



Role of Science Communication to Impart Authentic Information about Hiv/Aids during the Pandemic

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Abstract:

This study explores the influence of science communication channels on HIV patients during the COVID-19 pandemic. Using a descriptive approach, it incorporates both qualitative and quantitative methods for data collection and analysis. A virtual data collection strategy was implemented to assess these communication channels effectively.

To ensure accessible healthcare, the Ministry of Health and Family Welfare utilized information and communication technologies (ICT), offering various online consultation platforms such as the National Health Portal, mobile applications, e-Hospitals, and the Health Management Information System (HMIS). Since HIV is a sensitive health issue, many patients experience reluctance in discussing their condition with medical professionals. However, findings from this research indicate that science communication helped bridge this gap, fostering greater openness among patients and improving doctor-patient interactions.

The study highlights that digital healthcare platforms played a crucial role in enhancing patient engagement, reducing stigma, and strengthening trust in the medical system. Additionally, effective communication contributed to better adherence to treatment regimens. These findings emphasize the vital role of science communication in providing continuous



healthcare support, particularly for vulnerable populations during global health crises like COVID-19.

Keywords: Science communication, Pandemic, HIV, AIDS, COVID-19.

Introduction:

Science communication channels are essential tools for disseminating scientific knowledge, research findings, and critical health-related information to a broad audience. Their primary function is to bridge the gap between the scientific community and the general public, policymakers, and healthcare professionals. By simplifying complex scientific concepts and presenting them in an understandable manner, these channels enhance scientific literacy, support informed decision-making, and foster public trust in science (Ataguba, J.E., 2020). Their societal impact became particularly evident during the COVID-19 pandemic, as they played a vital role in sharing timely and accurate information.

When COVID-19 rapidly spread across India, the government enforced a nationwide lockdown that suspended most routine services. With the exception of emergency services, many healthcare facilities faced operational disruptions, posing challenges for individuals with chronic conditions, such as HIV/AIDS. Limited resources and the prioritization of COVID-19 cases resulted in reduced outpatient department (OPD) services, making it difficult for HIV/AIDS patients to access essential consultations. Given their need for continuous healthcare support, these patients were particularly vulnerable to both the virus and the health system's limitations (Brandeis, A., 2021).

During this period, science communication channels played a critical role in ensuring continuity of care for HIV/AIDS patients. Evaluating the effectiveness of these platforms in delivering health information became crucial. Mass media, social media, and digital communication tools emerged as primary sources of information for the HIV/AIDS community.



Platforms such as emails, phone calls, text messages, teleconferencing, and voicemails were instrumental in maintaining communication between patients and healthcare providers (Ataguba, O.A., 2020).

In response to these challenges, the Indian Ministry of Health and Family Welfare launched several initiatives, including the National Health Portal, toll-free helplines, and mobile applications. These services enabled healthcare professionals to provide advice on COVID-19 safety and other health concerns to HIV/AIDS patients. Due to the stigma associated with HIV, many patients hesitate to discuss their condition openly. Science communication strategies addressed this issue by offering more private, user-friendly ways to seek medical support, thereby facilitating better access to care and promoting HIV prevention (Jennifer M. Loglia & Clint A. Bowers, 2016).

The COVID-19 pandemic highlighted the importance of digital communication tools and led to the adoption of innovative methods for disseminating information. This study evaluates preferred science communication channels and assesses their effectiveness in conveying HIV/AIDS-related information before and during the pandemic.

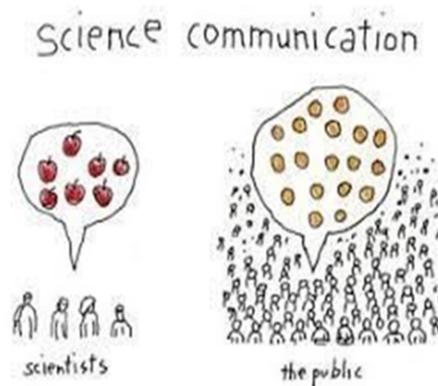
Effective communication is a cornerstone of public health management. According to Ohega et al. (2020), communication strategies were vital during global health emergencies. For instance, the Africa Centers for Disease Control and Prevention established a task force to enhance risk communication during COVID-19. However, many countries—except for Kenya and South Africa—lacked robust crisis communication systems. Previous examples, such as the West Nile Virus outbreak in New York City (1999–2000), demonstrated how the media played a pivotal role in pre-crisis awareness and response efforts.

