CONSORT-EHEALTH (V 1.6.1) -Submission/Publication Form

The CONSORT-EHEALTH checklist is intended for authors of randomized trials evaluating webbased and Internet-based applications/interventions, including mobile interventions, electronic games (incl multiplayer games), social media, certain telehealth applications, and other interactive and/or networked electronic applications. Some of the items (e.g. all subitems under item 5 description of the intervention) may also be applicable for other study designs.

The goal of the CONSORT EHEALTH checklist and guideline is to be

- a) a guide for reporting for authors of RCTs,
- b) to form a basis for appraisal of an ehealth trial (in terms of validity)

CONSORT-EHEALTH items/subitems are MANDATORY reporting items for studies published in the Journal of Medical Internet Research and other journals / scientific societies endorsing the checklist.

Items numbered 1., 2., 3., 4a., 4b etc are original CONSORT or CONSORT-NPT (non-pharmacologic treatment) items.

Items with Roman numerals (i., ii, iii, iv etc.) are CONSORT-EHEALTH extensions/clarifications.

As the CONSORT-EHEALTH checklist is still considered in a formative stage, we would ask that you also RATE ON A SCALE OF 1-5 how important/useful you feel each item is FOR THE PURPOSE OF THE CHECKLIST and reporting guideline (optional).

Mandatory reporting items are marked with a red *.

In the textboxes, either copy & paste the relevant sections from your manuscript into this form please include any quotes from your manuscript in QUOTATION MARKS,

or answer directly by providing additional information not in the manuscript, or elaborating on why the item was not relevant for this study.

YOUR ANSWERS WILL BE PUBLISHED AS A SUPPLEMENTARY FILE TO YOUR PUBLICATION IN JMIR AND ARE CONSIDERED PART OF YOUR PUBLICATION (IF ACCEPTED).

Please fill in these questions diligently. Information will not be copyedited, so please use proper spelling and grammar, use correct capitalization, and avoid abbreviations.

DO NOT FORGET TO SAVE AS PDF _AND_ CLICK THE SUBMIT BUTTON SO YOUR ANSWERS ARE IN OUR DATABASE!!!

Citation Suggestion (if you append the pdf as Appendix we suggest to cite this paper in the caption):

Eysenbach G, CONSORT-EHEALTH Group

CONSORT-EHEALTH: Improving and Standardizing Evaluation Reports of Web-based and Mobile **Health Interventions**

J Med Internet Res 2011;13(4):e126 URL: http://www.jmir.org/2011/4/e126/

doi: 10.2196/jmir.1923 PMID: 22209829

* Required

Your name *

First Last

Amir Pakpour

Primary Affiliation (short), City, Country *

University of Toronto, Toronto, Canada

Qazvin University of Medical Sciences, C

Your e-mail address *

abc@gmail.com

Pakpour_Amir@yahoo.com

Title of your manuscript *

Provide the (draft) title of your manuscript.

Efficacy of a theory-based cognitive behavioral technique app-intervention for patients with insomnia: A randomized controlled trial

Name of your App/Software/Intervention *

If there is a short and a long/alternate name, write the short name first and add the long name in brackets.

CBT for insomnia

Evaluated Version (if any)

e.g. "V1", "Release 2017-03-01", "Version 2.0.27913"

"V1", "Release 2018-06-01"

Language(s) *

What language is the intervention/app in? If multiple languages are available, separate by comma (e.g. "English, French")

Persian

URL of your Intervention Website or App

e.g. a direct link to the mobile app on app in appstore (itunes, Google Play), or URL of the website. If the intervention is a DVD or hardware, you can also link to an Amazon page.

Your answer

URL of an image/screenshot (optional)

Your answer

Accessibility *

Can an enduser access the intervention presently?

- access is free and open
- access only for special usergroups, not open
- access is open to everyone, but requires payment/subscription/in-app purchases
- app/intervention no longer accessible
- Other:

Primary Medical Indication/Disease/Condition *

e.g. "Stress", "Diabetes", or define the target group in brackets after the condition, e.g. "Autism (Parents of children with)", "Alzheimers (Informal Caregivers of)"

Insomnia

Primary Outcomes measured in trial *

comma-separated list of primary outcomes reported in the trial

Sleep hygiene behavior, Insomnia Severi

Secondary/other outcomes

Are there any other outcomes the intervention is expected to affect?

Attitude, Perceived behavioral control, Behavioral intention. Action planning, Coping planning, Self-monitoring, Self-report Behavioral Automaticity Index ,Hospital Anxiety and Depression Scale

Recommended "Dose" * What do the instructions for users say on how often the app should be used?
Approximately Daily
Approximately Weekly
Approximately Monthly
Approximately Yearly
as needed"
Other:

Approx. Percentage of Users	(starters)	still	using	the	app	as
recommended after 3 months	s *					

- unknown / not evaluated
- 0-10%
- 11-20%
- 21-30%
- 31-40%
- 41-50%
- 51-60%
- 61-70%
- 71%-80%
- 81-90%
- 91-100%
- Other:

Overall,	was the	app/inter	vention	effective?	*
----------	---------	-----------	---------	------------	---

•	yes: all primary outcomes were significantly better in intervention group vs control
0	partly: SOME primary outcomes were significantly better in intervention group vs control
0	no statistically significant difference between control and intervention
0	potentially harmful: control was significantly better than intervention in one or more outcomes
0	inconclusive: more research is needed
0	Other:
	ticle Preparation Status/Stage * which stage in your article preparation are you currently (at the time you fill in this form)
0	not submitted yet - in early draft status
0	not submitted yet - in late draft status, just before submission
•	submitted to a journal but not reviewed yet
0	submitted to a journal and after receiving initial reviewer comments
0	submitted to a journal and after receiving initial reviewer comments submitted to a journal and accepted, but not published yet
0	

Journal * If you already know where you will submit this paper (or if it is already submitted), please provide the journal name (if it is not JMIR, provide the journal name under "other")
onot submitted yet / unclear where I will submit this
 Journal of Medical Internet Research (JMIR)
JMIR mHealth and UHealth
JMIR Serious Games
JMIR Mental Health
JMIR Public Health
JMIR Formative Research
Other JMIR sister journal
Other:
Other: Is this a full powered effectiveness trial or a pilot/feasibility trial? *
Is this a full powered effectiveness trial or a pilot/feasibility trial?
Is this a full powered effectiveness trial or a pilot/feasibility trial?
Is this a full powered effectiveness trial or a pilot/feasibility trial? * Pilot/feasibility
Is this a full powered effectiveness trial or a pilot/feasibility trial? * Pilot/feasibility Fully powered Manuscript tracking number * If this is a JMIR submission, please provide the manuscript tracking number under "other" (The ms tracking number can be found in the submission acknowledgement email, or when you login as author in JMIR. If the paper is already published in JMIR, then the ms tracking number is the four-

!

