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Informed consent in cervical cancer screening research in Butajira district, Ethiopia

Lidya Genene Abebe[a,b,c], Abigiya Wondimagegnehu[b,c,d], Laith A. Labban[a], Brhanu Teka[c,e], Andreas M. Kaufmann[f], Tamrat Abebe[c,e], Eva J. Kantelhardt[b,g], Adamu Addissie[b,c,d] and Muluken Gizaw[b,c,d]

[a]School of Veterinary Medicine, Graduate Group in Epidemiology, University of California Davis, Davis, CA, USA; [b]Department of Epidemiology and Biostatistics, School of Public Health, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia; [c]Global Health Working Group, Institute of Medical Epidemiology, Biometrics and Informatics, Martin Luther University, Halle-Wittenberg, Germany; [d]Non Communicable Diseases Working Group, School of Public Health, Addis Ababa University, Addis Ababa, Ethiopia; [e]Department of Microbiology, Immunology and Parasitology, School of Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia; [f]Department of Gynaecology, HPV Research, Charité-Universitätsmedizin Berlin, Corporate Member of Freie Universität Berlin, Humboldt-Universität zu Berlin, and Berlin Institutes of Health, Berlin, Germany; [g]Department of Gynaecology, Martin Luther University, Halle-Wittenberg, Germany

ABSTRACT

Cervical cancer screening remains limited in developing countries due to barriers such as lack of convenience and privacy. These challenges hinder both screening uptake and the process of obtaining informed consent. This study aimed to explore ways to address these barriers and support ethical participation in screening research. The study was conducted in three rural and one urban kebele in Butajira, Southern Ethiopia. A total of 58 participants – including community elders, religious leaders, women's representatives, and traditional association leaders – were selected through purposive sampling for focus group discussions and in-depth interviews. Two interview guides were used to explore consent, decision-making, and screening preferences. Data were analysed using qualitative content analysis via QCAmap software. Participants generally understood the concept of voluntary participation but emphasized the need for clear communication about benefits. Although women could decide independently, many noted the importance of involving husbands. Initial suspicion about written consent was addressed through trust-building. A strong preference emerged for female providers during consent and procedures to enhance comfort. Self-sampling raised concerns about technical difficulty and cultural norms. Addressing cultural and ethical concerns is vital for improving cervical cancer screening participation. Insights from this study should guide future research and interventions in similar settings.

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Informed consent; research participation; screening programme; consenting to medical intervention; qualitative research; rapid ethical appraisals

Background

According to GLOBOCAN, cervical cancer is the fourth most common cancer in women worldwide, with an estimated 604,127 new cases and 341,831 deaths in 2020 (Sung et al., 2021). Cervical cancer is particularly prevalent in African countries, including Ethiopia, where it is the second most common cancer among women, with an incidence of 21.5 per 100,000 inhabitants (Bruni et al., 2017). It accounts for 7745 new cases of cervical cancer and 5338 deaths each year.

Cervical cancer screening is highly effective in reducing the incidence of and mortality from cervical cancer. Regular screening helps to detect and treat pre-invasive lesions, leading to better treatment outcomes. Despite its preventability, lack of access to prevention, screening, and treatment services contributes to 90% of cervical cancer deaths (World Health Organization, 2024). The World Health Organization (WHO) recommends that every woman in the target age group should undergo at least one screening for cervical cancer in her lifetime (WHO, 2014). Various screening methods, such as Human Papillomavirus (HPV) testing,

CONTACT Muluken Gizaw muluken.gizaw@aau.edu.et Addis Ababa University, Sefere Selam Campus, Floor 7, Office No. 712, Addis Ababa, Ethiopia

cytology, and visual inspection with acetic acid (VIA), are available. VIA is widely used in low- and middle-income countries (LMICs), including Ethiopia (World Health Organization, 2005).

