

ICT4D Essay: eHealth in developing countries

Madeleine Vanessa Wijono (2622352)

What is eHealth?

eHealth, which stands for electronic health, is a broad concept that is interpreted as the utilization of contemporary *Information and Communication Technologies* (ICT), more particularly internet technology, in order to improve and support the healthcare and health resources (André, 2019). From the healthcare institutions' point of view, it is crucial for individuals to take good responsibility and care for their own well-being and behavior. Health consumers (e.g. clients and patients) are capable of taking control of their health with the help of the eHealth system. Health professionals (e.g. doctors, general practitioners, physician's and caregivers), as well as health consumers, can both use eHealth applications by means of electronic devices to communicate with each other, for instance, to talk about the test results, diagnoses, or perhaps to exchange useful information. eHealth approaches can prove that the usage of ICT could result in significant improvements for health consumers (Menvielle et al., 2017).

What are the practices of eHealth?

Several of the approaches include online treatment programs using mobile phones and *Interactive Voice Response* (IVR) (e.g. telemonitoring health consumers that have a chronic illness and teleconsultation between health professionals among themselves), measuring devices (e.g. home automation and a care robot that keeps track of the patient's movement), support for the work of health care providers (e.g. medical applications to support with medical decisions, online information sharing, and *Electronic Health Record* (EHR) or *Personal Health Record* (PHR) (e.g. blood test results and medicine prescriptions)) (Menvielle et al., 2017). eHealth contributes to high-quality, accessible and affordable care that drives health consumers more towards self-management for their own personal care (Hansen et al., 2016).

Health consumers might probably use eHealth prior to the hospital visit to find information in order to decide whether they need to see a health professional. Then, after the visit, in case the hospital visit is necessary, consumers can look for additional information. The use of eHealth results in postponing or replacing the medical consultations, which can reduce healthcare costs (Hansen et al., 2016). Besides, eHealth is essential to improve healthcare service, the quality of care and safety of the consumers (Luna et al., 2014), (Kreps & Neuhauser, 2010).

What are the advantages of eHealth?

eHealth offers numerous benefits for the health consumers of eHealth and their appointed health professionals. The advantages are as follow:

- Health consumers can give a regular update by sending a photo of a healing wound that was taken by their mobile phone to the health professionals for an inspection. This action is convenient, as it can prevent the great expense of a hospital visit.
- Health consumers gain more insight into their own health through a personal digital health environment (Menvielle et al., 2017). They can also give permission to share the entire or parts of the data with their health professionals, so the health consumers do not need to countlessly inform their health professionals regarding medical history. This allows health professionals to work in a more targeted manner so that they can prevent making mistakes and provide the proper treatment more quickly (Kreps & Neuhauser, 2010). On the other

hand, health consumers have full control over their own health and are able to make better decisions concerning the quality of care that they want to receive.

- Health consumers can also choose to use anonymous eHealth where they receive assistance from their health care provider without having any personal contact (Menvielle et al., 2017).
- Health professionals have fewer administrative burdens which leave more time for contact with the health consumers. Besides, they can easily and securely share the consumers' information with their colleagues and possibly request for their advice.
- Digital support in healthcare can eventually save time (Menvielle et al., 2017). For instance, health consumers can effortlessly make an appointment online with health professionals. Moreover, in case that it is possible to carry out an online consultation, then the health consumers can remain at home.
- Thanks to the new technology, health consumers now can live independently at home for a longer period. As with the use of home automation, the house can be adjusted so that for example the light can be switched on and off automatically or video calls can be used as a private communication tool between the health consumer and health professional.

What are the disadvantages of eHealth?

- Not every eHealth initiatives are immediately successful, as the online communities might not be suitable for everybody. It requires that people have the skills and also the willingness and interest to make good use of the internet. Even people who have enough technical skills and whom you can assume that they are most like a knowledgeable health consumer, so even that selected subgroup, are still very humble. Even these front runners are very aware of a balance of power between themselves and the healthcare professionals.
- eHealth, unfortunately, has critical challenges and risks.

