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The Role of ICTs in Health Communication in Slums in Kenya

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Abstract

The use of Information and Communication Technologies (ICTs) for behaviour change communication is one of the approaches civil society in Kenya has embraced to confront the HIV/AIDS scourge. ICTs have a great potential to enable People Living with HIV (PLWHA) and other vulnerable groups such as women and the youth to respond appropriately to and participate effectively in programmes aimed at managing the impacts of the disease. This paper is focused on the actual role and potential benefits of ICTs in enhancing HIV/AIDS health communication in poorly resourced areas in Kenyan cities. Primary data for the study was collected through interviews and focus group discussions with administrators and users of ICT facilities in community HIV/AIDS project sites in Nairobi, Kenya. Additional secondary data was collected through documentary analysis of relevant literature. The collected data was analysed using content and conversation analysis. This study revealed that e-mail discussion groups, social media, the World Wide Web (WWW), radio, television and distance learning systems are some of the ICT tools which are being used in the fight against HIV/AIDS in the slums in Kenya's cities; HIV/AIDS programmes in Kenya utilise ICT tools to enhance their prevention, education and behaviour change communication mitigations; and HIV/AIDS projects utilise ICTs to educate health workers of emerging health issues in their efforts to enhance the impact of their interventions. The use of ICTs has resulted in social change, reduction of vulnerabilities, enhanced advocacy on pertinent issues, development of supportive networks and alliances, and enhanced capacity development outcomes. The effective use of ICTs for health communication is hampered by inadequate ICT infrastructure; prohibitive costs associated with the use of ICTs, inadequate technical skills, and low awareness of the potential benefits of ICTs to support health programmes.

Keywords: ICT, health communication, HIV/AIDS, slums, Kenya.

Introduction

According to the Joint United Nations Program on HIV/AIDS (UNAIDS), African countries carry an HIV/AIDS burden 100 times heavier than that of industrialised countries. UNAIDS further asserts that Sub-Saharan Africa is more heavily affected by HIV and AIDS than any other region of the world. UNAIDS also estimated that 25 million people in Sub-Saharan Africa were living with HIV at the end 2012 with approximately 1.6 million new infections that year. Additionally, in 2012 alone the AIDS epidemic in Sub-Saharan Africa claimed the lives of an estimated 1.2 million people and leaving more than eleven million children orphaned[1].

The 2012 Kenya AIDS Indicator Survey (KAIS) published by the National AIDS and STI Control Programme (NASCOP) reported that 5.6% of adults aged 15-64 are infected with HIV in Kenya. This high overall HIV prevalence rate among Kenyan youth reveals the urgent need for HIV/AIDS educational and prevention programmes targeted specifically at the unaffected young people[2].

Driscoll[3] argues that the use of ICTs complements other Information Education and Communications (IEC) campaigns designed to effectively reach people with health messages. The same technological resources such as e-mail, CD-ROMs and the World Wide Web can link HIV/AIDS educators and activists around the world. The technologies hold a great promise for reaching the target population who readily embrace the use of technology for entertainment, learning, and communication when given access to these resources[4].

Ashcroft and Watts[5] argue that more effective communication about HIV/AIDS and a greater flow of information are central to the success of its management strategies to reduce the vulnerability to infection. Gilhoney[6] on the other hand asserts that information and communication are sources of power to manage the epidemic characterised by a lack thereof as they confer the power to protect against infection, influence decision makers, and to live lives of dignity and equality once infected. In a region often characterised by diverse resource limitations and fragmented infrastructures, information and communication are two of the most critical and abundant resources available in the fight against HIV/AIDS[7].

Currently, there exists a considerable consensus that an effective response to the epidemic should be a comprehensive one requiring prevention, treatment, and the protection of human rights. These elements are part of a continuum, with prevention

enhanced by the availability of treatment, which in turn reduces the stigma of an illness perceived to be a death sentence[8]. The effective prevention of HIV/AIDS also relies on the reduction of vulnerability to infection in high-risk groups like women and youth, through the protection of human rights and other means. Information and communication are central threads running throughout this response, providing both form and content to prevention, treatment, and vulnerability reduction[9].