To achieve the elimination target, the WHO has modified its primary screening recommendations from VIA to HPV DNA detection by nucleic acid-based molecular testing (NAT) (World Health Organization, 2020). One advantage of HPV NAT testing is that it can be done on self-sampled material, eliminating the need for gynaecological examinations or trained health professionals (Arbyn et al., 2020; Poljak et al., 2021). Self-sampling offers a convenient method for women to collect cervico-vaginal samples for HPV DNA testing in the comfort of their own homes. This approach has shown promising results in reaching underserved populations and those who have never been screened for cervical cancer (Lozar et al., 2021). It overcomes barriers such as concerns about privacy, fear of pain, cultural norms, and limited access to healthcare facilities.

There is therefore a need to shift from solely relying on VIA to incorporating self-sampling with HPV testing into Ethiopian screening methods. However, before transitioning from VIA to self-sampling, it is crucial to assess the appropriateness of the approach for the local context. Based on a systematic review, self-sampling interventions have shown the potential to facilitate cervical cancer screening service and increase coverage in Sub-Saharan Africa. However, each country presents its own unique challenges and opportunities (Brandt et al., 2019). While studies have explored the feasibility and outcomes of self-sampling, research on the specific barriers and facilitators to develop ethical and respectful approach and its implementation remains limited. Existing studies indicate that HPV testing and self-sampling are acceptable and feasible, but gaps in infrastructure, training, and awareness among healthcare providers and the public need further investigation (Brandt et al., 2019). Gathering information from potential participants, investigators, field researchers, and stakeholders can aid in designing respectful and ethical engagement in comparing different screening methods for participants and their communities (Tekola et al., 2009).

Although HPV self-sampling shows promise in terms of patient comfort, privacy, and accessibility, many women remain uncertain about their ability to perform the test correctly and question the reliability of self-collected samples (Vega-Crespo et al., 2024). Misconceptions and a lack of knowledge contribute to challenges in obtaining informed consent. Addressing these barriers is essential to support informed consent and to enhance participation in screening programmes.

The Rapid Ethical Assessment (REA) is a method used to quickly collect community level qualitative data to identify issues that need to be solved. It can help community members, researchers, or managers identify and respond to specific ethical issues for a specific research setting. It also helps researchers design a respectful and ethical engagement with the research participants and their communities. It guides a study from research idea conception to participant recruitment. Recently, REA was implemented in different African countries, including Ethiopia (Addissie et al., 2016; Kengne-Ouafo et al., 2014; Negussie et al., 2016). This study was a sub-study of the overarching trial titled *A cluster randomized trial project on vaginal self-sampling and pelvic examination*. It was conducted with the aim of identifying potential social and cultural issues related to informed consent to participate in cervical cancer screening with the research participants and their communities. Specifically, it focused on providing suggestions for the study to consider societal and cultural factors, to assure adequate consent and setting-appropriateness. We aimed to identify potential barriers and facilitators related to informed consent in research that involves VIA and self-sampling cervical cancer screenings in Butajira, southern part of Ethiopia.

Methods

Design

An exploratory qualitative research approach was employed. It was exploratory in that the barriers and facilitators related to informed consent in research involving self-sampling cervical cancer screenings in the selected area as well as in Ethiopia is the first of its kind and has been conducted from scratch. REA was used in semi-structured interviews and focus group discussions (FGDs) to identify issues related to informed consent among research participants and their communities. REA was preferred because it helps to quickly collect community level qualitative data to identify issues that need to be solved.

Study setting

This research was conducted in three rural and one urban kebele (administrative units) of Butajira, Southern Ethiopia, namely Shershera Bido, Mesrak Meskan, Bati Dejano, and Butajira Town. The areas were selected by an overarching study which was planned to be conducted in these same areas. Butajira is found in the southern part of Ethiopia. Most of the population in the area are Muslims. Butajira hosts a health and demographic surveillance site. It has one hospital but with limited health related facilities.

Study participants

The participants of the study were selected based on how long they had been a part of that community and their role in it. This study involved 58 participants, including health extension workers (HEWs), nurses, religious leaders, and community representatives, with 35 being male and 23 female. The selection criteria for the participants are based on their stay in the community, their acceptance by the community, and their representation of the diverse groups in the community (Women, husband, health workers, community leaders).

