Knowledge, willingness to support, and reasons for not supporting wives for cervical cancer screening in rural Dire Dawa administration, eastern Ethiopia: A qualitative study

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Research Article

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Abstract

**Background:** Husbands' support is an important factor in spouses’ decisions to utilize reproductive health care services, including screening. Despite this, it is still poorly understood in the study area. Therefore, this study was aimed at exploring it, and this may help to fill the gap via interventions related to screening.

**Methodology:** A community-based phenomenological qualitative study was undertaken in the rural Dire Dawa administration, Ethiopia, from September 1 to October 30, 2022. Data was collected from purposively selected husbands via in-depth interviews using a semi-structured tool aided by a voice recorder and field notes. A thematic analysis done with an inductive approach goes through six steps: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up.

**Results:** Thematically, three main themes and sixteen sub-themes were identified, and in general, one-third of the husbands had knowledge of cervical cancer; however, aside from signs and symptoms, they lacked knowledge of the cause, risk factors, transmission, complications, cervical cancer treatment, screening, and other prevention methods. They each have different perceived reasons for not supporting their wives' screening.

**Conclusion:** Husbands lack knowledge of cervical cancer and their perceptions of the disease and screening are negative, and this is explored as being a major barrier to supporting wives' cervical cancer screening. Therefore, it is recommended that information regarding cervical cancer and screening be disseminated not only to women but also to men, as well as conducting additional community-based research.

Aims And Scope Statement

**What is known**

Men lack knowledge about cervical cancer, and a lack of male involvement is known to be an impediment to cervical cancer screening. Likewise, men's understanding, their perceptions, and their low level of support for screening services are also revealed as barriers. But their specific perceptions toward the disease and screening were little known.

**What does the study adds**

Almost all previous studies focused on the barriers to cervical cancer screening faced by women, but this study is significant because it conducted in-home interviews with men to uncover their true, specific perceptions of cervical cancer knowledge and screening. Furthermore, there are reasons for wives to support or oppose cervical cancer screening by their husbands at various ages. To date, cervical cancer prevention has primarily been recognized as a problem affecting women, so this study will fill the gap
beyond suggesting barriers. It was therefore recommended that information regarding cervical cancer and screening be disseminated not only to women but also to men, as well as conducting additional community-based research.

**What the implications are for clinical practice, public health/research**

Husbands are major decision-makers in many African countries, including the study area, including the utilization of reproductive health care services such as screening, which is an important topic in the intervention of cervical cancer prevention measures, including screening, so interventions of their perception and knowledge will fill the gap. If intervention is carried out, their willingness to support their wives for screening increases significantly. This is the significance of this study from a clinical and public standpoint. If the core roots of a problem are identified, it will be easy to allocate resources and focus on a real solution, which may have great importance for the prevention aspect of cervical cancer in the area and beyond.

Also, our findings can offer important contributions to the literature for researchers as a baseline or additional input and be used to develop and implement targeted health messaging, education programs, and interventions focused on alleviating the cervical cancer burden. Moreover, this study is significant as it has conducted interviews with men in varying age groups; to date, the prevention of cervical cancer has mainly been recognized as a problem affecting women.

**Introduction**

Human papillomavirus (HPV) is a family of viruses that primarily cause cervical cancer in types 16 and 18 (1–3). HPV is mainly transmitted through sexual contact, and most people become infected with HPV shortly after the onset of sexual activity (3, 4). There is also evidence linking HPV with cancers of the anus, vulva, vagina, penis, and oropharynx (1, 3). HPV risk increases with persistence and development of cervical cancer, HPV type—its oncogenicity or cancer-causing strength; immune status—people who are immune-compromised, such as those living with HIV (5); co-infection with other sexually transmitted agents (3), such as herpes simplex, chlamydia, and gonorrhea; and tobacco smoking (2, 5).

