

Community-Based Cervical Cancer Screening in Rural Tanzania: Acceptance, Participation and Sociocultural Barriers in Lindi District

Solveig Gross

`solveig.gross@oth-regensburg.de`

Regensburg University of Applied Sciences <https://orcid.org/0009-0009-4802-1023>

Research Article

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Abstract

Background

Cervical cancer remains a major public health challenge in Tanzania, where screening coverage is low and access to preventive services is uneven. This study evaluated the implementation and perceived significance of a community health programme (CHP) combining health education with on-site cervical cancer screening in rural Lindi District.

Methods

The CHP provided health education, nutritional counselling, cervical cancer awareness, gender-based violence training and cervical cancer screening using the VIA method by trained assistant nurse practitioners. Programme monitoring data from 2024 to July 2026 were analysed descriptively. A Swahili questionnaire was administered to literate participants from 11 villages between March and July 2026. Of 80 respondents, 79 valid questionnaires were analysed using descriptive statistics, chi-square tests and Cramér's V. A participatory Most Significant Change approach supported the qualitative assessment.

Results

In 2024, 6,216 women and 690 men participated, and 2,097 women underwent screening. In 2025, 5,296 women participated and 1,747 attended screening. By July 2026, 3,737 women had participated and 716 had attended screening. Screening uptake declined from 45.2% in 2024 to 19.2% in 2026. Most respondents considered screening important (91.2%) and the information understandable (96.2%). However, 49.4% perceived screening as controversial, significantly associated with gender ($p = 0.005$; Cramér's $V = 0.404$). Cultural or religious beliefs were barriers for 72.7%, and 96.1% feared negative community reactions.

Conclusions

The programme was positively perceived, but stigma, cultural and religious beliefs, gender norms and fear of social reactions limited uptake. Culturally sensitive communication, community involvement and confidential service delivery are needed.

Background

Cervical cancer ranks with first among cancers affecting women in Tanzania (IARC, 2026; Sung et al., 2021). The cumulative risk for cervical cancer Tanzania is 2.9% and in 2024 about 2.806 women died by cervical cancer in 2024 (IARC, 2026). Cervical cancer remains a major public health problem in Tanzania

and is the most common type of cancer among women aged 15 to 44. There is no nationwide organized screening program (Mahiti et al., 2025). HIV increases the risk of developing cervical cancer. The HIV prevalence among women in the Lindi region is 37.6% (Ministry of Health [Tanzania Mainland] et al., 2023). Women who have never been tested for HIV have often also never undergone cervical cancer screening (Hhera et al., 2025). Visual inspection of the cervix with acetic acid (VIA) is an effective, low-cost screening method that can be performed by trained health care providers. Peer-reviewed studies have reported a sensitivity of 66% and a specificity of 87% for CIN2 (WHO, 2025). A review by Runge et al. reported a cumulative VIA positivity rate of 9.2% (Runge et al., 2019). Early detection and treatment, particularly in the precancerous stages of cervical cancer, can save women's lives. Tanzania lacks an official nationwide cervical cancer screening program. In addition, many women in Tanzania lack knowledge about the causes of cervical cancer, prophylactic HPV vaccinations, and the importance of screening (Henke et al., 2021). The sensitivity of VIA can be increased if the examiners are experienced and receive supervision (Dartell et al., 2014).

The community health program in Lindi District, including health education, nutritional counselling, cervical cancer screening and awareness-training on gender-based violence (GBV), is intended to make a significant contribution to improving the health literacy of the rural population. In addition to health education alone, there are specific prevention services such as cervical cancer screening. Women do not need to visit a separate healthcare facility for this. The Cervical Cancer Screening Program (CECAP) is offered on site in a separate room following the health education session. The screening is performed by Advanced Nursing Practitioners (ANP) using the VIA method. The ANPs are state-certified as nurses/midwives and have completed a one-week continuing in house education course in cervical cancer screening. Awareness and health education are important factors influencing participation in such screening programme. However, it is not just knowledge of the existence of such a screening programme that is crucial. Health education should also help develop individuals' ability to assess the value of such screening services, particularly with regard to the benefits, limitations and procedures involved in screening and subsequent treatment. In order to assess the success of such a community health program, it is necessary to consider not only the number of participants but also trends and, above all, qualitative evaluations.

The *Most Significant Change (MSC)* method is an evaluation method that captures a wide range of outcomes from interventions by collecting change reports from participants and analysing their perceived significance. This method is designed as an ongoing participatory process that is repeated at regular intervals throughout the program cycle. The evaluation enables a joint assessment of the most significant changes at community level, highlights different perspectives and their causes, identifies and explains unintended changes and consequences, and facilitates the clear communication of results and processes to non-specialists and those not involved in the evaluation.