Data collection tools and procedures

Semi-structured interview protocols were constructed to guide the FGDs and in-depth interviews (IDIs) (Supplement 1). Seven FGDs were held with community elders, religious leaders, women's representatives, and Ekub or Eder (traditional savings and support system) leaders. The FGDs lasted between 75 and 105 min, on average, and were attended by six to nine people. In addition, six IDIs, ranging in length from 22 to 37 min, were conducted with key informants who worked at maternal and child health (MCH) units and HEWs. The FGDs and IDIs were both led by two skilled data collectors with extensive experience supporting qualitative data collection. All FGDs and IDIs were facilitated in Amharic (local language), and a suitable time and place was selected in advance to ensure the privacy and anonymity of the participants. The interviews and discussions were taped and transcribed verbatim. The study was mapped by the REA tool (Addissie et al., 2014). Questions related to participants' research understanding, voluntary participation, preferred consent type, the decision-maker for female participation in a study involving cervical cancer screening, which information to include for informed consent on cervical cancer screening research, and the community perception about vaginal examinations. Perceived challenges related to participating in such studies included difficulties anticipated from vaginal sampling, the preferred place and preferred professional to collect the sample, and communities' expectations in response to participation in a study. The group of investigators themselves checked the content validity of the interview guides based on their expertise.

Data analysis

All the interviews were tape-recorded, and notes were taken. Initially, MG and AW listened repeatedly to each interview and discussion to become familiar with the participants' words. Except the investigators, no one had access to the recorded audios to keep confidentiality of the data. All the audio-recorded interviews were transcribed by a research team. MG and AW reviewed each transcription document while listening to the recording to ensure the accuracy of the transcription. Then, the transcriptions, field notes, and debriefing notes were entered into the QCAmap (Qualitative Content Analysis map) software for additional analysis by MG, AW, LGA, and AA. Then, qualitative content analysis was conducted, involving the identification and coding of specific segments of the data. Similar codes were then grouped together to form meaningful themes that captured the participants' perspectives and experiences. The investigators who did the analysis had real-time coding access to the code. They met every week until the coding was completed. They went through the code to resolve any conflicts not identified during the coding process initially. The investigators used quotations as evidence, omitting personal identifiers to protect participant anonymity. Data collection continued until participant contributions became repetitive, indicating idea saturation.

Results

The following results of this study were grouped into four themes, including "understanding self-sampling and VIA", "participation in research", "consent", and "preference".

Theme 1: understanding of self-sampling and VIA

Perception of self-sampling

Self-sampling was commented on with mixed opinions from participants. One male FGD participant said: "Self-sampling will be difficult for women". Some expressed that women may be shy or hesitant to accept self-sampling. Others, however, mentioned that self-sampling would not have negative impacts on the women. One HEW added: "The challenge is women may not immediately accept it, because inserting a self-sampler in their uterus is a new thing for them. So, they may not accept it immediately". A participant from an MCH unit stated: "I personally don't think they would be bold enough to take the sample and bring it to the health facility. They are shy". Conversely, one religious leader from Butajira said: "It doesn't have negative implications on the society. It is not shameful to do that. She daily urinates and washes her body parts, right? So, it doesn't have any implication since she can wash at the end". Thus, a wide spectrum of opinions showed that there was no common understanding of a self-sampling application by women.

Perception of VIA

Participants shared various perspectives on the VIA screening procedure and linked it with a regular vaginal examination during antenatal care. Some participants mentioned that during the checkups, healthcare providers already examine them to assess the condition of the foetus and provide advice on nutrition and self-care. This suggests that the women perceived screenings as a means of monitoring both their own health and that of their unborn child. One participant from a female FGD stated: "They usually examine us, and if the foetus is not healthy, they advise us to eat more and take care of ourselves". Another female FGD participant said: "They are examining whether our womb is narrow or wide". A community leader expressed his feeling that some women might be sceptical about the need for screenings, specifically questioning why older women would require them. It is indicated in the FGD data that younger women have frequent visit to the health facilities when they get pregnant, so they are active, and it is easy for them to visit health facilities. However, older women don't have the interest to visit the health facilities since they feel that they are old and do not need any further screening. This highlighted a perception that screenings may not be necessary for older women.

