A JOURNAL BY SISSA MEDIALAB

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Public (dis)trust in science in digital media environments

PRACTICE INSIGHTS

Harnessing multimodal and multilingual science communication to combat misinformation in a diverse country setting

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Abstract

This practice insight explores how translation and multimedia formats, such as video and audio, can enhance science communication efforts to combat community-driven misinformation and build trust within communities. Focusing on a national HIV survey, it details strategies for countering misinformation spread via platforms like Facebook and WhatsApp, which falsely accused data collectors of criminal activity. The research team's response included multilingual, multimodal digital communication and community engagement, demonstrating the effectiveness of this blended approach in restoring trust and dispelling misinformation in diverse social and linguistic settings.

Keywords

Dewesternising science communication; Digital science communication; Science communication in the developing world

Received: 26th March 2024
Accepted: 12th October 2024
Published: 16th December 2024

1 ▪ Introduction

The South African National HIV Prevalence, Incidence, Behaviour, and Communication Survey series (SABSSM), led by the Human Sciences Research Council of South Africa (HSRC), is a vital tool for tracking the HIV epidemic and related health indicators. In 2002, then President Nelson Mandela, through the Nelson Mandela Foundation, commissioned the first study (https://bit.ly/4cGgJBJ). The sixth iteration — SABSSM VI, conducted from January 2022 to April 2023 — involved 76,134 individuals, with 94% agreeing to interviews and 63% providing blood samples [HSRC, 2024]. The research team, including data collectors, gathered data across all nine provinces of South Africa, in over 21,000 randomly selected households.

In August 2022, during this SABSSM data collection phase, when fieldworkers were actively interviewing survey participants in their homes, misinformation surfaced alleging that data collectors were involved in criminal activities such as theft and kidnapping. These false claims spread via digital media platforms like Facebook and WhatsApp, notably impacting the Free State and Eastern Cape provinces. A participant falsely accused a data collector of theft, and a school principal circulated a viral letter claiming that survey branded vehicles were kidnapping children, triggering widespread concern. At the same time, the research team noticed that participation levels in the survey began to drop.

In response, the team launched a counter-campaign utilising digital channels (including Facebook https://www.facebook.com/SABSSM6/), traditional media, and face-to-face engagement to dispel the misinformation. Multilingual content and various media formats were employed to engage diverse target groups effectively. This analysis demonstrates that blending digital communication with traditional media and direct community engagement can successfully counter misinformation. Multilingual digital communication fosters trust among diverse audiences, while multimodal communication proves versatile in engaging various groups. This adaptable approach offers valuable lessons for building trust in science communication within culturally, linguistically, and socioeconomically diverse settings.

The research team includes a Communications Expert Sub-Committee (CESC) tasked with seeking broad participation. The committee oversees a science communication strategy to guide all aspects of communication about the survey from pre-launch awareness to post-survey dissemination. The strategy is adapted throughout the survey. It includes targeted social media campaigns, traditional media promotion and a WhatsApp chatbot. Beyond the fieldwork phase, the CESC remains actively engaged in the project, disseminating findings, stimulating countrywide HIV debate, and striving to influence policy improvement.

An integral aspect of the sub-committee's mandate is to underscore the significance of future survey participation to the public.

2 ▪ Background

2.1 ▪ *Countering misinformation in the South African context*

Scholars, universities, and research institutes are increasingly using social media for science communication [Chugh et al., 2021; Gaur & Gupta, 2021; Weingart & Guenther, 2016]. Academics like Britton et al. [2019] and Insall [2023] have expressed apprehension about

the implications — especially in the post-truth era, where delivering balanced information is challenging [Rowe & Alexander, 2017] and the public's understanding of science may be at stake. Scholars have explored the impact and inclusivity of embracing multilingual science communication, but often with the goal of sharing scientific information with non-scientists [Carroll & Sironi, 2023], ensuring findings are available in local languages [Marden et al., 2021], or increasing access to scientific research [Ramírez-Castañeda, 2020]. The study of multimodal science communication often focuses on dissemination [Valeiras-Jurado & Bernad-Mechó, 2022]. Extant literature has yet to delve into the specific question of utilising a combination of multilingual and multimodal science communication in digital environments to counter misinformation in a research survey context.

Trench [2021, p. 5] underscore the difficulty of creating universally relevant science communication methods, due to the field's diversity. They question the applicability of evidence from Europe, North America, and Oceania to Africa or Asia. This practice insight aims to contribute to knowledge about science communication in developing contexts and multicultural societies like South Africa.

We therefore explore participatory research approaches designed to engage the public in scientific processes, particularly in surveys. We highlight inclusive strategies rooted in community-specific knowledge to promote co-creation of communication strategies for enhanced trust, effectiveness, and inclusivity. The research team's framework for inclusion prioritises wide-reaching communication platforms and the use of local language speakers for information dissemination, complemented by culturally sensitive responses to inquiries. Additionally, we assess the influence of multimedia content on various platforms, including social and traditional media, in expanding outreach.

Science communication literature [Weingart et al., 2019; Sobane et al., 2020] and theory [Trench, 2021; Cheng et al., 2008] highlight the value of multilingualism and diverse messaging formats [Valeiras-Jurado & Bernad-Mechó, 2022] in science communication, including in behaviour change communication [Sobane et al., 2020]. We therefore investigate the use of dialogue and participation models of science communication during the SABSSM VI survey, focusing on the misinformation counter-campaign.