TITLE AND ABSTRACT

1a) TITLE: Identification as a randomized trial in the title



1a) Does your paper address CONSORT item 1a? *

I.e does the title contain the phrase "Randomized Controlled Trial"? (if not, explain the reason under "other")

	yes
--	-----

	Othei	٠.
\ /	Oulei	١.

1a-i) Identify the mode of delivery in the title

Identify the mode of delivery. Preferably use "web-based" and/or "mobile" and/or "electronic game" in the title. Avoid ambiguous terms like "online", "virtual", "interactive". Use "Internet-based" only if Intervention includes non-web-based Internet components (e.g. email), use "computer-based" or "electronic" only if offline products are used. Use "virtual" only in the context of "virtual reality" (3-D worlds). Use "online" only in the context of "online support groups". Complement or substitute product names with broader terms for the class of products (such as "mobile" or "smart phone" instead of "iphone"), especially if the application runs on different platforms.

	1	2	3	4	5	
subitem not at all	\bigcirc	\bigcirc	\bigcirc	\bigcirc		essential
important						0000

Does your paper address subitem 1a-i? *

Copy and paste relevant sections from manuscript title (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Efficacy of a theory-based cognitive behavioral technique app-intervention for patients with insomnia: A randomized controlled trial "

1a-ii) Non-web-based components or important co-interventions in title

Mention non-web-based components or important co-interventions in title, if any (e.g., "with telephone support").

subitem not at all essential important

Does your paper address subitem 1a-ii?

Copy and paste relevant sections from manuscript title (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant for our study

1a-iii) Primary condition or target group in the title

Mention primary condition or target group in the title, if any (e.g., "for children with Type I Diabetes") Example: A Web-based and Mobile Intervention with Telephone Support for Children with Type I Diabetes: Randomized Controlled Trial

5 subitem not at all essential important

Does your paper address subitem 1a-iii? *

Copy and paste relevant sections from manuscript title (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Efficacy of a theory-based cognitive behavioral technique app-intervention for patients with insomnia: A randomized controlled trial "

1b) ABSTRACT: Structured summary of trial design, methods, results, and conclusions

NPT extension: Description of experimental treatment, comparator, care providers, centers, and blinding status.

1b-i) Key features/functionalities/components of the intervention and comparator in the METHODS section of the ABSTRACT

Mention key features/functionalities/components of the intervention and comparator in the abstract. If possible, also mention theories and principles used for designing the site. Keep in mind the needs of systematic reviewers and indexers by including important synonyms. (Note: Only report in the abstract what the main paper is reporting. If this information is missing from the main body of text, consider adding it)

Does your paper address subitem 1b-i? *

Copy and paste relevant sections from the manuscript abstract (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present study examined the long-term efficacy of a theory-based app (including cognitive behavioral theory [CBT], theory of planned behavior [TPB], health action process approach [HAPA], and control theory [CT]) on sleep hygiene among insomnia patients."

1b-ii) Level of human involvement in the METHODS section of the ABSTRACT

Clarify the level of human involvement in the abstract, e.g., use phrases like "fully automated" vs. "therapist/nurse/care provider/physician-assisted" (mention number and expertise of providers involved, if any). (Note: Only report in the abstract what the main paper is reporting. If this information is missing from the main body of text, consider adding it)

Does your paper address subitem 1b-ii?

Copy and paste relevant sections from the manuscript abstract (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The study was a two-arm single-blind parallel-group randomized controlled trial (RCT). Insomnia patients were randomly assigned to a treatment group who received access to an app for six weeks "

1b-iii) Open vs. closed, web-based (self-assessment) vs. face-toface assessments in the METHODS section of the ABSTRACT

Mention how participants were recruited (online vs. offline), e.g., from an open access website or from a clinic or a closed online user group (closed usergroup trial), and clarify if this was a purely web-based trial, or there were face-to-face components (as part of the intervention or for assessment). Clearly say if outcomes were self-assessed through questionnaires (as common in web-based trials). Note: In traditional offline trials, an open trial (open-label trial) is a type of clinical trial in which both the researchers and participants know which treatment is being administered. To avoid confusion, use "blinded" or "unblinded" to indicated the level of blinding instead of "open", as "open" in web-based trials usually refers to "open access" (i.e. participants can self-enrol). (Note: Only report in the abstract what the main paper is reporting. If this information is missing from the main body of text, consider adding it)

	1	2	3	4	5	
subitem not at all important	\bigcirc	\bigcirc	\circ	\circ	O	essential

Does your paper address subitem 1b-iii?

Copy and paste relevant sections from the manuscript abstract (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Insomnia patients were randomly assigned to a treatment group who received access to an app for six weeks (i.e., CBT on insomnia; CBT-I; n=156) or a control group receiving patient education (PE; n=156). "

1b-iv) RESULTS section in abstract must contain use data

Report number of participants enrolled/assessed in each group, the use/uptake of the intervention (e.g., attrition/adherence metrics, use over time, number of logins etc.), in addition to primary/secondary outcomes. (Note: Only report in the abstract what the main paper is reporting. If this information is missing from the main body of text, consider adding it)

Does your paper address subitem 1b-iv?

Copy and paste relevant sections from the manuscript abstract (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"CBT on insomnia; CBT-I; n=156) or a control group receiving patient education (PE; n=156) "

1b-v) CONCLUSIONS/DISCUSSION in abstract for negative trials

Conclusions/Discussions in abstract for negative trials: Discuss the primary outcome - if the trial is negative (primary outcome not changed), and the intervention was not used, discuss whether negative results are attributable to lack of uptake and discuss reasons. (Note: Only report in the abstract what the main paper is reporting. If this information is missing from the main body of text, consider adding it)

subitem not at all important O O O essential

Does your paper address subitem 1b-v?

Copy and paste relevant sections from the manuscript abstract (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Healthcare providers might consider using a CBT-I app to improve sleep among insomnia patients."

INTRODUCTION

2a) In INTRODUCTION: Scientific background and explanation of rationale



2a-i) Problem and the type of system/solution

Describe the problem and the type of system/solution that is object of the study: intended as standalone intervention vs. incorporated in broader health care program? Intended for a particular patient population? Goals of the intervention, e.g., being more cost-effective to other interventions, replace or complement other solutions? (Note: Details about the intervention are provided in "Methods" under 5)



Does your paper address subitem 2a-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Inadequate sleep and sleep disorders are among the most frequent problems worldwide.[1] Insomnia is one of the most common types of sleep disorders affecting approximately one-third of the general population. [2] It can have negative consequences on one or several spheres in daily life: psychosocial (e.g., depression, daytime dysfunction, reduced quality of life), occupational functioning (e.g., job absence, reduced ability to do tasks, poor job satisfaction, and inappropriate decisions and choices), or elevated burden to society (e.g., increased health costs, reduced job productivity).[3-5] Insomnia is described as a dissatisfying sleep associated with difficulty initiating or maintaining sleep or early morning awakening despite good opportunities for sleep leading to various daytime symptoms. "

2a-ii) Scientific background, rationale: What is known about the (type of) system

Scientific background, rationale: What is known about the (type of) system that is the object of the study (be sure to discuss the use of similar systems for other conditions/diagnoses, if appropiate), motivation for the study, i.e. what are the reasons for and what is the context for this specific study, from which stakeholder viewpoint is the study performed, potential impact of findings [2]. Briefly justify the choice of the comparator.

