# 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: <a href="http://www.jmir.org/2011/4/e126/">http://www.jmir.org/2011/4/e126/</a>

doi: 10.2196/jmir.1923 PMID: 22209829



**> pu1254@gmail.com** (未分享) 切換帳戶



○ 已儲存草稿

\*必填

Your name \*

First Last

YI - SYUAN, WU

Primary Affiliation (short), City, Country \*

University of Toronto, Toronto, Canada

National Defense Medical Center, Taipei, Taiwa

Your e-mail address \*

abc@gmail.com

pu1254@gmail.com

Title of your manuscript \*

Provide the (draft) title of your manuscript.

Effect of the Nintendo Ring Fit Adventure Exergame on Running Completion Time and Psychological Factors Among University Students Engaging in Distance Learning During the COVID-19 Pandemic: 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.

RFA (Ring Fit Adventure, Nintendo Co., Ltd.)

### **Evaluated Version (if any)**

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

您的回答

### Language(s) \*

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

Chinese

### 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.

https://ringfitadventure.nintendo.com/

URL of an image/screenshot (optional)

https://ringfitadventure.nintendo.com/

Accessibility * Can an enduser access the intervention presently?
access is free and open
access only for special usergroups, not open
<ul> <li>access is open to everyone, but requires payment/subscription/in-app purchases</li> </ul>
app/intervention no longer accessible
○ 其他:
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)"
Healthy Population
Primary Outcomes measured in trial *  comma-separated list of primary outcomes reported in the trial
comma separated list of primary outcomes reported in the trial
This study found that the running time in the R
Secondary/other outcomes
Are there any other outcomes the intervention is expected to affect?
您的回答

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"
● 其他: 30 minutes three times per week (in adventure mode)
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%
○ 其他:

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

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
其他:
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
Pilot/feasibility
Pilot/feasibility

### TITLE AND ABSTRACT

# 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 其他:

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

1a) TITLE: Identification as a randomized trial 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.

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subitem not at all important O O O essential 清除選取的項目

### 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

"Effect of the Nintendo Ring Fit Adventure Exergame on Running Completion Time and Psychological Factors Among University Students Engaging in Distance Learning During the COVID-19 Pandemic: Randomized Controlled Trial"

1a-ii) Non-web-based components support").		•				
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Does your paper address sub Copy and paste relevant sections from indicate direct quotes from your man information not in the ms, or briefly e	m manusc uscript), o	cript title (i or elaborat	e on this it	tem by pro	viding add	ditional
1a-iii) Primary condition or ta Mention primary condition or target g Example: A Web-based and Mobile In Randomized Controlled Trial	roup in th	e title, if a	ny (e.g., "f			•
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COVID-19 Pandemic: 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)

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清除選取的項目

### 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

"To investigate the relationships between a Nintendo Ring Fit Adventure (RFA) intervention and improvements in running time, cardiac force index (CFI), sleep quality (CPSQI score), and mood disorders (BSRS-5 score)."