2.2 ▪ *Misinformation incidents*

In August 2022, during the data collection phase, misinformation surfaced, persisting into September 2022. The misleading information spread nationally, but with notable impact in the Free State and Eastern Cape provinces, where fieldworkers reported community concerns about the survey. Digital media, primarily Facebook and WhatsApp, facilitated the dissemination of both the misleading information and subsequent efforts to counter it.

The misinformation first emerged in the Free State, where a participant falsely accused a data collector of theft, leading to the circulation of misleading posts on digital media. These posts, accompanied by a photo of an HSRC-branded vehicle (Figure 1), falsely claimed that data collectors were engaged in criminal activities.

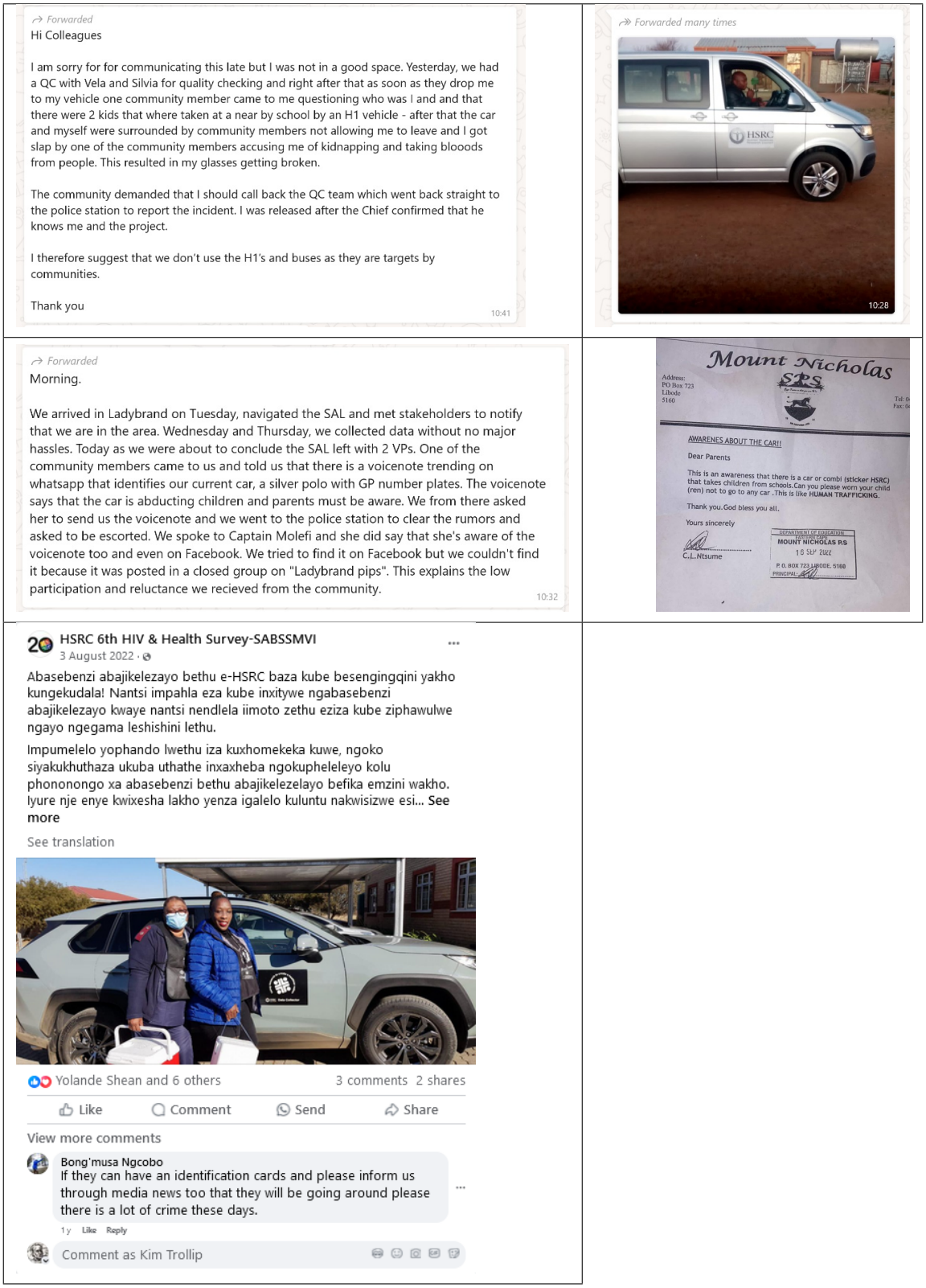

Figure 1. Examples of misinformation that was being shared. Screenshots of messages and posts sharing misinformation.

The dissemination of translated WhatsApp voice notes further fuelled the spread of disinformation across provinces. Listen to the voice notes here: WhatsApp Audio 2024-07-09 at 10.32.33_f8a457eb.mp4 (SeSotho) and here: WhatsApp Audio 2024-07-09 at 10.32.33_627fd62d.mp4 (English).

