
Abstract

Development of a Monitoring System for Smartphone Overuse

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Abstract

Background: Smartphone overuse has become an epidemic public health concern around the world. Nowadays, the measurement of smartphone overuse, which comes to be known as smartphone addiction, is still relying on self-reported questionnaire. However, this leads to inaccuracy and it cannot perform continual measurement.

Objective: The aim of this study is to develop an IT based system monitoring daily usage behavior of smartphone automatically, which was named Smartphone Overuse Monitoring System (SOMS).

Methods: The monitoring system consists of an Android Smartphone application (SOMS App) and a web application server. The App was designed to fulfill the following core functions: 1. To collect users' general demographic data and identify the IMEI of smartphones; 2. To monitor using behavior and assess smartphone overuse; 3. To give instant feedback to users. The web server stores the data collected by the App and execute statistical analysis.

Results: We invited 11 participants to test the SOMS. The users were asked to fill out a short questionnaire at the first logon, which includes demographic information, such as name, sex, age etc. The SOMS App recorded the smartphone behavior as follows: power on/off, call in/out, screening on/off/unlock, programs usage. The data of program usage include which app and how long it was used. Once a day, the participants received a notification of the smartphone usage statistics for the last 24 hours. The users can also find key messages from the interface of the SOMS App, such as the top 10 most frequently and longest used Apps. Moreover, the SOMS App draws a fragment map, which illustrates the interrupted daily life by smartphone.

Conclusions: The monitoring system can tally the length and frequency of smartphone use and analyze the most influential Apps on people's daily life. It is not only significant for the screening of smartphone overuse but also for the development of intervention strategy.

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KEYWORDS

activity monitoring; app; behavior, addictive/*prevention & control; psychometrics; smartphone

Multimedia Appendix 1

Full poster.

[[PDF File \(Adobe PDF File\), 397KB-Multimedia Appendix 1](#)]

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