### 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)

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Does your paper address sub	oitem 1k	o-ii?				
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1b-iii) Open vs. closed, web- assessments in the METHOD					ce-to-fa	ce
Mention how participants were recruiclinic or a closed online user group (of trial, or there were face-to-face compoutcomes were self-assessed throug traditional offline trials, an open trial researchers and participants know w "blinded" or "unblinded" to indicated usually refers to "open access" (i.e. p the main paper is reporting. If this info	ited (onlin closed use onents (a h question (open-lab hich treati the level o articipant	e vs. offlir ergroup tria s part of th nnaires (as el trial) is a ment is be of blinding s can self-	ne), e.g., from the intervers common a type of common instead of control). (Note the instead of	om an ope arify if this ation or for in web-ba linical trial istered. To "open", as ote: Only re	was a pure assessme sed trials). in which b avoid con "open" in eport in the	ely web-based ent). Clearly say if . Note: In both the fusion, use web-based trials e abstract what
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您的回答						
1b-iv) RESULTS section in abs Report number of participants enrolle attrition/adherence metrics, use over outcomes. (Note: Only report in the a missing from the main body of text, o	ed/assess time, nun bstract wl	ed in each nber of log hat the ma	group, the	e use/upta n addition	to primary	/secondary
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Does your paper address sul	oitem 1k	o-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								
您的回答								
1b-v) CONCLUSIONS/DISCU	SSION i	n abstra	ect for n	egative	trials			
Conclusions/Discussions in abstract negative (primary outcome not change results are attributable to lack of uptamain paper is reporting. If this inform	jed), and t ake and di	the interve	ntion was sons. (Not	not used, e: Only rep	discuss whoort in the a	nether negative abstract what the		
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INTRODUCTION								
2a) In INTRODUCTION: Scie	ntific ba	ackgrou	ınd and	explana	ation of r	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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### 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 global coronavirus disease 2019 (COVID-19) outbreak has changed people's lifestyles [1], forcing them to self-isolate or engage in distance learning. These conditions bring about physical inactivity and sedentary behavior, which introduce health risks [2,3]. Although research on the effects of COVID-19 on physical inactivity is still in the early stages [4], it is expected that people's sedentary behavior will increase due to long hours of working from home. In 2007, Nintendo utilized Wii Fit (Nintendo Co., Ltd., Kyoto, Japan) in the rehabilitation of patients with Parkinson's disease and stroke [12,13]. In addition, some research indicated that exergames demonstrated a positive effect on sleep quality (CPSQI score) and mood disorders (BSRS-5 score) [14,15], while other studies found that exergaming could alleviate the symptoms of chronic low back pain [8]. Despite the existence of studies on the effect of exergaming on health maintenance or psychological improvement, it is still necessary to conduct extensive investigations on the changes or improvements of physical fitness among students after performing exergames. Therefore, under the assumption that the Ring Fit Adventure (RFA; Nintendo Co., Ltd.) exergame is an effective and useful tool, this study aimed to explore the following: (1) whether RFA could improve physical fitness and reduce the completion time for a 1600-meter run; (2) whether RFA could improve sleep quality and mood disorder; and (3) whether the new CMPB index could provide results similar to those of the CFI and be suitable for estimating run time."

### 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.

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### 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

"The global coronavirus disease 2019 (COVID-19) outbreak has changed people's lifestyles [1], forcing them to self-isolate or engage in distance learning. These conditions bring about physical inactivity and sedentary behavior, which introduce health risks [2,3]. Although research on the effects of COVID-19 on physical inactivity is still in the early stages [4], it is expected that people's sedentary behavior will increase due to long hours of working from home. In 2007, Nintendo utilized Wii Fit (Nintendo Co., Ltd., Kyoto, Japan) in the rehabilitation of patients with Parkinson's disease and stroke [12,13]. In addition, some research indicated that exergames demonstrated a positive effect on sleep quality (CPSQI score) and mood disorders (BSRS-5 score) [14,15], while other studies found that exergaming could alleviate the symptoms of chronic low back pain [8]. Despite the existence of studies on the effect of exergaming on health maintenance or psychological improvement, it is still necessary to conduct extensive investigations on the changes or improvements of physical fitness among students after performing exergames. Therefore, under the assumption that the Ring Fit Adventure (RFA; Nintendo Co., Ltd.) exergame is an effective and useful tool, this study aimed to explore the following: (1) whether RFA could improve physical fitness and reduce the completion time for a 1600-meter run; (2) whether RFA could improve sleep quality and mood disorder; and (3) whether the new CMPB index could provide results similar to those of the CFI and be suitable for estimating run time."

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

"Therefore, under the assumption that the Ring Fit Adventure (RFA; Nintendo Co., Ltd.) exergame is an effective and useful tool, this study aimed to explore the following: (1) whether RFA could improve physical fitness and reduce the completion time for a 1600-meter run; (2) whether RFA could improve sleep quality and mood disorder; and (3) whether the new CMPB index could provide results similar to those of the CFI and be suitable for estimating run time."

