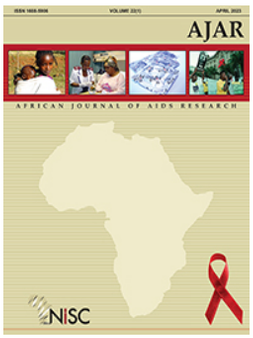

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Short Communication

The use of monitoring data and community feedback mechanisms to increase HIV testing among men during a cluster-randomised community mobilisation trial in South Africa

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This short communication describes the development and implementation of a programme monitoring and feedback process during a cluster-randomised community mobilisation intervention conducted in rural Bushbuckridge, Mpumalanga, South Africa. Intervention activities took place from August 2015 to July 2018 with the aim of addressing social barriers to HIV counselling and testing and engagement in HIV care, with a specific focus on reaching men. Multiple monitoring systems were put in place to allow for early and continuous corrective actions to be taken if activity goals, including target participation numbers in events or workshops, were not reached. Clinic data, intervention monitoring data, team meetings and community feedback mechanisms allowed for triangulation of data and creative responses to issues arising in implementation. Monitoring data must be collected and analysed carefully as they allow researchers to better understand how the intervention is being delivered and to respond to challenges and make changes in the programme and target approaches. An iterative process of sharing these data to generate community feedback on intervention approaches was critical to the success of our programme, along with engaging men in the intervention. Community mobilisation interventions to target the structural and social barriers impeding men's uptake of services are feasible in this setting, but must incorporate a continuous review of monitoring data and community collaboration to ensure that the target population is reached, and may need to also be supplemented by changes in the structure of care provision.

Keywords: HIV and AIDS, HIV prevention, programme implementation, stakeholder engagement

Introduction

South Africa has the largest population of people living with HIV in the world (approximately 7.8 million) and 230 000 new infections each year (UNAIDS, 2020). Full HIV testing coverage is required for early diagnosis, initiating timely treatment and averting new infections and death (Makhema et al., 2019). Frequent testing (at least annually) is especially important in settings like South Africa, where HIV incidence is high, due to the potential for undiagnosed HIV infection in those who test infrequently (Kranzer et al., 2011). A 2016 demographic and health survey (Department of Health, 2019) indicated that 82% of women had tested, compared to 69% of men, while 59% of women had tested in the year prior compared to 45% of men. These figures indicate the need to drastically increase testing uptake among both groups, particularly men, to achieve the UNAIDS 95–95–95 fast-track targets to end the AIDS epidemic by 2030 (UNAIDS, 2014).

Community mobilisation, defined as the collective promotion of action towards social change around a shared concern by a group or community (Lippman et al., 2013), has the potential to improve HIV service utilisation among men, particularly HIV counselling and testing (HCT) (Gregson et al., 2013) by addressing the social norms and barriers to care that has been documented among men in South Africa, including rigid gender norms, definitions of masculinity and anticipated stigma (Peacock & Levack, 2004; Greig et al., 2008; Peacock et al., 2009; Treves-Kagan et al., 2016; Mooney et al., 2017). We conducted a cluster-randomised

trial to increase HIV testing and antiretroviral therapy (ART) linkage and retention, by implementing a theory-based community mobilisation intervention (known as Tsima), with the purpose of addressing social barriers to HIV counselling and testing and engagement in HIV care, focussing specifically on reaching men (Lippman et al., 2017).

The Tsima trial included a multi-faceted monitoring system to allow for early and continuous corrective actions to be taken if activity goals, including target participation numbers, were not reached. While the collection of routine monitoring data is standard practice in interventional research (Abramsky et al., 2014), there is generally little attention paid to how monitoring and evaluation are implemented and what their effects are at a grassroots level (Shukla et al., 2016). To demonstrate the value of using monitoring data to improve access to and acceptance of programme components (Ruel-Bergeron et al., 2019), this case study describes the design of the Tsima programme and monitoring system, and how we used an iterative process of reviewing programmatic monitoring data and stakeholder feedback to improve the intervention's reach among men.