Chikonzo[10] argues that limited resources, stigmatisation and discrimination of PLWHA hamper the effective use of ICTs in health communication. There is inadequate information to enable appropriate behavioural changes and to counter the dangerous social consequences of misinformation and myths about the disease, and continuing social and political silence and denial about the disease.

Information and communication, and the technologies that facilitate them, are also key elements of a civil society response to the epidemic, enabling advocacy, mobilisation, and empowerment of PLWHA, women, and other vulnerable groups. ICTs also increase democratic participation and provide greater accountability of national and international decision makers[11].

Problem statement: Burnham and Peterson[9] opine that HIV/AIDS is the most threatening health and development challenge that Sub-Saharan Africa has faced in the past decade. Recognising the potential of ICTs, the Swedish International Development Agency (SIDA) and its affiliate Swedish Program for ICT in Developing Regions (SPIDER) commissioned research to explore the opportunities for using ICTs in mitigating HIV/AIDS in Southern Africa[12]. Using a participatory approach, the study focused on Zambia, Botswana and Mozambique and sought to address two key questions: i) how can ICTs contribute to the empowerment of people living with HIV/AIDS; and ii) how can ICTs improve the ongoing and planned HIV/AIDS programmes in the region. In this research, a literature review was conducted to explore the current and existing research on the use of ICTs within the HIV/AIDS prevention, care and treatment programmes in southern Africa. The findings of the research indicated that ICTs have the potential to mitigate HIV/AIDS through empowerment of PLWHAs. The findings further revealed that ICTs can facilitate the effective sharing of information, which could enhance the efforts to reduce stigma and discrimination among the infected and the affected.

Similar studies on the role of ICTs on the management of HIV/AIDS have not been undertaken in Kenya. Although AfriAfya has been implementing an ICT project in Kawangware slums in Kenya since 2004, little information about its progress, impacts and challenges is in the public domain. This study, therefore, sought to undertake an assessment of the usability and impact of the project, identifying the opportunities and making recommendations that would help improve its implementation and management. Specifically, the study sought to identify the ICT tools and programmes used in HIV/AIDS interventions; establish the benefits HIV/AIDS programmes obtain from ICTs; understand the challenges which hamper the effective use of ICTs in HIV/AIDS programmes in city slums in Kenya; and recommend suitable measures that could be used to overcome the challenges.

Theoretical framework: The researchers used the Activation Theory of Information Exposure for this study. The theory states that individuals will seek to satisfy their need for stimulation and information when attending to a message, before they can seek to fulfil their need for information alone[13]. According to Christ and Medoff[14], the Activation Theory of Information Exposure explains how individuals seek messages that fulfil their cognitive need for information as well as their desire to be entertained. To illustrate how this theory works, West and Turner[15] give a hypothetical example of Erin and Kris who are teenagers that lead active lives and are faced with the normal peer pressures of any teen: drugs, sex, and alcohol. During their daily television viewing they watch many commercials and programmes that are very entertaining. Periodically commercials that deal with serious issues such as drugs, sex, and alcohol come on the television channels they tune to. When the information is simply presented by someone talking at the viewers and presenting information, the teens change the channel. However, when the message has music or an entertaining story line, they watch the commercial and retain the information that is presented. The Activation Theory of Information Exposure states that Erin and Kris retain that information because their need for stimulation and information rather than just their need for information has been fulfilled[15]. This theory was used to help the researchers to assess the effectiveness of health messages passed through ICT tools which were designed to be both entertaining and informative.