Comprehensive cervical cancer control includes primary prevention (vaccination against HPV), secondary prevention (screening and treatment of pre-cancerous lesions), tertiary prevention (diagnosis and treatment of invasive cervical cancer), and palliative care (3, 5). Vaccines that protect against HPV 16 and 18 are recommended by the World Health Organization (WHO) and have been approved for use in many countries (3). Although cervical cancer is preventable and curable if detected early, its morbidity and mortality continue to be on the increase, including in Africa (2–4). Cervical cancer is the fourth most common cancer among women globally, and nearly 90% of the 311,000 deaths worldwide in 2018 occurred in low and middle-income countries (LMICs) (1). This high burden of disease is largely a result of lack of access to screening services and inadequate screening uptake due to female patients’ limited knowledge or fears about screening and their husbands’ disapproval (6, 7). Despite the availability of
cervical cytology screening, women in rural areas lack access to such services due to poorly understood barriers, particularly in Sub-Saharan Africa (2, 8).

Research has also suggested that a lack of male involvement may be an overlooked obstacle to cervical cancer screening (9, 10). Likewise, men's understanding (11, 12), their perceptions (9, 10, 13), and their low level of support for screening services are also revealed as barriers.

Although the global strategy towards eliminating cervical cancer as a public health problem adopted by the WHA in 2020, recommends involving men in a comprehensive approach to cervical cancer prevention and control (3), barriers towards cervical cancer and screening have not been well studied in the study areas. As a result, researching this topic fills a gap by providing information for effective prevention and intervention by removing barriers to cervical cancer screening, thereby reducing maternal morbidity and mortality associated with its complications in the study area. Hence, this study was aimed at exploring the knowledge and perception of husbands about cervical cancer and screening in the rural part of the Dire Dawa administration.

**Methods**

**Study Setting and Design**

A community-based phenomenological qualitative study was undertaken in the rural Dire Dawa administration, Ethiopia, from September 1 to October 30, 2022. Dire Dawa administration is located about 515 kilometers east of Addis Ababa, the capital city of Ethiopia, and 311 kilometers west of Djibouti port. The administration is bordered by the Shinile Zone of the Somali National Regional State on the north, east, and west and the eastern Hararge Zone of the Oromia National State on the northwest, south, south-east, and east. Wahil, Jaldessa, and Biyo-Awale are the three districts in the rural part of the Dire Dawa administration. According to 2021 population projections, 506,000 people live in the Dire Dawa City Administration, 32% of whom are estimated to be rural inhabitants, and there are 38 rural and 9 urban kebeles (the smallest administrative units). Dire Dawa city has six hospitals (2 public and 4 private), 17 health centers, and 34 health posts. Additionally, there are a total of 58 different level clinics, 35 pharmacies, 35 drug shops, and 2 non-governmental clinics (Family Guidance and Mari Stops International Clinics) (14).

**Sample size and sampling technique**

Wahil and Biyoawale were chosen at random from the three rural districts (Biyoawale, Jeldessa, and Wahil). Then we used purposive sampling from each of the selected kebeles to get the study participants who would be willing to share their understanding and perception regarding cervical cancer and screening. Then, based on the information obtained from health extension workers, households with husbands who were 18 years old or older and who had reproductive-age wives were included, but those with husbands who were severely ill and unable to communicate were excluded. Sample size was determined by the saturation level of information during data collection, which is appropriate for a
qualitative in-depth interview (15, 16). Saturation is defined as the collection of data until it becomes redundant (15, 17). Thus, a total of 29 in-depth interviews were conducted.

**Data Collection Methods**

Data was collected via face-to-face, in-depth interviews using a semi-structured tool that was developed after reviewing related literature and contextualized after the pre-test (8, 10-13, 18), aided by a voice recorder and field notes. The data was collected by four health extension workers who have experience with qualitative data collection. Data collectors and research assistants were fluent in the required local languages, and the principal investigator was moderating the in-depth interview (IDI) and assisted by an experienced note-taker. After the note taker and the interviewer introduced themselves, the purpose of the study and the confidentiality of the data were told to the participants, and then the probing questions were forwarded to them. All interviews were made in a suitable place that was chosen by individual study participants, tape recorded, and transcribed in full text.