Study setting

The study took place in the Agincourt Health and Socio-Demographic Surveillance System (HDSS) study area run by the Medical Research Council/Wits University Rural Public Health and Health Transitions Research Unit. The study area is located in the rural Bushbuckridge municipality of Mpumalanga province in South Africa, located about 500 km northeast of Johannesburg near the border with Mozambique. The longitudinal HDSS study maintains a detailed database and sampling frame through annual household updates, monitoring all births, deaths and migrations in a defined population since 1992. Over 20 000 households and 116 000 residents live in 31 fully enumerated villages in the study area (Kahn et al., 2012). Adult (15–49 years old) HIV prevalence in Mpumalanga is estimated at 22.8% and prevalence among 35–39 year-olds at the study site was over 45% in 2010/2011 (Gómez-Olivé et al., 2013).

Ethics approval for the study was granted by the Human Research Ethics Committee of the University of the Witwatersrand (South Africa), the Research Committee of the Mpumalanga Department of Health (South Africa), the University of North Carolina at Chapel Hill (UNC) (United States) and the University of California, San Francisco (UCSF) (United States).

Intervention design and implementation

Tsima was designed in partnership with Sonke Gender Justice, a South African non-governmental organisation known for its community mobilisation, advocacy and gender transformative work. As the implementing partner, Sonke established a Bushbuckridge-based office and hired a programme manager, intervention coordinator and logistician to supervise a data typist and sixteen community mobilisers responsible for leading Tsima activities. Two mobilisers were selected from each of the eight villages assigned to the intervention and trained in the intervention curriculum. Intervention delivery was standardised and manualised into a toolkit of community mobilisation activities, a workshop manual and a handbook for creating community mobilisation teams (Sonke Gender Justice, 2016; Lippman et al., 2017). Throughout the intervention, mobilisers engaged volunteer community action team members from their respective villages to assist with the facilitation of activities, workshops and support groups for people living with HIV and recruitment of new participants.

The Tsima intervention was designed to address social barriers to HIV testing and linkage and retention in HIV care, including poor awareness or understanding of HIV care, fear of stigma associated with HIV infection, clinic attendance and disclosure, lack of social support and gender norms (Lippman et al., 2017). Intervention activities were created to address the community mobilisation domains theorised as necessary to impact HIV prevention (Lippman et al., 2013; 2016). Effectiveness of the community-mobilisation intervention was evaluated by comparing uptake of HIV testing, ART initiation and retention in care between intervention and control community members through a clinical tracking system linking the HDSS population to health facility records. Trial results are described elsewhere (Lippman et al., 2022)). Intervention activities took place from August 2015 to July 2018 in eight villages across the Agincourt HDSS.

From the outset, the intervention aimed to increase the engagement of community members in HCT and HIV service utilisation by employing best practices for engaging men in community outreach activities (Table 1 summarises targeted activities). Strategies included using positive messages to promote behaviour change, appealing to men's sense of justice and desire to be a caregiver and supporter for their partners and/or children, and engaging influential male community leaders (Barker et al., 2010). Some activities used soccer skills and teamwork to discuss themes of behaviour change, HIV prevention, HIV treatment as prevention and community building, and to challenge norms of masculinity that may deter men from accessing health services. Community mobilisers were also encouraged to use spaces frequented by men at the study site as venues for activities and workshops.

Intervention monitoring mechanisms

Multiple monitoring systems were put in place to allow for early and continuous corrective actions to be taken if activity goals, including target participation numbers in events or workshops, were not reached. Clinic data, intervention monitoring data, team meetings and community feedback mechanisms allowed for the triangulation of data and creative responses to issues arising in implementation (Figure 1).

The research team developed an intervention monitoring database to quantify intervention fidelity, dose delivered and reach by village. Community mobilisers and community action team members were trained to complete monitoring forms for each type of intervention activity conducted. Table 2 provides a summary of indicators provided in the monitoring reports. Monthly targets were set for both dose and reach and were adjusted every six months based on the mobilisers' performance and feedback from the study team.

Community mobilisers also collected information on how and where recruiting was conducted, as well as any challenges faced during the recruitment process, what the objectives and outcomes were for the meeting, the next steps agreed to by participants to get HCT, and what worked well (or did not).

