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Contributions of Community Advisory Board and Experience of Study Participants in TB/MDR-TB Clinical Trial Management in Addis Ababa, Ethiopia: A Qualitative Study

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ABSTRACT

Community Advisory Boards (CABs), as a form of community engagement, provide an important mechanism to ensure that research aligns with community needs and priorities by representing broader community interests and guiding research accordingly. Tuberculosis (TB) and multidrug-resistant tuberculosis (MDR-TB) remain significant public health concerns, particularly due to resistance to key first-line anti-TB medications, and individuals affected by these conditions often face stigma and discrimination that hinder timely diagnosis and treatment adherence. Addressing these challenges requires community-driven strategies and improved access to health services, with CABs serving a central role in bridging gaps between researchers, healthcare providers, and affected communities. This study explored the contributions of CAB members in supporting TB/MDR-TB clinical trials, the challenges experienced by trial participants, and the strategies employed to address these challenges. Using an exploratory qualitative design, in-depth interviews were conducted with 17 stakeholders involved in TB/MDR-TB clinical trials, and data were analyzed using deductive thematic analysis. The findings highlight persistent stigma and discrimination, limited understanding of the role and functions of CABs, inconsistent budget allocation, reduced participation, and diminished CAB influence throughout the research process. The study underscores the essential role of CABs in enhancing community engagement in TB/MDR-TB clinical trials and emphasizes the need for greater awareness, advocacy, and institutional support to strengthen their contributions. Adequate and sustained funding, along with systematic planning and implementation, is critical for reinforcing CAB roles and promoting more ethical, inclusive, and responsive public health research practices in Ethiopia and other low- and middle-income countries.

1 | Introduction

1.1 | Background

Community engagement is defined as a process of inclusive participation that fosters mutual respect of values, strategies, actions, and builds authentic partnerships with individuals or groups identified by geographic proximity, shared interests, or similar social circumstances to address issues affecting their

well-being [1]. One widely endorsed mechanism for operationalizing community engagement in health and social research is the formation of CABs. Community engagement in research is increasingly recognized as a critical component for ensuring that health research is ethical, inclusive, and responsive to the needs of the populations it aims to serve [2].

Addressing these challenges effectively requires innovative approaches, such as the establishment of CAB members that

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actively engage communities in the research process [3]. Community engagement initiatives play a pivotal role in ensuring that research efforts are culturally relevant and ultimately responsive to community needs [4].

CAB members are typically composed of non-scientist community members who offer firsthand knowledge, unique perspectives, and deep-rooted involvement in their respective communities [5]. Through participatory processes, CAB members play a pivotal role in ensuring that *research reflects and responds to local priorities, values, and needs. They foster bi-directional* communication between researchers and communities, facilitate participant recruitment, support research implementation, promote the dissemination of results, and enhance community trust in the research process [6, 7]. Endorsed by ethicists, funders, and international guidelines such as the 2016 Council for International Organization for Medical Sciences (CIOMS) guidelines community engagement, and by extension CAB members, are now considered essential in global health research, particularly in clinical trials conducted in Sub-Saharan Africa countries [8]. Despite the growing recognition of CABs in high-income countries, their implementation and impact in low- and middle-income countries (LMICs), including Ethiopia, remain under documented [9].

In these contexts, CABs have the potential to improve the cultural relevance of research, address community mistrust, and mitigate ethical concerns around exploitation and inequity. However, their effective functioning is often challenged by limited resources, lack of clear operational guidelines, and inadequate researcher capacity [10, 11].

In remote or resource-constrained settings, efforts to establish CABs frequently fall short of achieving true community partnership, thereby restricting their potential contribution to ethical and impactful research [9]. Individuals diagnosed with MDR-TB often face stigma and social exclusion, which can hinder their treatment adherence and overall well-being [12]. In such contexts, CABs play a critical role in promoting awareness, facilitating communication, identifying and addressing participant concerns, and supporting follow-up of participants lost to care [9]. Moreover, they contribute to the dissemination of trial findings within the community in a culturally appropriate manner [4, 13].