### **METHODS**

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

"This randomized prospective study lasted four weeks. The participants were voluntarily recruited and divided into an intervention and a control group. This randomized prospective study was conducted with one experimental group and one control group. Randomization was conducted using the simple random sampling method."

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 inclusion criteria were as follows: (1) students who were over 20 years old and did not have chronic diseases; (2) students who were able to complete the 1600-meter outdoor run before and after the intervention; (3) students who understood and agreed with the research purpose and signed the consent form; and (4) wearable devices that were worn well. This randomized prospective study was conducted with one experimental group and one control group. A total of 95 participants were recruited for this study. Twelve participants were excluded from the pretest because their CFI could not be calculated (Based on the Zephyr BioPatch Monitoring Device for Human Performance manual, the values of the HR confidence lower than 20% presented that those data were unreliable and were automatically deleted [31]). "

### 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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### 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

您的回答

### 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

"The study period was from January to April 2021. The participants recruited in the study met the inclusion criteria listed below.

The inclusion criteria were as follows: (1) students who were over 20 years old and did not have chronic diseases; (2) students who were able to complete the 1600-meter outdoor run before and after the intervention; (3) students who understood and agreed with the research purpose and signed the consent form; and (4) wearable devices that were worn well."

### 4a-i) Computer / Internet literacy

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

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### 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

您的回答

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 sub	oitem 4	a-ii? <b>*</b>								
Copy and paste relevant sections from indicate direct quotes from your man information not in the ms, or briefly e	uscript), c	r elaborat	e on this it	em by pro	viding add	itional				
"This randomized prospective storective storective and divided into an inte	•				ants were	e voluntarily				
4a-iii) Information giving dur	Ū		- -							
Information given during recruitment informed consent procedures (e.g., p item X26), as this information may habias results.	ublish the	informed	consent d	ocumenta	tion as app	endix, see also				
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### 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

" First, the participants were limited to military students (college, master, and PhD students) in northern Taiwan. "

### 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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### 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

"Before the pre- and posttest, the participants' basic demographic information, including age, sex, height, weight, neck circumference, waist circumference, smoking status (yes or no), alcohol consumption status (yes: two to three times a week or at least once a week; or no), milk intake (yes or no), whether the participant consumed three servings of vegetables and two servings of fruit per week, exercise habits (four to six times a week, one to three times a week, or none), sleep quality (CPSQI), and mood disorder (BSRS-5 score), was collected."

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Does your paper address sul	oitem 4l	o-ii?				
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5) The interventions for eac including how and when the	•				to allow	v replication,
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including how and when the 5-i) Mention names, credent owners Mention names, credential, affiliation are owners or developer of the softwa	ial, affilials of the dare, this no	actually ations o	y admin	eveloper	s, spons ers [6] (if a	ors, and uthors/evaluators
including how and when the 5-i) Mention names, credent owners Mention names, credential, affiliation are owners or developer of the softwa	ial, affilials of the deare, this notice, this notice, this notice, the deare, t	actually ations of evelopers, eeds to be	of the de	eveloper , and owner in a "Conf	s, spons ers [6] (if a lict of inter	ors, and uthors/evaluators

您的回答

5-ii) Describe the history/dev Describe the history/development pro focus groups, usability testing), as the interpreting results.	cess of t	he applica	tion and p			, -
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5-iii) Revisions and updating Revisions and updating. Clearly menti (and comparator, if applicable) evalua during the evaluation process, or whe Describe dynamic components such a the replicability of the intervention (for	ated, or de ther the d as news f	escribe wh levelopme eeds or ch	ether the i nt and/or anging co	nterventio content wantent which	n underwe as "frozen"	nt major changes during the trial.
subitem not at all important	0	0	0	0	0	essential
Does your paper address sub Copy and paste relevant sections from indicate direct quotes from your man information not in the ms, or briefly ex 您的回答	n the mar uscript), c	nuscript (ii or elaborat	e on this i	tem by pro	viding add	itional