Monitoring forms were collected weekly and entered in a Microsoft Access database. Data were then used to assess the proportion of residents exposed to the intervention in each village and to estimate the proportion of "new faces" reached in each village (i.e. those who had not previously attended a Tsima activity). Since individual identifiers

Table 1: How the Tsima intervention addresses social barriers to men's uptake of HIV services

Addressing stigma related to HIV testing, care and treatment	Increasing knowledge around HIV treatment as prevention	Addressing gender norms around HIV testing and treatment
• Group discussions to reflect on men's experiences with HIV and how common it is to be affected by HIV • Two-day workshops focusing on community stigma around HIV testing and treatment • Door-to-door outreach and education (conducted in the participants' homes) • Digital stories and film screenings on HIV testing and care experiences featuring male characters in community action team members' homes	• Activities to demonstrate how increasing uptake of ART can safeguard the health of the community • Soccer themed activities (i.e. "penalty shoot-out", soccer tournaments) using principles of teamwork, winner/loser to highlight the importance of testing, show how the risk of transmitting HIV can be reduced with different strategies, including ART • Discussions about the importance of HCT, particularly for couples • Digital stories and film screenings on HIV testing and care experiences featuring male characters in community action team members' homes	• Activities to explore gender roles in providing care and support for people living with HIV or AIDS • Activities to understand some reasons why men get tested and seek treatment less than women, and to consider reconstructing masculinity in ways that support testing and treatment • Workshops focusing on gender norms and the benefits/barriers to men engaging in testing and care • Discussions with key groups (small business owners, church leaders, community leaders) to support engagement of men in HIV testing and care • Community debates that address gender norms and accessing HIV care • Murals addressing gender norms and HIV care

