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

The CONSORT-EHEALTH checklist is intended for authors of randomized trials evaluating web-based 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

james.eric.gaskin@gmail.com (not shared) Switch account

Draft saved

* Required

Your name *
First Last
James Gaskin

Primary Affiliation (short), City, Country *
University of Toronto, Toronto, Canada
Brigham Young University, Provo, USA

Your e-mail address *
abc@gmail.com
james.gaskin@byu.edu

Title of your manuscript *
Provide the (draft) title of your manuscript.
Team Building through Team Video Games: A Controlled Experiment
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.

We used consumer video games for XBOX, inc

Evaluated Version (if any)

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

Your answer

Language(s) *

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

English

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: Intervention was off the shelf video games

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)"

- poor team performance

Primary Outcomes measured in trial *
comma-separated list of primary outcomes reported in the trial

- better team performance

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

- Your answer
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 *

- 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/intervention effective? *

- [ ] yes: all primary outcomes were significantly better in intervention group vs control
- [ ] partly: SOME primary outcomes were significantly better in intervention group vs control
- [ ] no statistically significant difference between control and intervention
- [ ] potentially harmful: control was significantly better than intervention in one or more outcomes
- [ ] inconclusive: more research is needed
- [ ] Other:

Article Preparation Status/Stage *
At which stage in your article preparation are you currently (at the time you fill in this form)

- [ ] not submitted yet - in early draft status
- [ ] not submitted yet - in late draft status, just before submission
- [ ] submitted to a journal but not reviewed yet
- [ ] submitted to a journal and after receiving initial reviewer comments
- [ ] submitted to a journal and accepted, but not published yet
- [ ] published
- [ ] Other:
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")

- not 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:

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-digit number at the end of the DOI, to be found at the bottom of each published article in JMIR)

- no ms number (yet) / not (yet) submitted to / published in JMIR
- Other: 28896
CONSORT-EHEALTH (V 1.6.1) - Submission/Publication Form

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
☐ Other: It says: “A Controlled Experiment”

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 important ☐ ☐ ☐ ☐ ☐ essential

Clear selection

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

"Team Building through Team Video Games"
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”).

|   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| subitem not at all important | ☐ | ☐ | ☐ | ☐ | ☐ |
| essential | ☐ | ☐ | ☐ | ☐ | ☐ |

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.

We mention video games in the title, but do not specify whether they are online or console.

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

|   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| subitem not at all important | ☐ | ☐ | ☐ | ☐ | ☐ |
| essential | ☐ | ☐ | ☐ | ☐ | ☐ |

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.

“Team Building through Team Video Games” (i.e., this is meant for a team)
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

"In this experiment, teams were randomly assigned to a TVG treatment or a control treatment. Team performance was measured on basic tasks both pre- and post-treatment. Then teams who received the TVG treatment competed against other teams by playing the Halo™ or Rock Band™ video game for 45 minutes."
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)

subitem not at all important ☐ ☐ ☐ ☐ ☐ essential

Clear selection

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

Human involvement was implied but not explicit in the abstract. This is covered in the main methods section, but not the abstract.

1b-iii) Open vs. closed, web-based (self-assessment) vs. face-to-face 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)

subitem not at all important ☐ ☐ ☐ ☐ ☐ essential

Clear selection
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

This is covered in the main methods section, but not the abstract.

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)

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subitem not at all important ◁ ◁ ◁ ◁ ◁ essential

Clear selection

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

This is covered in the main methods section, but not the abstract.
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)

1 2 3 4 5
subitem not at all important 0 0 0 0 1 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

"TVG did not increase team cohesion so TVG effects are independent of cohesion."

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 stand-alone 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)

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subitem not at all important 0 0 0 0 0 essential
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.

The problem is: "teamwork is often ineffective" and "team building activities used by organizations can be both time consuming and expensive". Therefore "This study examines team video gaming as a possible solution."

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 appropriate), 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.