The TB/MDR-TB clinical trial study sites were established at the Armauer Hansen Research Institute (AHRI) and St. Peter Specialized Hospital during the STREAM II multi-center clinical trial on TB MDR-TB treatment, which ran from 2016 to 2022, in Addis Ababa, Ethiopia. CABs were formed for the first time at these sites to support the research process. The CABs served as a vital bridge between researchers, trial participants, and the broader community, ensuring that community perspectives were integrated throughout the trial lifecycle. Each CAB was allocated a dedicated budget and tasked with promoting community engagement. Their responsibilities included organizing training sessions, holding periodic meetings, facilitating focus group discussions, conducting site visits, and participating in conference calls. Through these activities, the CABs worked to ensure that research activities reflected community interests, values, and concerns, thereby enhancing the relevance and uptake of the trial's outcomes.

Each trial site had 12 CAB members, established to reflect the diversity of the community and ensure gender balance. These

members selected from various community-based groups of health extension programs, offices for women, youth, and children, local lawyers' associations, religious institutions, MDR-TB survivors, media representatives, and community security agencies.

The community engagement strategy through the CABs at AHRI and St. Peter Hospital was approaching the entire community based on their catchment area to create awareness, trace study participants lost to follow up, distribute behavioural change communication materials, attend regular meetings, report their activities, share faced challenges and lessons learned during engaging the community. Despite their contributions, sustaining CABs involvement beyond the trial period has proven challenging due to funding constraints and structural limitations.

This study aims to explore the experiences, practices, and gaps associated with CABs members as a form of community engagement and challenges faced by trial participants and the strategies used to address them in the TB/MDR-TB clinical trial study in Addis Ababa, Ethiopia. By analyzing stakeholders' perspectives and operational practices, the study seeks to generate practical recommendations for strengthening the role of CAB members in promoting ethical, community-responsive, and sustainable research in Ethiopia and other similar LMIC settings.

2 | Methods

2.1 | Study Design

A qualitative phenomenological exploratory research design was employed to explore the lived experiences and subjective interpretations of trial study participants, CAB members, community liaison officers and researchers with the aim of eliciting rich and meaningful insights [14]. An exploratory approach, utilizing in-depth interviews, were used to examine the contributions of CAB members and the treatment experiences of the trial participants in the TB/MDR-TB clinical trial study. The study data was collected through in-depth interviews guided by a semi-structured interview tool. This approach is selected to encourage sharing of personal experiences and facilitate discussion of sensitive topics that require individual reflection and confidentiality [15]. The in-depth interview approach format created a safe and private environment, allowing participants to express themselves freely without the influence of group dynamics or external pressures [16].

2.2 | Study Area and Period

The study was conducted at AHRI, and St's Peter Specialized Hospital found in Addis Ababa, Ethiopia. The semi-structured interviews were conducted from June 01, 2023, to July 31, 2023.

2.3 | Study Population

The study population consisted of individuals with different roles and responsibilities in the TB/MDR-TB clinical trial study sites. The selected participants included those who took part in the trial as study participants, CAB members, researchers

(Investigator and research nurses), and community liaison officers.

2.4 | Sampling Strategy

Purposive sampling was used to gain deeper insight into the knowledge, attitudes, practices, and challenges of individuals who were directly involved in the TB/MDR-TB trial study. Including individuals from different roles, we aimed to capture a wide range of perspectives relevant to the study's objectives and ensure the study reflected a broad range of viewpoints. Community Liaison Officers at each site nominated CAB members for the study based on their experience, knowledge, and active participation in CAB members activities. Field nurses identified trial participants who are willing and able to share their treatment experiences and the challenges they encountered, while researchers (investigator and nurses) are selected by snowball sampling strategy based on their specific roles and responsibilities in the TB/MDR-TB clinical trial study.

A total of 17 individuals participated in the study: 9 men and 8 women. The study participants were considered differently in the sampling due to their specific role and responsibilities. Invitations to participate in the study was send directly to selected individuals using contact lists obtained from the two-trial study site record books. The recording books contains name and phone numbers of trial participants, CAB members, researchers, and community liaison officers. Participants were recruited from the two TB/MDR-TB clinical trial study sites and data collection was carried out based on the willingness of purposefully selected study participants.

2.5 | Data Collection Tool and Procedures

A semi-structured interview guide tool and questions were developed based on the study objectives. The interview questions were pre-tested for their feasibility and clarity. In-depth semi-structured interviews were conducted with selected study participants in local languages (Amharic language) in person for approximately 40-50 min and their responses recorded during the interview process for transcription and translation purpose. The interview guides were provided in the Supporting Information: Appendix II.