What are the challenges and risks of eHealth?

Many possibilities of eHealth can offer numerous benefits in healthcare, but it can also entail risks. For the observation, it is important to have the benefits and risks in the right proportion, which involves two important matters, namely a secure system and its safe use in healthcare.

- The concern towards privacy issues and security are major factors in the fact that the use of eHealth tools is not fully accepted in society. The secure protection of confidential medical patient records against unauthorized access and inappropriate user data handling is the responsibility of the healthcare field. The concern is associated with both confidential and non-confidential data of the health consumers. Moreover, when using video stream between the health professional and health consumer, the video file needs to be encrypted. The connections are indubitably secured by implementing safeguards to protect the private data, but there is no guarantee to it (André, 2019).
- The concern towards proper treatment credibility, as the information provided by the health professionals, must not be harmful to the health consumers.
- eHealth literacy, which is the ability to among other things interpret the health information from electronic sources and on top of that apply the accessed knowledge to address a health issue (Hernandez et al., 2009). Health consumers can achieve positive results from using the internet for health purposes by having adequate eHealth literacy. Health consumers are protected from misleading information and entitled to entirely take part in making decisions related to their health information. Furthermore, consumers who have high levels of eHealth literacy are fully aware of the risk possibility of incorrect information on the internet. However, each health consumer dealt with the expansion of health-related digital resources as eHealth literacy in a different way, some people are more advanced than

the other. eHealth literacy does not necessarily depend on the ability to access the technology itself, but instead on the ability to apply the obtained knowledge.

eHealth in developing countries

There are a number of emerging trends of eHealth to solve global health problems by making investments from developed countries to developing countries (Iluyemi & Briggs, 2009), as the demand for care is continuously increasing. Nevertheless, there is a major lack of sustainable technological implementations (Luna et al., 2014). The financial problems in many developing countries result in the inadequacy of trained health professionals and available facilities that are disadvantageous for people's medical care, especially in rural areas (Hernandez et al., 2009). Moreover, eHealth is in many cases quite complex to establish due to the lack of adequate infrastructure and communications. There is no reliable electricity supply nor internet connectivity in under-resourced and remote villages in order to use eHealth system.

Improving access to effective health interventions by reducing the medical treatment gaps is especially relevant in the rural area in developing countries where instability and uncertainty are considered normal (Hernandez et al., 2009). The issues must be addressed with a fundamental principle to develop sustainable implementations of eHealth, such that the regional integration strategies are established, the health workers receive medical education and training, and the public has trust in terms of their security and privacy (Luna et al., 2014).

eHealth exists with the development of health information technology opportunities but despite that, the eHealth applications should have a design that is simple, accessible, interoperable, and captivating, that presents relevant and useful healthcare information for the users (Kreps & Neuhauser, 2010). Hence, there needs to be an understanding of the development process of eHealth from the users' perspective that utilizes available equipment and explicit technical knowledge depending on the specific cultural and contextual background (Petersen et al., 2013), (Iluyemi & Briggs, 2009).

In developing countries, the local people are not only addressed with low (health) literacy concerns but also the cultures differences, language barriers, trust in the exchange of information, and complicated terms that are used to describe the medical terms. The eHealth approaches must be strategically designed and structured to match the cultural orientations, particular interests, and characteristics of the users in a way that it meets the needs of the users and also is user-friendly for people who have low (health) literacy (Hernandez et al., 2009). eHealth interventions need to be appealing for users to positively influence their behaviors and capture their attention (Kreps & Neuhauser, 2010).

Researchers need to develop standards for the interface that can tackle those issues. Standardization plays a major role in providing interoperability of healthcare information systems to exchange essential health consumer's information for consistent medical care. Nonetheless, the adoption of eHealth standards faces substantial barriers that include for instance the lack of implementation guidelines, high cost and limited involvement in standards development. The government in developing countries needs to have an active role in the adoption of a standard user-centered development approach by making an investment in the development of human resource capacity and basic infrastructure, and in this way, these barriers can be surmounted (Adebesin et al., 2013).

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