Methodology

The study was designed as an exploratory case study research due to the dynamic nature of ICTs. Data was collected from the four community ICT centres managed by the AfriAfya project in Kawangware Division, a slum area in Nairobi city. The researchers interviewed all the four administrators of each project site. The administrators provided information about the mission of the centres as well as their programmes. They also provided insights of the impact of the projects. The researchers also held four focus group discussions (FGDs) with eight users of each of the ICT centres selected through information-oriented purposive sampling. The FGDs were used to get the general perception of the users of the usability and impact of the centres. All the interviews and FGDs were held at the project sites in Kiswahili which is the most widely spoken language in Kenyan slums. The data was analysed through content and conversation analysis.

Objectives of the project: The primary goal of the Kawangware ICT/HIV Project is to enhance the capacity of school going children and their teachers as well as enhance the capacity of CBOs with which they associate and other grassroots initiatives in the project areas to effectively mobilise and disseminate key HIV/AIDS messages to their peers. The specific objectives of the ICT Project are to: i. improve access to and utilisation of quality information by children, youth and women; ii. enhance access to and proper utilisation of appropriate technology by children, youth and women for improved communication services within the project area; iii. facilitate positive behaviour formation and change among children, youth, women and men in the project areas through effective communication; and iv. establish sustainable, collaborative communication networks to identify and respond to HIV/AIDS information needs.

The project was a response to the deterioration of health standards and the consequent reduction of life expectancy in various Kawangware slums communities due to the rapid escalation of poverty; emergence of HIV/AIDS that triggered the resurgence of diseases like tuberculosis and other opportunistic infections; and the persistence of malaria as a leading killer disease in the slums. The brunt of poverty, disease and health degradation is usually felt most by the vulnerable groups, the majority of whom are women and children.

Project sites: The project sites were schools in the Kawangware slums. These included Kawangware Day Nursery School; Muslim Primary School; Kinyanjui Primary School; and Riruta Primary School. AfriAfya chose to implement the projects through the schools for cost-effectiveness and also to ensure ready access to the services.

Results and Discussion

Profile of the respondents: Due to the sensitivity and vulnerability of children, the researchers focused on adults only. The researchers also focused on persons who had either worked for or benefited from the project for at least two years. This preference was based on the understanding that only persons who has associated with the projects for this period were adequately informed to assess the usability and the impact of the site facilities.

While 56% of the respondents were male, 44% were female. This was an indicator that both genders were represented fairly well in the use and coordination of the project. The findings also show that none of the respondents was either below 18 years or above 55 years (the mandatory retirement age in the public sector in Kenya). Whereas 25% of the respondents were aged between 18 and 25 years, 37% were aged between 26 and 35 years, 25% were aged between 36 and 45 years and only 13% were aged between 46 and 55 years. The findings show that majority of the respondents (87%) were aged between 25 and 45 years which is the age bracket considered sexually active and should be the key beneficiaries of the project.

The extent to which AfriAfya Project has utilized ICT tools in HIV/AIDS health communication: The administrative respondents were provided with a list of possible ICT tools that could be used in HIV/AIDS health communication and asked to indicate the extent to which these have been used in the project along a five point scale. Tables 1-7 below summarise the responses.

Table-1
E-mail discussion groups

Response	Distribution	
	Frequency	**Percentage**
Very Much	4	25
Much	4	25
Somehow	6	38
Neutral	1	6
Not at All	1	6
Total	**16**	**100**

E-mail group discussions was a popular ICT tool in HIV/AIDS health communication in the project, as indicated by the huge proportion (88%) of the respondents who said that it is either used very much, much or somehow. 6% of the respondents remained neutral while another 6% indicated “Not at all”. This overwhelming preference for email discussion groups for HIV/AIDS communication is perhaps driven by the popularity of email as a communication tool and also of the interactivity that email discussion forums facilitate.

Table-2
Social media

Response	Distribution	
	Frequency	**Percentage**
Very Much	3	19
Much	6	38
Somehow	5	31
Neutral	1	6
Not at All	1	6
Total	**16**	**100**

The majority of the respondents (88%) also stated that social media were popular as tools for health communication. Again, the popularity of social media was a result of its interactivity, especially amongst the youth who were the majority of the respondents in this study. Social media were also popular because they facilitated some degree of anonymity of the participants through the use of pseudo names which ensured their privacy. Given the sensitivity surrounding health matters and the stigmatisation associated with HIV/AIDS, a platform which ensures confidentiality is likely to facilitate open and effective communication between the participants.

