Chapter 9

Headache App: Usability Assessment and Criterion Validity

Tânia Dantas
University of Aveiro, Portugal

Milton Rodrigues dos Santos
University of Aveiro, Portugal

Alexandra Queirós
University of Aveiro, Portugal

Anabela G. Silva
University of Aveiro, Portugal

ABSTRACT

Mobile applications show great potential for the assessment and registration of information regarding headaches. However, data on the content and usability of mobile applications for headache that are accessible to the public in European Portuguese are scarce, as well the criterion validity. Therefore, this article aims to search for and characterize the mobile applications related to headache in terms of content, usability and criterion validity. A search in the Android app store of applications was conducted. Four mobile applications were found in European Portuguese that matched a set of predefined criteria. These were characterized in terms of general characteristics, content, usability and criterion validity. Three of the applications were specific for headaches and one could be used for any type of pain, including headache. All applications allowed recording of pain characteristics and its extraction in a form of a report. In the discussion section several challenges related to the use of mobile applications in the assessment and management of headache are discussed.

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INTRODUCTION

The World Health Organization (WHO) defines mobile health (mHealth) technologies as a component of eHealth. mHealth covers medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants, and other wireless devices (WHO, 2011). It is an emerging and rapidly developing field that can contribute to the transformation of healthcare and increase its quality and efficiency while simultaneously containing costs (de la Vega & Miró, 2014).

According to the Food and Drug Administration (FDA), the mobile applications for health should: i) help people (which means the users of the app) monitoring their health conditions without providing treatment suggestions; ii) provide simple tools to organize and control health information; provide easy access to information related with health; iii) help to document the health conditions, making this easier to share information with the health providers; iv) automate simple tasks for health care providers; and v) be intended to transfer, store and display medical data (FDA, 2013).

The adoption of mobile applications on a continuous basis can be affected by some barriers like the lack of confidence among patients, healthcare professionals and citizens regarding their reliability and their ability to accurately measure what is intended. Therefore, special attention should be given to them, before making them available to the general public and/or health professionals, especially if they have the potential to be a source of harm in normal use or have the potential to be misused (Queirós et al., 2016).

Regulations should effectively address issues such as certification of devices as well as applications. In addition, clinical usefulness is also an important issue for patients, citizens and healthcare professional’s acceptance (EC, 2014). Clinical usefulness can be defined as to whether using the application results in any benefit for the patient such as more accurate diagnosis or more appropriate care (Silva, Queirós, Caravau, Ferreira, & Rocha, 2016). It depends on other aspects such as whether the application is measuring what it is intended to measure (validity), whether measurements taken with the application are consistent across repeated measurements in similar conditions (reliability) (Streiner & Norman 2003). In addition, the experience of the end user when using the application and its ease of use (usability) can also be a barrier or a facilitator when considering the use of mobile applications. This means that before the use of an application can be considered and results trusted a broaden assessment of this application, from different but complementary perspectives, should be undertaken. It is assumed that this assessment performed as an interactive process should be performed by interdisciplinary teams constituted by professionals from different areas (e.g. informatics, health) and end users to improve the likelihood of the applications to be used.
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