Disseminating results: community response and input on Kisumu breastfeeding study

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Abstract

Communicating findings to study participants and their communities is a practice that often gets overlooked or receives low prioritization by research investigators, but is crucially important. The purpose of this study was to describe the process and community response to the dissemination of results from the Kisumu Breastfeeding Study (KiBS), specifically in terms of (1) community research knowledge and expectations and (2) impressions of result dissemination efforts. A qualitative evaluation was completed for 10 result dissemination events using focus group discussions (FGDs) ($n=10$; total number of participants=98). An inductive, thematic qualitative data analysis was completed in NVivo 8.0. Overall, FGD participants expressed great appreciation for being given information on the study results. Participants had a good understanding of what research entails and had specific expectations for the process, including that the community receive information about the study, not only at the end of the study but also at regular intervals throughout the study's conduct. They also wanted to receive the communications from a credible source, the principal investigator preferably. Other expectations centered on better community and research interactions and development and the use of community collaborators. Impressions of KiBS result dissemination events were positive, but suggestions for the future included having the event in a larger area, inviting more people, having more written materials, and putting the information in an entertaining format such as skits or movies. Sharing study findings with local community members is essential and beneficial to the researchers' long-term engagement with communities and importantly, the successful implementation of study findings when appropriate. It is imperative that dissemination of results be embedded as an integral part of research project planning and development.

Keywords

Study results, Dissemination, Community feedback, KiBS, FGDs, Clinical trials

INTRODUCTION

Dissemination of study results, the focus of this article, is only one component of community engagement process. Community engagement is held by the US

Implications

Policy: It is imperative that the dissemination of results be an integral part of research project planning and development, with explicit resource allocation and oversight by the institutional review boards (IRBs).

Research: Persuade researchers to prioritize returning study findings to the communities they study and enhance interaction and collaboration with the community members and their leaders.

Practice: Thoughtful, creative and community-informed presentation of study findings enable such populations to access relevant health information in order to make informed health decisions about seeking care and support, limiting avoidable health risks, and promoting their own health.

Centers for Disease Control and Prevention (CDC) as the cornerstone of public health and has identified principles for helping identification of problems, formulation of research agendas, and influence on the planning, design, implementation, or dissemination of health research [7]. When researchers fail to include participants and communities they work with in the dissemination of study results, there is high potential for undermining both the research findings and crucial community relationships [1, 20, 23, 25, 32]. Dissemination of the results of health research has been undertaken traditionally through presentations at scientific conferences, professional association meetings, and publications in peer-reviewed, highly technical literature. Historically, research findings have less often been published in the popular press [12]; however, the emergence of “pop science” (i.e., interpretation of science for general audiences) through radio talk shows, television programming, and print media, the internet and social media may offer new opportunities as well as challenges [5, 6]. Health researchers have been encouraged to identify and implement creative strategies for disseminating study results to lay persons, study participants, and the scientific community with the aim of improving awareness and utilization of

health services, fostering adoption of health-promoting behaviors, improving community knowledge of its own health problems, increasing referral to clinical trials, and helping the public acquire and execute health-related decision-making power [1, 12, 21]. In climates of potential distrust of research, open communication may help improve attitudes toward research and enhance interactions between researchers and communities studied [10].

Ethical and humanistic imperatives also underscore the importance of including participants, their communities, and the general public in research dissemination efforts [4, 22, 26, 27, 29]. The dissemination of study results is increasingly becoming an ethical requirement, specifically in that community involvement should be considered throughout the entire cycle of a study [24, 13, 11]. During the implementation and recruitment phases of research, potential participants and the communities they represent must be informed about the study objectives, procedures, risks, and benefits in a complete, clear, and easy-to-understand manner. What constitutes effective dissemination of the study results (in terms of impact and return on investment), however, is less clear. Lack of agreement exists within and between different funding agencies and research organizations as to what is considered appropriate result dissemination [33]. Moreover, issues of the communication method as well as the timeliness and the scope of dissemination efforts have been identified as additional challenges [8]. Thus, it stands to reason that research may benefit from clearer guidance on how to plan and perform dissemination activities directed to the local community where studies are conducted.