In a second incident in the Free State, a local school principal distributed a letter to learners' parents, claiming that the HSRC vehicle was being used to kidnap children (Figure 1). This letter also went viral. The research team visited the school to investigate. The principal reported that she had received the voice note from a colleague in a nearby town but had not verified the facts. A Department of Education spokesperson stepped in to confirm to schools and communities that no incidents of learners being kidnapped had been reported. At this point, the survey team launched their misinformation counter-campaign on social media.

The misinformation originating in the Free State soon spread to other provinces. In this analysis, we focus on one neighbouring province as a comparator. The Eastern Cape borders the Free State, and the provinces are linked by shared communities. Based on misinformation shared from the Free State, several schools in the Eastern Cape sent communications to parents, warning that SABSSM survey vehicles were kidnapping children. Following engagement with the survey communications team, these letters were later retracted, as part of a communications sub-strategy developed for the Eastern Cape. The Eastern Cape is thus a case of misinformation 'contagion'. Both the Free State and the Eastern Cape can, in turn, be compared to national data, where the effect of the misinformation is considerably diluted.

The misinformation incident occurred in August 2022. By early September 2022 the research team began disseminating counter-campaign content in a range of formats, including articles (https://bit.ly/multimodalscicom1), posters, infographics, audio clips, and videos (https://fb.watch/qcrPTYETbI/). Providing messaging in a diverse array of formats [Maier et al., 2007; Allgaier, 2012] and languages [Carroll & Sironi, 2023] follows science communication best practice. All material was disseminated on digital platforms in multiple languages (https://www.facebook.com/SABSSM6/videos/1488967128247474/). Interviews with HSRC researchers reassured people in their home languages that the misinformation claims were untrue (https://bit.ly/multimodalscicom2).

3 ▪ Methodology

In this practice insight, the sixth SABSSM survey serves as the empirical backdrop to our case study identifying effective strategies to counter misinformation. Our analysis focuses on methods for countering misinformation in the context of a scientific social survey, particularly with respect to diversity — both diversity of messaging formats and channels, and the linguistic diversity necessitated by the South African context. The authors examine the ways in which this diversity-driven strategy influenced engagement and communication, and consequently affected survey participation. Through this analysis, we hope to share valuable lessons for science communication practitioners facing similar challenges, as well as for science communication scholars focussing on public trust in science — including trust in the scientific process itself: its fieldworkers, organisational structures, and institutions.

3.1 ▪ *Countering misinformation*

As in any country, there are likely several reasons why fake news, misinformation, or disinformation about a research project would spread in South Africa. The country has a unique fingerprint when it comes to general perceptions of science and technology [Guenther et al., 2022]. A historical distrust of government and of science among some South Africans due to 'the undermining of the scientific governance of medicine due to AIDS denialism' [Nattrass, 2008, p. 157] and a lingering critical perception of science and technology among some citizens [Guenther et al., 2022] possibly both played a role. Therefore, although the nature of the misinformation was not scientific, our approach and response were to not only address the misinformation (rumours of theft and kidnapping) but to expand on the science-based messaging about the nature of the survey.

This practice insight compares participation levels across the survey, focusing on the period of the misinformation incident and subsequent counter-campaign, to identify anomalies characterised by abrupt declines in participation (associated with misinformation spread), followed by a restoration to previous participation levels (indicative of the counter-campaign's effectiveness).

Our analysis moves beyond prevailing knowledge [Weingart et al., 2019] by exploring associations between reduced survey participation during the misinformation spread and improved participation following the implementation of such countermeasures. We examine the strategies and formats for combating misinformation on social media and assess the effectiveness of using both multilingual and multimodal approaches in digital environments to counter misinformation in the context of South Africa's demographic and linguistic diversity.

Researchers play an important role in discussing results with participating communities and other target audiences [Cheng et al., 2008]. Research teams have a responsibility to ensure community engagement in all phases of a project in a language fluently spoken in that community [Carroll & Sironi, 2023]. To address these challenges, SABSSM employed cost-effective and efficient communication channels [Weingart et al., 2019]; [Sobane et al., 2023] to enable broad and targeted outreach [Britton et al., 2019]; [Ramlagan et al., 2021]. The survey leveraged channels with very few or no barriers to entry [Ramlagan et al., 2021] to reach people in situ, and on familiar channels such as social media and community radio [Ramlagan et al., 2021].

Translation on the other hand improves inclusivity [Carroll & Sironi, 2023] and increases trust [Yassine et al., 2023]. To these ends, the survey packaged linguistically-appropriate content that was translated where needed. All eleven official languages were used during SABSSM VI.

The research team embraced the opportunities afforded by digital communication technologies, acknowledging their dialogic nature. The approach also acknowledged disparities in access to information among specific populations [Sobane et al., 2023]. Mobile penetration in South Africa is high and growing; with smartphone subscriptions increasing from 60 million subscriptions in 2020 to 65 million in 2021 [ICASA, 2022]. WhatsApp played a major role in the communication activities.