	1	2	3	4	5	
subitem not at all						essentia
important	\cup	\cup	\cup	\cup		essentia

Does your paper address subitem 2a-ii? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Good sleep hygiene practices are often one of the first steps in treating insomnia. Sleep hygiene refers to a variety of behaviors that promote sleep quality.[6] Sleep promoting behaviors include among else avoiding going to bed hungry or thirsty, avoiding stress and anxiety, avoiding physical activity before going to bed, and preparing a bedroom that provides a relaxed environment limiting activities in the bedroom to sleep and sexual activities.[7] However, behavioral modifications to improve sleep quality can be hard to achieve; many patients with insomnia reported that they have tried to modify their poor sleep habits without any effect. Dysfunctional or unrealistic sleep expectations, and excessive worrying over sleep loss appear to contribute to poor sleep hygiene. For instance, a Japanese study found that sleep hygiene behaviors are confounded by sleep beliefs.[8] Additionally, due to the rise of mobile technologies, many individuals now use electronic devices in bed, and this may restrict individuals with insomnia from practicing good sleep hygiene (e.g., being too excited to sleep due to the use of media).[9] Consequently, interventions are needed to help individuals with insomnia to actually practice sleep hygiene.

However, simply providing intervention on sleep hygiene behaviors for individuals with insomnia is insufficient. A review paper of qualitative studies showed that individuals suffering from insomnia observe the inefficiency of sleep hygiene practice delivered by the healthcare providers. In particular, healthcare providers are found to have limited knowledge in sleep hygiene (i.e., they only know a few basic principles) and most providers are unable to incorporate theoretical models or techniques to deliver sleep hygiene.[10] Therefore, interventions concerning sleep hygiene behaviors should incorporate robust and effective theoretical models. Indeed, in a systematic review and meta-analysis, Webb et al. found that using theories as a framework in designing online interventions led to a substantial effect on outcome variables.[11] Theoretical models can help to select the components of the intervention and help in the evaluation of the intervention's impact.[12-22] By designing interventions based on empirically-derived theoretical principles, researchers can identify the most powerful determinants of a given construct. [23] Despite evidence-based recommendations that support the utility of theory-based approaches for designing interventions,[21] very few studies have considered this aspect.[22, 24] Therefore, studies using theory to support treatment efficacy are much needed.

There are four empirically-validated theoretical models (Cognitive-Behavioral Therapy [CBT], Theory of Planned Behavior [TPB], Health Action Process Approach [HAPA], and Control Theory [CT]) that may assist individuals with insomnia in engaging good sleep hygiene."

2b) In INTRODUCTION: Specific objectives or hypotheses



Does your paper address CONSORT subitem 2b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present study aimed to determine the long-term treatment efficacy of a theory-based app using CBT, TPB, HAPA, and CT on sleep hygiene among insomnia patients. The primary evaluation involved comparing sleep hygiene behaviors and sleep quality with a control group that received patient education (PE). "



3a) Description of trial design (such as parallel, factorial) including allocation ratio



Does your paper address CONSORT subitem 3a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"A two-arm single-blind parallel-group RCT was launched to compare CBT-I and PE groups via an App over a six-month period"

3b) Important changes to methods after trial commencement (such as eligibility criteria), with reasons



Does your paper address CONSORT subitem 3b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant

3b-i) Bug fixes, Downtimes, Content Changes

Bug fixes, Downtimes, Content Changes: ehealth systems are often dynamic systems. A description of changes to methods therefore also includes important changes made on the intervention or comparator during the trial (e.g., major bug fixes or changes in the functionality or content) (5-iii) and other "unexpected events" that may have influenced study design such as staff changes, system failures/downtimes, etc. [2].

5 subitem not at all essential important

Does your paper address subitem 3b-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant

4a) Eligibility criteria for participants



Does your paper address CONSORT subitem 4a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

" Inclusion criteria

The inclusion criteria were: (i) being 18 years of age or older, (ii) having insomnia disorder according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5),[40] (iii) having an ISI score of 10 or higher,[41] (iv) understanding Persian, and (v) having access to a smartphone and/or a desktop computer with internet access."

4a-i) Computer / Internet literacy

Computer / Internet literacy is often an implicit "de facto" eligibility criterion - this should be explicitly clarified.

subitem not at all important O O O essential

Does your paper address subitem 4a-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"having access to a smartphone and/or a desktop computer with internet access"

4a-ii) Open vs. closed, web-based vs. face-to-face assessments:

Open vs. closed, web-based vs. face-to-face assessments: Mention how participants were recruited (online vs. offline), e.g., from an open access website or from a clinic, and clarify if this was a purely web-based trial, or there were face-to-face components (as part of the intervention or for assessment), i.e., to what degree got the study team to know the participant. In online-only trials, clarify if participants were quasi-anonymous and whether having multiple identities was possible or whether technical or logistical measures (e.g., cookies, email confirmation, phone calls) were used to detect/prevent these.

Does your paper address subitem 4a-ii? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"This Iranian-based study was advertised using brochures and posters at three universities, five colleges, and ten general physicians' offices as well as on social media. Interested participants were asked to access an online platform specifically designed for the study to complete a screening questionnaire assessing insomnia symptoms comprising the Insomnia Severity Index (ISI), sleep characteristics, and medical history, as well as their time spent on computers and online. If the participants meet the initial criteria and express interest, a phone appointment is scheduled to conducted additional eligibility assessments"

4a-iii) Information giving during recruitment

Information given during recruitment. Specify how participants were briefed for recruitment and in the informed consent procedures (e.g., publish the informed consent documentation as appendix, see also item X26), as this information may have an effect on user self-selection, user expectation and may also bias results.

	1	2	3	4	5	
subitem not at all important	0	\bigcirc	\circ	O	0	essential

Does your paper address subitem 4a-iii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

After expressing objectives, assuring the participants about confidentiality of their data and possibility of withdrawing from the study, the written informed consent form was signed by those participants who were willing to participate in " .this research by the three research assistants

4b) Settings and locations where the data were collected



Does your paper address CONSORT subitem 4b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"This Iranian-based study was advertised using brochures and posters at three universities, five colleges, and ten general physicians' offices as well as on social media. Interested participants were asked to access an online platform specifically designed for the study to complete a screening



4b-i) Report if outcomes were (self-)assessed through online questionnaires

Clearly report if outcomes were (self-)assessed through online questionnaires (as common in webbased trials) or otherwise.

