



M-Health Technologies Bridging ASHAs with Rural Healthcare Needs

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Abstract

The concept of e-health is becoming a crucial part of the contemporary media health environment. The example of Covid-19 pandemic which has shaken the globe is advocating for its importance in today's medical arena. There has been an advent of global electronic health for the past two decades but many people are still uncertain and struggling with its usage, especially in developing countries. From frontline health workers to the general public, all need to be more e-health literate as the future healthcare is more oriented towards digital healthcare. In India, ASHAs are the backbone of the rural healthcare delivery system. There is a need to equip these health workers with the working knowledge of digital technologies like mobile-health, so that they can reach the target group effectively and efficiently. Therefore, the need for m-health technology is becoming more and more evident in contemporary health scenarios in playing an important role in reaching the rural and marginalized population.

Key Words: Mobile-health, ASHAs, Mass-Media, Digital, Rural, Interventions

Introduction

With the advent of internet technology, the traditional healthcare delivery model has started to shift towards an electronic health care delivery system. The concept of electronic health is becoming a crucial part of the contemporary media health environment. E-health is defined by the World Health Organization (WHO), as the use of information, communication and technology (ICT) for healthcare delivery services. Thus, it is the delivery of health services and information about health issues through digital technologies (Esyenbach, 2001). It provides

numerous virtual opportunities to advance the enhanced quality of care and evidence-based health services. It has surpassed the geographical boundaries with the introduction of telemedicine in health care. E-health has provided a set of tools in the shape of new models, devices, applications, and services to improve users' health. In rural India, digital health technologies like m-health are becoming a boon to healthcare delivery through rural health workers like

Accredited Social Health Activists (ASHAs). To utilize the full potential of such services, health literacy has become the need of the hour.

E-health Literacy

To make appropriate health-related decisions, a person should be able to understand, communicate and process health-related information which has been defined as health literacy (CDC,2019). People can fully utilize health services and information, only when they obtain and understand correct health-related information in the form of brochures, pamphlets, medical instructions, advertisements, doctor's prescriptions, etc. Health literacy is an important determinant for communities to develop and prosper. It helps mobilizing the communities towards better healthcare decisions and empower them

against emerging dangers like epidemics, emergencies, and contagious and non-contagious diseases (Kumar,2019).

With the growth in internet technology, electronic health literacy has come out as a more advanced concept. E-health literacy has been defined by Norman and Skinner (2006), as the ability to find, obtain, process and understand quality health information from electronic sources and online platforms and then apply these knowledge skills to solve health problems and address health related issues. It is a set of skills an individual must possess in order to better utilize the full potential of the

online information and services in the digital health arena. Unlike the concept of literacy, e-health literacy advocates for more than just reading and writing ability, a person needs to have basic working knowledge of computers, the understanding of science and technology, how the internet processes information and how the consumers receive that information.

M-Health Technologies

As stated by World Health Organization, m-health or mobile-health is the subset of electronic-health technology (WHO, 2011). E-health technologies can be defined as providing healthcare services through the use of information and communication technology such as., computers, the internet, and mobile devices. M-health therefore means providing health information and services through the use of smart mobile devices (Moss, Sule and Kohl, 2019).

India is witnessing dynamic growth in terms of mobile phone usage and internet access among rural and urban populations. As per Deloitte's 2022 Global TMT (Technology, Media and Entertainment, Telecom) predictions, there will be one billion mobile phone users in India by 2026 and this growth will drive by the users of rural areas (Hindu, 2022). E-health and m-health include a plethora of dynamic healthcare services like health message services, online appointments, health call centres, m-telemedicine, information, patient records, data, community awareness and many more (WHO, 2011). The concept of e-health is becoming a crucial part of the contemporary media health environment. The example of Covid-19 pandemic which has shaken the globe is advocating for its importance in today's medical arena, especially within the rural and marginal population. There has been an advent of global electronic health for the past two decades but many people are still uncertain and struggling with its usage especially in developing countries. From frontline health workers to the general public, all need to be more e-health literate as the future healthcare is more oriented towards digital healthcare. In India, ASHAs are the backbone of the rural healthcare delivery system. There is a need to equip these health workers with the working knowledge of digital technologies like mobile health so that they can reach the vulnerable target group effectively and efficiently. Therefore, the need for m-health technology is becoming more and more evident in contemporary health scenarios in playing an important role in reaching the rural, vulnerable and marginalized population. This study is a traditional review, which aims to conceptualize the role and importance of m-health technologies in the rural healthcare delivery models being operated by Accredited Social Health Activists (ASHAs).