The team utilised both digital and traditional media platforms to disseminate the information, the latter including community media such as radio. In both instances, messaging was

disseminated in local languages. Whenever feasible, messaging was reiterated in person by researchers and field staff, who wore branded bibs when convening face-to-face meetings with communities. Efforts were made using ward councillors and community WhatsApp groups to spread messaging about the trustworthiness of staff — sharing names and ID cards of the staff and licence plates of approved vehicles. The team engaged community mobilisers to reassure people and help support community participation. Organisations that foster social connectivity within communities, such as taxi associations and similar social nodes, responded to requests to support the study by sharing information about the survey.

Participation data gathered by the SABSSM VI research team, covering the period of the misinformation incident, is illustrated in Figures 2, 3, and 4. The period of active misinformation spread is highlighted in blue and the period of the science communication campaign to counter it in red. The darker overlap indicates where these periods coincided.

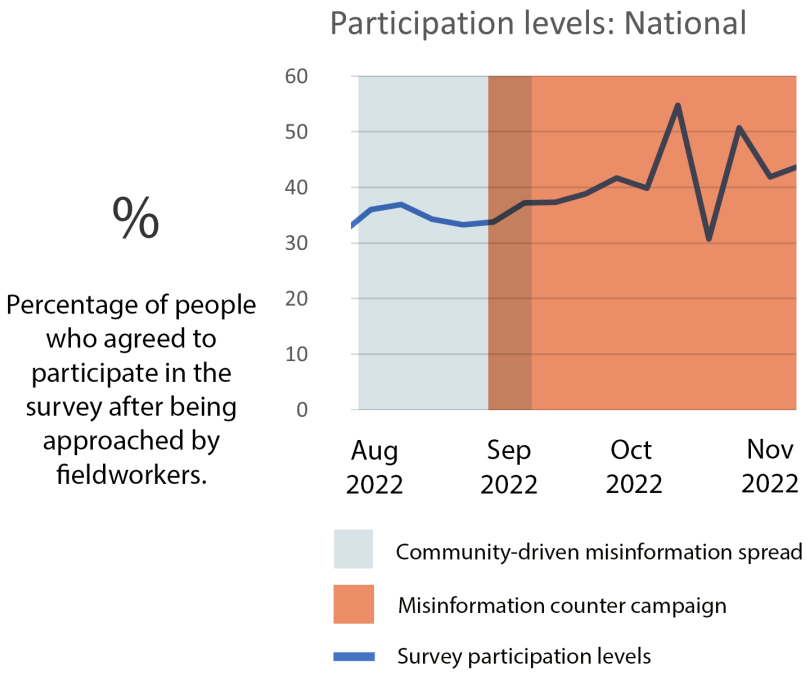

Figure 2. National survey participation levels during SABSSM VI. The graph shows the percentage of people who agreed to participate in the survey after being approached by fieldworkers during the misinformation incident and during the counter campaign. The legends indicate the time periods.

The CESC team, consisting of project managers, science communicators, and researchers, worked together with the broad aim of producing messages that were factual and transparent to foster trust. During this process, messages were tailored to specific audiences, with the aim of establishing meaningful connections with communities.

3.2 ▪ *The role of diverse messaging formats and multilingualism*

The approach to counter the misinformation and its impacts included addressing the misinformation itself and aiming to increase public participation by providing more scientific

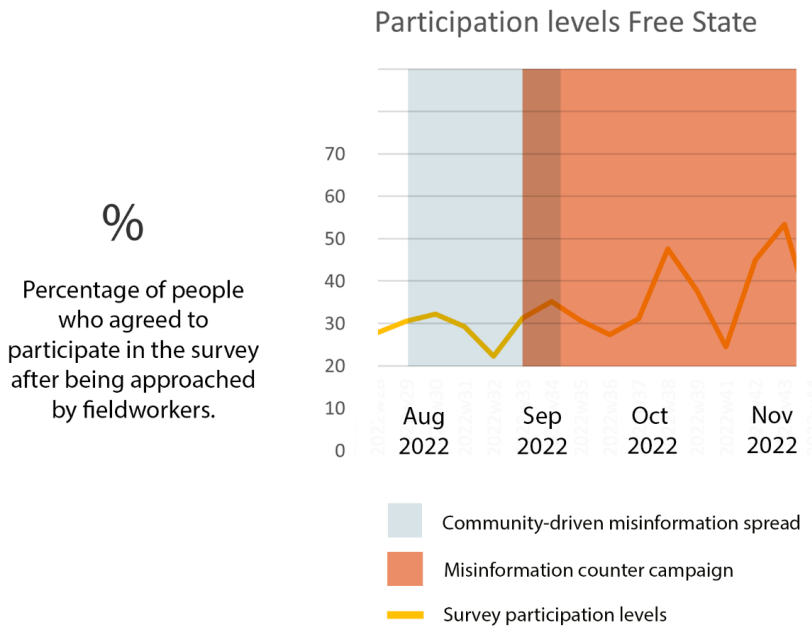

Figure 3. Free State participation levels during SABSSM VI. This is a province where the spread of misinformation was widespread. The graph shows the percentage of people who agreed to participate in the survey after being approached by fieldworkers during the misinformation incident and during the counter campaign.

context to the survey. Countering misinformation in a survey context requires more than just producing messages; it needs to be part of a broader strategy for digital media engagements, tools, and technologies Holliman [2011, pp. 1–4]. The approach followed by the CESC was to incorporate storytelling techniques in its messaging, including infographic posters, videos, and audio clips, supported by links that provided balanced information and ensured consistency across all communication channels, including the HSRC website.

