



THE ROLE OF MOBILE SMARTPHONES FOR DATA COLLECTION IN DISEASE AND HEALTH OUTCOMES REGISTRIES

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ABSTRACT

Introduction: Disease and health outcomes registries, one of the most important information resources in health care and clinical research, are collections of information about individuals, usually focused around a specific diagnosis or condition. Gathering such information for registries can be done electronically by different methods and technologies. Mobile smartphones are an innovative technology with valuable features and growing capabilities that can be applied to this purpose. But like every IT solution, it has its own advantages and challenges. As a limited number of studies have investigated the use of smart mobile phones as a data collection tool, the objective of this paper is to give a brief review on potential, challenges and concerns of adaption this device has, for data collection.

Methods: In the first step, three databases, PMC, PubMed and ScienceDirect and also, the most popular public search engine, Google, were searched by making terms of keyword combinations to find relevant articles. Most results were obtained by terms of “Use of Mobile Phone for Capturing Patient Data” and “Smart mobile health data collection”. Second-most search results were picked out due to studying their titles and abstracts. In this step, most relevant articles were categorized by numbered lists to specify their priority in relevancy and unrelated or non-significant work was put aside. Finally, most-relevant articles were selected to study and conclude.

Results: Mobile-based data collection makes data entry possible whenever and wherever a person is. Being light-weight and popular, mobile smartphones are preferred to other mobile devices. They support a variety of technical functions such as communication and network connection, data storage and processing, embedded sensing, capturing different types of data (text, voice, image, etc.) which make these devices considerable to play a role in health data collection. However, some challenges such as security (privacy and confidentiality of patient information), political considerations and standards, usability and user acceptance, as well as less processing and storage power compared to personal computers are barriers for adoption of these devices in health sectors.

Conclusion: The capabilities and availability of mobile smart phones, give them competency as data collection tools in registry software. Portability and network connectivity, ideally, provide real-time data capturing at the point of care, and good solution for data collection in deprived areas. So, smartphones can be used like a mobile client for registry and for servers to record and transfer data. Nonetheless, there are notable considerations to successful integration, acceptance and cost-effectiveness of these devices in clinical settings. One consideration is the security and data exchange standards. It is necessary for health sector authorities to provide guidelines on manner and quality of utilization of mobile applications and devices. Moreover, raising the quality of mobile services and paying attention to technical aspects are important. Training of data collectors to use mobile applications and devices is an effective factor in user acceptance.

KEYWORDS: Mobile health data collection, Smartphone, Disease registry data collection

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