A UK survey of publicly funded research found that while researchers were unsurprisingly focused on academic publication, a wide range of dissemination activities were being performed, often in an ad hoc fashion [33]. A systematic review of community-based participatory research (CBPR), which emphasizes the dissemination of research as a key element, showed that between January 2005 and December 2009, dissemination beyond scientific journals was reported in 48 % of publications ($n=101$) [8]. Among the corresponding authors for these same articles, 98 % reported in a web-based survey that they were disseminating results to community participants, and 84 % reported they were disseminating results to the general public [8].

Descriptions of strategies used to disseminate aggregate study results to communities are limited. We obtained community stakeholder feedback on the result dissemination process for the Kisumu Breastfeeding Study (KiBS), an open-label phase II one-arm trial to assess the safety and efficacy of zidovudine (AZT), lamivudine (3TC), and either nevirapine (NVP) or nelfinavir (NFV) for the prevention of mother-to-child transmission of HIV [31]. The study was conducted from 2003–2009 in Kisumu, western Kenya. Research is not new to the Kisumu community. The Kenya Medical Research Institute (KEMRI) has a field station located about 12 km from the Kisumu city central business district. CDC, the Royal Dutch Tropical Institute, the UK Wellcome Trust Laboratories, and the US Walter Reed Army Institute of Research

have been collaborating with KEMRI and at this particular field station since the 1970s. Efforts have primarily focused on malaria and schistosomiasis studies in the peri-urban and rural areas of Kisumu; however, more recently, HIV studies and clinical trials have been conducted in the city itself, including a large voluntary medical male circumcision study [2].

Upon conclusion of the KiBS in 2009, efforts were initiated to inform the local community of the study findings. The purpose of this qualitative study is to describe the community response to the dissemination of study results, specifically in terms of (1) community research knowledge and expectations and (2) impressions of result dissemination efforts.

METHODS

Study area

This qualitative study involving focus group discussion (FGDs) was undertaken in Kisumu, Kenya between April and June 2009. Kisumu has a population of approximately 500,000 residents whose ethnicity is primarily Luo [16].

Ethical statement

Ethical approval was obtained from KEMRI and reviewed and approved by the CDC. Prior to ethical review submission, the protocol was shared with the local KEMRI/CDC Community Advisory Board (CAB) for its input. No data collection was initiated without verbal consent, and all persons were invited to ask questions before making a decision to participate. A written copy of the verbal consent was offered to all potential participants. Before commencing a FGD, the moderator reread the script used to deliver the verbal consent to the group, asked that participants confirm their consent to the interview and audio recording, and answered any further questions on the discussion's purpose, process, and use. During the discussion, participants received light refreshments and, following conclusion of the FGD, were provided a bar of soap as a token of appreciation for their time and participation.

Research result dissemination procedure

Dissemination events took place in a variety of venues: social, lecture, and educational institution halls, and churches. Study staff consulted with the KEMRI/CDC CAB members, incorporated their views to identify, mobilize, and issue approximately 50 invitation letters along with a schedule and location for 10 dissemination events to purposively select representatives from occupational associations, social groups, religious groups, and other community members who had direct interest, involvement, or investment in HIV prevention of mother-to-child transmission. The specific age range criteria target was meant to (1) find a systematic and fair representation of the Kisumu community with the goal of obtaining a range of views and (2) enhance communication and interaction within the groups during the dissemination sessions.

All dissemination event attendees received a brochure and verbal summary of the KiBS key findings, and watched a video featuring selected study participants who had volunteered to describe, in their own words, their participation experience, including HIV knowledge gained. Attendees were informed that the event was limited to invited persons and were asked to provide a copy of their invitation letter at the event registration desk for identification, and to enhance logistical management of the event. We had several instances where invited persons invited other friends to the event, but given venue capacity, it was necessary to restrict FGD participation to ensure conduct management of the interview.