Allgaier and Svalastog [2015, pp. 498–499] emphasise the importance of harnessing multimedia and multilingual approaches to reach as many people as possible in efforts to counter misinformation. The online video format is seen to be particularly effective: "The online video format combines various advantages for science and health communication: it works on a visual but also on an auditory level. This means that various spoken native languages, as well as a diverse set of subtitles, could be used. The audio information can also be understood by people who have difficulty reading."

Visual elements, such as survey vehicle photos with registration numbers clearly displayed and fieldworker identification visuals, were introduced to enhance credibility and recognition. These were shared by community WhatsApp groups and closed community Facebook groups. Continuous social media oversight, proactive monitoring, and swift intervention all proved to be important in countering emerging misinformation.

Increased Facebook page reach and visitor numbers (Figure 5, July-October 2022) coincide with heightened participation levels in the survey. While the data does not underpin an argument for causation, there is evidently correlation that is consistent with the periodisation of misinformation and its countermeasures.

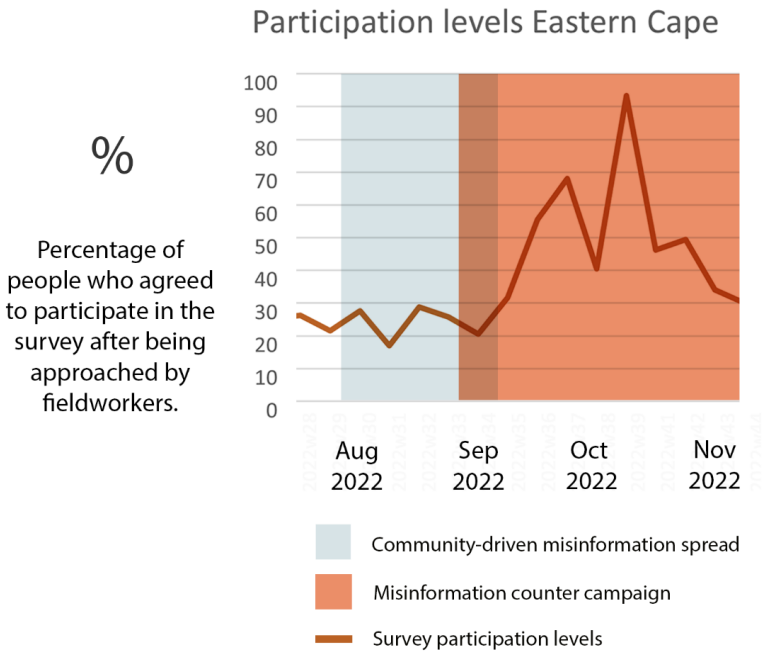

Figure 4. Eastern Cape participation levels during SABSSM VI, another province where the spread of misinformation was widespread. The graph shows the percentage of people who agreed to participate in the survey after being approached by fieldworkers during the misinformation incident and during the counter campaign.

Analytics for the Facebook page (Figure 5) reveal increased interest at survey onset in February 2022, which gradually declined over time, except for a notable surge from late July to September 2022 during the misinformation incident. The dissemination of misinformation itself can amplify reach and engagement on social media platforms [Hilary & Dumebi, 2021]. Consequently, the heightened engagement on the SABSSM VI Facebook page is attributable to both the misinformation incident and the subsequent counter-campaign. Indeed, the initial surge in activity can be attributed to the spread of misinformation, as the counter-campaign had yet to be launched.

However, the augmented engagement, particularly evident during the misinformation counter-campaign (Figure 5, September 2022), can be ascribed to a rise in page visits, new likes, and specifically positive comments from the public, particularly those pertaining to the survey and the fieldworkers. It can be inferred that the countermeasures played a role in enhancing reach and (positive) engagement throughout September 2022 and into October and November 2022.The simultaneous increase in national survey participation levels during this time suggests that the countermeasures successfully addressed the previous decline in participation caused by the dissemination of misinformation.

Engaged communication is dynamic, particularly in a survey setting where the fieldwork period is time-bound and requires resources. The engagement process responded rapidly and proactively to minimise the period in which the misinformation negatively impacted the survey. This aim was largely accomplished, as participation levels increase within weeks of the start of the misinformation counter-campaign (Figures 2, 3, and 4). The CESC sustained

this counter-campaign until mid-November 2022. Post-counter-campaign messaging on survey channels, including the "Myth Versus Fact" digital media campaign, continued to combat misinformation. The CESC continued to share videos crafted in response to the misinformation incident throughout the remainder of the survey.

4 ▪ Results

The SABSSM VI Facebook page went live in October 2021. The page became more active in February 2022, when the HSRC advertised for people to apply for positions as data collectors and fieldworkers. At this point, the page had 1,371 followers. Throughout the survey, the Facebook page exhibited consistent interest, particularly during active fieldwork phases, evidenced by heightened reach and visitation metrics. This trend persisted during instances of misinformation dissemination on Facebook and within communities.