5-iv) Quality assurance methods  Provide information on quality assurance methods to ensure accuracy and quality of information provided [1], if applicable.							
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subitem not at all important	0	0	0	0	0	essential	
Does your paper address sub Copy and paste relevant sections from indicate direct quotes from your man information not in the ms, or briefly e	m the mar uscript), c	nuscript (in or elaborat	e on this i	tem by pro	viding add	itional	
5-v) Ensure replicability by posture screenshots/screen-capture used Ensure replicability by publishing the and/or providing flowcharts of the algorithm principle be able to replicate the students.	video, a source co	and/or pode, and/oused. Repl	roviding r providing icability (i.	g flowch g screensh .e., other re	arts of t	he algorithms	
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5-vi) Digital preservation						
Digital preservation: Provide the URL disappear over the course of the yea webcitation.org, and/or publishing the pages behind login screens cannot be without login.	rs; also ma le source d	ake sure th code or sc	ne interven reenshots,	ition is ard videos ald	hived (Inte	ernet Archive, e article). As
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5-vii) Access  Access: Describe how participants a (or were paid) or not, whether they have participants obtained "access to the editors/reviewers/readers, consider reviewers/readers to explore the approximation.	ad to be a platform a to provide	member o and Interne a "backdo	f specific et" [1]. To e or" login a	group. If kensure account or	nown, des ess for demo mod	cribe how de for
subitem not at all important	1	2	3	4	5	essential 青除選取的項目
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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

"Participants in the RFA group were required to exercise for 30 minutes three times per week (in adventure mode) (Figure 2) for 4 weeks. The initial exercise intensity was set according to the instructions given by the virtual coach during the first game and was gradually adjusted according to the game instructions. The research continued to track the RFA group subjects and continued to encourage the completion of 4 weeks of physical activity training."

# 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].

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### 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

"RFA is a role-playing fitness exergame that uses a Ring-Con attached to a Joy-Con. The controller is equipped with high-precision sensors that can detect and digitize the player's movements. Ring-Con is a resistance training device that allows users to jump over obstacles or attack objects by stretching or squeezing them. In addition, a sports infrared camera monitors the changes in the player's heart rate. The game determines the optimal exercise intensity for the player and makes fine adjustments based on physiological feedback [8]. With an adjustable exercise intensity, RFA may be suitable for all age groups. During battle scenes, players are required to defeat the enemies using a combination of different physical activities. Although the amount of exercise depends on the specific exercise intensity chosen by the player, it is generally set to four to six metabolic equivalents [18]; a previous study found that the exercise intensity of Wii Sports was between three and five metabolic equivalents [19]."

### 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.

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### 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

您的回答

5-x) Clarify the level of huma	an involv	/ement					
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	0	0	0	0	0	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  您的回答							
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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subitem not at all important	0	0	0	0	0	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

"Participants in the RFA group were required to exercise for 30 minutes three times per week (in adventure mode) for 4 weeks. The initial exercise intensity was set according to the instructions given by the virtual coach during the first game and was gradually adjusted according to the game instructions. The research continued to track the RFA group subjects and continued to encourage the completion of 4 weeks of physical activity training."

### 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.

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### 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

"Participants in the RFA group were required to exercise for 30 minutes three times per week (in adventure mode) (Figure 2) for 4 weeks. The initial exercise intensity was set according to the instructions given by the virtual coach during the first game and was gradually adjusted according to the game instructions. The research continued to track the RFA group subjects and continued to encourage the completion of 4 weeks of physical activity training. In contrast, no intervention was introduced to the control group participants, who maintained their regular habits during the study period."

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

"Before the pre- and posttest, the participants' basic demographic information, including age, sex, height, weight, neck circumference, waist circumference, smoking status (yes or no), alcohol consumption status (yes: two to three times a week or at least once a week; or no), milk intake (yes or no), whether the participant consumed three servings of vegetables and two servings of fruit per week, exercise habits (four to six times a week, one to three times a week, or none), sleep quality (CPSQI), and mood disorder (BSRS-5 score), was collected."

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].

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subitem not at all important O O O o essential

### Does your paper address subitem 6a-i?

Copy and paste relevant sections from manuscript text

您的回答

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.