2.6 | Data Collection

The interview process was carried out by two experienced data collectors at a convenient date, time, and location, ensuring the confidentiality and safety of all study participants. All interviews were conducted in person, audio-recorded with participants' consent, transcribed verbatim, and subsequently translated into English for analysis. A total of seventeen (17) clinical trial study stakeholders were interviewed, comprising of 5 study participants, 4 Community Advisory Board members, 1 Investigator, 3 research nurse, and 4 Community Liaison Officers. The number of trial study participants, CAB members, and community liaison officers were determined based on data saturation. While a snowballing sampling method was employed to recruit investigators and study nurses considering

their professional experience and direct engagement with trial study participants.

2.7 | Data Management and Analysis

The collected study data was anonymized to ensure the confidentiality of respondents. Audio recordings were transcribed and translated into English before coding commenced. Coding began only after the transcription process has been completed. To ensure quality and consistency, each transcript is reviewed by an experienced independent verifier. The textual data was coded using both predefined themes and additional themes that emerged during analysis [17]. Key concepts and aggregated ideas were summarized in analytic memos and linked to their corresponding themes. Coding was conducted by a couple of authors manually, and the final themes were reviewed, discussed, and agreed upon by all co-authors.

2.8 | Ethical Considerations

This study received ethical approval from the Armauer Hansen Research Institute (AHRI)/All-African Tuberculosis, Leprosy Treatment, Rehabilitation, and Training Centre (ALERT) institutional review board (AHRI/ALERT IRB) under approval reference number PO/13/23, dated 17/02/2023. Written informed consent was obtained from all study participants prior to their participation in the study (ICF see Supporting Information: Appendix I). Within the data collection procedures, the applicant strictly maintained the participant's confidentiality by using the study code number as identification for each participant anonymity.

3 | Result

The findings from this study were categorized under five main themes, which consistently emerged across the interview and were highlighted by most participants. These themes are outlined below.

(1) Representativeness of CAB members in the process, (2) Challenges faced by study participants, (3) Sustaining and functioning of CAB activities, (4) Opportunities, and (5) The way forward.

3.1 | Theme 1: Representativeness of CAB Members in the Process

The study revealed that the CABs were designed to reflect the diversity of the community, ensuring broad and inclusive representation. According to the information gathered from the research staff, deliberate efforts were made to include individuals across gender, education, and socio-economic backgrounds. Under this theme, the representativeness of CAB members activities is explored. The responses from the research staffs are included. Most of the interviewees indicated that CAB members are composed of different community representatives that ensure diverse and inclusive participation in the process. In the establishment process of the CAB different skills, processes,

and approaches were used to have a representative of the large community member to serve as a bridge between the community and the researcher.

Yes, In the establishment of the CAB members we try to include male, female, literate, illiterate and community figure individuals who have involved in different work and represents the whole community; We try to include the representative of the whole community as a member of the CAB in terms of gender, work, economy, educational level and public level which was successful in the process of establishment.

(Investigator)

It may not represent 100%, but the presence of this CAB will represent some percent of the community, which plays a great role in the awareness of research and trials. Its presence will be better than the absence.

(Study nurse coordinator)

CAB members have different roles and contributions in the process of conducting a clinical trial study. Involving CAB members in the clinical trial process has its own contribution in addressing the trial objectives and to have a positive trial result timely. The following excerpts elaborate more

They disseminate TB/MDR TB information to different community groups; visit the medical ward of admitted TB/MDR TB patients, give advice to study participants to take the medication at the right dose and time, trace lost follow-up of study participants.

(Study field nurse)

CAB was used as a bridge between the researchers and the community, helping to clarify complex terms like "trial," "study," and "research," which might otherwise be misunderstood or create mistrust particularly in the context of TB and MDR-TB studies.

(Study nurse coordinator)

The Community Advisory Board (CAB) participation has a great role in the control and management of not only TB/MDR TB but also has a role in other communicable diseases too."

(Professional nurse)

Moreover, the participants reveal they're towards promoting sustained engagement and minimize attrition, they suggested that CAB members should receive appropriate monetary compensation in recognition of their time and contributions. Additionally, formal letters certifying their participation should be issued to enhance their prospects in future employment or academic opportunities. Meeting schedules should be thoughtfully arranged to accommodate members' availability, thereby fostering consistent attendance and meaningful participation.