Literature Review

Health is the most important aspect of life. In India, the healthcare delivery models are struggling to provide quality healthcare to all the population. There are varied health-related requirements of the population at different

levels i.e., rural and urban. The resulting health outcomes also differ for these groups of the population. There are multifaceted barriers from poor access to healthcare to lack information about various schemes and programs, poor communication between patients and healthcare service providers; lack of culturally specific health approaches poses a serious disease threat to underserved rural population (Shah, Kaselitz and Heisler, 2013) & (Ruggiero et.al 2012).

To achieve good health at the grassroot level, the government of India has introduced many schemes and programs like Ayushman Bharat Healthcare Scheme, Janani Suraksha Yojana, Mission Indradhanush, National Ayush Mission and many more. One such notable scheme launched by the government was the National Rural Health Mission (NRHM) in 2005 to address a number of health-related requirements of rural and vulnerable people, and to provide integrated healthcare to the people, as a sub-mission under the National Health Mission (NHM). One of its components was to provide Accredited Social Health Activists (ASHAs), a community health worker to every village of the country to facilitate the health communication process and health care delivery systems at the village level (NHM, 2014). Accredited Social Health Activists are trained female community health workers selected from the same village and are accountable to it. These females are trained to act as a bridge of information and health care delivery between people and the public health system.

The ASHAs have been working day and night to improve the primary healthcare delivery scenario in rural India. Studies have reported the positive impact of the ASHA program in bridging marginalized and vulnerable groups to healthcare systems (Agarwal et.al, 2019). These community health workers are supposed to inform and guide the villagers about various public health programs, and assist in maternal emergencies, immunizations, child nutrition, family planning and other behaviours linked to population health. They aim to persuade people and convince them to adopt healthy behaviours. But it has also been observed that many healthy behaviours in rural areas cannot be practiced because of lack of awareness among people, low exposure of media like TV, print, radio, etc. among women, health workers often do not reach many houses due to poor connectivity, distance and socio-cultural barriers. In such circumstances, the health of marginalized and vulnerable groups suffers. In such circumstances, mobile-health technologies act as an upgraded and additional tool to reach aimed health behaviour among the population (Hazra et. al, 2018). To strengthen primary health care, the role of mobile-based healthcare initiatives is of utmost importance (Jaysawal,2015). The health care burden in the areas like maternal and neonatal

care, sanitation, tuberculosis, HIV and AIDs, immunization, and communicable and non-communicable diseases, can be reduced by the efficient use of m-health technologies to make people aware, informed and by reducing gaps between the patients and health service providers (Davey and Davey, 2014). To increase the work productivity of frontline health workers, the state governments in India have distributed smartphones to ASHAs and also imparted training to use the m-health applications like Himarogya, TB Mukh Himachal App and RCH Portal, etc (The Tribune, 2020).

The Health care delivery integrated with the use of smart mobile phones is aiding ASHAs routine job to much extent. A recent study indicated that the use of m-health application affects the contact between the ASHAs and pregnant mothers (Prinja et. al, 2016). There are several e-health initiatives that are being used in rural healthcare settings globally like patient monitoring, awareness raising, contacting and interaction with patients, reminder calls, information, health records and data filing, emergencies, health surveys and many more (WHO, 2011). A study conducted on PIERS on the move (POM), a mobile-health application for smartphones developed to support frontline health workers in identifying and managing pregnant women at risk from pre-eclampsia, stated that the community health workers with proper training in using the POM mobile application found it helpful during their home visits. Both ASHAs and ANMs found the mobile-based application very useful and effective in assessing risks and complications during pregnancy, its clinical indicators and hospital referral recommendations helped the healthcare workers in making timely decisions regarding the health of the expecting mother and her foetus (Charanthimath et. al, 2021). Murthy and Vijayaraman, 2012 in their study 'ROLE OF MOBILE PHONE IN FEMALE HEALTH WORKERS' WORK ROUTINE' in 6 PHCs in Mysore district of Karnataka reported that the use of mobile phones acted as a bridge between health workers and ASHAs and their virtual presence in the field made it easier for them to connect with the target population. These community health workers are responsible for the successful implementation of various rural healthcare programs by connecting to marginalized communities, communicating with them information about health facilities, and mobilizing them to avail of such services (Karageorgos et. al, 2018). M-health technologies have made the reach of ASHAs limitless. With the adequate use of m-health technologies, ASHAs can inform, be aware and communicate with their target audience in a timely manner. Further, ASHAs have to make follow-up visits to a single home multiple times, m-health usage can make this task less burdened. In rough hilly terrains, ASHAs have to walk on foot for hours to reach

the target groups. The lack of proper roads and the unavailability of transport facilities in rural areas makes it a challenging task for frontline workers to perform their routine work effectively.