1 subitem not at all essential important

Does your paper address subitem 4b-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"All participants completed a socio-demographic profile questionnaire (age, gender, educational status, occupational status) "

4b-ii) Report how institutional affiliations are displayed

Report how institutional affiliations are displayed to potential participants [on ehealth media], as affiliations with prestigious hospitals or universities may affect volunteer rates, use, and reactions with regards to an intervention. (Not a required item - describe only if this may bias results)

subitem not at all essential important

Does your paper address subitem 4b-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

5) The interventions for each group with sufficient details to allow replication, including how and when they were actually administered

5-i) Mention names, credential, affiliations of the developers, sponsors, and owners

Mention names, credential, affiliations of the developers, sponsors, and owners [6] (if authors/evaluators are owners or developer of the software, this needs to be declared in a "Conflict of interest" section or mentioned elsewhere in the manuscript).

	1	2	3	4	5	
subitem not at all important	0	0	\circ	•	0	essential

Does your paper address subitem 5-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Partial financial support by Research Vice Chancellor of Qazvin University of Medical Sciences for the project is appreciated."

5-ii) Describe the history/development process

Describe the history/development process of the application and previous formative evaluations (e.g., focus groups, usability testing), as these will have an impact on adoption/use rates and help with interpreting results.

	1	2	3	4	5	
subitem not at all important	0	\circ	\circ	•	\circ	essential

Does your paper address subitem 5-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"the item is not applicable"

5-iii) Revisions and updating

Revisions and updating. Clearly mention the date and/or version number of the application/intervention (and comparator, if applicable) evaluated, or describe whether the intervention underwent major changes during the evaluation process, or whether the development and/or content was "frozen" during the trial. Describe dynamic components such as news feeds or changing content which may have an impact on the replicability of the intervention (for unexpected events see item 3b).

	1	2	3	4	5	
subitem not at all important	0	\circ	\circ	\circ	0	essential

Does your paper address subitem 5-iii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant

5-iv) Quality assurance methods

Provide information on quality assurance methods to ensure accuracy and quality of information provided [1], if applicable.

	1	2	3	4	5	
subitem not at all important	\bigcirc	\circ	\circ	0	0	essential

Does your paper address subitem 5-iv?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

5-v) Ensure replicability by publishing the source code, and/or providing screenshots/screen-capture video, and/or providing flowcharts of the algorithms used

Ensure replicability by publishing the source code, and/or providing screenshots/screen-capture video, and/or providing flowcharts of the algorithms used. Replicability (i.e., other researchers should in principle be able to replicate the study) is a hallmark of scientific reporting.

5 subitem not at all essential important

Does your paper address subitem 5-v?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Table 2 further illustrates how the BCTs work on specific targeted outcomes "

5-vi) Digital preservation

Digital preservation: Provide the URL of the application, but as the intervention is likely to change or disappear over the course of the years; also make sure the intervention is archived (Internet Archive, webcitation.org, and/or publishing the source code or screenshots/videos alongside the article). As pages behind login screens cannot be archived, consider creating demo pages which are accessible without login.

subitem not at all essential important

Does your paper address subitem 5-vi?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

5-vii) Access

Access: Describe how participants accessed the application, in what setting/context, if they had to pay (or were paid) or not, whether they had to be a member of specific group. If known, describe how participants obtained "access to the platform and Internet" [1]. To ensure access for editors/reviewers/readers, consider to provide a "backdoor" login account or demo mode for reviewers/readers to explore the application (also important for archiving purposes, see vi).

subitem not at all essential important

Does your paper address subitem 5-vii? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"the app has provided by a web-page"

5-viii) Mode of delivery, features/functionalities/components of the intervention and comparator, and the theoretical framework

Describe mode of delivery, features/functionalities/components of the intervention and comparator, and the theoretical framework [6] used to design them (instructional strategy [1], behaviour change techniques, persuasive features, etc., see e.g., [7, 8] for terminology). This includes an in-depth description of the content (including where it is coming from and who developed it) [1]," whether [and how] it is tailored to individual circumstances and allows users to track their progress and receive feedback" [6]. This also includes a description of communication delivery channels and - if computer-mediated communication is a component - whether communication was synchronous or asynchronous [6]. It also includes information on presentation strategies [1], including page design principles, average amount of text on pages, presence of hyperlinks to other resources, etc. [1].

1 subitem not at all essential important

Does your paper address subitem 5-viii? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The app is designed based on combination of the TPB, HAPA, and CBT-I[29] and utilizing the self-help concept[19] in order to treat insomnia. Several behaviorchange techniques (BCTs) are integrated in the app including: information about health consequences, information about social and environmental consequences, habit formation, habit reversal, pros and cons of performing sleep hygiene behaviors, reconstructing the physical environment, reconstructing the social environment, self-monitoring of behavior, action planning, and problem-solving. The intervention contents were designed across six weeks, with exercises and sub-tutorials automatically provided each week (Table 1). Table 2 further illustrates how the BCTs work on specific targeted outcomes."

5-ix) Describe use parameters

Describe use parameters (e.g., intended "doses" and optimal timing for use). Clarify what instructions or recommendations were given to the user, e.g., regarding timing, frequency, heaviness of use, if any, or was the intervention used ad libitum.

subitem not at all essential important

Does your paper address subitem 5-ix?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

5-x) Clarify the level of human involvement

Clarify the level of human involvement (care providers or health professionals, also technical assistance) in the e-intervention or as co-intervention (detail number and expertise of professionals involved, if any, as well as "type of assistance offered, the timing and frequency of the support, how it is initiated, and the medium by which the assistance is delivered". It may be necessary to distinguish between the level of human involvement required for the trial, and the level of human involvement required for a routine application outside of a RCT setting (discuss under item 21 generalizability).

subitem not at all essential important

Does your paper address subitem 5-x?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

5-xi) Report any prompts/reminders used

Report any prompts/reminders used: Clarify if there were prompts (letters, emails, phone calls, SMS) to use the application, what triggered them, frequency etc. It may be necessary to distinguish between the level of prompts/reminders required for the trial, and the level of prompts/reminders for a routine application outside of a RCT setting (discuss under item 21 - generalizability).

subitem not at all essential important

Does your paper address subitem 5-xi? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

". Participants in both groups received assistance from a trained research assistant to help them install and unlock the app. To avoid contamination, participants in the PE group could not access to the CBT-I content and this part was locked using a personal code. "

5-xii) Describe any co-interventions (incl. training/support)

Describe any co-interventions (incl. training/support): Clearly state any interventions that are provided in addition to the targeted eHealth intervention, as ehealth intervention may not be designed as stand-alone intervention. This includes training sessions and support [1]. It may be necessary to distinguish between the level of training required for the trial, and the level of training for a routine application outside of a RCT setting (discuss under item 21 - generalizability.

subitem not at all essential important

Does your paper address subitem 5-xii? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Procedure in PE

Participants in the PE group received written weekly information on accurate and relevant information regarding insomnia symptoms, physiological controls of sleep, sleep hygiene practices, healthy sleep behaviors (e.g., reduce time in bed, get up at the same time every day, go to bed only if sleepy, and do not stay in bed unless asleep) and changing lifestyle to promote sleep health. The information was designed in a separate content from the CBT-I in the App. This weekly information was locked for the participants and was unlocked on weekly bases. Participants in the PE group were informed and could access the CBT-I content of the app at the end of the study (i.e., 6 months after the completing the intervention).