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subitem not at all important    ○  ○  ○  ○  ○  essential
"Team video gaming gives players practice at forming and working effectively with other players in teams [17]. Players work together against an opponent to achieve a common goal. Video games such as Halo, a competitive and cooperative first-person shooter game, and Rock Band, a cooperative music game, encourage players to collaborate and engage as a team to successfully complete shared objectives. Much like competitive sports, teams playing team video gaming exhibit player engagement, team communication, and strategy formation to achieve a common goal [18]. Another reason team video gaming is a candidate for team building is that some research suggests that team video gaming improves team cohesion [19]. Cohesive teams developed social relationships and trust, attraction to the team and to the team tasks, and a knowledge of how to work together [20, 21]. This improves team performance on subsequent tasks [22-24]. Some organizations provide video game lounges containing gaming equipment because employees enjoy playing together [25]. However, only one academic study has examined the use of team video gaming for team building and measured subsequent team performance. Keith, Anderson [26] compared the effects of team building with and without team video gaming on subsequent team performance in a single task context. They found that teams using team video gaming increased team cohesion and increased subsequent team performance."

Our research questions are: RQ1: Can gamifying the team building process via team video gaming be an effective strategy to improve team performance? RQ2: Can team flow explain the effects of TVG on team performance above and beyond that of team cohesion alone?
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

"The study involved 1) a pretest of team task performance to establish a baseline, 2) a treatment, and 3) a posttest of team task performance, to measure performance improvement." Control group task 1 n=191 (51 teams; 3.75 per team), control group task 2 n=147 (38 teams; 3.87 per team). Treatment group task 1 n=112 (30 teams; 3.73 per team), treatment group task 2 n=136 (36 teams; 3.78 per team).

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

No changes were made to the methods after commencement.

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].

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subitem not at all important

essential
There were no downtimes or unexpected failures.

4a) Eligibility criteria for participants

Participants had to be adults who could communicate with team members.

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 | 1 | 2 | 3 | 4 | 5 | essential |

Does your paper address subitem 4a-i?

No requirement here. Even participants without video gaming experience were welcome.
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.

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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.

Participants recruited online via university research lab website. Participants came to a lab to complete the tasks. Participant total time with the research team was around one hour.

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.

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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.

Consent was given expressly in person by signing a consent document upon entering the lab. Instructions were given to teams orally and in person.

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.

Teams started in a research lab. For Task 1 they engaged with each other all over a university campus. For Task 2, they were in small rooms in a lab, isolated from other teams.

4b-i) Report if outcomes were (self-)assessed through online questionnaires
Clearly report if outcomes were (self-)assessed through online questionnaires (as common in web-based trials) or otherwise.

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subitem not at all important ○ ○ ○ ○ ○ essential

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.

An online survey was administered before, between, and after tasks.
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)

1 2 3 4 5

subitem not at all important ○ ○ ○ ○ ○ essential

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

No institutional affiliation was presented to participants.

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).

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subitem not at all important ○ ○ ○ ○ ○ essential
"The study involved 1) a pretest of team task performance to establish a baseline, 2) a treatment, and 3) a posttest of team task performance, to measure performance improvement.

The tasks in the experiment were designed to replicate the context of a newly formed work team under time pressure. Therefore, the task met the following criteria: 1) it was time sensitive—there was a limited amount of time available to complete the task, 2) it had objective performance measures that were readily calculable—this allowed teams to evaluate their own performance and compare their performance to other teams, 3) the teams selected their own strategies and division of labor—this allowed team members to benefit from their own creativity and ingenuity, and 4) the task required teams to coordination and collaborate to achieve the best results. We implemented two distinct tasks that allowed us to collect objective measures of team performance. Using two different tasks allowed us to measure the influence of the tasks on the results.

Task 1 was based on a mobile application called “Findamine” (pronounced “find a mine”) that was created for research purposes and has been successfully used in prior field experiments in IS research [26, 76], but with modifications made for our context. Findamine is a geocaching mobile application that generates clues for finding specific landmarks. Rather than giving GPS-based latitude/longitude coordinates, the application gives players short, text-based clues (e.g., “This statue depicts the founder of this university”) which help participants identify the specific location. The destination locations were distributed across the large campus. Teams earned points by successfully deciphering the clue, travelling to the location, and taking a picture of themselves at the location. The pictures of subjects in front of the landmark were automatically uploaded through the mobile application. Participants could identify and visit more locations by dividing into pairs. So, division of labor, communication between the team members, and collaboration were rewarded.

