

Preferred Communication Channels for Science-based Health Innovations Among the Communities of Mbarara University of Science and Technology and Rwentondo Village, Uganda

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Abstract: The dissemination of scientific research findings to non-scientists can be challenging owing to, among other reasons, scientific jargon, framing approaches, and the failure to identify appropriate communication channels for efficacious reception and negotiation of the information. Guided by the qualitative and ‘participatory communication’ approaches, we conversed with 90 key stakeholders within the communities of Mbarara University of Science and Technology (MUST), and Rwentondo village in Uganda, to identify the preferred communication channels for communicating science-based innovations; the motivations for the preferences, and existing challenges in the communication process. Key preferred channels to communicate and receive science-based health innovations identified among the urban (MUST) community are social media platforms particularly X, conventional websites, and scientific conferences. For rural audiences in Rwentondo, radio and health visit teams (VHTs) are favored. Channel credibility and affordance are important motivations. Common barriers include cultural beliefs, gender inequality, high costs of data bundles (internet), and, illiteracy. Our research underscores the need for stake holder involvement in determining the appropriate communication channels for effective science-based health innovations.

Keywords: Communication. Communication channels. Participatory communication. Science-based health innovations. Uganda

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INTRODUCTION

Science-based health innovations are increasingly being applied in interventions to solve emerging health threats, such as those posed by Malaria, Ebola and COVID-19, among others. The effectiveness of these efforts, however, rely on successful information dissemination – whereby, the audience (ordinary people/the public, scientists, and experts) can exchange feedback on the messages that have been disseminated. Communication channels including digital and traditional media or interpersonal, play a critical role in nurturing communal discourse that enables information exchange among the targeted audience. Yet, science-based innovative projects are usually affected by mistrust and rumors among the public. For example, insufficient stakeholder involvement in health interventions to COVID-19 in Uganda, led to vaccine hesitancy [1].

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As communication of science is crucial for society, there is a need to identify efficient and effective communication channels [2], for society to receive, comprehend and negotiate these issues for their welfare and survival. This research is guided by the thesis that when scientific information is communicated through trusted and favorable communication channels amongst audiences, then they are likely to respond to the information provided, hence giving more impetus to the developers of health innovations to solve emerging health threats.

STATEMENT OF THE PROBLEM AND JUSTIFICATION

The emerging technological field of science-based health innovations has provided a unique opportunity for addressing the health threats of the contemporary era in the global south. However, the information on science-based health innovations is scarce within the beneficiary communities who are also key potential technology users, which leads to a disconnect between scientists and the beneficiaries of the innovations. Navarro & McKinnon [3] attribute the scarcity of science-based information to gaps in the communication process, which breeds falsehoods, misinformation, mistrust, and resistance to scientific research and innovations.

This study recognises the importance of the various elements of the communication process including the message (its design and packaging), the channel, the reception, the potential of noise, the reception (and negotiation), and the feedback mechanisms that enable comprehension and negotiation of these issues amongst the key stakeholders. Our study problematises the communication channel as a central point for all other elements in the communication process to prosper, thus, justifying the need to conduct this research on the preferred communication channels for communicating science-based health innovations amongst the study population in the selected study area of MUST and Rwentondo village communities in Uganda.

LITERATURE REVIEW

The communication of various science-based campaigns and interventions in the Global south, has been enabled by channels of mass communication such as posters, magazines, billboards and handbills [4]. In a study on the health campaigns that were effective in communicating HIV/AIDS issues in Uganda, scholars [4] argued that the use of numerous communication channels enabled organizational researchers to connect to segmented target audiences, adding that conducting effective and sustainable research correlates with the use of multiple communication channels. Interpersonal communication channels, including body posture and facial expression, are equally valued for their usefulness in facilitating the exchange of ideas among scientists and users of scientific information, thereby improving the sustainability of such science-based health innovations [5]. Pla Ángel (2022), contends that with the proliferation of Internet-enabled communication technologies, communicating scientific research has become easier, especially given the existence of audio-visual channels, some of which exist on social media. This argument reinforces the idea that interpersonal, mass, and digital media communication channels facilitate the understanding and adoption of innovative ideas that are being communicated to the target audience [4, 5].