**Definition of Terms**

**Cancer** is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body (19).

Cervical cancer is a disease that affects sexually active women in which cervix cells proliferate uncontrollably, become malignant, and eventually cause death (20, 21).

**Cervical cancer screening:** procedures and tests undertaken to detect the presence of cervical cancer in an individual (20, 22).

**knowledge:** facts, information, the theoretical or practical understanding of the subject under study by husbands (cervical cancer and screening) (23, 24). It was assessed by listing questions related to HPV infection, causes, risk factors, transmission, signs and symptoms, complications, prevention, treatments, and ways of screening for cervical cancer. For each question, one point is awarded for a correct response, and zero points for a wrong response or "no response." The scale was then dichotomized such that "yes" was considered as 1 and "no" or "don't know" or "responded" as 0. A total knowledge score for all the items was computed by adding them all up. The total score was then categorized as "lack of knowledge" (score less than the mean) and "having knowledge" (scores between the mean and greater).

**Perception is** the way in which something is regarded, understood, or interpreted. In this case, it is a way of thinking, perceiving, or feeling about CC and CCS(18, 24, 25). It was assessed by asking open-ended questions based on six themes from the health belief model (perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy).

**Barriers:** hindrances that prevent getting access to cervical cancer screening (CCS) (6, 8, 26, 27).

**Data quality assurance**
The semi-structured questions were prepared in English, translated into local languages (Afan Oromo and Amharic), and then returned to English to be checked for consistency by experts. The IDIs guide tool was revised prior to administration during pre-testing on eight individuals at a non-selected area for actual data collection who shared similar demographic characteristics to the study participants. The IDIs took place at the respondents’ houses in private and confidential settings. The qualitative design is prone to bias, but open-ended questions were used to avoid acquiescence bias; thus, before actual data collection, two days of training were given for the data collectors regarding procedures for conducting qualitative research and interviewing sensitive topics, taking keynotes, and using a voice recorder. The recorded data were listened to repeatedly to understand the responses of each participant and transcribed directly after each interview by experts. Each sample response and each transcription were coded to check the consistency of the data. Audio files, transcripts, and informed consent forms were stored in password-protected files.

Data management and analysis

The investigators chose and followed clear file naming, developed a data tracking system, established and documented data transcription and translation procedures, and proved quality control procedures. All interviews were transcribed and translated verbatim from the local language to English by experts fluent in both languages. The transcripts were entered into a computer, and thematic content analysis was done. Specifically, the coding process involved identifying major themes in each of the transcripts. Identified themes were compared across the transcripts to determine discrepancies and similarities in the perspectives of the study. Finally, the data were thematically analyzed using the computer-assisted qualitative data analysis software Atlas.ti 7. The thematic analysis with an inductive approach goes through six steps: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up using the narrative.

Results

Characteristics of participants

A total of twenty-nine participants were involved in IDIs. The mean age (standard deviation) was 39.5 years. The participants in the study were all married and had wives of reproductive age (15–49 years old), with 17.2% having no formal education, 69% having primary education, and 13.8% having secondary or higher level education. 51.7% of respondents were farmers, 34.5% were merchants, 13.8% were employees and farmers, 76.9% had radio media exposure, and 23.1 had none.

Three main themes were identified thematically (cervical cancer knowledge, willingness to support wives’ cervical cancer screening, and reasons for not supporting wives for cervical cancer screening). Sixteen sub-themes were also identified under Knowledge 8 (what cervical cancer is, cause, risk factors, transmission, signs and symptoms, complications, treatment, and prevention methods). While under reasons for not supporting wives for cervical cancer screening, eight sub-themes were identified.
Knowledge Of Cervical Cancer

The majority of participants (72%) lack knowledge of cervical cancer but are aware of cancer in general; they get information primarily from health extension workers. Cervical cancer was described as "Yemahitsen-chaf nekersa" [in Amharic]. However, there was a misconception about what cervical cancer really is; some of them mentioned it as "the word cancer by itself is lethal, and there is no cure for it except by God, a religious view, or rarely by experienced traditional herbalists" (IDI with respondent 5, 9, 21, 17, and 24). The knowledge of participants in each specific part was investigated by posing provocative and ideal questions to individual husbands and narrating under each sub-theme as follows:

Knowledge About What Cervical Cancer Is

On average, 40.4% of all study participants stated that they had knowledge in this area, but the majority had a mixed opinion that suggests a lack of knowledge about the disease.