At registration, each participant received information about a post-dissemination FGD to obtain feedback on the information received and the manner in which results were delivered. Attendees were informed that to efficiently facilitate discussions, FGDs would be limited to a maximum of 10 participants; however, in instances where participation interest was high, study staff allowed a maximum of 12 participants. All persons interested in taking part in a FGD were screened for eligibility which included being at least 18 years of age, a resident of Kisumu or one of its neighboring villages, agreeing to being audio recorded, and providing verbal informed consent. Persons who had attended at least one prior KiBS dissemination event were not eligible for FGD participation given that we were interested in examining initial reactions to the information immediately following its delivery. Persons who declined participation were thanked for their time. Reasons for declining participation were not collected.

Persons meeting the criteria were instructed to proceed to a private, predesignated location within the event venue to provide verbal informed consent and demographic information on sex, age, education, ethnicity, employment status, monthly income, home ownership, marital status, and religion. Each person was assigned a unique participant ID code; no names or other personal identifying information were collected.

The primary language for conducting each FGD was established by participant consensus given that English, Dholuo, or Kiswahili are the main languages used locally. The moderator and notetakers, performing all the data collection for this study, were from the local area and fluent in all three languages. Where necessary, participants could express ideas in a language different from the agreed upon language and study staff or participants would translate to nonfluent group members.

Domains of inquiry

A semi-structured interview guide was used to facilitate FGDs. Open-ended questions focused on two broad domains of inquiry: (1) community research knowledge and expectations and (2) impressions of result dissemination efforts. Table 1 provides the questions asked for each of these domains of inquiry.

Data analysis

All FGDs were transcribed for computer-assisted qualitative data analysis. The FGDs conducted in Dholuo or Kiswahili were first transcribed verbatim then translated using meaning-based English translation methods. An inductive, thematic qualitative data analysis was completed in Nvivo 8.0, a QSR International software, with an emphasis on identifying commonly emerging patterns under which most of the data could be described [15, 3]. After thoroughly reviewing FGD transcripts, a detailed codebook was developed. The codebook contained for each code a mnemonic code label, a brief definition, a full definition, and information on when to use and not to use a code. An iterative coding approach was then undertaken. Iterative coding involved a cyclical process (i.e., coding rounds) whereby the transcript for the first FGD completed was independently undertaken by two analysts (KO and EML) and followed by a comparison of code application and resolution of coding differences. The process was repeated for each subsequent transcript. With each new round of coding, the analysts updated the codebook to fit the data and reviewed previously coded transcripts to ensure that coding application was consistent within and across transcripts and that all relevant text had been coded. Inter-coder agreement using this constant comparison approach was only assessed qualitatively. In the rare instances where consensus could not be reached, a conservative approach was taken. The text was flagged with a special code and assignment of an analysis code delayed until all coding was completed and a final decision could be agreed upon. Recurrent and unique concepts were identified and categorized into broader themes, and relationships between themes identified. Due to logistic required in bringing back some or all of the FGD participants to verify findings, we relied on the KEMRI/CDC CAB to ensure that our interpretations and explanations of themes were appropriate. Simple frequency counts were used to summarize participant demographic data.

RESULTS

FGD characteristics

A total of 98 (42 male and 56 female) participants took part in the 10 dissemination event FGDs. The mean focus group size was 10 (range of 6–12 participants) and lasted about 45 min. As shown in Table 2, representatives from a variety of community interest groups took part in the FGDs. Thirty-two percent of FGD participants were between the ages of 18 and 25 years; 11 % reported being ≥ 45 years. Many (64 %) had completed secondary school education or higher, approximately 14 % reported earnings of $\geq 10,000$ Kenya shillings [123 USD] a month, 41.8 % reported owning homes, 68.4 % reported living in an urban area, and 92.9 % reported being either Catholics or Protestants.