However, the application tracks the total time elapsed from opening a clue until the correct picture (verified by the GPS coordinates embedded in the photo) is submitted through the application. The natural log of the minutes elapsed was deducted from the possible clue points to reward teams for the speed of their performance in addition to accuracy.

At the conclusion of the task, teams returned to the start location where their performance was displayed in a “leaderboard” so that they could compare their results to other teams. In summary, this task enabled all three pre-conditions for flow, namely 1) a clear goal, 2) performance feedback, and most importantly, 3) a challenge that is commensurate with their skills [50, 51]. However, given that this geocaching task is somewhat “game-like” itself, and may be correlated to the characteristics of team video gaming, we created a second task (teams only completed one of the two tasks).

Task 2 was drawn from prior laboratory research on team tasks and performance [77]. It included a timed task of building a tower out of spaghetti and marshmallows. However, there was no leaderboard or real-time feedback about how they were performing relative to other teams—thus, minimizing the competitive element. Like the geocaching task, participants were divided into teams of four (while minimizing the likelihood of prior relationships among team members). Teams were given seven minutes to build the tallest tower possible that would remain standing. Performance was measured as the height in
tower possible that would remain standing. Performance was measured as the height in inches of the tower. Table 1 shows the number of teams in each treatment assigned to each task.

After all data was collected, z-scores were calculated for both Task 1 and 2 performance in order to make the results comparable. We also include task type (Task 1 coded as 1 and Task 2 as 0) as covariate in our hypothesis testing.

After being assigned to teams, participants performed either Task 1 or Task 2 (depending on the date of the study) as a baseline measurement of team performance. Similar to prior research [26], those assigned to Task 1 (geocaching) downloaded the app on only two of the phones possessed by team members. The app had six clues ready with a 25-minute time limit. The team's total score was the combined total of the points on both phones. The phones of the other team members could still be used for communication. Teams were given five minutes to plan a strategy. Immediately at the five-minute mark, the 25-minute timer began in which they could find the clues. As an incentive, teams were notified that the highest-scoring team from each day's participants would earn $20 Visa cash cards for each member. As locations were found, the results were loaded into a website leaderboard in real-time. Upon returning, each team was shown their standing on the leaderboard and their performance was recorded.

Teams assigned to Task 2 (tower) were placed in a dedicated room that was not visible to any other participant teams. They were given a standard number of marshmallows and dry spaghetti noodles. They were also given a brief review of the rules: (1) build free-standing towers not adhered to any furniture or walls, (2) no using smartphones for ideas or tips, and (3) total score is the combined height of the two tallest towers (to give teams the opportunity to determine how to divide roles). Finally, a seven-minute timer was started and left in the room with the team. Similar to Task 1, participants were notified beforehand that the highest-scoring team of that day would earn $20 Visa gift cards.

Team Intervention: Treatments

Upon completing the pretest, teams were randomly assigned to one of two treatments: 1) team video gaming or 2) control (no team video gaming). Those assigned to the control treatment were asked to spend the next 45 minutes by themselves. Team members were instructed to not speak with each other until the posttest began. This was intended to replicate the practical context where no team building occurs. However, they were left at liberty to work individually on homework or any other pursuit unrelated to the experiment.

In the team video gaming treatment, participants played Rock Band 3 or Halo 4. These two games were selected primarily because of the interdependent nature of the team tasks. In Rock Band, the players must coordinate their activities to perform the songs correctly. In Halo, the players must coordinate their attacks and defensive strategies to beat the other team. Teams in the Rock Band condition were tasked to earn the highest possible score across any four songs of their choosing. The team that earned the highest score earned large candy bars for each member. Those in the Halo 4 condition played three rounds of the team-based "capture the flag" sub-game against the other team in their cohort. The team winning at least two out of three matches earned large candy bars. Both treatments lasted 45 minutes. Figures 3 and 4 visualize gameplay of both games.