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6a-iii) Describe whether, how was obtained Describe whether, how, and when qua emails, feedback forms, interviews, f	alitative fe	edback fro				
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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

"Eighty participants (age: 20-36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study. This study found that the running time in the RFA group was significantly reduced. After four weeks of physical training, it took females in the RFA group 19.79 seconds (p = .025) and males 22.56 seconds (p = .034) less than the baseline to complete the 1600-meter run. In contrast, there were no significant differences in the performance of the control group in the 1600-meter run before and after the fourth week of intervention. In terms of mood disorder, the RFA group average score increased from 1.81 to 3.31 for males (difference = 1.50, p = .036) and from 3.17 to 4.54 for females (difference = 1.38, p = .062). In addition, no significant differences between the RFA and control groups were observed for CFI peak acceleration (CFIPA)\_walk, CFIPA\_run, or sleep quality."

### 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.

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### 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

您的回答

# 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

no applicable explanation of any interim analyses and stopping guidelines

### 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 was conducted using the simple random sampling method."

# 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

"Randomization was conducted using the simple random sampling method."

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

Blinding was not used in the study. "Randomization was conducted using the simple random sampling method."

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

Researchers recruited subjects into the study.

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

### 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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Does your paper address sub	oitem 11	la-i? *				
Copy and paste relevant sections fror indicate direct quotes from your man information not in the ms, or briefly e	uscript), d	or elaborat	e on this i	tem by pro	viding add	itional
Blinding was not used in the stud	dy.					
11a-ii) Discuss e.g., whether put intervention of interest" and Informed consent procedures (4a-ii) of participants knew which intervention "comparator".	l which	one was	s the "co	omparat expectation	or" ons - discu	ss e.g., whether
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11b) If relevant, description (this item is usually not relevant for e intervention to a active medication/ir	health tri	als as it re	•			or sham
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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

Not available for this item.

# 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

"The Windows version of SPSS 28.0 software (IBM Corp., Armonk, NY, USA) was adopted for the statistical analysis. According to descriptive statistics, categorical data are expressed in numbers and percentages, whereas continuous variables are expressed as average ± standard deviation.

Subsequently, the paired t-test was utilized to analyze the differences between the completion time for the 1600-meter run in seconds, CFI, CMPB, CPSQI, and mood disorder between pre- and posttest. We determined the data may not be normally distributed, so we additionally used the Wilcoxon signed rank test for analysis.

Alternatively, generalized estimating equations (GEEs) were adopted to predict important factors for run time. The significance level was set at two-tailed p < 0.05."

### 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]).

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### 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

" A total of 95 participants were recruited for this study. Twelve participants were excluded from the pretest because their CFI could not be calculated (Based on the Zephyr BioPatch Monitoring Device for Human Performance manual, the values of the HR confidence lower than 20% presented that those data were unreliable and were automatically deleted [31]). Randomization was conducted using the simple random sampling method. After 4 weeks during the posttest running test, the CFI of 3 participants could not be fully calculated, so these participants were excluded. Finally, a total of 80 participants in the intervention group and control group completed the study (Figure 1)."

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

"Alternatively, generalized estimating equations (GEEs) were adopted to predict important factors for run time. The significance level was set at two-tailed p < 0.05."

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

X26-i) Comment on ethics co	ommitte	ee appro	oval			
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Does your paper address subitem X26-i?	
Copy and paste relevant sections from the manuscript (include quotes in quotation ma indicate direct quotes from your manuscript), or elaborate on this item by providing addinformation not in the ms, or briefly explain why the item is not applicable/relevant for your manuscript.	ditional

"The study was approved by the Trial Committee of the Tri-Service General Hospital of Taiwan (Approval number: C202005175)."