Women's perspectives

One participant in a male FGD shared: "A woman might say I don't have any problem with my uterus; why would I get screened? It is not necessary for me". Another participant in the men's FGD added: "Even though it's for her own health, she might be concerned about the community's perception towards this. She may think or get worried about what others will say about her". One female participant in an FGD stated: "We are living in rural area. We are very shy to open our legs and get examined. We usually close our eyes and open our legs with lots of fear and shame. It's looked down upon". These examples showcase a range of perspectives and concerns related to VIA screenings. It was noted from the qualitative data that the women were shy of the procedures. They also associate this as a taboo in the community to undergo the procedure. While some participants acknowledged the importance of these screenings for monitoring foetal health, others expressed scepticism, focusing on concerns about community perception and feelings of shame or fear.

These insights shed light on the complex social and cultural factors that influence an Ethiopian woman's decision regarding VIA examination. There are different opinions on the acceptability of VIA by a community's religion. Some assumed that religion does not oppose VIA, whereas others did. Some participants mentioned that certain women thought that VIA is against their religion. One religious leader stated: "It is not forbidden by religious view to participate in such a kind of research". An MCH female worker added: "From what I observed in my routine job is that there is some resistance from Muslims".

Theme 2: participation in research

When it came to women's participation in research involving cervical screenings, some respondents believed that women might be willing to participate if they thought it would be helpful for the community. A community leader expressed confidence that women would participate because it was for their own benefit and health. Almost all the participants assumed that the women would be involved in such research since it involved women's health. One community leader reported: "They will participate. It's for their own benefit and their health".

Barriers for screening

Some factors were mentioned as "barriers", such as fear of pain and lack of privacy. Being primigravida was considered another barrier: "Primigravids are very shy; it is very strange for them. But if they already gave birth at the health facilities before, they would immediately accept it and not be afraid", said one participant who was working in MCH. Another barrier mentioned was health education. Women in this community related screenings with being diseased. If they had no apparent disease, they would not go in for a screening. Perceived pain was mentioned another factor in refusing a screening service. The women thought that VIA screening could cause pain, so they were afraid of VIA. However, one IDI participant, a head MCH coordinator, said: "It is not common for healthy people to come to the health facility and get screened for disease". One female FGD participant said: "When they (the doctors) insert their hand in our womb, there is some kind of pain we feel". The lack of privacy was another reported barrier. One female FGD participant explained: "It is very scary. Once, I was having an abortion, and everyone was there to see that. So, it was very scary, and I really got afraid of it".

Expectations from research participation

Some participants mentioned they had expectations from taking part in research involving cervical cancer screenings. These included receiving health education, incentives, and the results of the screening and treatment if they had the disease. Some participants also mentioned they expected to receive incentives or money for their participation. One female FGD participant said: "When we get involved in a study, we assume that we will benefit from the education we receive. I would like them to teach me something new". A women's FGD participant stated: "If she has the disease, she might expect to receive the treatment". Another woman added: "She expects the health professional to tell her what things she needs to do next and where to find the treatment". One community leader also said: "You have to link those women to those health facilities and facilitate to receive treatment". An HEW pointed out: "They might expect to receive some incentives from you, something like to buy coffee. Maximum of 50 birr. They might come without it, but our community participation is not equivalent if there are some incentives or not".

Theme 3: consent

Voluntary participation

The participants expressed their understanding of voluntary participation in research and the associated benefits. One community leader shared: "This means that people have a desire for the planned actions or activities to be done. It indicates they have a desire or interest to be a part of the study". The participants perceived voluntary participation as an opportunity to gain education and receive treatment. A community leader highlighted this by stating, "it's like gathering education. It has two benefits, the first one that people will get treatment and be cured. The second is, that they will study how to prevent disease in the future". According to one community leader, "the researcher should first introduce themselves and the organization they come from. They should explain the purpose and benefits of the research". This highlighted the importance of establishing trust and clear communication with participants to ensure their understanding and willingness to participate. A community leader emphasized the significance of cultural sensitivity in approaching participants by stating: "If he just simply enters their house and asks them for some information, some people might not be willing to give him the requested information. Therefore, he should approach them in the context of their own culture". The participants recognized voluntary participation as a sign of

willingness and interest in being a part of a study. They perceived it as an opportunity to receive education, treatment, and insights into disease prevention.