Studies by Ataguba O.A. (2020) further emphasized the significance of social networks in health communication during the pandemic. Using virtual ethnography and social metrics, researchers like Ana Perez-Escoda et al. (2020) examined the effectiveness of different communication strategies. This paper aims to explore how science communication channels



helped address health crises and improve public awareness, particularly for HIV/AIDS patients during the COVID-19 pandemic.

The Role of Science Communication in HIV/AIDS Healthcare during COVID-19



Science communication played an essential role in healthcare delivery for individuals living with HIV/AIDS whose immune systems are already compromised especially during the COVID-19 pandemic. Without adequate treatment, HIV can progress to AIDS, and access to regular medical care is critical for managing the condition. The pandemic's restrictions further complicated healthcare access, but science communication emerged as a powerful means of promoting awareness, delivering medical advice, and supporting continuity of care.

By translating complex scientific information into simple and accessible language, science communication via digital platforms, social media, and mass media helped close the gap between medical professionals and the public. Government agencies and scientific institutions worldwide used multi-channel strategies, including print, television, radio, video conferencing, and mobile services, to inform the public and address the specific needs of HIV/AIDS patients. In India, tools like telehealth consultations, mobile apps, and email support allowed direct communication between healthcare providers and patients.

The Ministry of Health and Family Welfare in India also developed platforms such as the National Health Portal, toll-free helplines, and health apps to guide individuals on COVID-19



protocols and other health matters. Due to the ongoing stigma surrounding HIV, many patients were reluctant to seek in-person assistance. Science communication provided confidential, accessible alternatives, significantly enhancing awareness, reducing fear, and promoting preventative care.

The importance of effective health communication during crises is reinforced by historical precedents. Research shows that clear and well-planned communication is critical during public health emergencies. For example, African nations strengthened health messaging during COVID-19, and earlier crises, like the West Nile Virus outbreak in New York (1999–2000), revealed the media’s crucial role in informing and preparing the public.

By evaluating diverse communication methods, this study highlights the role of science communication in supporting HIV/AIDS patients during the COVID-19 pandemic. The findings demonstrate how coordinated communication efforts can enhance public understanding, improve health literacy, and support vulnerable populations during global health crises.

Specific Objectives

The specific objectives of this study are as follows:

1. To examine public perceptions of science communication channels in relation to HIV/AIDS.
2. To analyze changes in societal behavior regarding the use of communication channels.
3. To identify which channels were most effective in spreading awareness about HIV/AIDS.
4. To determine which channels were the most accessible and user-friendly.

Literature Review

Science communication has become an essential tool for sharing reliable health information, especially during health emergencies like the COVID-19 pandemic. Research shows that digital platforms including social media, telehealth services, emails, and mobile apps



effectively support vulnerable groups such as HIV/AIDS patients by providing timely guidance and reducing barriers to care (Ataguba, 2020; Loglia & Bowers, 2016). These channels also help patients overcome stigma and hesitation by offering private and accessible ways to consult healthcare providers (Brandeis, 2021).

On a global scale, effective communication strategies have been linked to better management of public health crises. Countries with proactive crisis communication systems were able to control misinformation and address public concerns more efficiently during COVID-19, whereas nations without such strategies struggled with stigma and lack of awareness (Ochega et al., 2020). Studies also suggest that combining quantitative and qualitative research methods provides a more comprehensive understanding of how communication tools reach and influence different communities (Perez-Escoda et al., 2020).

In India, initiatives such as the National Health Portal, e-Hospitals, and mobile applications played a key role in providing HIV/AIDS-related information and medical support during the pandemic (Ministry of Health and Family Welfare, 2020). Despite these efforts, challenges remain in reaching rural and marginalized populations with limited digital access. This study aims to examine the effectiveness of science communication channels in enhancing awareness, facilitating healthcare consultations, and promoting safe practices among HIV/AIDS patients during COVID-19.

Research Methodology

This study aimed to examine how the general public interacts with science communication channels, with a particular emphasis on the growing influence of digital platforms (Craig, 2019). A descriptive research approach was adopted, integrating both qualitative and quantitative methods for data collection and analysis. Various virtual communication platforms, including WhatsApp, Facebook, video calls, emails, text messages,



voice calls, Messenger calls, Telegram, and Instagram, were explored to assess their role in disseminating scientific information.

