

## Case Report

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# Screening of Cervical Cancer Uptake and Associated Factors Among Women Aged 30-49 Years Old at Public Health Facilities of Kellam Wollega Zone, Western Ethiopia, 2023

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## Abstract

**Background:** The second most common cancer affecting women's lives is cervical cancer. Globally, it causes many thousands of deaths annually among women. If women are screened for cervical cancer once in their life between the age of 30 and 49 years old, the chance of obtaining cervical cancer will be decreased by 25–36%. However, including Ethiopia, the coverage of cervical cancer screening is restricted in low and middle-income countries. Therefore, this study goes to assess cervical cancer screening uptake and associated factors among women aged 30-49 years old at public health facilities of Kellam, Wellega zone, Oromia regional state, western Ethiopia, 2023.

**Objective:** To assess screening of cervical cancer uptake and associated factors among women aged 30-49 years old at public health facilities of Kellam Wollega Zone, Oromia regional state, western Ethiopia, 2022.

**Methods:** A facility-based cross-sectional study was conducted at the public health facilities of Kellam Wollega zone, western Ethiopia, from February 1 to 30, 2023. The total sample size for the study was 451. A systematic random sampling method was applied to select study participants. Variables with P-value < 0.05 in the multiple binary logistic regression model were used to declare statistical significance. An odds ratio with a 95% confidence interval was used to show the strength of the association.

**Result:** Of all respondents; screen uptake was 20.6% (table 2). Multiple binary logistic regression analysis found that good knowledge (AOR=2, 95% CI:0.6,7.9), higher self-efficacy (AOR=3.3, 95% CI: 1.2,9.8), good perceived benefit (AOR=6.2, 95% CI: 2.6,14.9), urban residency (AOR=5.8, 95% CI: 2.5,13) and having above five family size (AOR=5.7, 95% CI: 2.4,13) were significantly associated with cervical cancer screening uptake (Table 3).

**Conclusion:** The proportion (20.6%) of cervical cancer screening uptake in the Kellam Wollega zone was low compared to the national target of above 80%.

**Keywords:** visual inspection of acetic acid; cervical cancer; screening; uptake; acceptability dambi dollo; ethiopia

## Introduction: Background

Cervical cancer is caused by the Human papilloma Virus (HPV). This virus is passed from one person to a different throughout sex. Most sexually active individuals can have HPV at some point in their lives, however, few women can get cervical cancer [1]. It's the fourth most typically diagnosed cancer among females with 570,000 new cases and 311,000 deaths worldwide. Eighty-fifths of this occurred in developing countries [2]. The best incidence rate area unit in Southern, Eastern, and Western Africa also as South-Central Asia and South America. In Ethiopia, cervical cancer becomes the leading cause of death among females with 6294 new cases and 4884 deaths [2]. World Health Organization (WHO) developed a comprehensive approach to intervening and

managing cervical cancer[3]. The first intervention was through the human papillomavirus vaccine [4] and visual inspection with acetic acid was the secondary intervention for cervical cancer [5, 6]. The program targets women aged 30-49 unless HIV-positive [7]. Once a lady is endorsed to ascertain and treat programs, acetic acid [3%–5%] is applied to the cervix. The cervix is visually inspected with acetic acid [VIA] and if the Aceto white lesion area unit is noted, she is going to be offered cryotherapy treatment in real-time [3]. Currently, VIA screening of cervical cancer is that the suggested technique in African countries [7]. The Ethiopian Federal Minister of Health (EFMOH) has developed a national cancer management setup enforced from 2016–2020 considering cervical cancer a priority cancer for

intervention. The set-up targeted to launch of an HPV vaccination demonstration program and achieve 80% of girls within the target population and 80% coverage of VIA among target women by 2020 [7]. However, the screening coverage in African countries is just too low and its only 2.9% in 2017 [8]. Anticipated high price of the take, look at, spiritual denial, husband approval, anticipated long waiting time, fear of test outcome, Poor training experience, poor knowledge regarding cervical cancer screening, unskilled health care supplier, long distance from health establishments and a female provider determining women's cervical cancer screening acceptance [11-14]. Therefore, this study assesses cervical cancer screening uptake and associated factors among women aged 30-49 in Kellam Wollega zone public health facility, Western Ethiopia, 2022.

## Methods

### Study design and set up

The facility-based cross-sectional study was conducted at selected public health facilities within the Kellam Wellega zone from February 01 to 30, 2022. The zone is found 652 kilometers from Addis Ababa, the capital city of Ethiopia. From a total of 55 health facilities, only 9 have been providing cervical cancer screening using visual inspection of the cervix with acetic acid.