Table 1 outlines the activity on the Facebook page per month for the full period of the survey. Participation data suggest that the misinformation adversely affected survey participation from early August to mid-October 2022. For instance, Facebook page visits dropped from 5,197 in July 2022 to 3,325 in August 2022, while page likes dropped from 82 to 76 during the same period. Figures 2, 3, and 4 show the drop in participation at the national and regional levels. This correlation is periodised with causal dynamics, such as decreased engagement and a more negative sentiment in comments.

This is statistically relevant because, when compared to the rest of the active data gathering phase of the survey, these slumps were sudden and much greater than at any other time during data gathering. The only time when engagement levels on the Facebook page were lower were over the quiet Christmas/New Year period and the wind-down period of the survey, as it neared its completion in 2023. These lower levels of participation and engagement occurred during previous surveys and is understandable since there is much less communication and outreach about the survey to communities at this time.

Table 1. SABSSM VI Facebook page activity February 2022 to April 2023.

	2022											2023			
Month	**Feb**	**Mar**	**April**	**May**	**June**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**April**
Page visits	5,180	4,067	3,097	1,842	2,129	5,197	3,325	4,868	2,902	645	321	501	717	1,218	517
Likes	502	268	146	116	70	82	76	64	43	22	15	14	15	21	8
No. of posts	15	18	10	9	10	9	10	14	9	18	7	8	17	16	6

Negative sentiment received on Facebook during August 2022 included comments such as: “It is said that this car is taking women”, “We are living in dangerous world, we don’t trust people when they come to our houses”, and “Please clarify the truth, what can we do about this situation?” (translated from isiXhosa). Other users said (translated from Sesotho), “This is dangerous because some people were planning to attack and torch that combi without doing investigation. I think you need to arrange meeting with communities[…]inform them about your services, mission, and objectives. At least invite community Leaders. It will be risky roaming the streets of Botshabelo if residents aren’t properly informed about you guys.” In addition to the evident negative effects such discourse would have on survey participation levels, the latter quote demonstrates the material risk that can emerge from

misinformation — in this case, the risk of the survey vehicle being torched and potential harm to fieldworkers taking place. More generally, it demonstrates the importance of community engagement from the early stages of the research process.

To develop countermeasures to the misinformation, the research team utilised strategies developed through their previous experience during the HSRC's COVID-19 rapid socio-behavioural surveys in 2020 [Ramlagan et al., 2021], in which Facebook promotions played an important role. One advantage of this tool is that Facebook utilises geo-targeting to facilitate location-specific messaging. These promotions include elements of paid advertising, boosted posts, and targeted messaging. The effect is an enhancement of visibility and engagement on Facebook in a specific geographic area. During SABSSM VI, the team employed promotions to target users in areas most affected by misinformation. Boosted posts during September and October 2022 received significantly higher engagement compared to the averages in July and August 2022, as well as November and December 2022 (Figure 5). This targeted information campaign appeared to correlate with the restoration of participation levels (Figures 2, 3, and 4) between September 2022 and November 2024.

In the Free State (Figure 3), where misinformation first emerged in August 2022, the number of people who were approached to participate in the survey and agreed to it, decreased from 12% to less than 2% within two weeks. However, participation recovered to 15% by week 34 (the week of 5 September 2022) and peaked at 28% by week 38 (the week starting 3 October 2022), indicating a correlation between the implementation of countermeasures and increasing participation levels.

In the Eastern Cape (Figure 4), the data shows a decline in participation levels from 26% in the initial week of August 2022 to 17% by the week commencing 29 August 2022, as misinformation proliferated. However, following the launch of the counter-campaign in early September 2022, participation gradually improved. By the week of 10 October 2022, participation levels increased to 68%. Notably, by the end of October 2022, they peaked at 93%, marking the highest participation rate of any province during the survey period. As with the Free State, the communications counter-campaign was correlated with the restoration of survey participation levels to pre-misinformation levels, and a subsequent increase beyond the pre-misinformation level: to 25% in the Free State and 93% in the Eastern Cape. In this sense, the countermeasures leveraged misinformation to achieve a positive result.

4.1 ▪ *Which formats and posts were most effective?*

Initially (February-July 2022), the campaign foregrounded images of fieldworkers in action nationwide, supplemented by content featuring stock images or graphic designs. Subsequently (August 2022-April 2023), regular posts featuring colourful posters and photos encouraged survey participation, with consistent messaging across social media and printed materials.

Posters were pinned up in visible places wherever the survey was active, and flyers were handed out to community members. Researchers and fieldworkers carried printed materials with them to raise awareness about the survey before commencing data collection.

Figure 5. Examples of the diverse formats used and that aimed to engage audiences across various platforms.

4.2 ▪ *Communication metrics over the course of the campaign*

By September 2022, the CESC misinformation counter-campaign was underway. Table 2 lists the posts and formats uploaded to the survey Facebook page during the misinformation

Figure 6. A SABSSM VI poster attached to a rock in one of the more remote survey locations (left); and fieldworker with bib and ID and survey vehicle with registration number displayed (right).

counter-campaign 1–30 September 2022. With 4,868 visitors, during this month, engagement showed signs of recovery, marking a 51% increase compared to August 2022. Page reach increased by 50% compared to August 2022.