Table 1 | Questions included in the semi-structured interview guide for FGDs conducted in Kisumu, April to June, 2009

Community research knowledge and expectations
What does research mean to you?
What research has been conducted in Kisumu?
Who has conducted this research?
Tell what you know about who funded the research.
Tell me about your experiences in taking part in research.
What do you think that research groups need to know about how the community views these research studies?
When it comes to sharing results of a research study, what do you think is the best way to do this?
Who should provide the results to the community? Why?
When researchers receive community feedback, what should they do with this information?
Other than the researchers, who should be made aware of community feedback?
Impressions of result dissemination efforts
<i>a. Perception of recent activity</i>
Describe to me what you thought of today's event.
What do you think was the purpose of this event?
What do you think that the general community reaction was to the information presented?
What do you think people will remember most about the activity?
What do you think people will share with others that were not present at the event?
Why do you think that they will focus on this?
What would have made the event more useful to the community?
How relevant are these findings to your own life?
What did you want to hear but was not talked about?
Based on the findings presented, what actions do you think need to be taken?
Who should be involved in initiating these actions?
<i>b. Ideas about future activities</i>
What comes to mind when you hear people talk about KEMRI/CDC?
What role do you think should play in the community?
Thinking about research, what is of interest to the community?
What should be done to engage the community in research?
Who should researchers work with to make sure that they have feedback from the community?
When researchers interact with the community, what approach should be used?
What language should be used?
What media should be used (probe for TV, radio, and newspapers) and why?
What would help create good interaction between researchers and the community?
Is there anything else that about KEMRI/CDC's engagement with the community in Kisumu that we have not talked about that is important for us to know?

Community research knowledge and expectations

Participants indicated that research involved data collection and knowledge seeking, a test to determine the right or wrong answer or approach, assess the efficacy or effectiveness of something, prove a theory, or assess a new product, and/or as a “fact-finding mission” specifically oriented toward discovering a solution to or truth about a particular problem. Most responses were oriented toward research addressing community health or development issues as demonstrated by the following quotes from men 18–25 years old.

Research is a certain problem that emerge, that people want to know more about. People ... say this thing has emerged let us try to find out where it comes from, and try to find a solution

Some participants expressed their expectations regarding the research process, the actors and perceived outcomes.

“The communities sometimes view these research activities as just beneficial to the researcher. Therefore, the researchers should design their studies based on what affects that particular community upon which they conduct the research. Someone cannot just come from outside to start conducting research on something that we don't have interest in at all. So they should know what is of interest to the community and what actually affects them that needs intervention and through this, they can get positive response but when you just come with an idea that they have never heard and issues that are not even effecting them then they will see as if you are the one who wants to benefit and not them” [men and women 35 years and older]

Expectation: respect for communities

Across FGDs, participants stressed the importance of having researchers “give back” study findings to the

Table 2 | Summary of the FGDs conducted in Kisumu, April to June, 2009

10 dissemination event FGDs	Male; <i>n</i> (%), 42 (42.9)	Female; <i>n</i> (%), 56 (57.1)	Total participants; <i>n</i> (%), 98 (100)
Group type			
Provincial administration (chiefs), 35 years and older	8 (19)	1 (18)	9 (9.2)
Commercial sex workers, 26–34 years of age	0	10 (17.9)	10 (10.2)
Boda-boda (bicycle taxi drivers), 18–25 years of age	9 (21.4)	0	9 (9.2)
Boda-boda (bicycle taxi riders), 26–34 years of age	10 (24)	0	10 (10.2)
General community members/faith-based organizations (FBOs), 35 years and older	3 (7.1)	7 (13)	10 (10.2)
Single/not married mothers, 18–25 years of age	0	10 (17.9)	10 (10.2)
Community-based organizations (CBOs)/persons living with HIV/AIDS (PLWHAs), 26–34 years of age	5 (11.9)	5 (8.9)	10 (10.2)
Community health workers (CHWs)/traditional birth attendants (TBAs), 35 years and older	0	12 (21.4)	12 (12.2)
Medical students, 18–25 years of age	6 (14.3)	6 (10.70)	12 (12.2)
Health facility administrators/healthcare providers, 35 years and older	1 (2.4)	5 (8.9)	6 (6.1)
Age groups			
18–25 years of age (<i>n</i> =3)	15 (35.7)	16 (28.6)	31 (31.6)
26–34 years of age (<i>n</i> =3)	15 (35.7)	15 (26.8)	30 (30.6)
35 years and older (<i>n</i> =4)	12 (28.6)	25 (44.6)	37 (37.8)

local community members and its leaders as well as provide regular updates on a study's progress during its conduct. The act of “giving back” was viewed as a sign that the community was valued and respected. In a FGD of 18- to 25-year olds, one participant said:

On that issue of feedback, the community should be given the data. At many times you hear that many people go to collect data and the community wait[s] for the information to know what they have got and what are the solutions to the problems but most of the time you find that people carry out a research but they don't dispatch the information to the people. It is like you are appreciating what is in the community by giving them the information, when you give them feedback it is like appreciating them.

Expectation: improved community and researcher interaction

Across FGDs, participants talked about the importance of enhancing researcher and community interactions. They explained that to build a relationship, contact needed to extend beyond a research setting. They recommended coupling dissemination activities with the sponsoring of sports tournaments, local school events, hospital activities, and other community events as one potential strategy for bringing research scientists and community members together. As demonstrated by the quote below, participants also indicated that researchers needed to be willing to take a socially responsible approach, and be aware of needs and real world conditions of the people and communities they seek to involve in research:

“There is something known as corporate social responsibility which I think they should now move beyond the research and look at a human being the way they are with situations affecting them like food security, health, education, etcetera researchers should move [sic] in now in development as a whole.” [FGD men and women 35 years of age or older]

FGD participants recommended development of research centers with information desks that would permit access to information about studies taking place in the community to all community members. In addition, within some FGDs, participants requested that such research centers have days open in which community members could visit a center to engage in an information exchange dialog with researchers.

Expectation: principal investigator face time

In nearly all FGDs, it was indicated that the primary responsibility of the lead scientist and research team was to provide updates on study progress and disseminate research findings. Strong opposition was expressed for anyone other than the research team having the responsibility for communicating the findings of a study. It was viewed that avoiding this responsibility had the potential for creating unintended negative effects, including the community discounting or misunderstanding the results.

“I think the principal investigator should be the right person to give the results back to the community because that was his sole idea and if he does so he will allay anxiety from the community and they will accept the results. People will trust

his words...The researcher is actually the most recommended in giving the results, you know if you give a different person the results to disseminate, the community will lose trust in you because they will feel like their confidentiality has been breached hence feel cheated.” [FGD men and women 35 years of age and above]

Expectations: develop and use community collaborations

In some FGDs, participants indicated that researchers needed to treat the community as an active partner. They pointed out that because the lead investigator and the research team could not be everywhere, it was important to maximize the assistance of various community interest groups, partners, and other existing community platforms to reach the majority of the community. In a FGD of 26- to 34-year olds, a suggestion was made to have researchers train members of the community to communicate research-related information to the broader community. Recommended forums and platforms included faith-based organizations, religious leaders, community health workers, political leaders, community-based organizations, artists, media (print, audio, and radio), and study participants. These participants clarified that offering such training helped strengthen community participation while optimizing the use of existing and trusted sources within the community structure (e.g., provincial authorities, chiefs, village elders, community health workers, teachers) with information sharing. They indicated that relieve the principle investigators or their designees from the responsibility of being the primary sources of information. A provincial administrator participating in an FGD said:

“The community members have a lot of faith on the provincial administration and like the results we have been given here today is the kind where perception on the first hearing should be very positive. If you use the chief’s office because they trust us and because most of the things we tell them are activities, they feel that the government has heavily invested in and they cannot be cheated. Therefore, the chief cannot be left out... I think you can take one or two of your participants and put them on salaried contract to disseminate these findings to the community so that they can go out there and narrate their experience in the study.” [FGD men and women 35 years of age and above]

In one FGD of men and women 35 years and older, a participant stated that “... the community should be involved in all stages of research right from initiation so that they can own it.” Many FDG participants also talked about researchers needing to share both positive and negative findings beyond their academic or scientific peers to relevant local and regional institutions and government agencies. They stressed the

critical role of local government agencies, nongovernmental organizations, and media in developing policies and initiating actions based on research findings.