Interviewer:.... I have heard people say they had cervical cancer before. Have you ever heard? "Do you know what cervical cancer is?"

"I have heard of cancer, but I don’t understand the difference between the different types of cancer."

"I have heard of breast cancer, intestinal cancer, blood cancer,..."

"I remember hearing about it once during a campaign, but I’m not sure what it is or why it happens."

"Since we live in the rural part of the country, we don’t have access to the majority of the world’s information." (Respondent 23)

"I had heard of cancer, but not cervical cancer; I believe cervical cancer is a disease of women, not men, that usually affects women’s vagina, to mean cervix, so the majority of those affected are women who may or may not have husbands, similar to HIV/AIDS." (respondent 26)

"I heard it once on the radio, but I’m not sure how it happens or what causes it; I was at farm work and my attention was less." (Respondent 22)

Knowledge About Causes Of Cervical Cancer

In this study, 45.9% of participants had some knowledge of the cause of cervical cancer, with more than half having no knowledge or differing opinions. A 39-year-old husband shared his thoughts as follows: "Cervical cancer is caused by genetic causes, and cervical cancer is affected by environmental conditions like dirty pollution, unclean homes, and cloth" (Respondent 6).

A 45-year-old respondent stated that "I don’t know about the causes of other cancers, but I think cervical cancer is somehow a unique case; although it is a women’s disease, I think men should do something because it may transmit to them during sexual intercourse, so I think men should have knowledge about this." (Respondent 7)
A 38-year-old husband stated, "No, I haven't heard about it before, and I do not know detailed information about the causes of cervical cancer. The government should teach us." (Respondent 5)

"Eh.........well, from what we have been hearing from our traditional healers, cervical cancer is inherited from parents by children or as a result of bad deeds or sin from our parents or ourselves..." said a 41-year-old husband.

Likewise, a 40-year-old husband said, "Cervical cancer is thought to be caused by pregnant women going out at night; so, our wives should not walk at night as this is believed to cause cervical cancer" (Respondent 11).

**Knowledge About Risk Factors For Cervical Cancer**

About 46.7% of the participants were knowledgeable about cervical cancer risk factors, while more than half were not.

A 36-year-old husband said, "I am not very sure because I don't even know if my wife has this disease; how do I know?" "I didn't learn, and no one has told me yet" (Respondent 11).

A 42-year-old husband said, "I think those women who lack hygiene in their vagina may be risky, as women have many issues, but I think it depends on their body hygiene and nutrition status and their age; old age seems more risky to me... and due to this, they risk being affected."

Similarly, a 40-year-old husband stated, "Women who use common public restrooms may be at risk because, for instance, if they use toilets that are not clean and the dirty water gets into their private parts, such as their anus or vagina, she may be directly affected."

"I think women who are married to someone who is HIV positive have very high chances of getting this, as do women who work in hotels," a 31-year-old said.

**Knowledge About The Transmission Of Cervical Cancer**

Around 38.5% of husbands were knowledgeable; they clearly stated that cervical cancer is like HIV, a sexually transmitted disease. Those who did not understand how it was transmitted reacted differently.