### 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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### 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

您的回答

### 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)

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#### 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

您的回答

#### **RESULTS**

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

"This randomized prospective study was conducted with one experimental group and one control group. A total of 95 participants were recruited for this study. Twelve participants were excluded from the pretest because their CFI could not be calculated (Based on the Zephyr BioPatch Monitoring Device for Human Performance manual, the values of the HR confidence lower than 20% presented that those data were unreliable and were automatically deleted [31]). Randomization was conducted using the simple random sampling method. After 4 weeks during the posttest running test, the CFI of 3 participants could not be fully calculated, so these participants were excluded. Finally, a total of 80 participants in the intervention group and control group completed the study (Figure 1). Eighty participants (age: 20–36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of 23.75 ± 3.58 years; control group: 30 males and 10 females, with an average age of 22.65 ± 2.08 years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week."

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

"This randomized prospective study was conducted with one experimental group and one control group. A total of 95 participants were recruited for this study. Twelve participants were excluded from the pretest because their CFI could not be calculated (Based on the Zephyr BioPatch Monitoring Device for Human Performance manual, the values of the HR confidence lower than 20% presented that those data were unreliable and were automatically deleted [31]). Randomization was conducted using the simple random sampling method. After 4 weeks during the posttest running test, the CFI of 3 participants could not be fully calculated, so these participants were excluded. Finally, a total of 80 participants in the intervention group and control group completed the study (Figure 1). Eighty participants (age: 20–36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of 23.75 ± 3.58 years; control group: 30 males and 10 females, with an average age of 22.65 ± 2.08 years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week."

#### 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.

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#### 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

您的回答

#### 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 study period was from January to April 2021. The participants recruited in the study met the inclusion criteria listed below."

# 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"

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# 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

您的回答

# 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

Not available for this item. The research reached the standard of the number of cases received and was carried out completely.

# 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

"Eighty participants (age: 20-36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of  $23.75 \pm 3.58$  years; control group: 30 males and 10 females, with an average age of  $22.65 \pm 2.08$  years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week.

In addition, there were no significant differences in the participants' age, body mass index (BMI), neck circumference, waist circumference, smoking status, alcohol consumption status, whether the participant drank milk, whether the participant consumed three servings of vegetables and two servings of fruit per week, or exercise habits between the RFA group and the control group. The detailed demographics of the participants per group are listed in Table 1."

#### 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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#### 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

"Eighty participants (age: 20-36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of  $23.75 \pm 3.58$  years; control group: 30 males and 10 females, with an average age of  $22.65 \pm 2.08$  years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week.

In addition, there were no significant differences in the participants' age, body mass index (BMI), neck circumference, waist circumference, smoking status, alcohol consumption status, whether the participant drank milk, whether the participant consumed three servings of vegetables and two servings of fruit per week, or exercise habits between the RFA group and the control group. The detailed demographics of the participants per group are listed in Table 1."

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.

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subitem not at all important	0	0	0	0	0	essential

#### 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

"Eighty participants (age: 20-36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of  $23.75 \pm 3.58$  years; control group: 30 males and 10 females, with an average age of  $22.65 \pm 2.08$  years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week.

In addition, there were no significant differences in the participants' age, body mass index (BMI), neck circumference, waist circumference, smoking status, alcohol consumption status, whether the participant drank milk, whether the participant consumed three servings of vegetables and two servings of fruit per week, or exercise habits between the RFA group and the control group. The detailed demographics of the participants per group are listed in Table 1."

## 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).

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subitem not at all important OOOOO 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

您的回答

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

"After four weeks of the intervention, the time taken by the RFA group to complete the run (in seconds) decreased significantly from 611.75 seconds to 591.96 seconds for females (difference = -19.79, p = .025) and from 489.50 seconds to 466.94 seconds for males (difference = -22.56, p = .034) (Table 2).

In contrast, the time taken by the control group to complete the run (in seconds) increased from 483.6 seconds to 491.83 seconds for males and decreased from 598.30 seconds to 583.80 seconds for females. However, the differences between the pre- and postintervention periods were nonsignificant."

# 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).

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subitem not at all important O O O o essential

# 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

您的回答

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

Not available for this item. The results of the study are continuous numerical data.