Importantly, those in the team video gaming treatment were not simply left to themselves. Rather, they were playing in a cooperative-competitive environment in which the team they were competing against was in a nearby, but separate, room. A facilitator was assigned to handle technical problems and ensure that the teams played the games according to instructions and fully participated.
Post-task: Measuring Change in Team Performance

After the treatment, teams were again assigned to complete another round of the same pretest task so that team performance could be measured as the relative percent improvement from the pretest. For Task 1 (geocaching), the study administrators downloaded seven new clues for new locations on campus to the two phones on each team running the application. The increase from six to seven clues in Task 2 was because pilot tests revealed that participants gained experience and skill from Task 1 that translated into faster task completion times. Therefore, to even out the total time required by Task 1 and Task 2, the number of clues was increased for Task 2. Once again, the teams had 5 minutes to strategize, and then 25 minutes to find and photograph themselves at as many of the locations as possible. Upon finishing this task, the teams viewed their standing on the leaderboard and completed another survey measuring flow and the other key variables. For Task 2 (tower), participants were placed back into the same room with a fresh set of spaghetti and marshmallows and a clean workspace. They were given another seven-minute timer and set to work.

After the task, each team member took a survey measuring flow and several other covariates. It is important to note that the survey measures referred to the participants’ flow state during the geocaching or tower-building task—not the team video gaming treatment. This is significant because an important assumption of our research is that achieving a flow state during a team intervention (i.e., team video gaming) can increase the likelihood of entering a state of flow on subsequent team tasks as with the geocaching task.

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.

Subitem not at all important

1 2 3 4 5

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 study utilized consumer video games on the XBOX as a treatment. Therefore, the development history is not pertinent to this study.
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 ○ ○ ○ ○ ○ 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.

Your answer

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 ○ ○ ○ ○ ○ 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.

1 2 3 4 5

Subitem not at all important ○ ○ ○ ○ ○ Essential

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

Your answer

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.

1 2 3 4 5

Subitem not at all important ○ ○ ○ ○ ○ Essential
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

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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).

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subitem not at all important  ○  ○  ○  ○  ○  essential

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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

Participant teams were taken to gaming rooms near the lab.
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].

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 gaming intervention occurred on site in gaming rooms.

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.

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

The gaming intervention occurred on site in gaming rooms.
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).

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| subitem not at all important | O | O | O | O | O |
| essential |   |   |   |   |   |

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).

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| essential |   |   |   |   |   |
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.

Lab assistants checked in on gaming teams to make reminders about the time and objectives.

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.

1 2 3 4 5
subitem not at all important ○ ○ ○ ○ ○ essential

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.

No additional interventions were involved.

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.

CH1. Working on the task in my team challenged me to perform to the best of my ability.
CH2. Working on the task was a good test of my skills.
CH3. Compared to other team tasks, working on the task stretched my capabilities to my limits.
TD1. Time appears to go by very quickly when working on the task in my team.
TD2. Sometimes I lose track of time when I am working on the task in my team.
TD3. Time flies when I am working on the task in my team.
FI1. When working on the task in my team, I am able to block out most other distractions.
FI2. When working on the task in my team, I am absorbed in what I am doing.
FI3. When working on the task in my team, I am immersed in the task I am performing.
FI4. When working on the task in my team, my attention does not get diverted very easily.
HE1. I have fun working on the task with my team.
HE2. Working on the task with my team provides me with a lot of enjoyment.
HE3. I enjoy working on the task in my team.
HE4r. Working on the task with my team bores me.
C01. When working on the task in my team, I feel in control.
C02r. I feel that I have no control when working on the task with my team.
C03. I can control my own performance when I am working on the task in my team.
CU1. Working on the task with my team excites my curiosity.
CU2. Working on the task with my team makes me curious.
CU3. Working on the task in my team arouses my imagination.
GI-T1r. I am not happy with my level of participation within these activities and what my responsibilities are during the activities.
GI-T2r. I am unhappy with my team's level of desire to do well in this activity.
GI-T3r. This team does not give me enough opportunities to improve my skills used in these activities.
GI-T4r. I do not like the style of how this team completes this activity.
ATG-T1. Our team is united in trying to reach its goals and performance in this activity.
ATG-T2. We all take responsibility for any loss or poor performance by our team.
ATG-T3r. Our team members have conflicting aspirations for the team's performance.
ATG-T4. If members of our team have problems while they are doing this activity, everyone wants to help them figure out how to improve their performance.
ATG-T5. Members of our team do not communicate freely about each other's performance and abilities during this activity.
INT1r. My portion of the task could be performed fairly independently of others.
INT2r. My portion of the task could be planned with little need to coordinate with others.
INT3r. My portion of the task was relatively unaffected by the performance of other individuals in my group.
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 ○ ○ ○ ○ ○ essential