A 45-year-old husband said, "To my understanding, it is a women's issue and can be transmitted via unhygienic food, breast feeding, etc., generally in dirty conditions." (Respondent 13)

"It may be through the common use of blades or during female genital cuts," a 42-year-old husband speculated, "and I also heard that "evil eye" may transmit to women when they face barely during showering and taking in river." (Respondent 3)
Knowledge About Signs And Symptoms Of Cervical Cancer

In this regard, relatively more participants (53.6%) were knowledgeable about listing signs and symptoms of cervical cancer if someone had this condition, whereas those who lacked this knowledge listed a variety of points.

A 34-year-old husband said, "If women have such diseases, their breasts become large, they have sluggish, whitish vaginal discharge, and they have greater chances of weight gain...."

A 44-year-old husband said, "I am not sure, but she may have headaches, indigestion, and gastric burning symptoms or rashes in her body or face."

Knowledge About The Prevention Of Cervical Cancer

As per the findings, only 28% of participants had clear knowledge about the prevention of cervical cancer. Even though some mention protected sexual activities like using a condom appropriately and hygiene as a prevention method, the majority do not recognize these methods.

A 40-year-old respondent answering the question uncertainly stated that "This disease can be prevented early by educating young women. This is also possible by avoiding activities that would make you a carrier of this disease and by taking a drug (a vaccine) if one exists." (Respondent 3)

A few of them stated, "I am not very mindful of cervical cancer, so I don't know what kinds of prevention can be made."

The majority of participants responded with a similar idea with a different explanation that can be summarized as "making praying to God or Allah and personal and home hygiene important."

"This disease can be avoided by avoiding activities that lead to becoming a carrier of this disease and taking drugs if a vaccine exists." (Respondent 3)

Knowledge About The Treatment Of Cervical Cancer

According to this finding, while nearly half (48.6%) of participants recognized that cervical cancer is a treatable disease, the other half are unsure about treatment and responded differently as follows:

"As for me, some diseases like HIV, cancer, and hepatitis — unless God avoids them — still have no treatment except anti-inflammatory drugs," a 43-year-old husband responded. So, let us pray to him (God or Allah). You know, humans know nothing; the problem arises when we claim to know and act intelligently. "Even though we live our entire lives, we have no idea how many hairs there are in our heads." (Respondent 12)
“Treatment of this disease may be possible by certain drugs I heard once up on a time in the town campaign, but I am not quite sure... or sometimes if you get good traditional druggists with experience,” a 39-year-old husband said. They cure many diseases that doctors are unable to treat! ......you know this?” (Respondent 14)

Knowledge About Complications

As per the finding, 41.2% of participants were knowledgeable about the complications that could occur as a result of cervical cancer. However, more than half of them lack knowledge and have expressed their opinions in a variety of ways.

A 42-year-old husband said, "It may cause emergency death, diarrhea, or gastric pain; more than these, I am not sure, but she may get a severe headache." (Respondent 12)

Another 42-year-old husband said, "If women have this disease, it can result in madness like brain malaria and also excessive sweating."

Willingness To Support Wives' Cervical Cancer Screening

A husband’s willingness to support could be given in many ways, including by encouraging, being concerned and caring, allowing for education and reproductive health care service utilization like cervical cancer screening, being financially supportive and accompanying (going with her for service), telling her where to go and get reproductive health care services, etc.

Husbands thought they could encourage women to undergo screening. As such, they responded in different ways. In this finding, from those husbands who said yes, I support her (28%), the majority said, "I support her by allowing her to get education from health care workers, health extension workers, looking after our children until she comes back home, and giving financial support for transportation and others."

A few of them said, "I support her by reminding her of the campaign dates if I hear anywhere and encouraging her to participate."

Others added, "by encouraging the use of such reproductive health care services and also others,... I know I should accompany her, but most of the time I don't because of my work, farming, and "Inshallah, in the future, I will." (Respondents 19,22,29)

Reasons For Not Supporting Wives For Cervical Cancer Screening

The majority of participants who were not willing to support stated reasons related to knowledge about cervical cancer and screening, stating "I do not know about it," and others stated different reasons that are related to perception barriers, as follows:
Perceived reasons related to health services: Some study participants stated factors like proximity to facilities, access to or availability of health facilities, waiting time, and health care personnel behavior relating to their experiences during other case treatments and accompanying wives to antenatal care visits.