6a) Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed

Does your paper address CONSORT subitem 6a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Participants in the PE group received written weekly information on accurate and relevant information regarding insomnia symptoms, physiological controls of sleep, sleep hygiene practices, healthy sleep behaviors (e.g., reduce time in bed, get up at the same time every day, go to bed only if sleepy, and do not stay in bed unless asleep) and changing lifestyle to promote sleep health. The information was designed in a separate content from the CBT-I in the App. This weekly information was locked for the participants and was unlocked on weekly bases.

Participants in the PE group were informed and could access the CBT-I content of the app at the end of the study (i.e., 6 months after the completing the intervention)."

6a-i) Online questionnaires: describe if they were validated for online use and apply CHERRIES items to describe how the questionnaires were designed/deployed

If outcomes were obtained through online questionnaires, describe if they were validated for online use and apply CHERRIES items to describe how the questionnaires were designed/deployed [9].

	1	2	3	4	5	
subitem not at all important	\bigcirc	\bigcirc	0	\circ	()	essential

Does your paper address subitem 6a-i?

Copy and paste relevant sections from manuscript text

"Measures

All participants completed a socio-demographic profile questionnaire (age, gender, educational status, occupational status) at the baseline assessment. Primary and secondary outcomes were assessed using a variety of measures outlined below.

Primary outcomes

Sleep hygiene behavior. Sleep hygiene behavior was assessed using three items. The participants were asked to report how many days they had good sleep hygiene behavior over the past week ('How many days did you make your bedroom restful over the past week?') and then whether they avoided going to bed feeling hungry or thirsty, and avoided anxiety and stressprovoking activity before bed. Participants were asked to respond on an 8point scale ranging from 0 to 7. The internal consistency of the three items were found to be acceptable in a previous study ($\alpha = 0.78$).[37] Insomnia Severity Index (ISI). The ISI is a seven-item self-report scale that assesses participants' level of insomnia over the past two weeks. All items are rated on a five-point Likert-type scale ranging from 0 (no problem) to 4 (very severe problem). A total score is generated by summing up all seven items ranging from 0-28 with five sub-scores: 0-7 (absence of insomnia), 8-14 (sub-threshold insomnia), 15-21 (moderate insomnia), and 22-28 (severe insomnia). The ISI has been translated into Persian and its psychometric properties have been documented among Iranian adults.[44] Pittsburgh Sleep Quality Index (PSQI). The PSQI is a subjective measure of sleep quality and disturbances over the past month. The PSQI contains 19 items that are grouped into separate component scores in seven areas comprising: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The scores are summed to provide a Global Sleep Quality Score. The Persian version of the PSQI has been already validated and described in detail.[45]

Secondary outcomes

Attitude. Attitude towards good sleep hygiene was assessed using five-point evaluative semantic differential scales (e.g., 'To make my bedroom/sleep environment restful would be: unpleasant-pleasant, good-bad, wise-foolish, correct-incorrect, unenjoyable-enjoyable, satisfying-unsatisfying, usefuluseless). Internal consistency of this twelve-item scale has been found acceptable in previous studies.[24,37]

Perceived behavioral control (PBC). PBC was assessed using three items (e.g., 'I am confident that every day I can prevent anxiety-provoking activity before bedtime'). All items were scored on a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). The scale has proved internally consistent in previous studies.[24,37]

Behavioral intention. Behavioral intention was assessed using six items (e.g., 'Over the next week, I intend to make my bedroom restful'). All items were scored on a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Internal consistency of this six-item scale has been found acceptable in previous studies.[24,37]

Action planning. Action planning was assessed using four items. The participants were asked to indicate if have made a detailed plan regarding (i) when, (ii) where, (iii) how, and (iv) how often they will perform sleep hygiene behaviors over the next six months. All items were scored on a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). The internal consistency of this four-item scale has been found acceptable in previous studies.[24,37,46]

Coping planning. Coping planning was assessed using five items (e.g., 'I have made a detailed plan regarding what to do if something interferes with my plans'). All items were scored on a five-point Likert scale, ranging from 1 (totally disagree) to 5 (totally agree). Internal consistency of this five-item scale has been found acceptable in previous studies.[24,37,47] Self-monitoring. Self-monitoring was assessed by three items (i.e., "I keep track of how much time I spend sleeping", "I pay attention to how tired or rested I feel each day", and "I take care to note the time that I go to bed and wake each day). Responses were rated on a scale ranging from 1 (never) to 5 (always).

Self-report Behavioral Automaticity Index (SRBAI). The extent to which the sleep hygiene behaviors are habitual for an individual was assessed using the SRBAI. The SRBAI contains four items that starts with the stem "Sleep hygiene behavior is something..." following by "I do automatically', 'I do without having to consciously remember', 'I do without thinking', and 'I start doing before I realize I'm doing it'. The reliability of the Persian SRBAI has been reported.[48]

Hospital Anxiety and Depression Scale (HADS). The HADS is a 14-item scale that assesses anxiety (seven items) and depression (seven items) in patients with both somatic and mental problems. All items were scored on a 0-3 scale with higher score representing higher levels of anxiety and depression. The

6a-ii) Describe whether and how "use" (including intensity of use/dosage) was defined/measured/monitored

Describe whether and how "use" (including intensity of use/dosage) was defined/measured/monitored (logins, logfile analysis, etc.). Use/adoption metrics are important process outcomes that should be reported in any ehealth trial.

5 subitem not at all essential important

Does your paper address subitem 6a-ii?

Copy and paste relevant sections from manuscript text

Your answer

6a-iii) Describe whether, how, and when qualitative feedback from participants was obtained

Describe whether, how, and when qualitative feedback from participants was obtained (e.g., through emails, feedback forms, interviews, focus groups).

subitem not at all essential important

Does your paper address subitem 6a-iii?

Copy and paste relevant sections from manuscript text

Your answer

6b) Any changes to trial outcomes after the trial commenced, with reasons

Does your paper address CONSORT subitem 6b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant for our study

7a) How sample size was determined



NPT: When applicable, details of whether and how the clustering by care provides or centers was addressed

7a-i) Describe whether and how expected attrition was taken into account when calculating the sample size

Describe whether and how expected attrition was taken into account when calculating the sample size.

	1	2	3	4	5	
subitem not at all important	0	\circ	\circ	\circ	•	essential

Does your paper address subitem 7a-i?

