mHealth in Health Information Delivery; The Indian Scenario

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mHealth is one area which has major scope in developing countries like India, especially in the field of health Information delivery. It can play a major role in improving the health literacy among rural population. But there are barriers to the growth of mHealth in India. India is a country with numerous languages, diverse culture and living styles which makes it difficult to propagate standard set of information to people from all walks of life. Innovative ideas should be formulated to target people with differing languages and literacy levels, thus widening the scope for mHealth development in India.

Introduction

Global health challenges have gained attention in last few years. This changing scenario has influenced the life style of people around the globe. The standard of living is comparatively higher than that of previous century. The more the comfort, more is the risks towards health. In modern societies, almost every aspect of our lives is challenged with questions and decisions on health. People are expected to take health decisions for themselves or for their families at some point of their life.(1) It is at this point people seek information related to health. Technology now has a huge influence on people's life, which makes people more depended to it. Mobile phone is one such device which has created revolution in the world. It has now made world into a smaller place where almost everyone around the globe is within your reach. Mobile phone has put its strong feet in the industry throughout these years by arming itself with additional features like SMS, MMS, music /video downloads, video conferencing and so on, thus becoming the cheapest means of communication and entertainment in the modern world.

Now mobile phones are considered more than a device for communication. It is widely used as a source for marketing products, net searching, Information delivery, banking etc. Since mobile phones are widely used device irrespective of economic or social status of people, it can very well be used for information delivery. Health information delivery is not a new term to mHealth. It is widely used in different parts of the developing world for this purpose. 'U.S. President's Emergency Plan for AIDS Relief (PEPFAR), African Medical and Research Foundation (AMREF), Text4baby' etc. are few example which are successfully using the potential of mobile phones for health information dissemination.

As per the International Telecommunication Union (ITU) statistics until November 2010, it is estimated that, there are 5.3 billion active mobile subscriptions thus making 90% of the world's population have access to mobile network of which 73% of these mobile subscriptions are in developing countries.(2) Whereas in 2011, 142 million mobile‐cellular subscriptions were added in India, twice as many as in the whole of Africa, and more than in the Arab States, Commonwealth of Independent States and Europe together.(3) The accessibility of those who were unreachable before gives scope for the mhealth information delivery services to flourish in developing countries.

India is one country which has a huge scope for mhealth. India still has a vast population who remain

at the lower strata of the society who are deprived of quality living and healthcare facilities. They remain unaware of the modern technology and development in the health care industry, thus resulting in causalities which could be avoided if proper health information and facilities were available. mHealth can play a major role in improving the quality of living and health literacy levels of such people by providing quality health information to them. But it is not as easy as it sounds. To target the rural population, there are some key areas which require major focus for proper implementation of mHealth initiatives. This paper is focusing on those key areas which require to be studied for mhealth to flourish in a country like India.

Challenges to Health Information Delivery

It is worthwhile to note that 'India is now a major provider of health services and contains some of the most highly skilled and qualified medical providers in the world. Quality healthcare, however, remains inaccessible for many undeveloped Indian regions'.(4) Making these under developed Indian regions aware of the recent advances in health care and thus helping them avail at least the basic services can play a vital role in health care development. It ultimately will improve their quality of living.

mHealth has just started to mark its presence in India, when mobile phones have a strong hold in other areas like, marketing, banking, business development etc. Many of the available mhealth parameters are applicable to smartphones, or phones with 2G/3G system and the content will be in English. Such applications are sure to bring changes in health care but it hardly benefits people at the lower segment of the society.

Any developing country will focus primarily on the development of its rural counterparts, especially healthcare development which is the key towards bringing up a healthy population. Here mHealth can play a major role. The motivation behind the development of the mHealth field arises from two factors. The first factor include high population growth, a high burden of disease prevalence, low health care workforce, large numbers of rural inhabitants, and limited financial resources to support healthcare infrastructure and health information systems. The second factor is the recent rapid rise in mobile phone penetration in developing countries to large segments of the healthcare workforce, as well as the population of a country as a whole.(5)

Majority of causalities occurring in developing countries are due to the lack of knowledge in handling critical situations. For the illiterate, currently their only source of information is probably going to the people around them, who also, in many cases, illiterate. The lack of knowledge remains the root cause of such causalities.(6) Government run various health literacy campaigns to improve the health status of the rural population. The usual campaigning methods are by conducting study classes, workshops, street plays, campaigns through TV/Radio programs etc. which will definitely have its effect. The advantage of mobile phones over such initiatives is that, it is delivering personalized messages and if required reminders/ updates can be send multiple times. But there are challenges in keeping this set of population in the loop. This paper will analyse the challenges that will keep mHealth services from delivering health information to the Indian population at a large.

