Chapter 7

Apps for Hearing Healthcare: Trends, Challenges, and Potential Opportunities

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ABSTRACT

This chapter provides a picture of the evolution of mobile applications (apps) for hearing health care (HHC) in terms of availability, variety, penetration, offered services, and target users. Special emphasis is given to newly developed methods that might assist audiologists and hearing professionals to get meaningful information and guidance for informed adoption of apps for themselves as well as for patients and their families. The chapter also shows how these novel methods can be used to characterize and compare a variety of apps across a wide range of services and target user groups. A representative sample of apps, assessed by using such a standardized framework, is analyzed to derive a multifaceted picture of apps for HHC. The chapter outlines and discusses emerging trends and needs in the area and highlights the open challenges as well as potential opportunities for professionals, researchers, developers, and stakeholders at large.

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INTRODUCTION

In the growing area of digitally enabled audiology, the emerging mHealth (mobile Health) branch is extremely promising and opens novel opportunities for professionals and hearing care (HHC) providers. In the past years we have witnessed a rapid growth of the number and variety of mHealth solutions in HHC. Especially, mobile applications (apps) are rising growing interest. The debate about the potential benefits of these novel solutions, the existing gaps and challenges, as well as the emerging opportunities is open and lively (Bright and Pallawela, 2016; Paglialonga, Pincirol, and Tognola, 2017a; Paglialonga, Tognola, and Pincirol, 2015a; Paglialonga, Tognola, and Pincirol, 2015b; Tognola, Paglialonga, Chiamello, and Pincirol, 2015; Wong and Fung, 2015).

This Chapter describes the recent evolution of apps for HHC and assesses the current scenario in terms of availability, variety, penetration, offered services, and target user groups. The Chapter also shows how newly developed methods for app characterization and assessment can support audiologists and hearing professionals. These methods can enable them to get meaningful knowledge about apps, understand their peculiar features, and, in turn, help their patients to get increased benefit from informed, effective use of these solutions. Specifically, the Chapter describes a recently developed method that is able to characterize apps for HHC, regardless the operating system and hardware platform, by using a core set of features: the ALFA4Hearing model (Paglialonga et al., 2017a; Paglialonga et al., 2015a). Then, the Chapter describes the multifaceted picture obtained by using the ALFA4Hearing model on a representative sample of apps. Finally, the Chapter discusses the main emerging trends and needs in this area and highlight the open challenges as well as some potential opportunities for professionals, researchers, developers, and stakeholders at large.

BACKGROUND

mHealth is a broad term that encompasses any use of mobile and wearable technology to address key health care challenges (e.g., access, quality, affordability, matching of resources, and behavioral norms) through the exchange of information (Qiang, Yamamich, Hausman, Miller and Altman, 2012). It becomes thus clear that mHealth can be an entirely novel facilitator to try to address health care challenges. Within the broad area of mHealth, mobile applications (apps) are rising growing interest. Apps are software applications designed for use on mobile devices, such as smartphones and tablets, rather than desktop or laptop computers. As such, they have core characteristics that are specific to the mobile environment. Specifically: (i) penetration
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