Table-3
The World Wide Web (WWW)

Response	Distribution	
	Frequency	**Percentage**
Very Much	0	0
Much	1	6
Somehow	1	6
Neutral	2	13
Not at All	12	75
Total	**16**	**100**

The WWW was used here to refer to read-only web sites. The findings indicate that the WWW was not a popular ICT channel for HIV/AIDS communication among the respondents. Only 12% of the respondents agreed that the WWW were used much or somehow as 13% remained neutral. An overwhelming 75% said the WWW is not all useful for HIV/AIDS communication. This apparent dislike of the WWW could be attributed to its one-directional communication nature. Similarly, it could be because of the unfamiliarity of the participants of the communication approaches through the WWW.

Table-4
CD-ROMs, VCDs and DVDs

Response	Distribution	
	Frequency	**Percentage**
Very Much	0	0
Much	0	0
Somehow	1	6
Neutral	2	13
Not at All	13	81
Total	**16**	**100**

The storage of HIV/AIDS information on CD-ROMs, VCDs or DVDs and dissemination of the same was not popular as an ICT tool of communication as indicated by 81% of the respondents who said it was not useful at all as 13% remained neutral. These findings indicate the general fading of CD-ROMs, VCDs and DVDs as communication tools. They are viewed to be static, unidirectional and have a high obsolescence rate. Expenses associated with the purchase and use of these tools may have contributed to their unpopularity. The respondents apparently preferred videos and music which are available from free online social media sites such as YouTube and Sound Cloud.

Table-5
Radio

Response	Distribution	
	Frequency	**Percentage**
Very Much	5	31
Much	6	38
Somehow	3	19
Neutral	1	6
Not at All	1	6
Total	**16**	**100**

The use of radio was very high as indicated by 88% of the respondents who preferred it. This popularity could be attributed to the relatively low cost of acquiring, using and maintaining radios especially for low income persons living in the slums. Again radios have been known to integrate entertaining music and jokes in their programming. Furthermore radio health messages are succinct and direct. Radios also facilitate interactivity between the participants through call-in services. Radios also ensure anonymity of the participants because they are not seen and not necessarily heard on air.

Table-6
Television

Response	Distribution	
	Frequency	**Percentage**
Very Much	2	13
Much	5	31
Somehow	4	25
Neutral	1	6
Not at All	4	25
Total	**16**	**100**

Television was also rated high as indicated by 69% of the respondents. This popularity is attributable to the visual and entertaining feature of television as a communication tool. The lower popularity of television compared to email discussions or social media is attributable to its limited interactivity of the participants and cost associated with using it. For instance, most of these slum residents do not have access to electricity.

Table-7
Distance learning systems

Response	Distribution	
	Frequency	**Percentage**
Very Much	0	0
Much	0	0
Somehow	1	6
Neutral	2	13
Not at All	13	81
Total	**16**	**100**

Distance learning systems do not seem to be popular in the project as only 6% of the respondents preferred them somehow. This may be explained by the fact that distance learning systems are engaging more and require the keen concentration of the participants. Similarly, they do not facilitate instant or fast gratification of the users.

ICT-enabled communication interventions against HIV/AIDS in slums: The majority (68%) of the respondents indicated that ICT-enabled applications that encourage wider diffusion of health information from formal or informal sources were used to communicate HIV/AIDS messages in Kawangware; 19% were neutral while 13% indicated "Not at all". Key among the ICT-enabled applications used for health

communication included mobile phone text messages.