3.2 | Theme 2: Challenges Faced by Study Participants

TB and MDR-TB are communicable diseases that can be transmitted through airborne droplets expelled when an infected person coughs or sneezes. Due to the contagious nature of the disease, participants in the trial study encountered various challenges. Many of them experienced stigma and social exclusion following their diagnosis with MDR-TB. This is largely attributed to the community's limited knowledge and understanding of TB/MDR-TB and its modes of transmission. Participants reported various psychosocial and economic challenges. The most common issues are stigma, discrimination, and social isolation, largely due to community misconceptions about TB/MDR-TB transmission. In this theme we identified, and addressed obstacles encountered by trial study participants during the study.

Wearing a mask was uncommon then, making me feel ashamed and pressured to limit my mobility, as people saw it as a sign of being cursed. I struggled between removing it to feel free and protecting myself. Economic hardship also made it difficult to afford a balanced diet, crucial for managing drug side effects and boosting immunity. Returning to work after 2 months of anti TB treatment, I faced stigma—colleagues were uneasy around me, and despite wearing a mask, I lacked confidence, unsure how to interact with others moving forward.

(Trial participant 1)

During the time, wearing masks was not a common practice in the community. However, following the COVID-19 pandemic, mask-wearing became more normalized, and public awareness about its role in preventing disease transmission significantly improved. This shift has also positively influenced TB-related practices, as individuals with TB or MDR-TB can now wear masks without drawing undue attention, helping reduce stigma while protecting others from infection. The experiences of trial participants with stigma during MDR-TB treatment varied significantly, reflecting the impact of community awareness and support networks. Several participants reported facing significant stigma, particularly due to a lack of understanding of TB and MDR-TB within their communities.

The whole family faced a stigma from the community; I was a student, and my friends left me alone; they visited me but not in a friendly way (stigmatized me). I feel so bad and sad too.

(Trial participant 2)

I experienced stigma abroad due to the disease, but upon returning home, I was warmly welcomed by CAB members and volunteers who offered support and encouragement. Their kindness and guidance provided me with hope, which, in many ways, felt more healing than the medication itself, helping me overcome the mistreatment I had faced.

(Trial participant 4)

Conversely, other participants did not encounter stigma or significant challenges during their treatment. These individuals often attributed their positive experiences to the availability of accurate information about TB and MDR-TB within their communities. In these settings, community members are more informed, largely through peer associations in which the participants were actively involved.

I did not face any challenge or stigma, rather I got support and advice from my family and friends. Many community members associate TB/MDR TB with HIV as the individual loses weight, looks weak, loses appetite. The community has mixed forms of groups, the one who have awareness, and the other one did not have awareness about TB/MDR TB.

(Trial Participant 5)

I didn't experience stigma from my community or friends. As my condition worsened, they ensured I received medical care. Since it was the onset of COVID-19, wearing a mask was common, reducing potential stigma. Without COVID-19, continuous mask use might have led to discrimination. I received TB/MDR-TB treatment at a hospital often associated with HIV patients, which could have caused misconceptions. However, when the community is informed, they do not discriminate. I also advised my friends to adopt healthier behaviors and avoid drug use to prevent diseases like TB/MDR-TB.

(Trial Participant 3)

These findings highlight a clear gap in what the community knows and how they feel about TB and MDR-TB. This highlights the critical importance of CAB members and other stakeholders intensifying their efforts to raise community awareness about TB/MDR-TB disease transmission and prevention. By improving understanding and involving the community more, we can help break down the stigma and discrimination that still surround these diseases.

3.3 | Theme 3: Sustaining and Functioning of CAB Activities

Although the TB/MDR-TB (STREAMII) trial was the first project to allocate a dedicated budget for establishing and sustaining Community Advisory Boards (CABs) to support trial sites and promote meaningful community involvement. CAB members faced significant challenges in continuing their roles after the trial concluded, primarily due to the absence of sustained funding. While the STREAM-II trial provided a dedicated CAB budget, sustaining CAB activities post-trial remains a major challenge due to the lack of ongoing funding. Members struggled to maintain community engagement efforts and faced resistance from certain community members. Under this theme, we explored difficulties in initiating and maintaining CAB functions at the trial study sites.

The main challenges we faced during this time included a lack of budget, which led us to utilize various programs and opportunities to share ideas with the community, often by integrating our efforts into the scheduled programs of other social-based organizations. Additionally, the COVID-19 pandemic disrupted physical meetings, and ensuring the timely dissemination of trial results to the wider community remained a significant challenge.