Metrics reveal fluctuating activity on the SABSSM VI Facebook page amid the misinformation incident and subsequent counter-campaign. For example, in July 2022, nine posts featuring fieldworkers garnered significant interest, with 5,197 page visits, a 140% increase from the previous month. The page received 82 likes, 12 more than in June 2022, marking a 8% increase. Page reach increased by 196% that month, likely partially in response to the early stages of the misinformation incident.

During August 2022, as misinformation spread, ten posts on Facebook attracted 3,325 visitors, a 36% decrease compared to July 2022. The page received 76 likes, six fewer than in July 2022, representing a 7% decrease. Page reach decreased by 55% from July to August 2022.

Table 2. List of posts and formats uploaded to the survey Facebook page during the misinformation counter-campaign 1–30 September 2022.

Date	Format	Post text or description of post	Visuals	Responses	Video views
05/09/2022	Photos of field workers in action	Fieldwork is happening across the country with our teams working hard to reach households that are selected to be part of the study! #SABSSMVI #nationalhivsurvey #ShapeSA #StrongerTogether #ProudlySouthAfrican #SAStrong #HaveYourSay		26 likes 0 comments 0 shares	
13/09/2022	Photos of field workers Plus a link to the press release	Please click on the link to access the full press release: https://drive.google.com/.../1R-drx0bKz_o2Nf9w84b.../view...		681 likes 15 comments 3 shares	
14/09/2022	Short video	Have your say: A video recorded in the field and presented in Xhosa spoken in the Eastern Cape, countering the fake news, encouraging participation in the survey and telling viewers to contact the free WhatsApp number for more info.		9 likes 1 comment 3 shares	276 views
14/09/2022	Short video addressing the misinformation circulating	No text, Sesotho audio, spoken widely in the Free State Province		98 likes 5 comments 7 shares	45 000 views
14/09/2022	Short video addressing the misinformation circulating	No text, Xhosa audio, spoken widely in the Eastern Cape Province		10 likes 1 comment 3 shares	6 100 views

Date	Format	Post text or description of post	Visuals	Responses	Video views
15/09/2022	Social media card HSRC's PSA about "fake news" in English			264 likes 0 comments 4 shares	
16/09/2022	Photo and text	Our teams are working hard in Clarens this week! #SABSSMVI #SAstrong #haveyoursay #shapeSA #ProudlySouthAfrican #NationalHIVSurvey		11 likes 2 comments 3 shares	
16/09/2022	Text/photo/video (multilingual) post about celebrating the field worker teams	We believe that team work makes the dream work! Working together with communities and stakeholders is a very important part of our fieldwork so that our communities are prepared and happy for our teams to do this important work! #SABSSMVI #nationalhivsurvey #ShapeSA #proudlysouthafrican #HaveYourSay		10 likes 1 comment 1 shares	364 views
16/09/2022	Picture of field workers with local Police informing the public that HSRC informs SAPS before entering each community	Did you know? Before our teams enter into a community, we visit the local SAPS to inform them that we are in the area to implement the survey and to establish the legitimacy of the survey. We then visit all other stakeholders in the area to ensure that we are able to work with the full support of the community. For more information about the survey, send a quick "hi" to our WhatsApp Chatbot on 073 505 5078. For any enquiries, please send us a DM or visit our website on www.hsrc.ac.za #ShapeSA #nationalHIVsurvey #doyourbit #proudlysouthafrican #SABSSMVI		19 likes 0 comments 9 shares	

Date	Format	Post text or description of post	Visuals	Responses	Video views
27/09/2022	Updated cover page	No text		12 likes 0 comments 1 share	
28/09/2022	Field workers in Ficksburg	Clr. Izak Vries and Clr. George Magalayane working with our teams in Ficksburg. Working together with communities is critical when we undertake work so that communities feel safe when our field staff are in their area. #ShapeSA #nationalHIVsurvey #doyourbit #proudlysouthafrican #SABSSMVI		14 likes 3 comments 3 shares	
28/09/2022	Fake news text board and link to media article	HSRC calls on members of the public to refrain from spreading fake news about its data collectors		6 likes 0 comments 2 shares	
29/09/2022	Link to audio interview with Principal Investigator	Interview link to Prof Zuma's interview on Sajonisi Youth Radio in Zulu.	Link to clip	2 likes 0 comments 0 shares	
29/09/2022	Photos showing the survey posters in rural settings	Our teams are always finding innovative ways of letting communities know they are in the area! #SABSSMVI #nationalhivsurvey #ShapeSA #doyourbit #proudlysouthafrican #StrongerTogether		10 likes 0 comments 0 shares	

Video content introduced as part of the misinformation counter-campaign explained project details and the significance of survey participation through a variety of formats and approaches.

The videos were collectively viewed over 50,000 times (Table 2). They garnered the highest engagement levels throughout the survey communication campaign compared to all other formats, with an average engagement level of 12,966 per video post, compared to 1,090 for non-video posts and 94 for other formats (Table 2).

Posts were uploaded two to three times every week, increasing to four or five times during the misinformation counter-campaign. The languages used in the posts were matched to the languages spoken by the communities in the areas of active data gathering. Communication activities to counter the misinformation ranged from social media posts written in the local language, to conducting interviews with researchers on local radio stations in the local language, and videos produced and shared in the local language of that community.