According to Rogers [6], information disseminators and sources should utilize communication channels that are accessible and appropriate to bridge the knowledge gap, to maximize the rate of adoption of the innovation. These are also common motivations in literature for channel preferences among science-based health innovations users (5). This study believes that a change in attitude and behaviour amongst scientific innovation beneficiaries, relies on the suitability of the communication channel and a well-thought-out plan to support full acceptance and buy-in of the idea being communicated.

Since communication channels, provide the context in which information is understood between the concerned stakeholders [7], it crucial to identify the obstacles that may hinder both the communication and reception of the information within the communication process. Among the hinderances to communicating science-based innovations identified in Africa include the lack of trust, cost implications to receiving and sharing information, and gender-related issues, among others [8, 5, 4].

THEORETICAL FRAMEWORK

The participatory communication theory [9] which emphasizes the importance of people's participation in the process of communication design, implementation, and evaluation informs this study. It stresses the freedom of expression and sharing of knowledge and information during development projects – thereby challenging the dominant perspectives which does not consider diverse voices. Participatory communication is a valuable tool in fostering social change in their society. Through its application society has been empowered to participate in development projects, thereby improving sectors such as health, agriculture, politics, and education [7]. In this study, the participatory communication theory provided insight into the impact of innovator's communication by using the communication channels that emphasize the participation of the beneficiary communities. By applying participatory communication theory and utilizing preferred communication channels, scientists can foster more effective communication channels that prioritize the target audience's needs thus, promoting better health outcomes and empowerment.

METHODS AND PROCEDURE

A case study design that involves an in-depth analysis of a specific phenomenon within its real-life context was employed. This method allows for an exploration of the unique interactions, nuances, and dynamics that exist within a particular situation,

providing valuable insights into the broader implications and potential solutions for similar occurrences [10]. Two sites including MUST and the Rwentondo village communities were the cases for analysis, and an in-depth understanding of stakeholders' perspectives on the preferred communication channels for receiving and seeking science-based information. The study population comprised different subgroups of respondents, i.e., key stakeholders that were 18 years and above. They included academics, administration and support staff (i.e., academics and support personnel), university students, opinion leaders (e. g. religious leaders), village residents (both men and women, literate and illiterate) and the LC1 Chairperson. These were accessed through 9 FGDs (each comprising 8 participants =72) and Key Informant Interviews (KIIs) with 18 interviewees. These sets of respondents were determined by the data saturation principle [10].

RESULTS AND DISCUSSION

This study set out to examine the preferred communication channels for science-based health innovations among the community of Mbarara University of Science and Technology, and the motivations for their preferences, as well as existing challenges in the communication process. The following results are from the KIIs, FGDs and documentary reviews.

PREFERRED COMMUNICATION CHANNELS FOR COMMUNICATING SCIENCE-BASED INNOVATIONS.

Findings have revealed a slight difference in preferences of communication channels between urban and rural respondents, whereby, mass and digital communication channels such as science websites, research dissemination conferences, and social media platforms (Facebook, X and WhatsApp) are the most preferred communication channels amongst the urban-based MUST community. While interpersonal communication channels particularly the Village Health Teams (VHTS) visits are highly appreciated by rural community in Rwentondo village, who view them as efficient in delivering information on new health initiatives like vaccination programmes, new disease outbreaks, and government health programmes (FGD participants).

The results further established that radio is a prominent and most preferred channel of communication (more than other communication channels) to receive health innovation information amongst all respondents but mainly for Rwentondo village respondents. That radio sets are cheaper, portable and efficient in terms of local language use, and a wider transmission reach, makes it prominent in most parts of Africa [7]. This disproves trending claims and perceptions that in Africa, traditional mass communication channels such as radios are becoming redundant and no longer relevant [8].