### Sample Size Determination and Sampling procedure

The study's sample size was calculated using Epi-info version 7 software and the single population proportion formula. The subsequent assumptions were used; 10% proportion of cervical cancer screening service uptake [15], 95% Confidence level, 80% power, a d a 5% margin of error. Finally, the sample sizes become 451 after adding a 10% contingency for possible nonresponse and 1.5 as a

design effect. The samples were selected randomly from the list of all health facilities providing cervical cancer screening using a visual inspection of the cervix with acetic acid in the zone using a simple random sampling technique.

### Data collection tools, and quality assurance

A structured, interviewer-administered questionnaire was used to collect the data. The questionnaire was first prepared in English, translated into the local language (Afan Oromo) to ensure consistency. The questionnaire was pretested on 5% of the total sample size 5 days before the actual data collection day among women aged 30-49 years old at Keto health center which has VIA. Amendments were taken to some questionnaires. Fifteen experienced data collectors were recruited and collected the data for one month after they received three days of training.

## Result

### Socio-demographic characteristics of respondents

Respondents' mean age was 37 years old with a standard deviation 5. Respondents who participated in the study were females. Of the whole respondents, 398 (88.2%) respondents' marital status was married. Similarly, 302 (67%) of the participants were Oromo in ethnicity and 305 (67.6%) of the respondents were protestant in religion. The study postulated that 121(26.8%) and 84(18.6) of the respondents were unable to read and write & able to read and write in educational status, respectively, and 270(59.9%) of the respondents' occupations were housewives. Likewise, the study documented that 283(62.7%) of the participants had < 1500 income ETB, and about 374 (82.9%) of the participants had 0-5 family size (Table 1).

**Table 1:** Sociodemographic characteristics of respondents in Kellam wollega zone, Oromia, western Ethiopia, 2022.

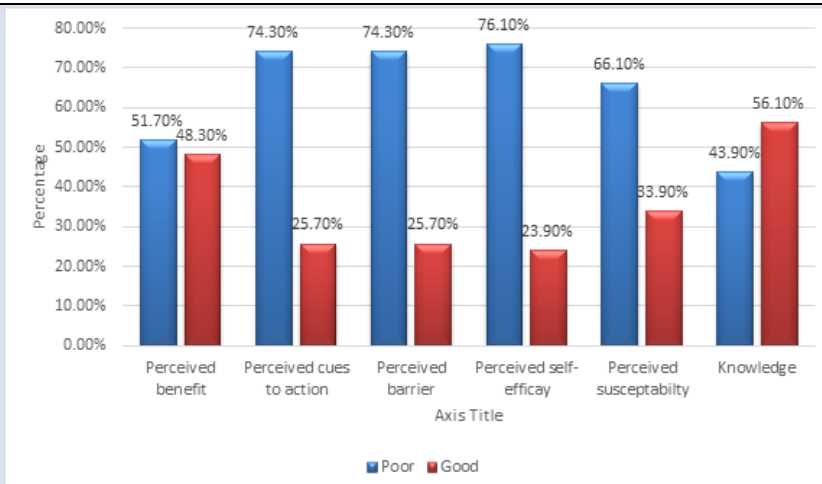
Variables	Frequency	Percentage
Age		
30-34	181	40.1
35-39	146	32.4
40-44	70	15.5
45-49	54	12
Residence		
Urban	262	58.1
Rural	189	41.9
Marital status		
Married	398	88.2
Widowed	33	7.3
Divorced	13	2.9

Single	6	1.3
Others	1	0.2
Ethnicity		
Oromo	302	67
Gambela	6	1.3
Amhara	51	11.3
Gurage	43	9.5
Silte	42	9.3
Others	7	1.6
Religion		
Protestant	305	67.6
Orthodox	79	17.5
Muslim	45	10
Catholic	6	1.3
Apostle	16	3.5
Educational status		
unable to read and write	121	26.8
able to read and write	84	18.6
primary education	83	18.4
secondary education	69	15.3
Certificate	27	6
Diploma	32	7.1
degree and above	35	7.8
Occupation		
Housewife	270	59.9
Merchant	65	14.4
Daily laborer	31	6.9
government employee	40	8.9
Student	14	3.1
private employee	19	4.2
Others	12	2.7
Family size		
0-5	374	82.9
6-10	77	17.1
Monthly income of the head by ETB		
<1500	283	62.7
1500-3000	87	19.3
3000-4500	23	5.1
4500-6000	28	6.2
6000-7500	13	2.9
≥7500	17	3.8

### Perception and knowledge of respondents about cervical cancer and screening

Of a total of 451 respondents, 198 had poor knowledge, 253 had good knowledge, 233 had the

poor perceived benefit, and 218 had good perceived benefit about perception and knowledge on cervical cancer and screening (figure 1).



**Figure 1:** Perception and Knowledge of respondents about cervical cancer and screening in Kellam wollega zone, Oromia, western Ethiopia, 2022.