Copy and paste relevant sections from manuscript title (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

7b) When applicable, explanation of any interim analyses and stopping guidelines



Does your paper address CONSORT subitem 7b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The sample size was estimated based on previous studies on internet-based self-help insomnia interventions with a moderate effect size.[42, 43] Using a twotailed test with a small-to-medium effect size (Cohen's d = 0.40) and significance level at p=0.05, a total sample size of 266 (i.e., 133 per group) had 90% of power. Using an estimated drop-out rate at 15%, the entire sample size was increased from 266 to 312 participants (i.e., 156 per group)."

8a) Method used to generate the random allocation sequence

NPT: When applicable, how care providers were allocated to each trial group

Does your paper address CONSORT subitem 8a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Randomization and allocation procedures

Participants who met the inclusion criteria and signed the informed consent were randomly assigned to a control group (PE) or a treatment group (CBT-I) at a 1:1 ratio. Randomization was performed by an independent researcher via a random list generated utilizing SPSS 24.0. Because blinding participants from treatment condition was impossible, the study blinded the data analyst using a code system for treatment condition. Moreover, the data analyst did not have access to the key document. Participants in both groups received assistance from a trained research assistant to help them install and unlock the app. To avoid contamination, participants in the PE group could not access to the CBT-I content and this part was locked using a personal code.

8b) Type of randomisation; details of any restriction (such as blocking and block size)

Does your paper address CONSORT subitem 8b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable/relevant for our study

9) Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned



Does your paper address CONSORT subitem 9? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Randomization was performed by an independent researcher via a random list generated utilizing SPSS 24.0"

10) Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions



Does your paper address CONSORT subitem 10? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Randomization was performed by an independent researcher via a random list generated utilizing SPSS 24."

11a) If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how



11a-i) Specify who was blinded, and who wasn't

Specify who was blinded, and who wasn't. Usually, in web-based trials it is not possible to blind the participants [1, 3] (this should be clearly acknowledged), but it may be possible to blind outcome assessors, those doing data analysis or those administering co-interventions (if any).

subitem not at all essential important

Does your paper address subitem 11a-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Because blinding participants from treatment condition was impossible, the study blinded the data analyst using a code system for treatment condition. Moreover, the data analyst did not have access to the key document. Participants in both groups received assistance from a trained research assistant to help them install and unlock the app. To avoid contamination, participants in the PE group could not access to the CBT-I content and this part was locked using a personal code. "

11a-ii) Discuss e.g., whether participants knew which intervention was the "intervention of interest" and which one was the "comparator"

Informed consent procedures (4a-ii) can create biases and certain expectations - discuss e.g., whether participants knew which intervention was the "intervention of interest" and which one was the "comparator".

subitem not at all essential important

Does your paper address subitem 11a-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Because blinding participants from treatment condition was impossible, the study blinded the data analyst using a code system for treatment condition. Moreover, the data analyst did not have access to the key document. Participants in both groups received assistance from a trained research assistant to help them install and unlock the app. To avoid contamination, participants in the PE group could not access to the CBT-I content and this part was locked using a personal code. "

11b) If relevant, description of the similarity of interventions



(this item is usually not relevant for ehealth trials as it refers to similarity of a placebo or sham intervention to a active medication/intervention)

Does your paper address CONSORT subitem 11b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Procedure in PE

Participants in the PE group received written weekly information on accurate and relevant information regarding insomnia symptoms, physiological controls of sleep, sleep hygiene practices, healthy sleep behaviors (e.g., reduce time in bed, get up at the same time every day, go to bed only if sleepy, and do not stay in bed unless asleep) and changing lifestyle to promote sleep health. The information was designed in a separate content from the CBT-I in the App. This weekly information was locked for the participants and was unlocked on weekly bases. Participants in the PE group were informed and could access the CBT-I content of the app at the end of the study (i.e., 6 months after the completing the intervention).

12a) Statistical methods used to compare groups for primary and secondary outcomes

NPT: When applicable, details of whether and how the clustering by care providers or centers was addressed

Does your paper address CONSORT subitem 12a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Statistical methods

All statistical analyses were performed in accordance with Consolidated Standards of Reporting Trials (CONSORT) guidelines. Also, intention-to-treat (ITT) analyses were carried out to tackle attrition. Descriptive statistics were used to summarize the characteristics of the participants. To evaluate the magnitude of changes in primary and secondary outcomes over time across the two groups, linear mixed models (PROCMIXED) were performed, controlling for baseline variables and other covariates that may relate to the outcome. The mixed modeling approach is a powerful statistical tool to evaluate group differences over time that has unequal numbers of participants at baseline and follow-up. It is also a helpful way to handle missing data using full information maximum likelihood estimation. The analysis incorporated two betweenparticipant effects (between groups and between participants within groups) and three within-participant effects (between times, group by time interactions, and random variation). All p-values were two-sided and were evaluated as statistically significant at the 0.05 level. All statistical analyses were performed using SAS version 9.3 (SAS Institute Inc., Cary, NC, USA).

12a-i) Imputation techniques to deal with attrition / missing values

Imputation techniques to deal with attrition / missing values: Not all participants will use the intervention/comparator as intended and attrition is typically high in ehealth trials. Specify how participants who did not use the application or dropped out from the trial were treated in the statistical analysis (a complete case analysis is strongly discouraged, and simple imputation techniques such as LOCF may also be problematic [4]).

Does your paper address subitem 12a-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Statistical methods"

All statistical analyses were performed in accordance with Consolidated Standards of Reporting Trials (CONSORT) guidelines. Also, intention-to-treat (ITT) analyses were carried out to tackle attrition. Descriptive statistics were used to summarize the characteristics of the participants. To evaluate the magnitude of changes in primary and secondary outcomes over time across the two groups, linear mixed models (PROCMIXED) were performed, controlling for baseline variables and other covariates that may relate to the outcome. The mixed modeling approach is a powerful statistical tool to evaluate group differences over time that has unequal numbers of participants at baseline and follow-up. It is also a helpful way to handle missing data using full information maximum likelihood estimation. The analysis incorporated two betweenparticipant effects (between groups and between participants within groups) and three within-participant effects (between times, group by time interactions, and random variation). All p-values were two-sided and were evaluated as statistically significant at the 0.05 level. All statistical analyses were performed .(using SAS version 9.3 (SAS Institute Inc., Cary, NC, USA

12b) Methods for additional analyses, such as subgroup analyses and adjusted analyses



Does your paper address CONSORT subitem 12b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Statistical methods

All statistical analyses were performed in accordance with Consolidated Standards of Reporting Trials (CONSORT) guidelines. Also, intention-to-treat (ITT) analyses were carried out to tackle attrition. Descriptive statistics were used to summarize the characteristics of the participants. To evaluate the magnitude of changes in primary and secondary outcomes over time across the two groups, linear mixed models (PROCMIXED) were performed, controlling for baseline variables and other covariates that may relate to the outcome. The mixed modeling approach is a powerful statistical tool to evaluate group differences over time that has unequal numbers of participants at baseline and follow-up. It is also a helpful way to handle missing data using full information maximum likelihood estimation. The analysis incorporated two betweenparticipant effects (between groups and between participants within groups) and three within-participant effects (between times, group by time interactions, and random variation). All p-values were two-sided and were evaluated as statistically significant at the 0.05 level. All statistical analyses were performed using SAS version 9.3 (SAS Institute Inc., Cary, NC, USA).

