Changing Cultures: Changing Lives—Mobilising Social Media During a Health Crisis

Martha Kamara

Abstract Though developing continents such as Africa continue to be challenged by the prevalence of certain health related matters, the emergence of Information and Communication Technologies seems to be promising in managing and monitoring a number of heath related diseases. The rapid growth of mobile phones, computers, and other social media devices in almost all cities and rural areas in Africa has been the catalyst for this change. The use of m-Health and e-Health care strategies developed in tandem with industrialised countries has increasingly contributed to improvements in healthcare. Illustrative are m-Health applications in Africa with particular reference to its use during the recent Ebola crisis in Sierra Leone.

Keywords Healthcare · Digital information sharing · Ebola

Introduction

The rapid development and growth in digital technologies has significantly transformed global and local patterns of communication and dissolved continental and regional boundaries. These innovations have included the World Wide Web, mobile phones, and online social networks such as Facebook, WhatsApp, twitter, LinkedIn, and much more. Social media for example, has transformed and enhanced how families and friends communicate with each other. While a digital divide continues to exist between global north and south, social media has gained currency and popularity at a faster rate than expected in Africa, reaching rural and most remote villages. Most people can now boast of having a mobile phone regardless of where they live and work. The rapid response of social media and other forms of digital communication in Sub-Saharan Africa has seen a steady stream of innovation and

M. Kamara (✉)
School of Education, La Trobe University, Melbourne, Australia

advancement in health, education, governance, and economic development. Communications technologies have redefined and revolutionised traditional communication protocols and cultural practices. Social media provides a fast, cost-effective, and more transparent communication alternative which overcomes limitations that hindered progress in the past. Sectors such as banking and finance have been swift to embrace and exploit digital technologies extensively to improve service delivery. In almost every remote part of Africa, financial transactions are executed across the globe securely and rapidly through one form of technology or the other. Most families with relations around the world can now send and receive money through a simple mobile phone by financial institutions and agents in countries that provide such services.

Notably, the health sector has realised a rapid growth in the use of digital technologies in recent years (Bruce 2002; Khan et al. 2010; Thinyane et al. 2010). Considerable interest in the use of information and communication technologies for health-care delivery has significantly transformed the administration and management of health service delivery globally. Essentially, there has been significant improvements in responding to health service delivery through e-health, a cost-effective and secure use of information and communication technology for health and health-related purposes through the use of various applications and tools (Cole-Lewis and Kershaw 2010).

Industrialised countries such as Australia, USA, Canada, and the UK are now relying on electronic medical records (EMRs) in its various forms to provide quality health care efficiently and effectively. At a universal level, there has been widespread support for an integrated approach to activate global e-health (Blaya et al. 2010) paying particular attention to developing countries in Sub-Saharan Africa. The case of adopting these technologies has been widely embraced though not without enormous challenges as a partial solution to improving universal healthcare with developing countries the most vulnerable due to cultural and financial constraints (Edejer 2000). In an increasingly digital world, prompted by technological advances, economic investment, social and cultural changes, there is growing recognition that inevitably the health sector must integrate information communications technology into its practices if universal healthcare is a priority for world leaders as pronounced by the United Nations and its key agency, the World Health Organisation. This applies whether the goal is to reach all citizens with high quality, equitable and safe care, or to meet obligations for public health records and research.

The African Context

Rapid readiness to embrace the use of communication technology with the potential to improve development projects in Africa, has witnessed significant improvements in facilitating clinical and managerial decision-making in some parts of the African region thanks to the work of health agencies and other non-government

organisations such as United Nations Development Program, and World Health Organisation (UNDP 2015a, b). Africa has slowly migrated to e-Health solutions from storage of patient information which traditionally involved stacks of manila files and handwritten notes, to diagnosing, treating, and monitoring of certain diseases such as HIV/AIDS (Ediger 2000) with penetration of digital devices. Being part of a global village has substantially increased and created new opportunities in Sub Saharan Africa though significant challenges are acknowledged. For example, an equitable share of resources in developing countries remains a major challenge in terms of affordability and reception. Migrating to e-Health has so far been of immense benefit though the level of development in technology is remains low, and coverage of digital health technologies in large economies such as Nigeria is still in a neophyte stage (Batta et al. 2015). For the continent, the majority of the population is living in abject poverty with little access to healthcare for medical assistance. Countries such as Kenya, Ghana, Nigeria, Rwanda, Ethiopia, Uganda and South Africa are slowly migrating to e-health facilities in an attempt to facilitate National Health Service delivery in response to achieving United Nations Millennium Development Goals (MDGs) and match the resolution of the World Health Assembly urging nation-states to embrace e-health in an effort to improve and strengthen health systems (Asamoah-Odei et al. 2007).

