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User's Perceived Needs for a Personalized Motivational Application for Running: Interviews With Future Users

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Sedentary lifestyles and lack of physical activity place a financial burden on health services. Although the World Health Organization (WHO) recommends people to increase their levels of physical activity, more than 80% of adolescents and 27% of adults do not meet such WHO recommendations [20]. Running is an activity of particular interest when considering the design of interventions to promote physical activity [23]. However, many interventions do not reach their expected long-term impact, primarily because people fail to maintain active behavior [6]. To improve the impact of such intervention programmes, research suggests providing personalized interventions [18]. That is, using tailored persuasive/motivational technology, which is designed to be interactive to positively influence users' attitudes, beliefs, and behavior to reach given goals [21]. This study aims at better understanding the needs of runners when it comes to the design of motivational interactive applications on phones and smartwatches. As part of a participatory design approach [22] for the design of a motivational mobile application involving potential users, individual interviews were carried out to gather information on perceived runners' needs and expectations. Ultimately, the future motivational application designed with a user-centered design approach and based on psychological theories of motivation, behavior change, emotional regulation, and personality aims at the implementation of effective personalized interventions to increase adherence and maintenance to running [5, 10].

CCS Concepts: • **Human-centered computing** → **Interaction design; User centered design; Participatory design.**

Additional Key Words and Phrases: User-centered design, mobile application, personalization, motivational technology

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1 INTRODUCTION

Physical inactivity and a sedentary lifestyle are major risk factors for health problems. Reducing sedentary behaviors and practicing physical activities at all ages and in all life contexts is recommended for health reasons. The WHO's report on physical activity reveals gaps in implementing policies and interventions to increase physical activity (WHO, 2022). Personalized interventions seem more efficient than generic approaches when promoting people's engagement [18]. Motivational technology has been gaining ground as an alternative when designing interventions to change users' behavior in healthcare [2] such as the self-management of chronic low back pain [3, 4]. User-Centered Design allows

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researchers to base design choices on concrete and objective factors. It consists of an iterative approach in which the results of each stage inform the subsequent phase. The first stage is the user research phase, identifying users' needs and expectations in their context. Then, the design and evaluation stages are carried out based on what was previously retrieved [9, 17].

Some factors may act as barriers or facilitators of physical activity behavior, and “knowing what facilitates and hinders physical activity behavior across domains is central for the development of actions for more active lifestyles”. In the literature, intra and interpersonal factors are considerably less explored than environmental conditions [7]. In our study, we use a user-centered design approach to better understand the users' needs and expectations regarding motivational running mobile applications, as well as what helps or prevents them from maintaining running activities. As a first step, we conducted individual interviews divided into narrative/life story interviewing to gather information from the subjective experience of individual participants and semi-structured interviewing with open questions [8, 14].

2 METHODS

We recruited 34 participants; 10 were part of running clubs. We conducted video interviews via Teams (which generated the transcriptions automatically). All the participants gave informed consent, and this study was approved by the Ethics Committee of the University Paris-Saclay (#CER-Paris-Saclay-2023-037). The interviews were carried out by two investigators, both having access to the interview guide previously written based on existing literature [11, 15, 24].

We started with a narrative interview methodology to better understand people's experiences and behavior when running [1]. We asked participants to tell us about their last running session in the form of a story with as many details as they would like. No other constraints or specific directions were given at this point. Then, within a semi-directive approach, we used open-ended questions to ask the participants about their running habits, frequency of training, participation in running events, affiliation to groups/federations, and their goals and expectations concerning the sport. The following block of questions was devoted to the motivational aspects and strategies adopted by the participants. We explicitly asked about the approach they usually employ to ensure they will get a training session done, how they stay motivated in the long term, and the factors that work as barriers and may demotivate them. The last part of the interview was dedicated to the use of technology. We questioned whether participants already used running apps, if they had smartwatches, and what were their general impressions and impact of using said devices on their running activities. Then, we used more specific questions to guide the interview toward the discussion about existent features considered essential and features the participants did not have on their apps but believed could be valuable. These needs were explored within a motivational context. Participants were always encouraged to think about what would motivate them. We also invited them to think about their daily lives when asked to suggest the timing and frequency of receiving notifications. Finally, we asked if other topics adjacent to running per se – such as nutrition, hydration, or suggestion of stretches -- should be present in a motivational app.

The Interviews were transcribed verbatim, yielding between 40 and 50 pages of single-spaced typed text each. The transcriptions are being content analyzed – with a deductive thematic analysis approach – using ATLAS/ti qualitative data analysis software package (Muhr,1997). ATLAS/ti is a flexible tool for constructing networks and is useful for qualitative data analysis.

3 PRELIMINARY RESULTS

The mean duration of the individual interviews was 58 minutes. From a preliminary analysis, several parameters emerged. Regarding the participants' aspirations, we were able to establish a distinction between two main types of goals: the first focused on health and aesthetics, and the second centered around performance and competition.

Some terms frequently appear referring to the facilitators and barriers of running practice. Among the factors acting as barriers, the most cited were: the weather, cognitive fatigue, unplanned “last-minute” social invites, work or family-related obligations, injuries, and general time constraints. One of the most cited facilitators was seeing progress in their performance or health markers. Other important factors were: the social aspect, establishing short or long-term goals, and thinking about the well-being experienced after a running session. These facilitators and barriers are consistent with other studies in domains other than running [25]. When asked which features participants' considered crucial to a motivational running app, they all mentioned health and performance statistics, such as heart rate and variability, distance, mean pace, and time. Participants frequently considered social features motivating as long as they could have autonomy in choosing what to share and how to interact with other users. Needs in terms of personalization were evoked. A common complaint regarding the existing commercial running apps is the generic content. The timing of notifications and tips ought to be aligned with participants' objectives and the time of sessions for them to perceive the features as personal.

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