X26) REB/IRB Approval and Ethical Considerations [recommended as subheading under "Methods"] (not a CONSORT item)

X26-i) Comment on ethics committee approval

Does your paper address subitem X26-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present study protocol was approved by the Ethics Committee of Qazvin University of Medical Sciences (IR.QUMS.REC.1396.455) and is registered with ClinicalTrials.gov (Identifier: NCT03605732; last updated July 2018). This study was performed based on the Helsinki Declaration principles. Required permissions were obtained from authorities of Qazvin University of Medical Sciences. After expressing objectives, assuring the participants about confidentiality of their data and possibility of withdrawing from the study, the written informed consent form was signed by those participants who were willing to participate in this research by the three research assistants. "

x26-ii) Outline informed consent procedures

Outline informed consent procedures e.g., if consent was obtained offline or online (how? Checkbox, etc.?), and what information was provided (see 4a-ii). See [6] for some items to be included in informed consent documents.

	1	2	3	4	5	
subitem not at all important	0	\bigcirc	\circ	\circ	O	essential

Does your paper address subitem X26-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present study protocol was approved by the Ethics Committee of Qazvin University of Medical Sciences (IR.QUMS.REC.1396.455) and is registered with ClinicalTrials.gov (Identifier: NCT03605732; last updated July 2018). This study was performed based on the Helsinki Declaration principles. Required permissions were obtained from authorities of Qazvin University of Medical Sciences. After expressing objectives, assuring the participants about confidentiality of their data and possibility of withdrawing from the study, the written informed consent form was signed by those participants who were willing to participate in this research by the three research assistants. "

X26-iii) Safety and security procedures

Safety and security procedures, incl. privacy considerations, and any steps taken to reduce the likelihood or detection of harm (e.g., education and training, availability of a hotline)

subitem not at all essential important

Does your paper address subitem X26-iii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer



13a) For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome

NPT: The number of care providers or centers performing the intervention in each group and the number of patients treated by each care provider in each center

Does your paper address CONSORT subitem 13a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The flow chart of the study design is shown in Figure 1"

13b) For each group, losses and exclusions after randomisation, together with reasons



Does your paper address CONSORT subitem 13b? (NOTE: Preferably, this is shown in a CONSORT flow diagram) *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The flow chart of the study design is shown in Figure 1"

13b-i) Attrition diagram

Strongly recommended: An attrition diagram (e.g., proportion of participants still logging in or using the intervention/comparator in each group plotted over time, similar to a survival curve) or other figures or tables demonstrating usage/dose/engagement.

5 subitem not at all essential important

Does your paper address subitem 13b-i?

Copy and paste relevant sections from the manuscript or cite the figure number if applicable (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The flow chart of the study design is shown in Figure 1"

14a) Dates defining the periods of recruitment and follow-up



Does your paper address CONSORT subitem 14a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present study protocol was approved by the Ethics Committee of Qazvin University of Medical Sciences (IR.QUMS.REC.1396.455) and is registered with ClinicalTrials.gov (Identifier: NCT03605732; last updated July 2018). "

14a-i) Indicate if critical "secular events" fell into the study period

Indicate if critical "secular events" fell into the study period, e.g., significant changes in Internet resources available or "changes in computer hardware or Internet delivery resources"

subitem not at all important

essential

Does your paper address subitem 14a-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable

14b) Why the trial ended or was stopped (early)



Does your paper address CONSORT subitem 14b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable

15) A table showing baseline demographic and clinical characteristics for each group



NPT: When applicable, a description of care providers (case volume, qualification, expertise, etc.) and centers (volume) in each group

Does your paper address CONSORT subitem 15? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

item is not applicable

15-i) Report demographics associated with digital divide issues

In ehealth trials it is particularly important to report demographics associated with digital divide issues, such as age, education, gender, social-economic status, computer/Internet/ehealth literacy of the participants, if known.

5 subitem not at all essential important

Does your paper address subitem 15-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Table 3 shows that both CBT-I and PE groups shared similar demographic characteristics. Specifically, the mean age of the insomnia patients in the CBT-I group was 36.21 years (SD = 5.81) and the mean age of those in the PE was 35.29 years (SD = 5.76). Slightly less than half of the participants were male in each group (46.1% in the CBT-I group and 42.3% in the PE group). "

16) For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups

16-i) Report multiple "denominators" and provide definitions

Report multiple "denominators" and provide definitions: Report N's (and effect sizes) "across a range of study participation [and use] thresholds" [1], e.g., N exposed, N consented, N used more than x times, N used more than y weeks, N participants "used" the intervention/comparator at specific pre-defined time points of interest (in absolute and relative numbers per group). Always clearly define "use" of the intervention.

Does your paper address subitem 16-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Effects of the intervention on primary outcomes" "Table 5"

16-ii) Primary analysis should be intent-to-treat

Primary analysis should be intent-to-treat, secondary analyses could include comparing only "users", with the appropriate caveats that this is no longer a randomized sample (see 18-i).

5 subitem not at all essential important

Does your paper address subitem 16-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

17a) For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)



Does your paper address CONSORT subitem 17a? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Table 5"

17a-i) Presentation of process outcomes such as metrics of use and intensity of use

In addition to primary/secondary (clinical) outcomes, the presentation of process outcomes such as metrics of use and intensity of use (dose, exposure) and their operational definitions is critical. This does not only refer to metrics of attrition (13-b) (often a binary variable), but also to more continuous exposure metrics such as "average session length". These must be accompanied by a technical description how a metric like a "session" is defined (e.g., timeout after idle time) [1] (report under item 6a).

5 subitem not at all essential important

Does your paper address subitem 17a-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

17b) For binary outcomes, presentation of both absolute and relative effect sizes is recommended

Does your paper address CONSORT subitem 17b? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable

18) Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing prespecified from exploratory

Does your paper address CONSORT subitem 18? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Table 5"

18-i) Subgroup analysis of comparing only users

A subgroup analysis of comparing only users is not uncommon in ehealth trials, but if done, it must be stressed that this is a self-selected sample and no longer an unbiased sample from a randomized trial (see 16-iii).

5 subitem not at all essential important

Does your paper address subitem 18-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

19) All important harms or unintended effects in each group



(for specific guidance see CONSORT for harms)

Does your paper address CONSORT subitem 19? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable

19-i) Include privacy breaches, technical problems

Include privacy breaches, technical problems. This does not only include physical "harm" to participants, but also incidents such as perceived or real privacy breaches [1], technical problems, and other unexpected/unintended incidents. "Unintended effects" also includes unintended positive effects [2].