A 45-year-old husband said, "Since we are living in a rural area, the government should make services available and accessible to our wives." "If the service becomes available in the near future, we husbands can force our wives to use it; otherwise, it is difficult....

A 42-year-old husband said, "The major problem is the behavior of doctors; they do not respect us and do not provide adequate information when asked, especially since we are farmers, they underestimate us... So how can we go there with interest, my son?

Some others responded, "We are living in rural areas, far from town, so we do not have such health facilities, and if we want to go to town, the transport fee is difficult for us."

Others added, "Although we live in rural areas, we go to town for health services, such as if the nearest health centers cannot manage the disease of women giving birth; but for this case, what you are talking about, we really don't know where it is given, and doctors are not disciplined and compassionate," others continued. As a result, even when our wives ask us to go, we are never happy.

Perceived Lack Of Money And Cost Perceptions Of Health Care Services

The other reason that husbands reported for their unwillingness to support is "a perceived lack of money or being perceived as poor."

Many participants expressed a general suspicion of the health care system and concern for its costs, stating they feared the expensive payment of health care services... Many husbands said, "Cancer issues are expensive." "I don't know if the government should do something about it." This suggests many husbands perceive screening as expensive and are not aware it is cheap or free.

Cervical Cancer Is Perceived As A Non-series Disease

A 38-year-old husband said, "I think it's Allah's decision to make disease and cure it; he can cure a lot of dangerous conditions; this is simple," his gesture reflecting an underestimation of the gravity of the situation.

A similar idea was also responded to by a few others: "We think this does not have the power to end a woman's life unless determined by God; people live even with HIV/AIDS; they work; they give birth...."
Perception Of Traditional Treatment Is Better Or No Modern Treatment For Cervical Cancer

Some participants perceive that because cervical cancer has no modern treatment, they should not be screened. Some participants believe that because traditional healers are superior to modern treatments, screening or a Pap smear is not regarded as important.

"Treatment of this disease may be possible by certain drugs, which I heard once upon a time in the town campaign, but I am not sure... or sometimes if you get good traditional druggists with experience," said a 39-year-old husband. They cure many diseases that doctors are unable to treat! .....you know this?" (Respondent 14,21,28)

The Perception Of Cervical Cancer As An "evil Act" Or Due To "bad Deeds"

Some participants described cervical cancer as an evil act, the result of bad deeds committed by themselves or their parents, or a familial trend.

"Well, from what we've been hearing from our traditional healers, cervical cancer is inherited from parents by children or as a result of bad deeds or sins from our parents or ourselves, so it's better to be seen by reliquary fathers than screening," a 41-year-old husband said.

A 46-year-old husband stated, "Long ago, a friend told me about this issue from his personal experience (his wife was in such a case, okay?)... certain traditional drugs are given by some "Kalchas or Papas" in religious places, but they hide it; they do not give it to everyone for every request... otherwise, there is no treatment; doctors give you pills, but there is no cure even for typhoid nowadays."

In addition, a few others stated almost related ideas that can be quoted as, "Since it may damage women's bodies, it may affect them after a long time and may pass to the unborn baby... " "So it is an evil sickness."

The Perception That They Are Not At Risk For Cervical Cancer

Some participants perceive that they are not at risk for cervical cancer and that screening or a Pap smear are not necessary.

In this study, the majority of husbands did not perceive that their wife may be at risk of developing cervical cancer.

"No, I and my wife had taken an HIV test, and we are free," a 40-year-old husband said.
Many other respondents agreed, saying, "No, because this disease is associated with those who engage in sexual activity other than their husbands when he dies or secretly even when he is alive, or those who work in hotels."