Methodology

The Community Health Programme (CHP) provided health education, nutritional counselling, cervical cancer awareness, gender-based violence training, and on-site cervical cancer screening using VIA. Screening was offered following the educational session and conducted by trained assistant nurse practitioners in a separate room. The aggregated figures from the Programme monitoring data from 2024 to July 2026 are used for the quantitative basis for the assessment. A total of 80 people (N = 80) from 11 different villages were surveyed regarding the Community Health Program (CHP) between March and July 2026. Following the health education session, CHP participants were given a questionnaire in Swahili, and the questions could be answered using a Likert scale. The questionnaire was distributed only to literate participants. A total of 79 valid, completed questionnaires were included in the analysis. The data were collected using SoSciSurvey.com and analyzed using SPSS. The independent variables are gender and level of education. Chi-square-Test and Cramér's V statistics were calculated. The significance level was set at $p < 0,05$. The MSC method was not fully implemented. The evaluation was supplemented by a short interview with one of the ANP in order to better understand the barriers to access.

Results

In 2024, a total of 6,216 women and 690 men took part in the CHP. Of these, 2,097 women accepted the offer of cervical cancer screening. In 2025, a total of 5,296 women took part in the CHP. 1,747 women took part in the cervical cancer screening, which was offered following the health education session. Until July 2026 in total 3,737 women participated on the CHP and 716 women follows the recommendation to participate the CECA-Screening. Cervical cancer screening is well received by women in the villages (Fig. 1).

We compared the CECA participation rate as at 31 July for the years 2024–2026 in order to identify a trend. Until 31st July 2024, 45.24% of the women who took part in the health education program followed up by attending the CECA Screening (Fig. 2). The results showed that fewer women (19.16%) took part in the CECA Screening until 31st July 2026 than in 2024 and 2025.

The study included 61 women (77.2%) and 18 men (22.8%) from a total of 11 different villages in the Lindi District area. The vast majority of respondents (74.7%) had completed primary school, 2.5% university degree or vocational secondary certification. whilst 7.6% had no formal qualifications. There is no significant difference in educational attainment between men and women.

High normative agreement, but limited practical access.

Participants generally consider CECA Screening to be worthwhile. In total 91,2% of participants view the screening as an important component of health care. The majority of respondents (96.2%) consider the information they receive about cervical cancer screening to be easy to understand and important (Fig. 3).

Women perceive the benefits of CECA Screening as controversial.

The question – ‘Is the CECA investigation being highly controversial?’ – was answered in the affirmative by 49,4% (Fig. 4). 49.4% of women view the screening as critical or controversial ($p = 0.005$, Cramér’s $V = 0.404$). Level of education has no significant influence ($p = 0.069$, $df = 5$).

Cultural and religious beliefs act as barriers to access.

Invisible barriers limit women’s participation on cervical cancer screening program (CECAP). Religious beliefs, shame, gender roles, or family expectations influence perceptions and thus hinder utilization. 72,7% of the participants said that cultural or religious beliefs hinder women to participate in cervical cancer screening. However, 71.7% of women and 76.5% of men recognize that cultural and religious beliefs make it difficult to participate in programme components such as CECA Screening. The difference between the gender is not significant ($p = 0.674$, Cramér’s $V = 0.141$). In total 96,1% said they feared negative reactions from the village community if they took advantage of the program’s services (Fig. 5).

Discussion

In general, the CHP has been well received, and the individual program components – in particular cervical cancer screening – have been identified as an important part of healthcare provision. The qualitative evaluation (CHP Survey) provided a clearer picture of the acceptance of cervical cancer screening in the outreach program. The respondents viewed the CHP overwhelmingly positively and strongly agreed that it appropriately takes into account the cultural norms and values of the region and makes an important contribution to preventive health care. At the same time, traditional gender roles and concerns about negative reactions from their social circles were cited as significant barriers to participation in the program components. The results point to an ambivalent perception of CECA Screening. Although CECA Screening is recognized as a relevant component of preventive health care, social, cultural, and religious barriers simultaneously exist that hinder actual participation. This suggests a discrepancy between a generally positive attitude and actual utilization. Agreement on the importance of CECA Screening does not automatically translate into high utilization. The vast majority of participants are engaged in farming. For instance, certain female participants express heightened concern regarding physical contact or clinical examination during the state of wudhu (ritual ablution), particularly when preparing for or performing prayers. Consequently, this religious requirement can induce hesitancy among clients to undergo screening at that specific time. Furthermore, a traditional community practice dictates that individuals refrain from shaving the genital area until the harvest is completed. Due to this cultural norm, some women experience discomfort or feelings of shame, which subsequently deters them from attending gynaecological examinations. Measures to reduce stigmatization should be considered so that agreement translates into actual participation. Several practical recommendations can be derived from the results of the CHP survey, which address both structural and psychosocial aspects:

1. Removing barriers to access

Targeted measures should be developed to reduce 'invisible' barriers, e.g. the sensitive design of care settings that minimizes shame and insecurity.