Literacy

Over the years, the literacy levels at rural areas have improved considerably. But there is a vast rural population who keep education as the last priority on their list. Another aspect which needs to be stressed upon, is the 'health literacy' of the population which helps them independent decisions on their own or their families health issues when the need arises. To improve the health literacy among such people is always a challenge. Unless these people are covered, none of the campaigns will be complete. Oral presentation and visual aids will be the best method to educate them. But the effectiveness of hearing or seeing something just ones or twice need to be studied. Here mHealth also have limitations as the target population may not read the text messages if send to them. This area requires Intervention to study and formulate effective use of mHealth technology such as developing, audio or video messages which will have a scope in the long run.

Language

Individual mother tongues in India number several hundred. The 1991 census recognized "1576 rationalized mother tongues" which were further grouped into language categories. Considering a country like India with hundreds of languages and low literacy levels in the rural population, mass education strategies may not workout. Regional, TV and Radio coverage will have a positive result in such cases. But the limitation is that it can support general campaigning ads, talk shows or documentaries which may or may not propagate the message to all the people. mHealth technology has a virtuous scope in

this area by reaching the target population with information in their own regional language specially to each individual.

Culture & Geographic location

Sometimes cultural barriers can undo any multimillion dollar deal says Geoff Williams in his article in Entrepreneur. 'India is an ancient culture that's been around for 5,000 years.(7) The geographic variations in India are assorted. The Indian population is distributed along a variety of cultural variations. The diversity is so vivid that addressing the whole population with a standard information set will be difficult. For instance, if information on diet modification for expecting mothers has to be formulated, it cannot be same throughout the country, as the availability of raw materials differ in different regions. Believes and culture also varies across the country thus making it difficult to convince the people about new things. These brain barriers are difficult to break as they were believes followed by them for quiet long. In spite of all the campaigning efforts undertaken by the Government, still there are people who have mind blocks towards vaccinations for children. It requires a patient and undying effort to resolve such mind blocks towards health initiatives.

Technological illiteracy

Access and use of new information and communications technologies is one way to improve the social and economic development of a community. From a layman's point of view, Technology is a broad term which includes many complicated process involving machines. 'The term digital divide has become an increasingly frequent way to describe gaps between rich and poor countries and between rich and poor populations with in the countries'.(8)

mHealth has its limitation among rural population as they consider mobile phones just as a mode of communication at the click of a button. Often rural population will find it complicated to follow recorded instructions to reach a particular service provider on phone. This area requires major intervention to formulate system which involve less typing. To make this point more clearer, text message support for expecting mothers often ask to enter information like, last menstrual periods, expected date of delivery etc. to receive personalised messages on their phones. For majority of the rural population, following such instruction will be tedious even if they are very simple steps. On top of that majority of such support services are worded in English. The fear and anxiety

in using such system and that also in a foreign language keep them from using such service. The end result is that the messages will not be delivered to those who will require it the most.

Another challenge is the small screen of the mobile phones which requires the use of navigation keys to scroll up and down to read the entire content of a text messages. This will make it difficult for commoners and elderly people to use text message support systems.

Conclusion

As we have seen, reading and understanding instructions or messages on mobile phones is difficult for people with low literacy level. Illiteracy both academically and technologically plays a major obstruction towards mHealth initiatives. Since most of the mobile phone based health initiatives are subscription based, many will not opt for it.

Now, seeing mHealth information delivery as a noble cause to improve the health status for those underprivileged, innovative ideas has be formulated to make mobile phones as the handiest device for health education. As language and literacy levels are the major barriers in mHealth initiative, new techniques like audible and readable message delivery has to be formulated. Here again if the technology plays the villain, the message delivery system should have the option to get linked to the HIS/EMR system which then sends automatic recorded information and alerts to the patients. It will also help the patient to minimize typing related details on to the mobile phones. If needed option should be there to set up reminders to alert people about doctor's appointment, medication, dosage, diet etc. Such activities will popularise the mHealth among rural population which deliver vital information at their privacy.

Acknowledgement

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