Does your paper address subitem 6a-i?
Copy and paste relevant sections from manuscript text

Your answer

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.

1 2 3 4 5
subitem not at all important ○ ○ ○ ○ ○ essential

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).

1 2 3 4 5
subitem not at all important ○ ○ ○ ○ ○ essential

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

No changes were made to the intervention after the trial.

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 〇 〇 〇 〇 〇 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

Not applicable to this study.

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

We used a random function in MS Excel to assign participants to groups.

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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

Team size was restricted to 3-4 members. Once 4 members were assigned to a team, that team was removed from additional allocations.

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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

We just used Excel's random function.

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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.

The primary author conducted the randomization.

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

NPT: Whether or not administering co-interventions were blinded to group assignment

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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).

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| subitem not at all important |   |   |   |   |   |

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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.

The participants knew whether they were control or treatment, since the treatment was a videogaming activity. The researchers conducting the experiment also knew which teams were receiving the treatment. Therefore, no blinding was involved in this study.
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”.

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subitem not at all important ○ ○ ○ ○ ○ essential

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

Your answer

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

The control and treatment were completely different.

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

We used t-tests to compare treatment and control groups.

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]).

1 2 3 4 5
subitem not at all important ○ ○ ○ ○ ○ essential

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

Since the experiment was live, contiguous, and in person, there was no attrition, and therefore no need to attend to imputation.

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

https://docs.google.com/forms/d/e/1FAIpQLSfZBSUp1bwOc_OimqcS64RdfIAFvmrTSkZQL2-3O8O9hrL5Sw/viewform?hl=en_US&formkey=dGlKd2... 37/58
**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.

We used ANOVA to examine additional covariates and potential confounds (e.g., age, gaming experience, gender).

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

**X26-i) Comment on ethics committee approval**

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|---|---|---|---|---|
| subitem not at all important | | | | | essential |

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**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.

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**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.

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| subitem not at all important | | | | | 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

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

RESULTS
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

Control group task 1 n=191 (51 teams; 3.75 per team), control group task 2 147 (38 teams; 3.87 per team). Treatment group task 1 n=112 (30 teams; 3.73 per team), treatment group task 2 n=136 (36 teams; 3.78 per team).

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

No attrition was experienced for this study.

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.

1 2 3 4 5
subitem not at all important ◯ ◯ ◯ ◯ ◯ essential
14a) Dates defining the periods of recruitment and follow-up

Data was collected between 2016 and 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

Your answer
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

We stopped the experiment once we had sufficient statistical power to detect effects.

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

"A total of 586 individuals across 155 teams. However, only 444 participants completed all survey responses measuring latent constructs used to estimate the theoretical model. A few teams had only three participants due to no-shows at the lab. Comparative tests showed few differences between 3 and 4 person teams as noted in the results section. Of those who chose to report, 141 (24%) were female, 469 (80%) were Caucasian, 59 (10%) were Asian, and 41 (7%) were Hispanic. The average age of

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.

