The running & exercise mental break optimisation (REMBO) app

Citation for published version (APA):

Document status and date:
Published: 11/10/2019

Document Version:
Publisher’s PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:
- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher’s website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

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Extended abstract


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Submitted: 11-09-2019

Keywords: running application; user experience evaluation; running-related injury; recovery; passion

1 Introduction

The popularity of running is steadily growing, which is great news considering its potential health benefits [1]. Less fortunate, however, is the associated injury rate in running. Recent research shows that no less than 52.2% of runners report a running-related injury (RRI) in the past 12 months [2]. These numbers suggest injury prevention in running is pivotal, but insufficiently practiced. The most common barriers for practicing injury prevention in running are “not knowing what to do” and “no history of RRI” [3] (p. 10). Therefore, we designed an application specifically for runners to prevent injuries and internalize a habitual preventative mindset concerning RRI in runners. We tested the application in a randomized controlled trial [4].

The application or app, which we aptly named the Running & Exercise Mental Break Optimisation (REMBO) app, contained various elements aimed at establishing the aforementioned goals, most importantly via a ‘running check’ questionnaire. The purpose of this short questionnaire was to determine ones’ personal training capacity via a set of questions and to give a personalized advice accordingly relating to their planned training load for that day. In doing so, its goal was to help runners stay within healthy boundaries of training, thereby preventing overtraining and the associated risk of injury. Thereby the app stimulated them to ensure adequate recovery had taken place before they engaged in running again. The main proposed workings of our app revolved around mental aspects of injury prevention, which are likely to be very important in injury prevention [4]. These aspects include physical, cognitive and emotional recovery [5], and obsessive and harmonious passion [6], which are described more in-depth in our design paper [4].

In order to evaluate the ease of use and effectiveness of this app we set out to gage user experiences. Using a semi-structured interview format, we set out to qualitatively explore how users experienced usage of the app and points for improvement they recommended. Note that predicted relations with injuries and/or results from the trial are not part of the current abstract and will be reported elsewhere.

2 Methods

As a summary of the app design and workings: we compared several online app designing platforms, eventually selecting one which facilitated such design via a (near-)drag & drop experience with basic HTML support. The earlier mentioned ‘running check’ consisted of 12 items mainly related to mental aspects, such as mental fatigue, feelings of obligation, and focus. Some items related to physical indicators were also included (e.g., joint pain). All items were rated on a 7-point Likert scale. The feedback mechanism on planned trainings based on this
‘running check’ was implemented using traffic lights, a common and effective approach in interventions [7]; green for: safe running, orange for: risky running, and red for: no running recommended at all. Categories were determined via an algorithm based on ‘running check’ scores of users. Orange and red traffic lights were accompanied by advice on reduction of or alternatives for participants’ planned training.

The REMBO app was first tested in a randomized controlled trial [4]. After this trial we requested 37 people from the intervention group (n = 214) (i.e., those who had access to the app) to partake in an interview. Of those invited, 14 accepted and were interviewed in a semi-structured fashion by phone. During this interview 18 questions (i.e., closed, open, and follow-up questions based on certain answers) were used to explore the following facets of user experience: general perception of the app and the ‘run check’; outcomes resulting from app usage; anticipated future use; and possible improvements [8]. Results were analyzed according to Grounded Theory [9] using QDA Miner Lite (v2.0.6; Provalis Research, Montreal, Quebec, Canada).

3 Results

More positive than negative experiences were mentioned, with only a subset of these negative experiences pertaining to actual app content (c.f., app look). The ‘running check’ was nearly uniformly deemed a good indicator of their capacity, although some comments about its lack of physical questions and broadness of traffic light categories were mentioned.

A wide variety of ideas were offered when asking for improvements, including the ability to save data and link the app with other apps. Most interviewees said the app influenced their opinion of running injuries by increasing awareness of mental aspects (e.g., detaching from ones’ sport), followed by a smaller share which said the app had not changed anything, following by a variety of yet smaller shares mentioning various positive outcomes other than awareness. Participants were nearly uniform (86%) in saying that the app would not require recurring usage but that its mechanism was internalized after a period of usage during the trial.

4 Conclusion

The goal of this study was to qualitatively evaluate the REMBO app among its users. Generally, the app was received well and achieved some of its intended effects, such as increased awareness of mental aspects (e.g., mentally detaching from ones’ sport) of injury prevention. Multiple points for improvement were offered by users, including collaboration with or implementation in other apps and the option to save ones’ data.

As the goal of our app was rather small in scope (i.e., to test proposed mechanisms relating to RRI) our design process was not as elaborate as some similar studies [10]. Combining solely the functional mechanism of our application with other apps which already possesses adequate design and a benefitting user base may avoid issues pertaining to our basic design.

The qualitative nature of this study can be considered both a strong and weak point, as the exploratory nature allows us to explore aspects otherwise missed, but the very nature (and sample size) of such studies generally complicate generalizability. Furthermore, some of our findings can also be considered ambiguous due to contrasting desires with comparable amounts of proponents on both sides of some issues.

In conclusion, this study shows that the design and implementation of the REMBO app were received favorably among the interviewed runners and app usage resulted in increased awareness of the mental aspects (e.g., mental recovery, passion) of RRI prevention.

References