To fulfill the study's objectives, a virtual data collection technique was implemented, focusing on the effectiveness of science communication channels in reaching and informing the public. In addition to their communicative function, the study also examined the role of these channels in fostering public awareness, particularly in health communication contexts.

Sample of the Study

Participants were selected through a structured questionnaire designed to gather relevant data. Two distinct sampling methods were employed for comparative analysis (Dam, 2020). The first sample group was recruited through digital platforms, including social media, emails, and messaging apps, while the second group was selected using a non-probability convenience sampling approach, chosen for its efficiency in systematic data collection.

A questionnaire, developed based on a thorough literature review and prior understanding, was used to obtain detailed feedback from respondents. The questionnaire included both multiple-choice and open-ended questions to evaluate aspects such as appropriateness, coverage, language, sequencing, and presentation of information in science communication channels. Google Forms was used to distribute the questionnaire and collect responses.

Respondents were asked to share their opinions on the level of detail provided, ease of replication, potential for wider dissemination, clarity of key topics, and the effectiveness of HIV-related information. Additional feedback was gathered regarding content reach and overall presentation.

The questionnaire was distributed to the following groups:

- 100 science communicators



- 300 medical professionals
- Research scholars from CSIR labs and various universities
- 300 individuals from the general public

A total of 700 invitations were sent via email, Messenger, Instagram, and WhatsApp. Despite the broad outreach, only 250 responses were collected through Google Forms. The data collection period spanned from June 12, 2022, to August 8, 2022.

Research Design

The study utilized a mixed-methods approach, incorporating virtual communication channels such as WhatsApp, Facebook, video calls, emails, text messages, voice calls, Messenger, Telegram, and Instagram to gather data. A virtual methodology was adopted to assess the effectiveness and accessibility of these platforms in science communication.

Sampling Technique:

A convenience sampling technique was used to collect the data.

Data Analysis

Among the 250 respondents, 130 were below 35 years of age, while 120 were between 36 and 74 years. The sample included 14 scientists (5.6%), 70 research scholars (27.2%), 86 students (34.4%), and 80 individuals from the general public (32%). The gender distribution consisted of 126 males (59.6%) and 124 females (40.4%).

Data was collected online using Google Forms, with a questionnaire comprising eight questions. Responses were gathered through various digital platforms: 120 via WhatsApp, 88 via Facebook, and 42 via email. The selected sample received the survey link (<https://forms.gle/SfYLSp9XwjLeaA>) via email, WhatsApp, and Facebook Messenger.

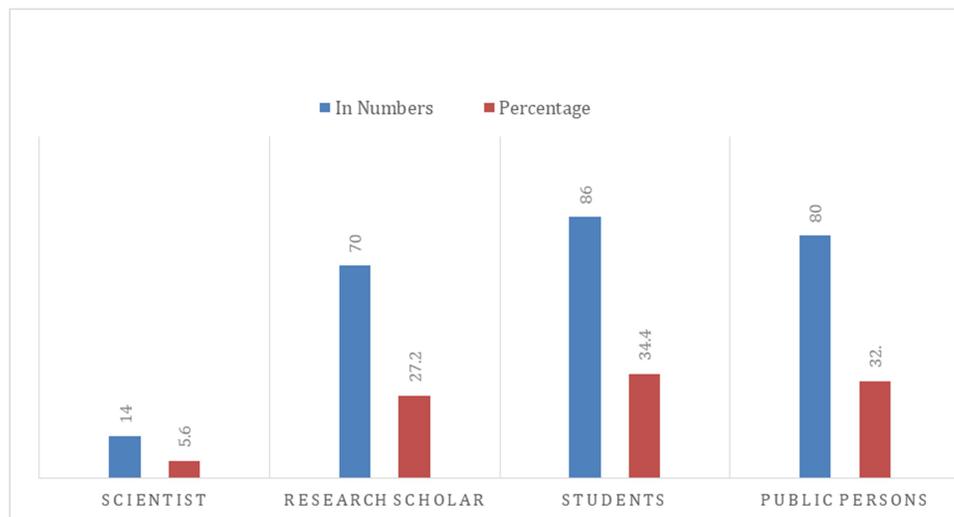


Geographical Distribution

The study received responses from 11 out of 32 states. The distribution was as follows: 31.2% from Delhi, 25.6% from Uttar Pradesh, 17.2% from Madhya Pradesh, 4% each from Jharkhand, Chhattisgarh, Tamil Nadu, Karnataka, and Kerala, and 2% each from West Bengal, Bihar, and Maharashtra.