Willingness to give written consent

The participants generally agreed that written consent would not have a negative impact as long as the study was beneficial to the community. They believed that if the research had the potential to benefit the community and participants, individuals would willingly sign the consent form. Trustworthiness was also mentioned as an important factor, with one woman participant stating, "[a] signature is the sign of faithfulness (trustworthiness)". Some participants expressed concerns and misconceptions regarding written consent. They mentioned suspicions relating it to serious or political matters and fear due to lack of knowledge or perceived dangers. One community leader respondent said: "If you request them to sign on, they will be very suspicious as if it's something serious". Another men's FGD participant stated: "Some people might relate it as a political issue". However, some participants believed that proper explanation and understanding of the study and its benefits would alleviate these concerns and encourage participation. It was noted that requesting signatures at the beginning might discourage participation, but trust in the interviewer and clear communication about the study and its benefits could increase willingness to sign at the end of the study. Overall, establishing trust, providing detailed information, and explaining the benefits of a study were seen as important factors in encouraging women to provide written consent.

Informed decision-making

Most respondents were clear that the decision of a woman to participate in a study was her decision alone. She could make decisions by herself. One community leader stated: "She herself should decide to participate in a study". However, there were also some who believed the husband should make the decision. A community leader stated: "The head of the house or the husband should decide". Some participants mentioned it would be beneficial if the woman discussed it with her husband and that they should decide together. Another female FGD participant said: "It's also good if our husbands are aware of it in case we get screened and have the disease". Some study subjects believed that if husbands were involved, they would help or encourage their wives to go and get screened. One male FGD participant added: "I personally encourage her to get screened and check her health status. I will also encourage others to get screened". Some participants mentioned that if the husband was not involved, it would be considered rude and against their culture. They also pointed out that if a husband was involved, he would take care of household responsibilities in her absence. Additionally, if not involved, he might assume he had lost control over the house. One male FGD participant said: "But if she decides to participate by herself, that is rude. The same is true for the husband". Although most participants agreed that it is a woman's decision to make, they also agreed that the husband should be involved in the process.

Theme 4: preferences

Gender preference in interviewers and examinations

The study participants expressed a preference for a female interviewer over a male interviewer. Despite acknowledging that there was no inherent difference between male and female interviewers, women in the community generally favoured a female interviewer. Similarly, for VIA examinations, most participants preferred females to conduct the examination. However, a few individuals indicated that the gender of the interviewer or examiner did not matter. A female FGD participant stated: "It is preferable if females do the VIA examination". Another male FGD participant expressed a neutral stance, stating, "I don't mind whether male or female do the VIA examination". Additionally, participants expressed a preference for midwifery and elderly professionals to conduct the examinations. A woman specifically mentioned that she preferred a midwife, while another participant emphasized the importance of an older health professional due to their extensive training and experience. The participants provided reasons for their preference for female interviewers and examiners, which included empathy, approachability, and lower levels of associated shame. One participant from the women's FGD highlighted the aspect of empathy, stating, "a female interviewer or examiner would better understand what she [the patient] was going through. Males lack this understanding". Another female FGD participant mentioned:

"Males often lacked a welcoming approach". Furthermore, one male FGD participant pointed out: "Some participants may feel ashamed to be examined by males", emphasizing the sensitivity surrounding the issue. While some participants would feel uncomfortable if a male doctor examined their wife, others shared a positive attitude towards VIA, regardless of the gender of the healthcare provider. In the community, healthcare professionals are usually considered lifesavers next to God, although some husbands did feel some discomfort when their wives underwent VIA examinations. The participants mentioned that an educated person is more likely to perceive it positively, while those who are not educated may view it negatively. Overall, the preference for female interviewers and examiners stemmed from considerations of empathy, approachability, and the avoidance of potential shame or discomfort during the examination process.

Preferred place to collect a self-sample

Opinions on the preferred place to collect a self-sample varied among the participants. Some suggested the health centre, while others mentioned the health post or even at home as a more comfortable option. The availability of services and materials at the hospital level was also mentioned as a factor in favour of that location. However, most participants suggested that the self-sample collection should be done at the health post. A female FGD participant said: "If it's at home, it will be very easy, so that I can do it at any time". All other female FGD participants said: "It's better if we give the sample at the health post". A religious leader stated: "They will be happy if sample collection takes place at the hospital level. The hospital is better than other places since all services and materials are available there".