Does your paper address subitem 19-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

the item is not applicable

19-ii) Include qualitative feedback from participants or observations from staff/researchers

Include qualitative feedback from participants or observations from staff/researchers, if available, on strengths and shortcomings of the application, especially if they point to unintended/unexpected effects or uses. This includes (if available) reasons for why people did or did not use the application as intended by the developers.

subitem not at all essential important

Does your paper address subitem 19-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer



22) Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence



NPT: In addition, take into account the choice of the comparator, lack of or partial blinding, and unequal expertise of care providers or centers in each group

22-i) Restate study questions and summarize the answers suggested by the data, starting with primary outcomes and process outcomes (use)

Restate study questions and summarize the answers suggested by the data, starting with primary outcomes and process outcomes (use).

5 subitem not at all essential important

Does your paper address subitem 22-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The present research found that a theory-based intervention improved sleep outcomes among insomnia patients in Iran, as evidenced by improved sleep hygiene behaviors, increased sleep quality, and decreased insomnia severity. These beneficial effects were mediated by several changes in the putative determinants of behavior, including the perceived behavioral control in the TPB, action and coping planning in the HAPA, and self-monitoring and behavioral automaticity in the CT. Moreover, the entire treatment effects were guided by the CBT (i.e., the use of BCTs). Furthermore, as a consequence of the improvements in sleep, the positive effects of CBT-I were demonstrated by reduced anxiety and depression among insomnia patients. Researchers and practitioners interested in improving sleep quality, particularly among insomnia patients, might draw on the insights provided by several components in the TPB,[7,34-37] HAPA,[37,38] and CT[39] in order to design effective interventions for insomnia patients. Moreover, the use of CBT-I app may enhance the feasibility of providing CBT-I treatments incorporating the components in TPB, HAPA, and CT mentioned above. "

22-ii) Highlight unanswered new questions, suggest future research

Highlight unanswered new questions, suggest future research.

Does your paper address subitem 22-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

20) Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses



20-i) Typical limitations in ehealth trials

Typical limitations in ehealth trials: Participants in ehealth trials are rarely blinded. Ehealth trials often look at a multiplicity of outcomes, increasing risk for a Type I error. Discuss biases due to non-use of the intervention/usability issues, biases through informed consent procedures, unexpected events.

	1	2	3	4	5	
subitem not at all						essentia
important	\cup	\cup	\cup	\cup		essentia

Does your paper address subitem 20-i? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"There are some limitations in the study. First, the participants were not representative of the entire population of Iranian patients with insomnia. For example, participants in the present study needed to use the app to receive the intervention. Therefore, insomnia patients who have little literacy in using smartphone or desktop computer may not gain benefit from the CBT-I. Following by the first limitation, given that the mean age of the studied sample was midthirties; the possibility to generalize our findings to all inhabitants/age group is low. Second, the use of self-report measures for sleep and mental health outcomes could be biased by social desirability or memory recall. Although mental health outcomes are hard to measure using non-self-reports, future studies may want to use objectively measured instruments on sleep quality (e.g., actigraphy). Third, the participants could not be blinded because the intervention was obvious to them. Therefore, the placebo effects were hard to be excluded; especially most of the outcome measures were self-reported. However, given that the promising effects were found across all the outcome measures and the placebo effects would be unlikely to last six months after treatment ends, we tentatively concluded that the CBT-I is an effective program to treat insomnia. Lastly, as the study only followed up to six months after completing the intervention, it is unclear whether the CBT-I can last the effects longer than six months. Future studies are thus warranted to examine a long-term effect of the CBT-I."

21) Generalisability (external validity, applicability) of the trial findings



NPT: External validity of the trial findings according to the intervention, comparators, patients, and care providers or centers involved in the trial

21-i) Generalizability to other populations

Generalizability to other populations: In particular, discuss generalizability to a general Internet population, outside of a RCT setting, and general patient population, including applicability of the study results for other organizations

5 subitem not at all essential important

Does your paper address subitem 21-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

21-ii) Discuss if there were elements in the RCT that would be different in a routine application setting

Discuss if there were elements in the RCT that would be different in a routine application setting (e.g., prompts/reminders, more human involvement, training sessions or other co-interventions) and what impact the omission of these elements could have on use, adoption, or outcomes if the intervention is applied outside of a RCT setting.

subitem not at all essential important

Does your paper address subitem 21-ii?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

Your answer

OTHER INFORMATION

23) Registration number and name of trial registry

Does your paper address CONSORT subitem 23? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Trial Registration: NCT03605732"

24) Where the full trial protocol can be accessed, if available



Does your paper address CONSORT subitem 24? *

Cite a Multimedia Appendix, other reference, or copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"Trial Registration: NCT03605732"

25) Sources of funding and other support (such as supply of drugs), role of funders



Does your paper address CONSORT subitem 25? *

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"No financial support for disseminating the protocol."

X27) Conflicts of Interest (not a CONSORT item)



X27-i) State the relation of the study team towards the system being evaluated

In addition to the usual declaration of interests (financial or otherwise), also state the relation of the study team towards the system being evaluated, i.e., state if the authors/evaluators are distinct from or identical with the developers/sponsors of the intervention.

subitem not at all important

essential

Does your paper address subitem X27-i?

Copy and paste relevant sections from the manuscript (include quotes in quotation marks "like this" to indicate direct quotes from your manuscript), or elaborate on this item by providing additional information not in the ms, or briefly explain why the item is not applicable/relevant for your study

"The authors declare no conflict of interest"

About the CONSORT EHEALTH checklist

As a result of using this checklist, did you make changes in your manuscript? *
yes, major changes

no

yes, minor changes

What were the most important changes you made as a result of using this checklist?

Your answer

How much time did you spend on going through the checklist INCLUDING making changes in your manuscript *

Your answer

This is a required question

As a result of u	sing this checklist	t, do you think	your manuscrip
has improved?	*		

•	yes
	-

-)	n/
	110

()	Other:
\ /	Other.

Would you like to become involved in the CONSORT EHEALTH group?

This would involve for example becoming involved in participating in a workshop and writing an "Explanation and Elaboration" document

\bigcirc	yes
\cup	ye:



Other:

Any other comments or questions on CONSORT EHEALTH

Your answer

STOP - Save this form as PDF before you click submit



To generate a record that you filled in this form, we recommend to generate a PDF of this page (on a Mac, simply select "print" and then select "print as PDF") before you submit it.

When you submit your (revised) paper to JMIR, please upload the PDF as supplementary file.

Don't worry if some text in the textboxes is cut off, as we still have the complete information in our database. Thank you!

Final step: Click submit!



Click submit so we have your answers in our database!

SUBMIT

Never submit passwords through Google Forms.

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service

Google Forms