Table.1 Demographic Table

No of person	Age group	Occupation	No of person	Percentage
130	< 35	Students	86	34.4%
120	36 to 74	Research Scholar	70	27.2%
		Scientists	14	5.6%
		Others person	80	32%

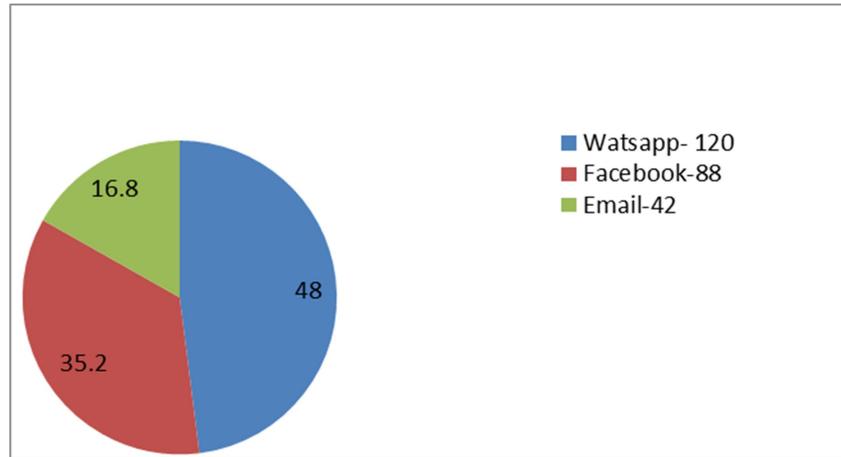


Data Received From

Social Media Platform	Numbers	Percentage
Whatsapp	120	48%



Facebook	88	35.2%
Email	42	16.8%



Result

A total of 250 surveys were completed. The sample was fairly evenly distributed in terms of science communication channel usage. A large majority (97%) of participants stated that science communication channels play an important role for HIV patients. Most respondents (98%) agreed that science communication channels were helpful in the recovery process for individuals with HIV/AIDS. Additionally, 92% of respondents said that science communication channels helped protect HIV patients during the COVID-19 pandemic. Furthermore, 90% of respondents believed that science communication channels provided complete knowledge about HIV. About 93% agreed that these channels offered better suggestions for HIV patients, and 92% stated that science communication channels were effective in reducing the infection rate of HIV.

Discussion

In the present study, the majority of respondents reported using science communication channels during the COVID-19 pandemic. The findings revealed a positive association between



the use of these channels and individuals living with HIV/AIDS. The number of people who relied on science communication platforms during the pandemic was supported by descriptive responses to an open-ended question that assessed respondents' perceptions of their usefulness for HIV patients.

However, some responses reflected stigmatizing views toward people living with HIV/AIDS. Respondents used terms such as “immoral,” “sinners,” “poor judgment,” and “making wrong choices,” indicating the persistence of negative stereotypes and moral judgments.

Several implications can be drawn from this study. First, awareness interventions targeting the Delhi NCR population should incorporate science communication channels, given their significant influence on public understanding. These channels also shaped how health messages were interpreted. A study by Kalichman et al. (1993) found that individuals in the Delhi NCR region who received AIDS-related information framed within an educational context were more likely to perceive AIDS as a personal threat compared to those who received standard public health messages. Thus, communicating about HIV/AIDS through science communication platforms can be an effective strategy for engaging the Delhi NCR population.