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| subitem not at all important |   |   |   |   |   |
| essential                     |   |   |   |   |   |
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.

Control group task 1 $n=191$ (51 teams; 3.75 per team), control group task 2 $147$ (38 teams; 3.87 per team). Treatment group task 1 $n=112$ (30 teams; 3.73 per team), treatment group task 2 $n=136$ (36 teams; 3.78 per team).
16-i) 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).

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subitem not at all important  ○  ○  ○  ○  ○  essential

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

"The team video gaming treatment in Task 1, geocaching, resulted in a 49.6% average improvement compared to 20.3% for the control teams, for a difference of 29.3% (t-test, P<.001). The tower building task (Task 2) produced greater variance in term performance than Task 1 and a clear “ceiling” effect—meaning that teams who build a very tall tower during the pretest were not able to improve their score by as great a percentage like the geocaching task. Despite this, the team video gaming treatment resulted in 72.1% average improvement compared to 49.5% improvement for the control teams, for a difference of 22.6%.

"Supporting H2, the team video gaming treatment increased the teams’ perceptions of the challenging nature of the subsequent tasks (β=.169, P<.05). As predicted by H3, challenge increased the perception of team flow (β=.451, P<.001). The exceptionally high R2 for team flow (94.9%) is not unexpected since, as noted earlier, challenge is an essential prerequisite for flow. Perhaps most central to our study, H4 was supported in that team flow significantly increased performance (β=.313, P<.05). The control variables gender (β=-.056, P=.211), team size (β=.017, P=.396), and task type (geocaching versus tower building) (β=.265, P=.200) had no significant impact on team performance."

"Team video gaming did not significantly increase team cohesion after controlling for task type (β=-.004, P<.485). Team cohesion did increase team performance (β=.253, P<.001)."

"Challenge contributes positively and significantly to all components of flow (P<.001). However, the effects of the components of flow on performance are much more differentiated. Focused immersion positively influenced team performance (β=.532, P<.05). Surprisingly, heightened enjoyment had a significant negative effect on team performance (β=-.445, P<.05). Control had a moderately significant effect (β=-.285."

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).
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.

We did not have binary outcomes.

18) Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified 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.

"after controlling for all other relevant paths, those who participated in the geocaching task experienced a greater sense of appropriate challenge (β=.739, P<.001) and, thus, greater flow (β=.613, P<.001) while developing less team cohesion (β=.375, P<.001). In addition, as expected, higher performances in the pretest led to lower relative increases in posttest performance (β=-.539, P<.001). Finally, the control variables gender (β=-.082, P=.122), team size (β=.004, P=.481), and study (geo-caching versus tower building) (β=-.181, P=.356) had no significant impact on team performance. Table 3 summarizes the hypotheses and main results of this study."

"An ANOVA controlling for game (Halo or Rock Band), gender (percent female), age, team size, task showed that the team video gaming treatment had a very strong and significant effect on improving team performance (F=8.760, P=.004)."

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).

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.

We did not detect any harms or unintended effects.

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].

1 2 3 4 5

subitem not at all important  ○  ○  ○  ○  ○  essential

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.

Your answer

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.

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subitem not at all important  ○  ○  ○  ○  ○  essential
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

DISCUSSION

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).

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ☐ |
| subitem not at all important | essential |
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.

"In response to our two research questions, the primary findings of this research are: 1) the team-building process can be implemented with team video gaming. Unlike traditional team building exercises, which focus the attention of team members on specific team building objectives, these objectives are met naturally as the teams focus on cooperating to play the game. Existing features in the games used in this research supported cooperation and competition through enjoyable and challenging game scenarios, thereby effectively accomplishing the team building process. 2) Teams that played team video gaming experienced greater flow and exhibited greater performance on subsequent team tasks. This effect was found with two different video games and with two different post-play work tasks; thus, the positive effects of team building with team video gaming are not limited to one video game or one post-play task. Team video gaming provides some benefits traditionally attributed to team cohesion: a limited form of team attraction, attraction to the task, and roles and scenarios embodied in the game serve to facilitate effective division of labor and cooperation within the team. But team video gaming does not manipulate team cohesion. The effects of team cohesion on team performance are independent of team video gaming. Team cohesion has a small, positive impact on team performance, but is not affected by team video gaming. Instead, team video gaming improves performance by increasing appropriate challenge which increases flow. The positive effect of flow on performance is stronger than the positive effect of team cohesion on performance. Focused immersion is the component on flow that increases team performance. Heightened enjoyment is a component of flow that decreases team performance. These findings constitute a better explanation of how team video gaming increases team performance than prior research. We found a much stronger effect size for team performance. In particular, our model explained 62.3% of the variance (R2) in team performance across two distinct types of team tasks compared to 18.5% explained by Keith et al. 2018 [50]."

