Promising Patients the Earth? Social and Ethical Issues in Mobile Health Communication

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Abstract. The massive transformation in healthcare and developments in mobile technologies highlight the importance of mobile health communication and its offers. Mobile health applications provide many advantages to healthcare providers and consumers, and redefine the delivery of healthcare services. As seen in development of social media sites and online health forums, there are important social and ethical considerations for mobile health communication systems, such as credibility of information provided by mobile applications, privacy and security of patients' data, low health literacy rates, differences in technology adoption, etc. This study examines the changing structure of health services through mobile applications from service providers and consumers' perspectives and discusses major problems of mobile health applications that threaten health system and its actors. This paper also provides suggestions for policy developers and communication professionals in order to develop sound mobile health strategies and a better healthcare system.

Keywords: mHealth, Healthcare System, Regulation, Patient Privacy.

1. ''mHealthed'' Healthcare: Benefits and Opportunities

The structure of healthcare services is about the change from top to bottom, and communication seems to be the main driver of this change. The conventional approaches in healthcare are being replaced by the new ones. Due to the higher speed of internet access, smart phones and tablets in most developed countries, healthcare once used to cure or treat diseases now focuses more on to prevent diseases. These new tools and promotional activities are transforming patients to health-conscious citizens who can act proactively to track their health and understand how to make healthier choices without visiting their doctors or hospitals in person. Therefore, todays' healthcare system is much more customer-centric and gives patients more empowerment to act proactively for their health.

According to the World Health Organization (2011), each year millions of people die because of some diseases that could have been prevented, such as cardiovascular diseases, chronic respiratory diseases, unintentional injuries, and diabetes. If these people were reached by user friendly digital applications and devices in the very beginning of their illnesses, they would have assessed and monitored their health better and would have taken some necessary precautions to live longer and happier. Behind the rapid development of e-health services, particularly mHealth, there is this acute need for self-monitoring health and wellness.

The use of health related information and applications in mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices is shortly defined as mHealth (WHO, 2014). Through these portable technologies, patients will be able to get their routine measures and checks, such as blood pressures, diabetics, some other key clinical parameters. In this way, physicians can easily monitor their patients, especially those in critical conditions. Built on mobile phones, these applications minimizes errors to diagnose and/or to cure, and reduces the amount spent for reaching healthcare services, and shortens the traffic at hospitals' corridors.

When the system works for keeping people out of hospitals, it is expected that healthcare expenditures will be reduced and services will become highly cost-effective for patients, customers and healthcare providers. Because of these new applications, time and cost spent for reaching and servicing patients may be minimized and in return they can create important competitive advantage for healthcare providers.

mHealth usage can provide many advantages to healthcare providers in competition. Mobile phones are important vehicles to collect various health related information immediately, and even from experts in their fields (Deloitte, 2012; Schimpff, 2007).Healthcare providers can easily arrange their times, or even work from home through these technologies. Effective data base management and effective information use of healthcare providers can improve their diagnoses since they will be able to make better correlations about patients' status (Deloitte, 2012). Therefore, mHealth has the potential for providing a holistic care to patients because he/she is under supervision of his expert teams wherever or whenever he/she may need to. This is a real paradigm shift for the patients and healthcare providers. For the first time in the history, they will have an integrated and "continuous care" implemented through virtual healthcare teams, virtual community networks and better managed database systems enabling to reach patients' all kinds of medical information effectively. Health-related social media usage is highly effective via mobile media because people can easily access to social support communities which make them feel that they are not alone and are easily reachable, so they can pursue their normal lives and perform usual activities (Mirza, Norris, & Stockdale, 2008, Stern, 2014). mHealth is seen revolutionary because it changes the rules of the game for the sake of poor people. People in underdeveloped or developing regions can access to healthcare and health related information at anytime from anywhere as long as they are connected. mHealth fills an important gap in healthcare market because the world population is getting older and there are many people suffering from chronic diseases. mHealth also helps to overcome the problem of health literacy especially in developing regions. Even the lowest health-literate person can use mobile devices and search on the internet, and through mHealth's user-friendly applications become more conscious and concern about his/her health. However, the internet is full of misleading and deceptive information that seem to be challenging for healthcare providers in order to build good reputation and to apply their strategies properly (Nosta, 2013).

From the aspect of diffusion of innovation theory, the healthcare providers such as hospitals, pharmaceutical companies, health and wellness centers, etc., which are early adopters of mHealth applications can have pioneering advantage in healthcare industry (Peres, Muller, & Mahajan, 2010). mHealth can be a good indicator of service quality at the same time and serve for reputation of healthcare providers. Advanced technology usage and customer-centric approach will positively improve the image of a healthcare provider in the eyes of its stakeholders. In addition, it can be a reflection of its financial strength, therefore it again serves for its reputation.