The majority (81%) of the respondents indicated that the Internet was used to create advocacy coalitions and enable the members to interact online, develop a shared identity and common agenda, exchange information, and mobilize themselves to collective action. 6% were neutral while the other 13% indicated "Not at all". Effective HIV/AIDS management requires social mobilisation, networking and advocacy to ensure that all members of the society individually do their part to prevent new infections and manage existing cases. ICT-enabled communication platforms, especially the social media, facilitate the creation, mobilisation, coordination and interaction of interest groups, stakeholders, caregivers, peer educators and campaigners which boost the fight against HIV/AIDS in slums in Kenya.

While the majority (75%) of the respondents indicated that ICTs were used to support the provision of distance education to enhance the traditional face-to-face training of trainers (TOT), 19% remained neutral as 6% indicated "Not at all". The use of community health workers empowered through various forms capacity building approaches through web or CD-ROM/DVD interfaces is prioritised in Kenya's community health strategy aimed at reducing the burden of preventable diseases in the country. Project sites with ICT tools provide an environment and facilities conducive for distance learning programmes.

The majority (88%) of the respondents also indicated that new ICT tools and platforms such as social media were being integrated with the traditional communication channels to scale up the scope and reach of health communication in slums; 6% remained neutral while the other 6% indicated "Not at all". The integrated use of emerging and conventional communication channels for health communication ensures that all audience segments are reached effectively with the HIV/AIDS messages. It is also based on the understanding that none of the emerging and traditional channels are complementary; not mutually exclusive.

While 88% of the respondents indicated that communication interventions were combined with other preventive or treatment services to ensure a multipronged and effective management of the epidemic, 6% remained neutral as the other 6% indicated "Not at all". The provision of these services was also coupled with general education and life skills aimed at stimulating appropriate behaviour change.

Benefits and challenges of using ICTs in HIV/AIDS interventions: The majority (88%) of the respondents agreed that the adoption of ICTs for health communication facilitates social change; 12% disagreed. Similarly, 81% of the respondents also said that the use of ICTs empowers the audiences and reduces their vulnerability to HIV/AIDS while the other 19% disagreed. The other benefits identified by the majority of the respondents include advocacy, mobilisation, networking and capacity building (94%); and effective information sharing on matters pertaining to HIV/AIDS risk factors and behaviour, preventive measures, treatment and palliative management (62%).

The majority of the respondents identified limited access to a reliable Internet connectivity (88%); poor ICT infrastructure in the slums, especially lack of access to electricity (81%); high costs of accessing the Internet (81%); and language barrier as the major challenges to the effective use of ICT-enabled health communication.

Recommended strategies on how best to use ICTs in HIV/AIDS programmes in slums in Kenya: The respondents recommended the following measures to enhance the use of ICT-enabled communication to mitigate health challenges associated with HIV/AIDS in slums in Kenya.

Limited connectivity: In order to address the challenges posed by limited connectivity to the Internet on comprehensive dissemination of HIV/AIDS related information, the respondents suggested that there was need to put efforts in place to facilitate the connection of the CBOs in the project area to larger national or international NGOs in order to enhance networking. With several NGOs connected to the CBOs, there will be a continuous flow of information that can be accessed by the users should AfriAfya connections remain unstable because of interruptions in connectivity.

Poor ICT infrastructure status: In order to address the obstacles to effective health communication posed by the poor ICT infrastructure status, the respondents proposed that there is need to update the existing ICT equipment, which would include the replacement or refurbishment of the available computers, which were old and slow. In addition, there was also need to train some of the beneficiaries diagnose and conduct routine maintenance of the ICT equipment so that they can take care of any breakdowns.

High cost of accessing the Internet: In order to address the problem of high costs of accessing the Internet, occasioned by among others, the high costs of acquiring new equipment and maintenance of the same, the respondents suggested that the CBOs should solicit the support of organisations and individuals who would give more funding to the project so that it can increase its area of coverage and access a higher Internet bandwidth.

Language barrier: In order to address the limitation to effective health communication caused by language barrier, among the measures suggested was that the communication materials ought to be translated into Kiswahili so as to enable the community members to comprehend them without seeking the help of translators. Most of the materials were mainly available in the English language and presented with jargons which the beneficiaries could hardly comprehend. It was also

recommended that some of the materials could also be translated into vernaculars to enable users to understand, interpret and apply or convey the messages to their peers effectively.