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

```
|   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| subitem not at all important | O | O | O | O | O |
| essential                   |   |   |   |   |   |
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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 important  ○  ○  ○  ○  ○  essential
A few limitations of this research are worth noting. First, this was a laboratory experiment. Although laboratory experiments are a necessary and useful first step in establishing a phenomenon, future research is needed to ensure the results of this study are generalizable to practical workplace settings. One limitation arising from the experimental setting is the artificial time pressure to which we attributed mixed effects of some aspects of flow on team performance.

Managers should not assume all team video gaming will be beneficial. Each team had a facilitator that encouraged them to participate fully and the participants may have been motivated by knowing that their cooperation would help the researchers. Therefore, the positive effects of team video gaming may not be replicated in actual settings if the teams do not engage in the video games.

Our geocaching and tower-building tasks were designed to be enjoyable. The geocaching task was somewhat game-like in that it included a leaderboard and real-time feedback about competitive performance. This may have contributed to the carryover effects of challenge and flow from the team video gaming treatment to the subsequent tasks. However, we included it to keep our results comparable to prior research on team video gaming [26]. In contrast, the tower-building task was selected to avoid this bias. There was no leaderboard or competitive feedback making it more distinct from the team video gaming treatment. Nevertheless, neither of the tasks were particularly representative of common business work tasks. Therefore, future research should replicate our findings using more generalizable business-oriented tasks.

Another limitation concerns our use of two video games. While the video games used represented very different genres, these games have feature sets that represent only some video game characteristics that could be useful as team building interventions. Future research could map the characteristics of other game features to the traditional team building treatments (interpersonal relations, goal setting, role clarification, problem solving) to see which game types are most effective for each team building treatment.

Our results were found specifically with participants who were previously unfamiliar with each other, yet interdependent in terms of accomplishing a team task. The team video gaming treatment may not have the same effect on preexisting teams who have already established norms, biases, and opinions about other team members. In these settings, competitive video gaming may reinforce existing negative biases in relationships that already exist.

Additionally, our participants were college-age students who were generally familiar with video games. The advantage of using student subjects is that 1) it allowed us to replicate the context of new teams and 2) students are typically younger and may be more interested in video gaming than older employees [91]. So, students do not represent all types of employees and some employees may have negative attitudes toward team video gaming. Moreover, these students had experience with the games studied in this research. Future research could explore how team video gaming might work with those who are not familiar with video games. Similarly, if a workplace is not characterized by time critical, objectively measured tasks, then team video gaming may work differently.
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

1 2 3 4 5

subitem not at all important ◯ ◯ ◯ ◯ ◯ essential

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.

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subitem not at all important ○ ○ ○ ○ ○ essential

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

Your answer

⚠️ This is a required question

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.

In the main manuscript and appendices.

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 external funding was used for this study. The authors used faculty research budgets provided by their college to fund this study.

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.

1 2 3 4 5

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

Your answer

About the CONSORT EHEALTH checklist

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

- yes, major changes
- yes, minor changes
- no

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 *

Way too much. Super redundant for a study that has already been accepted... I probably spent two hours on this task.
As a result of using this checklist, do you think your manuscript has improved? *

- yes
- no
- 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

- yes
- no
- Other:

Any other comments or questions on CONSORT EHEALTH

Your answer

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