Discussion

The themes in this study provide insights into the community's understanding of informed consent as well as related topics such as self-sampling and participation.

The participants discussed their opinions on self-sampling. While some expressed concerns about the acceptability of self-sampling, others believed it would not have negative implications. These findings highlight the mixed opinions surrounding self-sampling, echoing previous research that discussed the challenges and potential benefits of self-sampling and its acceptability (Abay et al., 2016). However, this study does not quantify the rate of acceptability among individuals. Thus, a quantitative study might be needed to measure this.

In women's participation in cervical screening research, participants believed people might be willing to participate if they thought it would benefit the community. They expressed confidence that women would participate for their own health benefit. However, findings also revealed concerns about research incentivization, as some participants expected to receive incentives. This raises concerns about voluntariness and the potential influence on the consent process. These results differ from prior research suggesting that participants could be reluctant to join HPV testing approaches (Gebremariam et al., 2018).

Regarding perceptions of VIA, participants shared varied views. Some saw vaginal examinations as a way to monitor their own health and that of their unborn child, while others expressed scepticism, especially about the need for screenings in older women. These findings align with previous research highlighting diverse perceptions related to VIA (Nishimura et al., 2021). The confusion between VIA and vaginal examinations during obstetric care suggests that many women either had no prior cervical cancer screening experience or misunderstood prior screenings during pregnancy as part of obstetric care. This confusion could be due to several reasons: the lack of proper Amharic and local language translations for terms related to screening and pelvic examination, gaps in patient-physician communication, or low educational levels in rural communities where many patients have no formal education. The medical terms used at health facilities may be jargon that is not easily understood by laypersons. This finding suggests a need for culturally adapted awareness campaigns to ensure informed consent.

In terms of research participation, Butajira is a city with significant exposure to research due to Addis Ababa University's Health Demography Surveillance Site (HDSS) (Afework et al., 2014). However, barriers such as fear, privacy concerns, and shyness may still impact the quality of informed consent. Participants believed women would be willing to participate in cervical cancer screening research but noted potential obstacles including primigravida status, fear of pain, and lack of privacy. Some women mentioned shyness related to pelvic examinations. These insights highlight the complex social and cultural factors

influencing Ethiopian women's decisions regarding VIA screening. These findings align with previous studies that discussed fear of pain, shyness, and privacy as barriers to research participation (Luleci & Kilic, 2022; Marques et al., 2020). Uniquely, our study identified primigravida status as a factor, possibly linked to shyness; in the community, first-time pregnant women are believed to be shyer compared to women who have given birth before. This group may require targeted awareness programmes. Supporting this, a study in Cameroon showed that pregnant women are not exempt from cervical disease risk, with 128 of 482 participants having abnormal cytology (Marques et al., 2020).

Regarding consent, participants expressed varied perspectives on obtaining written consent for research participation. Some emphasized the importance of oral communication and face-to-face conversations to ensure mutual understanding and trust. Others had concerns and misconceptions about written consent, associating it with serious or political matters. These findings align with previous research highlighting the need for clear communication and understanding in obtaining informed consent, as well as addressing misconceptions about written consent (Addissie et al., 2016; Gebremariam et al., 2018; Tekola et al., 2009). This highlights the need for interventions or awareness programmes to build rapport and help participants understand what written consent means, preventing misunderstandings.

Regarding decision-making, most participants believed the woman herself should make the decision, while others felt the husband or head of the household should be involved. This reflects deeply ingrained societal norms and power dynamics in Ethiopia, which impact the voluntariness of informed consent. Researchers should consider involving husbands in the consent process or creating awareness among men to support women's autonomous decision-making. Overall, these findings reflect complex cultural considerations surrounding decision-making in research participation (Abay et al., 2016; Gebremariam et al., 2018).

Participants also expressed an understanding of voluntary participation and associated benefits, such as education, treatment, and disease prevention insights. They emphasized the importance of clear communication, trust-building, and cultural sensitivity such as involving community gatekeepers to foster informed and willing participation. These findings align with prior research highlighting trust, detailed information, and ensuring participant understanding (Abay et al., 2016; Behnke et al., 2020).