Recommendations for policy and practice: In view of the findings of the study, the following measures are recommended:

ICT tools and interventions applied in HIV/AIDS programmes: In order to enhance the effectiveness of ICTs and leverage their impact on HIV/AIDS in Kenya's slums, there is need to not only enhance connectivity, but also upgrade the existing tools and equipment. Connectivity can be enhanced by seeking networking and collaborative arrangements with telecommunication service providers, community libraries and donors who may be called upon to donate ICT equipment and other recourses.

In order to make health communication through the use of television and radio more effective, there is need to ease the congestion by availing more frequencies to television and radio stations. In addition, more classrooms should be availed for the purpose of hosting these sessions.

Recommendations on project planning and implementation: In order to cut down on the costs of maintaining the ICT equipment, there is need for project implementer to enhance the capacity of the community members by identifying and training some of them in the maintenance so as to take charge of basic repairs and maintenance of the ICT equipment. The target communities should also be involved in project planning for the anticipated scaling up of the ICT project in order to enhance its ownership and sustainability.

Other recommended strategies to enhance the impact of ICTs on HIV/AIDS programming: There is need to supply all the resource centres with electricity since the cost of fuel to run generators in some of the sites is very high. The relevant ministries and other stakeholders should seek funding for such projects to boost the electric power supply.

There is need to enhance the capacity of the community members in Kawangware slums through the training of more Community Own Resource Persons (CORPS) and conduct follow up trainings for the CORPs already trained. The training should include management of resource centres and maintenance of tools and equipment at the centres.

The project should also consider the generating additional income for instance by providing commercial secretariat services at the project sites so that the services may be accessed by other community members will also create further employment and revenues. The centres should also have a library section to enable the users to access books and other publications relevant to the fight against HIV/AIDS. In addition, the security of the centres should be improved by employing security guards and reinforcing the windows and doors of the classrooms to avoid theft of ICT equipment.

Conclusion

From the foregoing, the researchers conclude that ICTs have direct and indirect intrinsic value in their capacity to empower users to prevent or mitigate the effects of HIV/AIDS infections. The human and non-technological enablers of communication and information are equally critical and, in contrast to ICT, are abundant resources in the fight against the epidemic. The researchers also emphasise that the participation of PLWHAs and other stakeholder communities is critical to the success of AIDS management strategies in slums in developing countries.

Whereas ICTs offer a variety of opportunities, extra efforts have to be made in order to systematically harness the benefits and opportunities they present for the management of HIV/AIDS. This is especially in terms of understanding the age and gender dimensions of mitigation projects to ensure that different issues, needs and concerns by different sections of society are adequately addressed.

Mitigating HIV/AIDS effectively using ICTs requires an approach of concerted actions addressing areas ranging from prevention and education, care and treatment, empowerment of people living with or affected by HIV/AIDS, to monitoring and research. It also requires cooperation between a large group of stakeholders such as the ministries for health, education, communication and transport, regulators, ICT service providers, HIV/AIDS service organisations and many others. Similarly, greater efforts need to be made to translate the national policies on HIV/AIDS into effective ICT based interventions which are embedded in the respective policies and plans. For instance, the objective to provide people in the rural areas with access to vital information should have an impact on the policies and plans for building the national tele and data communication infrastructures.

To combat the AIDS pandemic effectively, it is necessary to deliver timely, credible, and multi-sectoral information about the scourge through infotainment. The information should not reach clinicians and scientists only, but a diverse array of other relevant stakeholders, such as behavioural specialists, policymakers, donors, social activists, industry leaders as well as the general population. There is also need for strong advocacy and political support at the national level. Another key to successfully combating the HIV/AIDS epidemic is the creation of an infrastructure that concurrently develops healthcare networks, education programmes, and community participation.

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