The Fear Of Community Perception Towards The Word "cancer"

Many participants reported that there may be some concerns within their community regarding women receiving frequent gynecologic care and being labeled as having cancer, and they followed the stigma from the community. Besides, they said, "Many people consider you to have HIV/AIDS or cancer; the word "cancer" makes them shake, including us." There is a community fear of the word "cancer," so there are fears of stigma that may impact the efficacy of ongoing cancer prevention screening.

Participants' Perceptions Toward Male Health Professionals For Cervical Cancer Screening

The majority of interviewed subjects stated that they would allow their wives to be screened by female health professionals; they also expressed the opinion that women would likely be more comfortable with female health professionals.

Interviewer: I have heard that some people argue that the sex of the health care worker is important for this type of examination or screening. In your opinion, what do you say?

To explore possible reasons behind husbands' decisions on cervical cancer screening, participants were asked whether they felt that women who went for frequent pelvic exams were promiscuous. Few were agreeable to their wife seeing a male or female health care examiner, the main concern being appropriate treatment, although several felt that their partner would be more comfortable with a female one. Only a few people expressed opposition, but it remains a barrier.

"I think that... my wife should only be seen by a female health care provider, and her privacy should be respected." Besides, women understand each other better than men understand each other. "It seems that it's good, and... she also likes that women see her" (subject 10).

"Yes, why not? It's a private part, anyone needs confidentiality, and secondly, it's not like her husband, who is culturally and religiously forbidden from being seen by everyone. So, we wouldn't like for a male doctor to examine a woman. That's why I do not allow her... (Subject 6)

Discussion

The present study explored the knowledge and perception of husbands as a major barrier to supporting cervical cancer screening in rural Dire Dawa administration, eastern Ethiopia, using a qualitative study. Accordingly, the majority of study participants identified having a lack of knowledge about cervical
cancer and screening. Likewise, their lack of knowledge and negative perceptions of the disease and screening were explored as being a major barrier to supporting wives’ cervical cancer screening in rural Dire Dawa administration, eastern Ethiopia.

The present study gives in-depth insight into some of the major barriers or reasons that are affecting husbands' willingness to support their wives for cervical cancer screening.

Our study shows that the majority of study participants lack knowledge about cervical cancer and screening, which is consistent with studies conducted in different countries (11, 13, 23, 28).

This is far from the global strategy, which sets targets to accelerate the elimination: 90–70–90 targets that need to be met by 2030 for countries to be on the path towards cervical cancer elimination; 90% of girls are fully vaccinated with the HPV vaccine by age 15; 70% of women are screened with a high-performance test by age 35 and again by age 45; 90% of women with cervical disease are treated (90% of women with pre-cancer are treated, and 90% of women with invasive cancer are managed) (3). Participants in this study had relatively average knowledge of signs and symptoms, but they had low knowledge of the cause, risk factors, transmission, complications, treatment, and prevention; this variation was also supported by other studies (11, 13, 23, 28).

Besides, despite their level of knowledge, only a few husbands are willing to support their wives in participating in cervical cancer screening; this is supported by other studies (13, 18) (9). This suggests that although the husband's lack of knowledge adds to the burden of cervical cancer screening, there may be other reasons also. Thus, as shown in the present study, the other major barrier is found to be men's perceptions of cervical cancer and screening. Moreover, the present study explored the reasons for husbands' unwillingness to support wives' participation in cervical cancer screening and perceptions toward health care services (cost, availability, or distance), health care providers' behaviors, and cultural perception (fear of community perception) as major barriers related to perception.

Different studies reveal a similar idea: male partners' perceptions could determine whether their spouses took CCS or not, either directly or indirectly (25, 26). Different other studies revealed that male partners’ perceptions are distorted, and this negatively affects the prevention of CC and the CCS programs (10, 18, 29). A study revealed that the level of knowledge about CCS were other barriers to the prevention and control of cervical cancer (CC) (23). Additionally, a study in Botswana showed that among the major factors identified by women were financial burdens, lack of familial support, geographic burdens, and stigma or emotional barriers to screening (26). Likewise, a study in Uganda showed that perceptions of men are one of the barriers to CCS: 54.5% of men believed only women could be infected with HPV, and 32.7% of men believed antibiotics could cure HPV (24).