2. Barriers and Limitations… Social and Ethical Considerations for mHealth

Although a very optimistic picture is drawn for mHealth so far, it has some major pitfalls and restraints that make its adoption slower and harder. First one is related with internet security and patients' privacy. Patients are more likely to be suspicious in mobile environment when delivering their personal information because the information provided by mHealth applications may be seen by other people, like physicians, family members, operators, other application providers, or researchers. The storage of the data is also a controversial subject and often regarded as invasion of patients' privacy. Therefore, a principal-agent problem may be seen in the application of mHealth service delivery. For new healthcare providers, an important strategic goal is to build digital trust on their consumers and other stakeholders to acquire, transmit and to deliver healthcare data without violating any legal and ethical boundaries. Especially international healthcare providers and vendors must recognize beliefs, values and lifestyles in their host countries as well as their symbolic codes and communication patterns.

On the other side of the coin, there is an issue of patient empowerment. mHealth may provide too much autonomy to patients and health consumers who want their full control on their health records and data. If they can have a limitless access to be able to modify or delete any content in their records, it would create an important conflict with insurance companies and healthcare providers, and may harm health industry as a whole. The situation would be more chaotic when these patients are not health literate enough. However, instead of total restriction to access their data, patients' collaboration may be required in some degree. Patients as rightful owners of intimate information should be empowered to see their data, take their notes and may question the record if they seem necessary. In this way, they can serve for enhancing quality of healthcare services they are getting (Deloitte, 2012; Layman, 2008).

In order to gain trust toward mHealth, patients and other users of mHealth have to be assured that only secure and approved devices and applications can access data. Here, the works of mHealth Regulatory Coalition is highly important. They have established an important platform to make a quick progress to draft the laws, regulations, and standards to improve mHealth applications as well as to protect patient privacy. However, national governments should also be in charge of increasing data protection and privacy concerns within businesses and healthcare organizations. They also need to give details about data protection and privacy issues to patients, and gain public trust for mHealth development. Without governmental effort, it is difficult to build awareness toward mHealth in public. Governments also need to find better ways for integration of the two types of technology included in mHealth; medical device technology and telecom technology (Vodafone, 2013).

Although mHealth applications can be very beneficial for public health interventions, there are legal loopholes of some applications, such as electronic diaries or some neuroscience applications. Moreover, some applications may be deceptive so that consumers may face with important risks for over expending for these useless applications. Here, as the leading authority in many health-related issues in the world, the US Food and Drug Administration (FDA)'s applications should be mentioned. The institution has recently announced its standards toward medical devices and applications and work cooperatively with international programs and other institutions. Therefore, the regulation of mHealth applications which seems to be a major pitfall for mHealth is in progress (de la Vega & Miro, 2014; mhealthregulatorycoalition.org, 2014).Since mHealth is a new technology, it requires a certain time for consumers to trust and get used to, especially in developing countries. There are also some cultural and social barriers in adoption of new technology like mHealth. Although mHealth is seen as a game-changer providing equal healthcare services for all, it may also create new injustices. Internet access and its usage and also smart phone usage among people differ according to their socio-economic status. People from underdeveloped regions and lower socioeconomic status may face with important technological incompetency. Hence, digital divide could be an important barrier for mHealth applications to be widely used, especially as an alternative to the conventional system (Layman, 2008)

In addition to human related problems, mHealth may cause some problems about the conventional system. mHealth brings a totally new approach to healthcare services that may cause to disruption of current health systems. The strong parties of these conventional systems like insurance companies, some hospital groups, and the doctors whose existence depend on the existence of old system will naturally start argument and/or propaganda against mHealth applications and will try to prevent its adoption. Therefore, another important job for mHealth providers and governments is to manage these delicate and complex relationships in general healthcare system and in its bureaucracy (Vodafone 2013, Deloitte, 2012)

3. Conclusions

As seen in other breakthrough changes, there are social, cultural, ethical and economic aspects of mHealth adoption in healthcare industry. It calls a stronger role for governments and regulatory offices. Therefore, one of the principal issues for the effective use of mHealth is to make a proper mHealth regulation to monitor patients' rights on data access and privacy. The socalled digital divide among the countries may be overcome by innovative use of technology in underdeveloped countries; therefore these governments should invest more on technology and on their human capital

Governments and regulators should not only assure the security and privacy of patient data, they should also closely monitor requirements of patients to help the improvement of applications and the new system. A list of approved applications might be published publicly to direct mHealth users accurately. Here, it should be noted that there might be some cultural and socio-economic differences using a mHealth application. A very successful mHealth application worked in one society might not be well anticipated in another. Therefore, mHealth providers and regulators should take these relative differences into consideration in adopting a new application.

The unique benefit of mHealth is to bring a patient-centered approach so that each parties; government, application producers, healthcare providers, doctors, and healthcare communicators have to make sure that patients are kept at the center of healthcare network. Patient engagement will continue to be the most important issue in healthcare, therefore building digital trust, maintaining good reputation and increasing consumers' health literacy are the core duties of healthcare providers who want to survive successfully in this great transformation.

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