In Kenya for example, text messages have been used to provide services to HIV/AIDS patients thanks to the rapid spread of mobile phone use. In Nigeria, it is reported that phone companies are providing frequent free text messages on HIV prevention to all subscribers. In South Africa a number of measures have been taken to establish e-health practices in the treatment of diseases such as HIV/AIDS and zoonotic diseases in remote communities. Networks of e-Learning and telemedicine have been established in other countries such as Mali, Senegal, Cameroon, Burkina Faso and Niger in collaboration with some industrialised nations such as France and Switzerland. Such cooperation has been noted with other African countries in promoting transnational e-Health and Telemedicine (Asamoah-Odei et al. 2007).

Sierra Leone—A Case Study

The recent Ebola crisis has had a profound impact on Sierra Leone. At the time of the outbreak there were severe shortages of doctors with only two doctors per 100,000 people (Momodu 2014). Admittedly, the health care system in the country was considered weak, lacking good laboratory facilities for early detection and diagnosis.

Sierra Leone a multi-ethnic country located in West Africa with an area of 71,730 km^2 and a population of approximately 6 million people gained independence from British indirect rule in 1961. According to the Human Development Index in 2011, it is one of the world's poorest nations ranking 180 out of 187 countries. English is the official language. Krio is widely spoken by 90 percent of

the population and represents the dominant lingua franca of ethnic groups. Poverty is widespread with more than 60 percent of the population living on less than \$1.25 a day (UNDP 2015a). Illiteracy and unemployment are very high. Despite social, economic and political problems, there is steady capacity rebuilding in collaboration with aid agencies such as UNDP in mobilising the nation's opportunities since the end of the civil war in 2002 (UNDP 2015b). Along with infrastructural rebuilding across the nation, mobile communications technologies have become central to programs for change. Although mobile phone companies are established in major cities, the population has embraced technology at a faster rate than expected including a significantly illiterate population living in rural areas and villages. Local village traders are now empowered to transact business directly with customers by minimising third party reliance on external agencies.

Sierra Leone and Modern Telecommunication

Paradoxically, while communication gap between governments and communities undermined the efficacy of the emergency response, closely linked to weak national capacities overall, especially in terms of ensuring access for all to basic services for health, water, sanitation, education and social protection, more people in Africa have access to mobile phones. In Sierra Leone, mobile phone usage has increased tenfold with only about 113,000 subscribers; however by 2008, there were over 1 million subscribers (Petifor 2011). The most prominent users are young people between 15 and 35 years. It is reported there are about 2 mobile phone users per household in the rural areas (thanks to the provision of Solar photovoltaic (PV) which provides a solar mobile phone charging system (Mansaray 2013). The promptness and capacity of instantaneous communication via social media, the internet and Facebook in this instance of crisis brought to bear the ways in which traditional social and cultural practices relating to communication protocols were being transformed. Populations within Sierra Leone are no longer isolated from the world. Social media provides a means to bypass traditional knowledge cultures and practices and opens up possibilities for widespread mobilisation of news and information through communications technologies. Nonetheless, it has taken a crisis in the health sector such as Sierra Leone and other developing countries in Africa to move e-Health from the periphery to the centre of strategic health planning.

The Ebola Crisis

While there are distinct social and economic differences between affluent city residents, villages, and transient slum dwellers, the Ebola crisis demonstrated an instance where social media became a significant communication medium for

reaching populations within Sierra Leone, for communicating to the global world and the Sierra Leonean diaspora.

The Ebola Virus Disease (EVD) crisis highlighted the fragility of Sierra Leone's health, education and social structures when faced with the rapidity of disease. As noted by the President of Sierra Leone at the recent Ebola Conference held in Brussels, noted that at the outbreak of the virus, 3100 citizens died which included over 400 children and hundreds of orphans. This situation decimated an already crumbled economy with heavy casualties in the education and health sectors. Schools, colleges, universities, hospitals, clinics, commercial centres went into lock down. There was widespread flight of residents from cities, towns, and villages in fear of being contaminated even though most residents did not fully understand the ramifications of the outbreak. Sadly, a crippling government most willing to protect and secure its residents did not have immediate answers nor the resources to manage the enormity of the situation. Frontline health workers became casualties including a few specialised physicians. The EVD made no distinctions between social status, wealthy or poor, village or city. The population was extremely vulnerable, fearful and anxious about where and when, and who the disease would take. Unfortunately, the crisis took the entire world by surprise and a rapid response to treatment and management was slow, fragmented, and challenging.

The health crisis exacerbated the fragility of a nation recovering from a 10 year brutal civil war in which 50,000 people were killed, infrastructure destroyed, and more than 2 million residents displaced. Thousands of professionals left for Europe, America, and Australia, leaving a significant intellectual, social, economic vacuum to overcome for rebuilding the nation's political system, civic infrastructure, health, education, and the economy. Health and education are two critical areas where much help is needed to meet the UN Millennium Development Goals of eradicating poverty, hunger and disease and for developing more resilient nations. The challenges of power shortages was one of the major catalysts in casualties that decimated the country. For example, speaking on a mobile phone a dying woman's last words to a relative from her Ebola bed were "I need to desperately charge this mobile phone but there is no power and I have been abandoned here by the health workers". Ultimately, her voice faded as the phone shut down. Shortage of protective equipment, ignorance of the outbreak, and cultural practices hampered prompt treatment of patients.