This study gives insight into the fact that husbands' support is such an important factor affecting reproductive health service utilization, including cervical cancer screening, which is also consistent with other studies (10, 29). This is particularly prevalent in Africa, where most women's reproductive issues and utilization of reproductive services, including CCS, are under the approval of their husbands (11, 25,
Thus, interventions are needed to enhance knowledge of cervical cancer and screening and improve trust in the health care system among male spouses or partners, which is consistent with studies (7, 18, 28). Taking interventions to correct misconceptions about cervical cancer and screening is also a key strategy to achieving the global strategy, which sets 90-70-90 targets for elimination that must be met by 2030.

In general, as per the finding, it is apparent that knowledge and perceptions of husbands about cervical cancer and screening do influence women's uptake of cervical cancer screening; playing as a barrier in the CCS. The participants, however, expressed a willingness to support wives if they knew what their roles were, and they suggested ways in which they could do so. These include encouraging, giving moral and financial support, and going to the clinics with their partners if necessary. Therefore, it is essential that men be given sound knowledge about the condition in order to involve them fully in the reduction of the incidence of the disease.

The study's strength was that it concentrated on rural husbands who may lack information and health care supports due to a variety of reasons. Besides, in many African countries, husbands are major decision-makers, including the utilization of reproductive health care services, which is an important topic in the intervention of cervical cancer prevention measures, including screening. In addition, the interviewers were local language speakers and knew the local norms and times at which participants were comfortable; this was very helpful to probe the actual information and reduce the non-response rate and social desirability bias. Also, our findings can offer important contributions to the literature and be used to develop and implement targeted health messaging, education programs, and interventions focused on alleviating the cervical cancer burden. Moreover, this study is significant as it has conducted interviews with men in varying age groups; to date, the prevention of cervical cancer has mainly been recognized as a problem affecting women, so it will fill the gap. However, there are important limitations that affect external validity, particularly generalizability: (1) the small sample size; (2) all participants were married husbands. Therefore, these findings may not transfer to other settings or populations (e.g., widows, singles, or unmarried ones; women were not included, and their perspectives might vary).

Conclusion

Husbands lack knowledge of cervical cancer and screening, and their perceptions of the disease and screening are negative, and this is explored as being a major barrier to supporting wives' cervical cancer screening in rural Dire Dawa administration, eastern Ethiopia. It was therefore recommended that information regarding cervical cancer and screening be disseminated not only to women but also to men, as well as conducting additional community-based research.

Abbreviations

CCS: cervical cancer screening, HPV: Human papilloma virus, IDI: in-depth interview
Declarations

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us.

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Ethical approval and consent to participate

An official letter of permission was obtained from the Dire Dawa Administration Health Bureau.

The community administrators and religious leaders were informed about the objective of the study, including the benefits and confidentiality issues. Participants were briefed on the purpose and objective of the research and their rights to participate, refuse, or withdraw from the interview. We also assured them of the confidentiality of the information. Permission was also requested, and any further move was made upon their approval.

Competing interests: The authors would like to declare that they have no competing interests.

Authors’ contribution

Authors’ contributions

AM: was responsible for all aspects of the design, execution, and management of this study, including the study's design and implementation, funding, regulatory review, interpretation of study results, and manuscript preparation, revision, and writing. All in all, he is a major contributor.

HL: recruited and consented participants, supervised in-person interviews, aided in study design, study development, coding, and interpretation of results, and assisted in manuscript review.

Both authors read and approved the study transcripts, coded the study responses, and approved their submission to the journal.

Funding: There was no funding; all costs were covered by the authors' contributions. This is from a low-income country; our salary couldn't cover the cost of publication. This manuscript is original, has a great impact on designing prevention strategies for policymakers and others, and will be used as additional input for researchers. As a result, we request that your journal publish it; many thanks from the start.

Availability of data and materials: All the data of this study are available from both authors upon request.
References