Results dissemination event impressions

Across FGDs, participants indicated that result dissemination events should be preferably held in a convenient and easily accessible location for the target audiences. Moreover, the use of in-person or video-recorded participant testimonials, which was strongly encouraged, required holding the event in a setting that offered privacy. Similarly, discussion of sensitive topics, such as HIV/AIDS, was believed to require private venues. However, within some of the FGDs, participants stated that results dissemination should be conducted in large open areas, and many people mobilized to attend. Suggestions were made to incorporate drama, skits, and other “edutainment” to help establish and maintain audience interest.

“The place was enclosed and we would have suggested that it be taken to an open place....Invite more people...write more invitation letters and opt for larger spaces...include entertainments... use skits, songs, drama.” [FGD women 18–25 years of age]

“What happened today was very good. Second to that I feel that next time we are meeting, we should be in an open place and have those who have had positive and negative experience from this thing. The community likes entertainment. They can be entertained in an open air somewhere where they see for themselves.” [FGD men 26–34 years of age]

Appropriate handouts and discussion time

FGD participants recommended that educational and communication materials such as brochures, handouts, and booklets be made available at dissemination events. In addition, the need to allocate sufficient time for discussion around the results being disseminated was highlighted. Participants emphasized the importance of using language-sensitive and appropriate-to-the-target audience activities.

The presentation given was very good and relevant [but] the time allocated for it was not enough, I would therefore suggest that it be given more time and handouts...The presentation was short lived in memory and required handouts at the end. [FGD men and women 35–45 years of age]

DISCUSSION

Our findings suggest that dissemination should not be an end-of-study activity, but rather part of a larger and ongoing community engagement process. Understanding knowledge of and attitudes toward research

is critical given that this information can indirectly influence both demand for and consumption of evidence-based health findings, including adoption of health-promoting behaviors [9, 18, 19]. Hence, it is useful for researchers to embrace the notion that communities form the entire *body-physique* of research and that passive community involvement from initiation to completion may be counterproductive, especially if major health behavior changes are needed to change the course of a disease, as is the case with HIV. An important lesson learned was the importance of being able to situate results within a dissemination and/or implementation framework as opposed to merely describing dissemination at the end of a research study. Dissemination and implementation (D and I) frameworks described by Tabak et al. [30] help guide the direction and scope of activities. Inclusion of one of these frameworks is essential for advancing D and I research and providing empirical evidence regarding the use of a particular framework.

Our FGD results suggested that members of the community where the Kisumu Breastfeeding Study was performed have a good understanding of what research entails and have specific expectations of the process. The participants in our study may have been more research savvy than general community members. Their involvement in community interest groups may have increased their exposure to research. In addition, a long history of malaria research in the area may have influenced general community knowledge about research, and our sample may not significantly differ from others in the community. To our knowledge, no studies in this setting have compared research understandings by more research savvy persons to those who are research naïve. Because we did not collect individual information on prior research participation and given that not all persons may have felt comfortable talking about whether or not they had prior research participation experience, we are unable to examine our data at this level. Such a comparison may be warranted in future studies.

Expectations were strong that the community should be respected and that information should be provided to the community not just at the end of the study, but at regular intervals throughout the study's conduct. As a practice rather than merely an ideal, respect for community should involve ongoing dialog, with status reports including interim findings, being provided when available. Proper and open channels of communication were highlighted as critical for helping participants and lay persons understand and embrace research information as well as demystifying research and activities that go on at research facilities. Several settings for dissemination activities were suggested, such as sports facilities, hospitals, and schools. Focus group participants recommended that researchers consult with the recognized gatekeepers and organizations in the target community to discuss mutually acceptable forums for interaction.