Despite the spontaneous outbreak, international agencies in a coordinated effort eventually mobilised to reach out and intervene with high tech equipment and management strategies, in cooperation with the entire nation. For example, UNDP offices were upgraded in the three hardest hit countries in West Africa—Liberia, Guinea, and Sierra Leone to provide videoconferencing kits to boost internet bandwidth worth over a million dollars. The provision of this facility made all the difference in coordinating efforts of staff in the affected countries and industrialised nations where medical staff were located. In part, the widespread use of social media and other forms of telecommunication became one of the catalysts for combating the disease though there was less readiness for telehealth services. It became expedient for a paradigm shift in an integrated approach to re-establish

institutional frameworks with greater adoption of digital technologies. One of the critical steps taken at the time was the proper establishment of telecommunication channels and training of health service staff in the treatment and management of a crisis of that magnitude. To facilitate and harmonise communication nationally, Ebola centres were established in certain regions of the country and the internet became a reliable facility at Ebola Response Centres (ERC) managed by e-Health at the "Alert Pillar" unit of the Ebola Response Centre or C Command Centre in major cities. The Alert Pillar was assigned the responsibility for receiving all alert calls (sick, death, suspect, and security). These calls were then redirected to the appropriate response wings of various unit—dignified burial, surveillance, life case, psychosocial and social mobilization, and Security units for necessary action. The availability of the internet greatly facilitated administration and management between the government and agencies in speeding up communication between districts when recording information on the number of outbreaks and death notices. The setting up of a database was helpful on many fronts in assisting access to information that communities would not normally receive if relying on traditional technologies of communication (for example, fixed telephone, mail, newspapers). Having up to date accounts around the country assisted government officials and medical staff to understand patterns of disease by having reliable statistics on actual and approximate figures.

The crisis illustrated the critical need for communication efficiency to reach populations in educating them about health and disease prevention. Mobile technologies and internet access indicated fundamental shifts in managing crises of this nature. There was a ground breaking innovation of mobile payments to Ebola staff, cloud computing and open source information management systems to efficiently manage the crisis with the UNDP as frontline agency (WHO Ebola Response Team 2014). During this time there was an exponential increase in the use of social media, from villages to cities, and to the broader world. Sierra Leoneans themselves utilised social media to convey news, find relatives and friends and post updates on the progress and status of individuals as the disease unfolded in time. Already grappling with a struggling economy for Sierra Leone the socio-economic impact will be lasting. It will need a global effort to re-establish education, health, and other social services in the country. The unflinching efforts of the Sierra Leone government to provide universal health care has been dealt a blow.

The Way Forward

While it may take a number of years to rebuild the struggling economy, good strategies will progress the efforts of international bodies and the government. Essentially, some long term investment and commitment is required from all key stakeholders. Global resilience, preparedness, and response have been widely criticised (Brown and Cropley 2014). Lessons learned in the hardest possible way are essential starting points for reforming recommendations from the World Health

Organisation (WHO) in implementing policy initiatives from the country. Fundamentally, education is a key target in the recovery process. Basic primary health care training is necessary. Health care staff including community health care workers need to work collaboratively to maximise the impact of containing the disease; yet even is challenging since affected countries are grossly understaffed. It is imperative that the presence of the United Nations and other international agencies remain is a priority even when a zero target had been reached. As a developing country, it is important that cultural practices that have been long established and which may have a potential to counter recovery practices are dealt with in a sensitive manner. A dialogic process with community people will yield better answers and empowerment than coercive measures. The outbreak has created high rates of unemployment particularly among the youth. The implementation of vocational education programs could be the answer to engaging this cohort. Consequently, it will need a genuine effort from the government and citizens to ensure that resources provided for the recovery process are utilised accordingly.

Conclusion

Though wireless technology has altered health care delivery, there remain enormous possibilities in responding to health epidemics particularly in emerging countries. With the widespread use of mobile technology and social media platforms in Africa, there is opportunity to capitalise on e-Health and e-Education modes of delivery that should incorporate culturally appropriate ways of accessing and interacting with such technologies. Harmonising education and health systems through cultural and social interfaces along with the development of specific applications for mobile phone use may provide a way forward to overcome significant challenges presented at the time of the crisis. No doubt there are important lessons learned at various levels nationally and internationally. With the widespread use of mobile phones and other telecommunication devices, a new direction in enhancing the provision of cost-effective devices and services will play a major role in e-Health service delivery not only for diseases such as Ebola but other life threatening diseases.

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