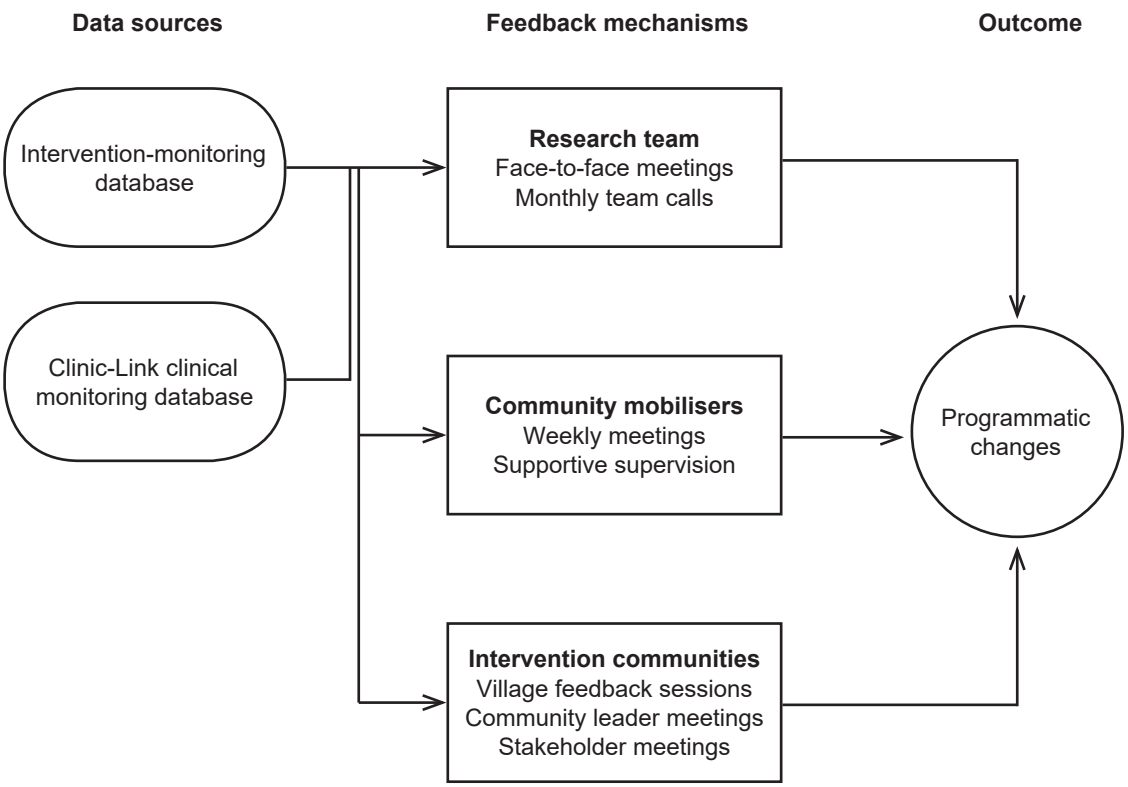

Figure 1: Tsima intervention monitoring data sources and feedback mechanisms

Table 2: Selected Tsima intervention-monitoring report indicators

Monitoring category	Indicator
Summary of intervention implementation	Number of each type of activity conducted
	Number of activities conducted by thematic area
Progress toward targets	Number of mobilisation activities conducted in time period
	Percentage target for time period attained
	Cumulative number of activities
	Percentage of cumulative target attained
Reach	Percentage of "new faces" reached
	Percentage participants attending both days of two-day workshop
	Average number of participants
	Number of participants by sex and age
	Type of leadership and stakeholders engaged
Fidelity	Percentage of workshops lasting two days and at least four hours per day
	Percentage of workshops that covered at least four of the six prescribed themes
	Percentage of workshops covering at least six of the eight prescribed activities

were not collected from activity participants, the number of contacts made with participants included those who were counted multiple times while attending different events. The "new faces" indicator intended to estimate the number of new participants to understand what proportion of attendees were newly reached and to monitor successful outreach. Monitoring reports were generated monthly, quarterly and annually to ensure the team was reaching intervention targets and to assess fidelity and dose.

Monitoring data were also used as a performance management tool by the intervention manager and project manager. Weekly meetings were crucial to the discussion and development of new ideas and activities to engage participants in the Tsima intervention. The study team reviewed monthly monitoring reports, supplemented by narrative reports, to discuss the trends in the activities that were successful at reaching participants (by age and sex) and to discuss modifications to programming to encourage more participation (particularly of men). The study team, including the Agincourt public engagement office, would meet in person twice yearly to review quarterly monitoring data, discuss challenges in intervention implementation and create plans of action. Research uptake strategies and project sustainability were also discussed in these meetings.

Clinic data monitoring community uptake of HIV testing and care were collected in all participating clinics using Clinic-Link — a system developed by the MRC/Wits Rural Public Health and Health Transitions Research Unit — to link clinical records to HDSS records following informed consent of the patient (Kahn et al., 2012). Clinical records were used to determine the proportion of individuals who sought testing and treatment, and provided the basis for trial outcomes. For the trial, clinic data was linked to participants residing in the HDSS to identify village of residence and intervention exposure. For monitoring and stakeholder engagement, reports were prepared semi-annually for each clinic and discussed with each clinic's operational manager, summarising key indicators for testing, linkage to care and retention in care. Gaps in testing coverage identified using clinical monitoring data were reviewed by the study team to inform intervention programming, specifically increasing emphasis on HIV testing among male participants.

Integrating monitoring data and community feedback to improve engagement with men

Despite incorporating many best practices for reaching men to participate in activities in the initial design of intervention activities, the project still struggled to engage men aged between 30 and 49 years. The collection and review of routine monitoring data and triangulation of this data with narrative fieldwork reports from the intervention manager, team discussions and meetings with community leaders and stakeholders were critical to the study team's understanding of what changes needed to be made on the ground. Table 3 presents a summary of quarterly data reviewing our reach data, issues identified in the field and corrective actions taken by the intervention team to attempt to engage more male participants.

Throughout implementation, the study team conducted reviews of routine monitoring data and adjusted recruitment and intervention activities accordingly through discussion with the community mobilisers, community action team volunteers and community leaders and stakeholders. Utilising input from the various monitoring systems, the team noted challenges in engaging men, particularly in HCT. Reported barriers to testing included the perception of lack of confidentiality by clinic staff, the perception that clinics were not male-friendly spaces, the lack of health care facilities in some villages and a preference to test for HIV at home. To address the low uptake of HCT identified through clinical monitoring data, the intervention team partnered with a local non-profit organisation to provide community-based HCT at Tsima events, starting in December 2017. The team also organised "fun days" with music, free car washes and the provision of HCT on weekends near main roads during afternoon and evening hours to encourage men to test for HIV. In addition, a "men's event" was organised for participants from all intervention villages to discuss health and relationships, along with the provision of HCT. Men also indicated a preference for HCT when testers and counsellors were from villages other than their own, as it made them feel their confidentiality was better protected.