Preferences were also important. Participants expressed a preference for female interviewers and examiners, citing empathy, approachability, and avoidance of shame or discomfort. This preference relates to building rapport, an important component in the informed consent process. These findings align with previous research on gender preferences in interviews (Abay et al., 2016). Opinions on the preferred place for self-sample collection varied, but most preferred health posts. This preference may be due to health posts' proximity to women's homes and better privacy compared to houses. Participants also expressed concern about whether women could collect samples themselves, believing that health extension workers (HEWs) could assist if needed. HEWs are trusted community members and friends of the women, facilitating rapport (Assefa et al., 2020; Birhanu et al., 2013). These factors made health posts the preferred site for self-sample collection, though further studies on feasibility and effectiveness are needed.

Finally, a strength of this study was the strong focus on women and inclusion of diverse community members (e.g. husbands, religious leaders, community leaders, health workers), allowing for a range of perspectives. A limitation is that the community's prior research exposure (via HDSS) may limit the generalizability of findings to rural populations with less research familiarity. Conducting studies in various regions could provide a clearer picture of the challenges faced by most rural populations who lack access to research and awareness programmes.

Conclusions

While many participants believed that women would be willing to participate, barriers such as fear of pain, concerns about privacy, and primigravida status often associated with shyness were identified. Participants noted that expectations of receiving results, treatment, or incentives could compromise the voluntariness of consent, raising ethical concerns. Although most participants agreed that women would provide written consent, some expressed mistrust or misunderstanding of written consent forms, associating them with political issues or fear, which could impact informed consent. Decision-making was primarily viewed as the woman's right, however, the influence of husbands as well as societal norms could affect a woman's autonomy in consenting. Preferences for female health workers conducting VIA screenings and for self-sampling at

health posts highlighted the need for culturally sensitive approaches to improve comfort and trust. Additionally, confusion between cervical cancer screening procedures and obstetric examinations pointed to gaps in awareness that might hinder clear understanding during the consent process. These findings emphasize the importance of tailored education, clear communication, and culturally appropriate strategies to overcome barriers of informed consent.

Overall, based on these findings, it is recommended that researchers provide clear education and awareness about cervical cancer screenings to assure informed consent, establish trust, and ensure cultural sensitivity when approaching participants. It is also recommended that further quantitative studies be conducted to assess its acceptability, feasibility, and effectiveness. Researchers should consider preferences for female interviewers and examiners and offer health posts for self-sample collection. Providing clear information, linking women to health facilities, and addressing expectations could enhance research experiences for Ethiopian participants, and this is especially important for sensitive topics that involve examinations of and discussions about female reproductive organs.

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Author contributions

CRediT: **Lidya Genene Abebe:** Conceptualization, Data curation, Formal analysis, Software, Writing – original draft, Writing – review & editing; **Abigiya Wondimagegnehu:** Conceptualization, Data curation, Software, Writing – review & editing; **Laith A. Labban:** Formal analysis, Methodology, Validation, Writing – review & editing; **Brhanu Teka:** Conceptualization, Data curation, Methodology, Supervision, Visualization, Writing – review & editing; **Andreas M. Kaufmann:** Conceptualization, Data curation, Writing – original draft, Writing – review & editing; **Tamrat Abebe:** Conceptualization, Data curation, Methodology, Supervision, Writing – original draft, Writing – review & editing; **Eva J. Kantelhardt:** Conceptualization, Data curation, Funding acquisition, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing; **Adamu Addissie:** Conceptualization, Data curation, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing; **Muluken Gizaw:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Ethics approval and consent to participate

Ethical clearance was obtained from the Institutional Review Board (IRB) of Addis Ababa University, College of Health Sciences. The interviewers obtained oral informed consent from the respondents. Participation in the study was

completely voluntary and refusal to respond to some of the questions or interrupting the study was possible. All the information obtained from the respondents remained confidential and anonymous.

Data availability statement

The original IDI and FGD transcription data without participant identifiers will be available from the corresponding author upon reasonable request.

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