(CAB chairperson)

Some individuals did not accept the message we transmit about TB/MDR-TB; they consider themselves professional and neglect our advice and ideas raised during community mobilization activities.

(CAB member 3)

Beyond allocating a dedicated budget, it is essential to establish clear and rigorous criteria for the nomination and selection of CAB members to ensure they are well-equipped to actively fulfill their roles within the community and effectively engage with other stakeholders. The effectiveness of CABs largely depends on the selection criteria and composition of their members. While ensuring broad community representation is important, study findings suggest that the ability of members to actively engage in CAB activities is equally critical. Several participants emphasized the need for selecting members who are not only respected within the community but also capable of fulfilling their roles with energy, reliability, and commitment. It was observed that many current CAB members are older in age, which at times limits their capacity to actively participate in time-sensitive tasks such as community outreach, participant follow-up, and dissemination of information. As one CAB member noted:

Most of the CAB members are old in age because of this they could not act actively for the responsibilities they should perform. So, the CAB members should be active, loyal and have confidence to serve the large community with trust and inner motivation to bring expected results within the community in the scheduled time.

(CAB member 2)

This insight highlights the importance of incorporating younger, more dynamic individuals into CABs, as they are often better positioned to meet the physical and time demands associated with CAB responsibilities. Nonetheless, the experience, wisdom, and community standing of older members remain invaluable assets that should not be underestimated. A balanced composition, that integrates the energy and initiative of younger members with the credibility and influence of senior participants, is likely to yield a more effective and representativeness of CABs.

To ensure inclusivity and diverse representation, CAB members should be selected across a broad spectrum of age groups, educational backgrounds, professional experiences, and socio-cultural contexts. This diversity enriches the deliberative process and enhances the relevance of community input. Special attention must be paid to internal power dynamics, particularly between youth and older members, as younger individuals may

be less inclined to express their views openly in mixed-age settings. Addressing such dynamics is critical to fostering equitable participation. Establishing clear, transparent, and merit-based selection criteria focusing on factors such as availability, motivation, communication skills, and a demonstrated commitment to community service will help ensure that CAB members are well-equipped to contribute meaningfully throughout the research process.

3.4 | Theme 4: Opportunities

Both CAB members and study participants shared valuable learning experiences gained during their involvement. Training and networking improved their knowledge on TB/MDR-TB, research methods, and public health practices. This theme explores potential improvements and best practices that emerged during the clinical trial process, drawing on insights shared by CAB members and study participants.

Serving voluntarily in this role has been a meaningful experience. By guiding individuals who struggle to access health services or information, engaging in TB/MDR-TB research at AHRI, and participating in trainings on treatment and related topics, I've had the opportunity to connect with a wide range of professionals and community members. This experience has significantly expanded my knowledge and understanding of research and public health

(CAB Chairperson)

As a CAB member, I have participated in various training sessions that have helped me deepen my understanding of a wide range of research-related topics and issues.

(CAB member 1)

3.5 | Theme 5: Way Forward on Active Community Engagement

Study participants proposed practical steps to enhance future community engagement strategies within the research process. Involving community representatives such as CAB members offers significant advantages, as they are trusted and respected figures within their communities. Their involvement helps build trust, facilitates communication, and supports the successful implementation of research activities. Here under listed some of their suggestions

They have a big role in the prevention and control of TB/MDR-TB. We expect those who took the anti TB/MDR-TB and become cured will learn the community about communicable disease. Some of the cured individuals will become a member of the CAB.

(Investigator)

Early preparedness is important before the onset of any disease. I do not know how I was diagnosed with MDR

TB disease. Awareness should be created using different media continuously within the community; if it is done on and off in between many individuals will be exposed and become infected by the disease.

(Trial Participant 1)

Due attention should be given by the health ministry and concerned party to the Community Advisory Board; it should be established at a country level because there are studies all over the country that country, that need the active participation and contribution of the community to facilitate and conduct research.

(CLO 1)

Participants also proposed strategic recommendations for improving CAB effectiveness and broader community engagement. These included formal institutional support, wider community representation in CABs, early education efforts, and broader application beyond TB/MDR-TB.

The CAB should be established not only for communicable diseases but also for non-communicable diseases, which are increasingly prevalent in the community. CAB members should work diligently to address both communicable and non-communicable diseases, ensuring comprehensive health advocacy and support.

