dCBT-I+ER in the manuscript.”
Methods
1. In the section on Digital Hybrid CBT intervention, did "online" mean "computer-based"?
2. How do you retain participants in the waitlist arm to? Any strategies will be used?

To avoid confusion, we have amended the “Digital Hybrid CBT intervention” section on page 9 with the addition of some terms (e.g. computer-based, online) and a paragraph to emphasise the online computer-based nature of the intervention.

“Participants can access the online programme as well as attend the therapy appointments on their computer, tablets or phones.”

Those placed in the waitlist control arm are contacted regularly over email with information on their participation timeline and reminders before their enrolment on the logistics of the study (i.e. sleep tracker delivery, therapist appointments). The wait-time to enrol in the intervention arm is only 6-weeks long before participants are invited again to do a sleep tracking week and get access to the online programme. Aside from these strategies, we do not provide alternative interventions to the waitlist control participants, to make sure true intervention effects are not distorted. We will be able to conduct exploratory analyses to compare whether there is are higher drop-out rates or less engagement during the intervention in the participants initially placed in the waitlist control arm compared to those randomised to the intervention arm.

VERSION 2 – REVIEW

| REVIEWER         | Hsiao-Yean Chiu                                  |
|------------------|-------------------------------------------------|
| Taipei Medical University, Nursing                   |
| REVIEW RETURNED | 21-Mar-2022                                     |
| GENERAL COMMENTS | Thanks for submitting the revised manuscript.   |
|                  | The considerable revisions have significantly enhanced the manuscript. The points I expressed in my initial evaluation have been adequately addressed, and I have no further questions about this work. |