From the evidence provided in the Facebook analytics reports (consolidated in Table 1 and detailed for the month of September 2022 in Table 2) we conclude that boosted, geo-targeted posts in local languages were associated with enhanced engagement, evidenced by positive comments and increased activity. Content in multiple languages gained greater engagement, including 1) more comments, 2) comments often made in languages other than English, and 3) comments that were supportive of the survey.

The communication formats (see examples in Figure 5) that proved most effective (Table 2) included social media cards, Facebook posts linking to radio interviews, fieldworker images with press release links countering misinformation, and animated video explainers. Video content, particularly in indigenous languages, proved highly engaging (Table 2), with one Sesotho video garnering 45,000 views. Another in isiXhosa drew 6,100 views. Fewer video posts were uploaded to the SABSSM Facebook page prior to the misinformation counter campaign. During the campaign, video proved highly engaging, significantly boosting engagement levels on the page. The videos played a significant role in increased activity on the survey social media pages and could be considered key to countering the misinformation.

Combination posts that were multilingual and featured a mix of text, photos, and video were also popular. For example, a post in English (text) and Sesotho (video audio), celebrating the fieldworker teams, and posted on 16 September 2022 received an above average of ten likes. The video within the post however received even greater engagement of 364 views, despite being less visible as it was the last item in a Facebook gallery and required a click-through to view.

Posts featuring photos were popular, although not as favoured as video. The photos of fieldworkers in their bibs received between 10 and 26 likes. Photos of fieldworkers with community leaders such local government officials and law enforcement officers received between 14 and 19 likes. Even photos of fieldworkers in their bibs but without text, such the cover photo changes on the Facebook page received 12 likes. Colourful social media cards, like the one posted on 15 September 2022, garnered 264 likes and four shares. The design team opted for contrasting colours and short and powerful text for engagement and impact.

5 ▪ Limitations

To assess the social media content employed during the campaign, we drew on analytics reports generated throughout the survey. The reports, as consolidated in Table 1, outline the activity on the Facebook page per month for the full period of the survey. We used this information to identify the most effective formats and posts in countering the misinformation by examining levels of engagement and reach per post.

One limitation of this analysis is that due to data constraints, a provincial breakdown is not available. Insights can be reached about dynamics at the national level but not at the community or regional level.

Going forward, it will be useful to track the reach and engagement on digital media in future SABSSM surveys so that the team can build a more solid foundation for its decisions over which multimedia formats and messaging garner the greatest reach and response over time.

6 ▪ Conclusion

Based on the national and provincial participation data, correlated with the levels of activity, reach, and engagement on social media, as well as the analytics reports and feedback from the research team, we deduce that the activities of the misinformation counter-campaign were closely correlated with restored participation levels. While the data is not sufficient to establish causation definitively, we can tentatively conclude that an element of causation may have been at play. This conclusion is supported by the observed increase in survey participation, improved social media analytics, and positive feedback reported by researchers during data collection.

From our experience on the SABSSM VI Survey, as outlined in this practice insight, we conclude that a focused communication campaign grounded in both science communication theory and best practice [Britton et al., 2019; Trench, 2021; Carroll & Sironi, 2023; Hilary & Dumebi, 2021] can play a role in dispelling misinformation and rebuilding trust in both a research project and its overseeing organisation. The success of the counter-campaign, as reflected in the increased survey participation levels, social media activity, and positive feedback, underscores the efficacy of the multilingual and multimodal approaches used to combat misinformation and restore trust in the survey and its organisers.

The novelty of this analysis lies in its demonstration of an integrated, adaptable approach that blends digital communication, traditional media, and direct community engagement to counter misinformation in science communication [Cheng et al., 2008; Ramlagan et al., 2021; Sobane et al., 2020]. What stands out as innovative is the emphasis on multilingual digital communication to build trust among diverse audiences, combined with the strategic use of multimodal formats — such as videos, social media, and face-to-face interactions. This multi-layered approach is tailored to culturally, linguistically, and socioeconomically diverse settings, offering practical insights for engaging different population groups more effectively and fostering trust in research projects across varied contexts.

For example, we found that translating information into multiple languages, formats, and leveraging interactive channels helped build trust among communities where the survey was being conducted. Visual elements, including videos and animations, played a crucial role in

enhancing credibility and recognition, making them essential components of communication strategies for research projects [Allgaier & Svalastog, 2015]. Video content introduced as part of the misinformation counter-campaign featured explainer-style videos with animated graphics to break down complex information. Posts included a video introducing the project, another entitled "Journey of Blood" explained why the survey team needed a blood sample, while another described Nelson Mandela's involvement in founding SABSSM.

Videos, both in English and other official languages, consistently outperformed other formats in terms of reach and engagement. This would most likely have played a role in the observed, improved participation levels in the survey after the counter campaign started.

These insights have the potential to inform praxis in the promotion of national research projects in diverse social and linguistic settings.

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How to cite

Trollip, K., Gastrow, M., Ramlagan, S. and Shean, Y. (2024). 'Harnessing multimodal and multilingual science communication to combat misinformation in a diverse country setting'. *JCOM* 23(09), N01. https://doi.org/10.22323/2.23090801.

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