Our study also found that the community expects results to be reported by a credible source, preferably the principal investigator and that community collaborators be involved in the dissemination process. It

was also suggested that community collaborators be trained to assist researchers with study information sharing. Underlying this recommendation was an expectation that researchers should actively engage other relevant local agencies to ensure that study results are translated into tangible community health-promoting actions.

Overall impressions of KiBS result dissemination events were positive, but the community also had valuable suggestions for future such events. These included having the event in a larger area, inviting more people, scheduling more time, having more written materials, and putting the information in an entertainment format such as skits or movies. It should be the responsibility of researchers to present their findings in a format that can be accessed by potential users. Soliciting and using suggestions such as those provided above may help researchers fulfill broader dissemination responsibilities [14, 28].

Many persons at risk of poor health outcomes are members of underserved and vulnerable populations who also have limited access to health information. As suggested by Kreps [17], there is a need for new strategies and policies in disseminating research findings to enable such populations to access relevant health information in order to make informed health decisions about seeking care and support, limiting avoidable health risks, and promoting their own health. Thoughtful and community-informed presentation of study findings can help deflect criticism that researchers do not share their findings, deliver them too scientifically, or present them in the wrong language. Key findings from this evaluation have since been adopted by the KEMRI/CDC center for global health research in Kisumu into a broader community engagement approach. All projects take into account the findings presented here to develop their strategies for sharing findings with community members and stakeholders as well as for planning new research or implementing intervention programs. Community awareness and involvement are included as critical elements in an all-new research study design, and monitored and evaluate on an ongoing basis using a KEMRI/CDC CAB, stakeholder, and participant feedback system. The process is facilitated through a community liaison team and the study principal investigator(s).

LIMITATIONS

While our study design was informed by our familiarity with CBPR and community engagement principles developed by the CDC, finding as previously mentioned are not presented in light of any of the dissemination and implementation models proposed by Tabak et al. [30]. Findings of this study are not generalizable beyond the communities studied. This was an evaluation study that used a purposive sample of a small set of community stakeholders in an urban setting in western Kenya, which may not reflect the interests of leaders and other key persons in

neighboring rural areas or other regions. Moreover, because information concerning reasons for declining participation was not collected, a self-selection bias may be present. Lastly, a single FGD was held per event, resulting in an inability to systematically compare FGDs by age groups or gender. It is possible that a wider range of perspectives could have been collected had a larger number of FGDs been conducted though we mitigated this by having discussions with a variety of interest groups from the Kisumu community comprising distinct age categories. While our findings lack generalizability, the strength of our study is that it provides a rich and informative account of community perspectives on research result dissemination and adds to the currently sparse but important literature on this topic. Moreover, our findings may not be atypical in that in other settings, the development and implementation of strategies for increasing community awareness about the initiation, conduct, and completion of a research study, including access to study results may likewise be appreciated and viewed as respectful. The broader implication of our findings as opposed to those nuances that may be culturally and locality driven along with the process taken for obtaining and using community input should be considered. To foster a collaborative environment between scientists and communities, that enhances public health research directions and outcomes, and actions need to be taken to establish and sustain accountability and open channels of effective two-way communication.

CONCLUSIONS

Our results demonstrate the need for research scientists to prioritize returning study findings to the communities they study. Our respondents called for enhanced interaction, and a collaborative approach to research work in order to build stable and sustainable platforms for engagements between researchers and communities. In addition, scientific researchers need to revise their view of participants from a singular one in which the only purpose is to test the study hypothesis to a more holistic one in which it is understood that they are dealing with meeting multiple objectives/responsibilities, with testing the study hypothesis being just one. In resource-constrained settings, collaborating research institutions from resource-rich countries, which may be one of the key employers in a community, may have additional demands and community responsibilities beyond those traditionally expected of a research entity. Both researchers and the communities in which they work mutually benefit from returning study results to the community. It is imperative that dissemination of results be an integral part of research project planning and development, with explicit resource allocation and oversight by the institutional review boards (IRBs). Each interest group with a stake

in the research is unique, and, as such, there is a need to adopt a multifaceted dissemination approach which is sensitive to each target group.

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