

Mutiv: Music-based Mobile Application to Support Joggers

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Abstract—Regular jogging help people maintain their health. However, it is burdensome to keep working out without clear motivation. Although mobile applications has been developed to overcome the challenge, little is known about the guidelines for designing mobile applications that address the needs and barriers of joggers. In this study, we identified joggers' needs and barriers and used them to produce ten principles for designing mobile applications. We then created Mutiv, a web-based prototype of the mobile application based on the principles and evaluated the satisfaction of the joggers of the prototype.

Keywords—*mHealth; user-centered design; jogging*

I. INTRODUCTION

Although regular exercise (e.g., jogging) in paid fitness facilities become popular in Korea, it is reported that 71% of people who signed up for paid fitness facilities gave up exercising in one month due to a lack of motivation [1]. Existing mobile applications (e.g., Nike+) provide joggers with measurements and social features (e.g., competition in the social network) to support their motivation as reported in [2]. Nevertheless, little is still known about design principles for creating mobile applications for regular jogging. To fill in this gap, we aim to answer to the following research questions: 1) what are the principles for designing mobile applications to support joggers' motivations? 2) what is the satisfaction of joggers with the mobile application created by the design principles? To create a mobile application, we used music as intervention because music may reduce the sensation of fatigue and increase the level of mental arousal [3].

II. APPROACH

Our overarching strategy for creating a mobile application was to follow the user-centered design (UCD) approach: 1) needs assessment, 2) prototype design, and 3) evaluation. For the needs assessment, we conducted semi-structured interviews with ten joggers (2 females, Avg age: 31.0) who have listened to music when going jogging to identify the needs and barriers of joggers and generated ten design principles (see Fig. 1.). Based on the design principles, we created Mutiv, a web-based prototype of the mobile application for joggers. For evaluation, we recruited five participants (2 females, Avg age: 24.2) who have listened to when going jogging for the last three months.

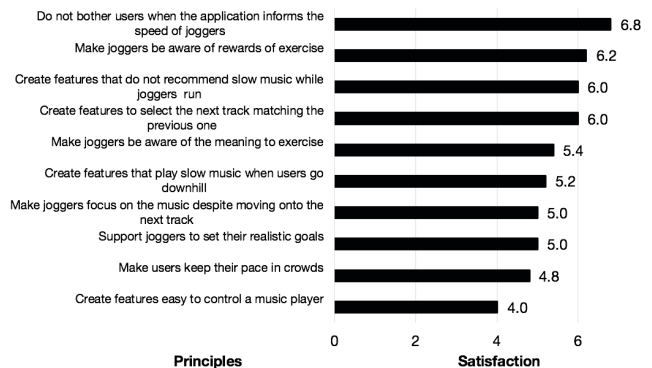


Fig. 1. Satisfaction of participants with ten design principles applied to the prototype of Mutiv.

We asked each participant to interact with Mutiv to accomplish actionable tasks, such as setting goals, selecting tracks to run, and selecting songs. We then asked each participant to fill out the surveys with 7-point Likert scales.

III. RESULTS

From semi-structured interviews with ten participants, we produced ten design principles (see Fig. 1). Further, Fig. 1. illustrates the summary of the survey (1-strongly disagree, 7-strongly agree) where each participant rated how much each principle was addressed in the prototype. The average score of the satisfaction was 5.44 (std: 0.815). Also, our study shows that the UCD approach could be useful for creating mobile applications to make people keep regular exercise.

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