2. Culturally and religiously sensitive approaches

As cultural and religious beliefs represent a key barrier, culturally sensitive health communication is essential. Involving community leaders or trusted religious figures can help to increase acceptance.

3. Reducing stigmatization

Public relations work and educational measures should aim to normalize CECA Screening and link it to positive health narratives.

4. Target-group-specific information

As women in particular sometimes perceive the benefits as controversial, evidence-based, targeted information programs are necessary. These should clearly outline the benefits, limitations and procedure of the screening in order to reduce uncertainties and promote informed decision-making.

5. Involvement of men and the social environment

As men also perceive cultural and religious barriers, they should be specifically included in information and awareness-raising strategies. Partners, family and the social environment can play a decisive role in encouraging uptake.

6. Strengthening health literacy

Regardless of educational level, there is a need to promote health literacy. Training should focus on developing the ability to evaluate prevention programs and support decision-making processes.

7. Monitoring and evaluation

The effectiveness of the measures should be systematically evaluated to assess whether uptake of the CECA Screening is actually improving and whether barriers are being reduced.

8. ANP's role

ANPs should not be entrusted with the provision of preventive care if there is no guarantee that it will be carried out properly and if findings are neither correctly identified nor appropriately assessed. In such cases, there are shortcomings in due care and professional judgement, which pose a significant risk. Given the potential threat to women's health and lives, it is imperative to ensure that the necessary competencies are in place. Healthcare professionals should receive targeted training to respond sensitively to ambivalent attitudes, take cultural aspects into account and build trust. Unprejudiced and respectful communication is central to this.

Fazit

This study presents a mixed picture of normative acceptance and socio-cultural barriers to a community-based health programme that combines cervical cancer screening in the rural district of Lindi in Tanzania. Whilst the programme was predominantly perceived as culturally appropriate and valuable for screening, traditional gender roles, stigmatisation and concerns about social consequences proved to be significant barriers to actual participation. The discrepancy between positive attitudes and low uptake highlights the need for multi-faceted interventions that address both structural barriers to access and deeply rooted cultural norms. Key recommendations include culturally sensitive health communication, the involvement of community and religious leaders, targeted education for women and men, and the strengthening of health literacy. Future efforts should aim to reduce stigma and incorporate confidence-building activities to ensure that such initiatives remain sustainable. Furthermore, ensuring that Advanced Nurse Practitioners possess the appropriate skills is crucial for maintaining quality and trust.

Limitation

Several limitations of this study should be acknowledged. First, the evaluation included only literate participants, which may have introduced selection bias and limits the generalizability of findings to non-literate populations who may face different barriers to accessing community health programmes. Second, the predominantly positive evaluation may reflect social desirability bias, as participants aware that the programme's continuation depends on favourable feedback may have been inclined to provide more positive responses. Third, there was a substantial imbalance in gender representation among survey respondents, with significantly more women than men participating, which may have skewed perspectives on gender-related barriers and normative acceptance. Finally, with only 80 respondents, this was a small-scale evaluation, limiting statistical power and the ability to detect subgroup differences or draw robust conclusions about the broader population in Lindi District. These limitations should be considered when interpreting the results and designing future, larger-scale evaluations.

Abbreviations

ANP
Advanced Nursing Practitioners

CECA
Cervical Cancer
CECAP
Cervical Cancer Screening Programme
CHP
Community Health Programme
VIA
Visual inspection with acetic acid

Declarations

Ethics approval and consent to participate

Not applicable. Before completing the questionnaire, the participants gave their consent to the analysis of the data. All other data is presented in aggregated form and is taken from the project reports.

Consent for publication

This manuscript does not contain any individual person's data in any form that would require consent for publication.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

The authors conceived the study idea, designed the overview, conducted the literature search and data extraction. The author synthesized the findings and drafted the manuscript. The authors critically revised the manuscript for important intellectual content and approved the final version for submission.

Availability of data and materials

All data supporting the findings of this overview are derived from publicly available published literature and registry reports cited throughout the manuscript. No new datasets were generated or analysed during the current study.

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