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

The study used gender-stratified analysis. "Eighty participants (age: 20-36 years; mean age: 23.20 years, standard deviation [SD] = 2.96) completed the study; both groups were composed of 40 individuals (RFA group: 16 males and 24 females, with an average age of  $23.75 \pm 3.58$  years; control group: 30 males and 10 females, with an average age of  $22.65 \pm 2.08$  years). None of the participants were smokers; 51 people (64%) exercised 1-3 times a week."

# 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).

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# 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

您的回答

# 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

Research data is de-linked and de-identified and cannot be reversed back to an individual. The data is stored on the research computer, and only the researcher can access and analyze it.

#### 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].

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subitem not at all important

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essential

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# 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

您的回答

19-ii) Include qualitative feed	19-ii) Include qualitative feedback from participants or observations from					
staff/researchers						
Include qualitative feedback from pa strengths and shortcomings of the a or uses. This includes (if available) r by the developers.	pplication	, especiall	y if they po	int to unir	ntended/ur	nexpected effects
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DISCUSSION						
22) Interpretation consister considering other relevant NPT: In addition, take into account the expertise of care providers or center	evidenc	e of the con				
22-i) Restate study question starting with primary outcor Restate study questions and summa outcomes and process outcomes (us	nes and	proces	s outcor	nes (use	e)	,
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Does y	our pa	per ad	dress	subitem	22-i	<b>?</b> *
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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 study found that training using RFA could maintain or improve users' physical fitness. Therefore, it can be concluded that RFA provides a good solution for people who engage in distance learning for a prolonged period or who do not have sufficient time for exercise. Exergames not only serve as an alternative for exercising at home but also show in the potential to evolve with changes in society."

22-ii) Highlight unanswered r Highlight unanswered new questions	•			future ı	research	n
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subitem not at all important	0	0	0	0	0	essential

# 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

您的回答

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

20-i) Typical	limitations	in ehealth	trials
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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.

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subitem not at all important O O o essential

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# 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

"However, this study had some limitations. First, the participants were limited to military students (college, master, and PhD students) in northern Taiwan. Second, the study did not explore potential interfering elements, such as lifestyle habits and environmental factors. In addition, healthy participants may contribute to a plateau effect, as their performance was already close to an optimal level [14]."

# 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

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subitem not at all important O O O essential

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#### 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

"However, this study had some limitations. First, the participants were limited to military students (college, master, and PhD students) in northern Taiwan. Second, the study did not explore potential interfering elements, such as lifestyle habits and environmental factors. In addition, healthy participants may contribute to a plateau effect, as their performance was already close to an optimal level [14]."

# 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 important O O O essential

清除選取的項目

# 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

"This study had several strengths. First, the study found that RFA provided an opportunity for indoor exercise during the COVID-19 pandemic [54]. In addition, users' constant engagement in training and activities could be encouraged by different elements in the game. Second, aside from running performance, this study also investigated the effect of RFA on sleep quality and mood disorders. Third, a new index, CMPB, was proposed based on the original CFI. Hence, the CMPB allows for easier comprehension and shares the same important factors in predicting the time required to complete the run."

#### 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

"The study was approved by the Trial Committee of the Tri-Service General Hospital of Taiwan (Approval number: C202005175)."

# 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

Research using Nintendo Ring Fit Adventure Exergame.

# 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

"This study was supported by grants from the Research Fund of the Taoyuan Armed Forces General Hospital (AFTYGH-D-109035, AFTYGH-D-111024 and TYAFGH-D-111038), and National Defense Medical Center (MND-MAB-110-136 and MND-MAB-D-111091), and Taichung Armed Forces General Hospital (TCAFGH-E-110040), Taiwan. Particularly, the authors thank the General Pao-Yu Chen who supports the series of cardiac force studies and currently serves as the Chief of the General Staff of the Republic of China Armed Forces in Taiwan."

### 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

清除選取的項目

# 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

您的回答

#### 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?

您的回答

How much time did you spend on going through the checklist INCLUDING making changes in your manuscript *
It takes about 7-8 hours to check each item.
As a result of using this checklist, do you think your manuscript has improved? *
yes
O no
<b>其他</b> :
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
O no
○ 其他:
Any other comments or questions on CONSORT EHEALTH
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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!

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