Further, the findings established that MUST community preferred annual dissemination conferences (interpersonal channel), which deploy meetings or gatherings of people to whom scientists present science/health related research finding/information. The elements of instant feedback and dialogue, which are also illuminated by the participatory communication theory in which this study is located, validates interpersonal communication channels as most relevant for reaching wider audiences to communicate science-based innovations [7].

These findings are consistent with previous studies [8], which locate group discussions and interpersonal communication tools as most desirable for reaching a wider audience regarding new innovations. Similarly, the study validates the argument that people who can read and comprehend messages, prefer digital communication channels [3].

MOTIVATIONS FOR COMMUNICATION CHANNEL PREFERENCE

The results on the motivations for channel preferences revealed that factors of cost and affordability, information reliability/credibility, instantaneous, timeliness and interactivity elements in seeking and receiving science-based information are significant. VHTs, for example, were mentioned as cost-effective, since information recipients do not pay to receive and share information (FGD participants). Respondents in this study preferred communication channels that provided information most of the time, i.e., digital communication channels.

The ability of digital media channels (radio and social media platforms) to cover a wider area in a timely manner, was identified as a major motivation for their preference. Radio was also preferred for its credibility and timeliness. Similarly, students at Mbarara University preferred the use of X formerly Twitter due to its wide coverage and the ability to reach their target audience in a timely manner. The ability to have a timely interaction between the sender and receiver makes X a preferred communication channel especially to literate populations and those who share common characteristics.

These findings establish a fact that accessibility and quality of information can significantly impact the adoption of new health technologies and innovations [3]. The findings are in sync with the participatory communication theory that identifies dialogue as the superlative method to foster effective communication [9].

COMMUNICATION CHALLENGES IN THE COMMUNICATION OF SCIENCE-BASED HEALTH INNOVATIONS.

Several obstacles including religious and cultural beliefs, illiteracy, low technology uptake, message packaging, gender-related issues such as control over the communication channels, and high internet/data costs were identified as obstacles to seeking out and/or receiving information on science-based health innovations. Religious and cultural beliefs – where ‘people tend to rely more on prayers and miracles’ than on seeking knowledge and utilizing science innovations to improve their health was echoed in FGDS and KIIs. For example, ‘some community members declined from vaccinating their children against killer diseases, like polio and measles’. Rogers [6] contends that cultural barriers, also associated with misinformation, can distort and impede the communication of the intended message. Low adoption of technology in the

study communities hindered the utilization and communication of science-based health innovations. Indeed, access to scientific information and health-based innovations like telemedicine, is made possible through ICT-enabled gadgets such as

smartphones. Illiteracy levels within the population are a barrier to effective communication of science-based health innovations owing to failure to comprehend and interpret written messages. The Ugandan Bureau of Statistics Census report of 2017, revealed that up to 12% of persons aged above 18 years in Mbarara are illiterate.

CONCLUSION

The findings of the study on the preferred communication channels for science-based health innovations among the communities of Mbarara University of Science and Technology and Rwentondo village in Uganda, make a significant contribution to both the field of science and risk communication. It reminds emphasizes the importance of participation of all key stakeholders in identifying the preferred or appropriate communication channels to register success in the communication of science-based health innovations. This is not only viewed as a holistic communication approach for effective science-based innovation, but a prompt method for spreading scientific information to a wider population.

Direct engagement has also been identified as crucial for community involvement in science-based health innovations, as it sparks interest and encourages people to relate innovative ideas to their daily life experiences. This is important for sustainability, as stakeholders will feel part of the innovation and own it. Direct engagement is also viewed as a dynamic way to communicate about the innovation without disinformation and misinformation.

Since VHTs have been identified as a key communication channel, involving them in innovation processes, especially in rural areas, is likely to generate trust, among the beneficiaries of science-based health innovations. Health communication professionals and scientists should create campaigns to modify attitudes, increase service use and promote health-living behaviours.

Finally, there a need for more empirical studies on credibility of science-based information across various scientific communities in Uganda, to address, among others, inconsistent beliefs and misinformation on science-based health information amongst non-science audiences.

Author Biography

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