The project team's reach targets were initially set to engage 60% of participants in at least one activity by year three of the intervention. By the final quarter of the intervention, a total of 30 261 contacts had been made

Table 3: Monitoring data and programmatic responses

Quarter	Age group (years)	Contacts* made (*n*)	Cumulative contacts* made (*n*)	Men engaged cumulatively (*n*) estimate	Issues raised	Actions taken
1	18–29	2 194	2 194	1 746	Low attendance at Tsima activities of men aged 30–49 years	• Recruited men from specific locations on weekends and after work hours (car washes, taverns, churches, soccer fields) • Organised soccer tournaments for men aged 30–49 years • Organised pool tournaments during which men engaged in pool and other project activities
	30–49	1 337	1 337	1 011		
2	18–29	1 602	3 796	2 584		
	30–49	1 150	2 487	1 635		
3	18–29	3 493	7 289	3 869	Low engagement of men aged 30–49 years as community action team members Low attendance of men aged 30–49 years at two-day workshops	• Met with traditional leaders to recruit them to assist in encouraging men to participate in Tsima • Introduced traditional food (cow's head) to encourage attendance of older men
	30–49	2 065	4 552	2 489		
4	18–29	3 078	10 367	4 470		
	30–49	1 882	6 434	3 067		
5	18–29	3 074	13 441	5 071	Low attendance of men at two-day workshops	• Held workshops only for men aged 30–49 years • Held engagement meetings with political and traditional village leadership • Held stakeholder meeting with members from all villages including home-based care groups, pastors, traditional healers
	30–49	1 787	8 221	3 522		
6	18–29	2 087	15 528	5 411		
	30–49	1 210	9 431	3 758		
7	18–29	2 722	18 300	5 791	Low attendance of men aged 30–49 years at activities	• Provided incentives (airtime, mugs, bottles, caps) to men aged 30–49 years who brought male peers to activities • Conducted mapping exercise to identify areas the team had not reached
	30–49	1 630	11 061	4 133		
8	18–29	2 988	21 288	6 213		
	30–49	1 849	12 910	4 489		
9	18–29	2 078	23 366	6 540	Clinical data showed that HIV counselling and testing rates remained low for males across the Health and Socio-Demographic Surveillance System	• Established male-only support groups • Sent SMS reminders to participants to attend Tsima activities • Continue to emphasise sports events • Established "fun days", which included community-based HIV testing
	30–49	1 602	14 512	4 759		
10	18–29	2 338	25 704	6 765		
	30–49	1 506	16 018	4 969		
11	18–29	2 142	27 846	6 970		• Continued "fun days" and community-based HIV testing • "Men's event" – joined by partnering with local organisations, and includes HIV testing
	30–49	1 653	17 671	5 130		
12	18–29	2 465	30 261	7 116		
	30–49	1 815	19 486	5 257		

*Includes contacts made with participants multiple times because unique participant identifiers were not collected

with men aged 18–29 years, and 19 486 contacts with men aged 30–49 years. Engagement rates for men of both groups increased steeply after quarter three, during which the team met with traditional leaders and opted to recruit community members through the introduction of the traditional cow head meal at activities. In quarter seven, the team began giving incentives to participants who recruited males to join activities, and in quarters eleven and twelve the team introduced "fun day" and "men's day" events. The engagement of males aged 18–29 years increased by 13% (from 47% to 53%) between quarters one and twelve of the intervention, and the engagement of males aged 30–49 years increased by 27% (from 32% to 44%).

Lessons learned

Tailoring HIV services to meet men's needs

While the intervention made thousands of contacts with men through activities that culminated in agreements to go to the clinic for HIV testing, men consistently asked for HCT to be offered at community venues. Additionally, continued low uptake of HCT observed in the clinics resulted in the team partnering with local clinics to provide community-based HCT at outreach events. The introduction of "fun days" and the "men's events" with community testing resulted in both higher engagement in Tsima activities and HIV testing uptake during this period. Outreach events providing community-based HCT were far more effective at reaching men than clinic-based testing. Monitoring data from seven days in which community-based HCT events were held resulted in 221 men taking up HCT. The HDSS-Clinic Link data showed that a total of 308 men presented for clinic-based testing over the course of eight months (December 2017 to July 2018) during which period these events were held. These data suggest that men in this area wanted to participate in HCT and were willing to do so when services were offered in venues outside the clinic.