(Study field nurse)

This CAB was established for the specific trial project called STREAM; in the future, it should be established in AHRI as a unit to have a clear direction and activity to continue in all research project activities.

(Study nurse coordinator)

CAB should be established, supported, and strengthened as a community-based initiative, not only for TB/MDR-TB but also for other major diseases requiring community involvement. Partnering with large social, government, and community organizations can enhance public awareness and promote prevention strategies. Engaging CAB members in these efforts will help control and prevent communicable diseases in the future.

(Investigator)

Given their crucial role in clinical trials, trial participants recommended improving communication, psychological support, and transparent interaction between health professionals and patients:

The health professionals should communicate with TB/MDR-TB patients in a polite and patient manner, as these patients often face various challenges. Additionally, psychological support should be provided to address the emotional and mental health issues related to the disease,

fostering a positive and trusting relationship between patients and healthcare providers.

(Trial participant 4)

4 | Discussion

The findings reveal significant challenges in implementing community engagement through CABs within TB and MDR-TB clinical trial activities in Addis Ababa, Ethiopia. Despite these challenges, CABs serve as a critical bridge between communities and research institutions and contribute meaningfully to the control and management of TB/MDR-TB as well as other communicable diseases [18]. However, the effectiveness of CAB is often undermined by structural and social barriers, particularly the limited understanding among research stakeholders regarding the roles and responsibilities of CAB members. This gap in awareness limits the recognition of CAB contributions and diminishes their influence in decision-making processes [19]. The problem is compounded by the absence of regular and adequate budget allocation, which restricts CABs from sustaining activities or maintaining meaningful engagement with communities [11, 20]. Over time, these financial and structural constraints have led to inconsistent participation and a reduced role for CABs in amplifying community voices. This challenge is also identified in similar research [21]. Furthermore, persistent stigma and discrimination directed at individuals diagnosed with TB or MDR-TB discourage open dialogue and silence the perspectives of those most affected, making inclusive engagement even more difficult. This finding aligns with other studies highlighting similar experiences [22]. Collectively, these barriers weaken the CAB's ability to build trust, foster inclusion, and create meaningful linkages between communities and research institutions [21].

Addressing these challenges require deliberate and coordinated action from different stakeholders. Promoting awareness and providing capacity-building opportunities for research stakeholders is one of the actions to ensure that the roles and contributions of CAB members are clearly understood and fully valued [13, 23]. Furthermore, securing regular and sufficient budget allocations would empower CABs to carry out sustained activities and engage with communities in a consistent manner. Encouraging greater participation of CAB members through recognition, motivation, and supportive structures can also help strengthen their role in representing community perspectives. In addition, targeted efforts to reduce stigma and discrimination against TB and MDR-TB patients are essential. This can be achieved through community education, sensitization campaigns, and by ensuring the active involvement of affected individuals in advisory processes.

5 | Conclusion

A multi-stakeholder's effort and involvement is crucial to address the identified gaps and strengthen the role of CABs in the clinical trial study process. CABs can more effectively build trust, foster inclusiveness, and strengthen the relationship between research institutions and the communities they serve through community engagement. Offering culturally grounded insights helps to align research objectives with local needs and

expectations of the community. Their involvement enhances transparency, encourages community participation, and ensures that research is not only scientifically sound but also socially responsive. Moreover, such collaboration is critical not only for reducing social barriers that delay diagnosis and treatment but also for improving disease control and public health outcomes in Ethiopia. More broadly, these measures contribute to advancing ethical, inclusive, and responsive research practices across Ethiopia and other low- and middle-income countries. In doing so, research institutions can enhance community trust, promote fairness, and ensure that research benefits are shared more equitably.

5.1 | Limitation of the Study

Due to constraints in time, budget and personnel we were unable to incorporate trial sites from other countries. This limitation prevented a more comprehensive analysis that could have included perspectives from a wide range of study participants. As a result, the study lacks the broader comparative perspective that could have enriched our understanding of regional variations in clinical trial implementation and community engagement practices. This limitation underscores the importance of future multi-country collaborations that can capture a more diverse range of participant experiences, cultural contexts, and health system dynamics. Expanding the geographic scope of research would not only enhance the generalizability of findings but also contribute to more inclusive and globally relevant recommendations. Despite these constraints, the insights gained from Ethiopia offer valuable lessons that can inform similar efforts in other low- and middle-income countries.

Conflicts of Interest

The authors declare no conflicts of interest.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.
Appendix I. Appendix II.