Questionnaire with Result

The questionnaire and the corresponding responses were summarized in the table mentioned below:

Questionnaire	Responded by	Answer
1. Whether there is any role for Science communication channels in HIV during COVID Pandemic?	Student -81.39%	97%
	Common person-62.5%	
	Research Scholar-64.28%	
	Scientists -50%	
2. Whether science communication	Student – 95.34%	98%



channels helped recover HIV?	Common people -90%	
	Research Scholar -92.8%	
	Scuentists-64.28%	
3. Whether science communication channels helped protect HIV patient during the COVID-19 pandemic?	Common people-88.75%	92%
	Scientist-57.14%	
	Research Scholar-88.57%	
	Student- 93.02%	
4. Whether science communication channels were able to provide complete knowledge about HIV?	Scientist- 64.28%	90%
	Common people-65%	
	Research Scholar-82.85%	
	Student- 83.72%	
5. Whether online communication channels provide better suggestions to HIV patients?	Student-75.58%	93%
	Research Scholar-85.71%	
	Common people-87.5%	
	Scientists- 42.85%	
6. Whether Science communication channels were able to reduce the infection rate of HIV?	Scientists -57.14%	92%
	Research Scholar- 71.42%	
	Students-79.06%	
	Common people-87.5%	

Summary of Findings

This research explores the role of science communication channels in raising awareness about HIV/AIDS during the COVID-19 pandemic. It examines their effectiveness in providing healthcare support, disseminating information, and facilitating medical consultations when in-person access to healthcare services was limited. The findings indicate that 97% of participants



recognized the importance of science communication in assisting HIV/AIDS patients, 98% believed these channels contributed to the recovery process, and 92% stated that they played a role in protecting patients from COVID-19.

Social media platforms such as Facebook, Instagram, Telegram, and WhatsApp emerged as key sources for medical consultations, while government-led initiatives including the National Health Portal, mobile applications, and e-Hospitals provided virtual healthcare services. With print media and face-to-face consultations becoming less accessible, digital platforms became a critical alternative for obtaining scientific information.

The pandemic significantly influenced public behavior, increasing reliance on digital platforms for healthcare needs. Many HIV/AIDS patients preferred virtual consultations over in-person visits due to privacy concerns and social stigma. Science communication channels were found to be highly effective in educating people about HIV/AIDS (90%), providing improved healthcare guidance (93%), and reducing infection rates (92%).

Among social media platforms, Instagram and Facebook were the most frequently used for doctor consultations and health-related information. Video calls, WhatsApp messaging, and teleconsultations were the preferred modes of communication. The study collected responses from 11 states, with the highest participation recorded in Delhi (31.2%), Uttar Pradesh (25.6%), and Madhya Pradesh (17.2%).

In conclusion, science communication channels played a crucial role in managing public health during the COVID-19 crisis by ensuring healthcare accessibility, reducing stigma, and promoting accurate information for HIV/AIDS patients. Integrating digital communication strategies into healthcare systems can further enhance accessibility and awareness, particularly for marginalized communities.

Concluding Remarks



This study underscores the critical role of science communication in providing accurate and timely information about HIV/AIDS during the COVID-19 pandemic. As physical consultations became challenging, digital platforms emerged as essential alternatives, ensuring uninterrupted healthcare access for vulnerable populations. Social media platforms, particularly Instagram and Facebook, were widely used by HIV/AIDS patients to connect with medical professionals, complementing government initiatives such as the National Health Portal, mobile applications, e-Hospitals, and the Health Management Information System (HMIS).

Additionally, the research highlights how social media has transformed public engagement with health-related communication, making scientific information more accessible. Platforms such as Facebook, Instagram, Telegram, and Twitter proved effective in reaching HIV/AIDS patients and disseminating crucial COVID-19 safety guidelines and healthcare updates.

Overall, digital science communication has emerged as a powerful tool for enhancing the accessibility, accuracy, and impact of healthcare information. Strengthening these communication channels can improve public health awareness and support systems, particularly during global health emergencies.

Policy Recommendations and Future Research Directions

- Strengthening Digital Healthcare Systems – Governments should invest in expanding and improving digital health platforms and mobile applications to ensure continuous support for individuals affected by HIV/AIDS, extending their accessibility beyond pandemic situations.
- Utilizing Social Media for Awareness – Public health organizations should adopt strategic approaches to leverage social media for disseminating reliable information and countering misinformation related to HIV/AIDS.



- Training Healthcare Professionals in Virtual Communication – Medical practitioners should receive specialized training to enhance their ability to engage effectively with patients through digital communication channels.
- Evaluating the Long-Term Impact of Digital Healthcare – Further studies should investigate how digital health initiatives influence patient adherence to HIV/AIDS treatment and preventive measures over extended periods.

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