The challenges in recruiting men identified in community feedback sessions included the high levels of migration in the study area, primarily for employment purposes, as well as recruitment of participants during work hours. Another barrier was the reported discomfort of older men discussing sexuality and sexual behaviours in front of younger men and women. The study team tried to create additional activities specifically for men in this age range, including a village-wide marathon, soccer tournaments and workshops for men aged 30–49 years only, and holding activities in venues generally frequented by men in this age range.

Strong feedback mechanisms are integral to understanding the community context

The Agincourt HDSS has operated a dedicated public engagement office since 1994 to connect the community and local government with the unit's research initiatives. This office is responsible for community engagement and liaises closely with civic and traditional village leadership, as well as local service providers (Twine et al., 2016). The public engagement office was critical in informing the Tsima intervention design and building the relationships that were needed to create community engagement and feedback structures.

Community feedback mechanisms became increasingly important throughout implementation to ensure community involvement in the Tsima programme. Ongoing engagement of leadership and stakeholders was built into the study's conceptual framework (Lippman et al., 2017) and intervention design, which included multiple avenues for community stakeholder engagement, also conducted in other studies in the Agincourt HDSS (Twine et al., 2016). These included sharing preliminary findings with community mobilisers, stakeholders and community leaders with the aim of increasing awareness of the programme's progress, to identify issues with implementation and to refine the intervention. Meetings were held with traditional leaders, local government and community development forums made up of religious, political and other leaders to discuss issues surrounding male engagement in the intervention and men's uptake of HCT.

In addition, stakeholder meetings were held in each village to discuss increasing attendance of men aged between 30 and 49 years at intervention activities, and included home-based care groups, pastors and traditional healers. In response to these meetings, the project adjusted recruiting strategies so that mobilisers would recruit participants on weekends and after work hours in spaces more commonly frequented by men, such as car washes, shebeens (informal licensed drinking places), pool halls and churches. The project introduced a small incentive structure for participants who encouraged men in the age range of 30–49 years to join Tsima activities, including small vouchers for airtime, mugs, water bottles and caps. The project also began to send SMS reminders to men who had stated their willingness to participate and provided a phone number to receive reminders of the date and time of Tsima activities. In addition, a male-only support group was formed in partnership with an HIV-positive male community leader and the Agincourt HDSS community advisory board in response to feedback from intervention participants and community mobilisers alike.

Challenges monitoring reach in a large cluster-randomised trial

It is important to acknowledge the operational challenges in collecting accurate programmatic monitoring data in real time, particularly in a study setting such as ours with high levels of migration, the potential for contamination between intervention and non-intervention villages and wanting to monitor reach without a means of collecting unique identifiers for every member of the community. We expect that there were overestimates in the monitoring data due to estimating numbers of participants at events, double-counting participants who engaged in multiple activities and the difficulty in identifying participants from outside the intervention communities. In planning future interventions trying to assess reach at the community level, it may be beneficial to implement a short cross-sectional mid-point survey of community members to assess knowledge of the programme and level of engagement. This would allow for triangulation between self-reported engagement and monitoring data while the study is ongoing, and for making programmatic adjustments accordingly.

Conclusion

Ongoing and routine analysis of monitoring data allowed the team to be responsive to the community and address gaps in our intervention to reach men in a rural South African setting. Our study used programmatic monitoring data to be agile in the implementation of the intervention, and to respond to challenges and changes in the programme and target approaches. An iterative process of sharing these data to generate community feedback on intervention approaches was critical to the success of our programme and to engaging men in the intervention. However, engagement of men across the HIV care cascade continues to lag behind their female counterparts, particularly in HIV counselling and testing (Human Sciences Research Council, 2018). While community mobilisation interventions to target the structural and social barriers impeding men's uptake of services are feasible in this setting, monitoring data and community collaboration revealed that structural changes in service provision were also required to ensure that the target population was reached.

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