Apart from connecting with target groups, m-health technologies can also help health professionals to impart training and learning to rural non-professional healthcare workers. M-health technology also provides a vast e-health literature and other educational material to health workers to further enhance their knowledge and work functioning (Karageorgos et. al, 2018). Thus, m-health technologies play a crucial part in helping ASHAs contacting with their village people. Although to make ample usage of mobile-health facilities, e-health also plays a significant role. It has been found that the ASHAs with age more than 40 years find it difficult to use technology-based applications while younger ASHAs have ease of using mobile phones and mobile phone-based health technologies in their routine work (Murthy and Vijayaraman, 2012). Older frontline health workers' low level of literacy and awareness makes it difficult for them to utilise all the trending benefits of m-health technologies. Further lack of m-health technology awareness and low e-literacy rate among the rural public, the benefits of mobile-health initiatives sometimes backfire. A study 'Potential for mobile health (mHealth) prevention of cardiovascular diseases in Kerala: A population-based survey' by Feinberg et. al. (2017) indicated the patients' preference for using phone calls as a successful m-health intervention over short messaging service (SMS) interventions (Feinberg et. al, 2017). The patients preferred voice phone calls over the SMS interventions as their poor reading ability made it difficult for them to understand the message information. Therefore, the later one has believed to be creating or widening health disparities among the population. Thus, literacy and e-literacy play a crucial role in widening or narrowing any health intervention gaps.

Discussion and Conclusion

The telecommunication industry is flourishing in India and penetrating rural areas at a faster pace. In today's digital world, it becomes of utmost priority to equip frontline health workers with digital health intervention knowledge and training to develop and enhance the rural public health sector. This review put forth the importance of m-health usage among ASHAs and health workers to make them more productive and to improve their quality of services in the health arena. From making reminder calls to pregnant women, answering queries of people, sending SMS, recording and updating daily data, and connecting with health workers and doctors, ASHAs work can be eased with the use of m-health technologies.

In today's digital world, advancement in technology along with its benefits also poses a challenge to digital health literacy. Electronic health has the potential to bring a revolution in the way health information is being provided, but the needs and preferences of the low-health literate population need to be taken into consideration.

To evaluate how the media is framing public health epidemics, and to understand the basic functioning of the internet, individuals require basic literacy of digital technology. Training should be imparted to frontline workers and health educators about proper usage and knowledge about online public health systems. Health educators and health workers then need to be aware people about the importance of health literacy, electronic health literacy, health education, proper use of technology-driven health services, and their pros and cons. People need to be educated about the basic skills required in this digital health ecosystem. As stated by WHO, health workers need proper pieces of training, a supportive environment for working and dealing with this changing infrastructure of health scenario (WHO, 2019). Community health workers are the backbone of rural healthcare delivery model in India. With the unprecedented fatal viral spread, the work burden on ASHAs has now increased manifold. The routine field work of ASHAs can be supplemented with the proper use of mobile-health technologies. Digital penetration in the rural domain has led to a spurt in smartphone usage among population (Business Standard, 2021). In the advanced medical-health sector, technology is becoming the panacea for achieving overall health. There is a widespread expansion towards digital mobile technologies and e-health sector, therefore a proper, systematic and trained usage of smartphone devices with a specific focus on e-health literacy among rural health workers as well as the general public can make an evolved rural healthcare delivery model with enhance the performance of health workers.

Limitations and Future Scope of Study

There are several limitations to this review. There is an abundance of other literature related to the use of m-health technologies and how they can enhance ASHAs routine work which the author has not studied, and can be systematically reviewed in further studies. A systematic review can be done to further underpin the importance and need for e-health literacy among frontline health workers and the use of mobile-based health technologies. Also, there is much literature that is categorised as grey literature; non-peer reviewed papers and content on various online platforms and websites which can be studied in future reviews. The various government policies related to Accredited Social Health Activists and health workers, in general, can be studied to support the author's argument.

Declaration of Conflicting Interest

The Author declares that there is no conflict of interest.

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