**Cervical cancer screening uptake by respondents**

From a total of 451, only 93 respondents were screened which gives a screen uptake of 20.6 %. Of a

total of 93 screened respondents, 79 were negative and 14 of them were positive for the pre-cancerous lesion (Table 2).

**Table 2:** Cervical cancer screening uptake by respondents in Kellam wollega zone, Oromia, western Ethiopia, 2022.

Variables	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Cervical cancer screening uptake	93	20.6	358	79.4
Result	Positive		Negative	
	14	3.1	79	17.5

**Factors significantly associated with screening of cervical cancer acceptance by respondents in Kellam wollega zone, Oromia, western Ethiopia, 2022.**

Multiple binary logistic regression analysis found that good knowledge (AOR=2, 95% CI:0.6,7.9), higher self-efficacy (AOR=3.3, 95% CI: 1.2,9.8), good

perceived benefit (AOR=6, 95% CI: 2.6,14.9), urban residency (AOR=5.8, 95% CI: 2.5,13) and having above five family members (AOR=5.7, 95% CI: 2.4,13) were significantly associated with cervical cancer screening uptake (Table 3).

**Table 3:** Factors associated with cervical cancer screening uptake in Kellam wollega zone, Oromia, western Ethiopia.

Variables	Cervical screening uptake		AOR (95% CI)
	Yes n (%)	No n (%)	
Residence			
Urban	70	192	5.78(2.54, 13.17) *
Rural	23	166	1
Family size			
0-5	58(49.7)	296(50.3)	5.66(2.36, 13.56) *
6-10	35(46.5)	62(53.5)	1
Perception			
Poor Perceived benefit	23(49)	194(51)	1
Good Perceived benefit	70	164	6.2(2.58, 14.91) *
Poor Perceived self-efficacy	54(28)	289(72)	1
Good Perceived self-efficacy	39	69	3.33(1.13, 9.84) *
Knowledge about Cervical cancer			
poor knowledge	25(53)	167(47)	1
good knowledge	68(32)	191(68)	2(0.55, 7.94) *

\*Statistically Significant at P< 0.05

## Discussion

WHO recommends screening for all women aged thirty to forty-nine years to spot the metastatic tumor lesion. Eighty percent of cervical cancers are often prevented if early treated and screened [16]. The finding of this study is 20.6%, which is below the national target of 80% of cervical cancer screening [17].

The result of this study were below the study findings in Canada 58% [18], England 85.7% [19], Catalonia 50.6% [20] and Republic of Kenya 46% [21]. Variations within the socio-demographic and economic status of the study respondents furthermore because the countries' health policies may be the potential reason for this variation. For example, in Canada, screening utilization can be multiplied as even distribution of screening service centers and universal access to health care is obtainable. However, in Ethiopia, since the cervical screening service was initiated a few years back, the cervical cancer screening activities area units distended at a restricted variety of health establishment, and furthermore as continuous and arranged health education and awareness creation programs do not seem to be well established [22]. The distinction might be partly justified by the time gap between the studies, furthermore because the study space may be completely different among the studies. [23].

The finding of this study is higher than the study conducted in Ghana 2.4% [24], Nigeria 8%, Uganda 4.8% [25] and 17.5% Kenya [13]. This may be because of socio-demographic characteristics and the time gap between the studies, furthermore because the study area may be totally different between the studies [23]. Additionally, it may be because of variations in countries' promotional policies, increased nationwide support, and media concern [26]. For example, the reason for the low coverage of cervical cancer screening services in Ghana may be there is still no national policy or program concerning cervical cancer screening which may well be causative to the low screening of cervical cancer in Ghana. Currently, in Federal Democratic Republic of Ethiopia, the growth of cervical cancer screening service centers was done. Associate in Nursing integration of services with the delivery case team at the health center level, making awareness for health extension workers and health development army to activate the community for cervical cancer screening service uptake were additionally done by the government.

The results of this study were higher than the study findings at the national level of 2.9% [27], meta-analysis study in Ethiopia 18.17% [17], 16.4% in Gondar [28], 10% in Gondar [26], 10.6% in Addis Ababa [29], SNNPR 18.59%, Oromia 16%, Tigray 15.41%, Addis Ababa 14.32%, Amhara 13.62%, Dessie 11% [30], Arbaminch 5.9% [[31], Dessie and Mekele towns 20% [[32]. The uptake report from these studies was supported by retrospective assessment, not once invited and a few studies were from HIV clinics alone. For example, the previously conducted study in Gondar targeted to HIV-positive women who visited the referral hospital compared to the present study, including women regardless of HIV status attending health facilities and hospitals along. Thus, the exaggerated uptake discovered within the current study may be as a result of the recent replacement of VIA screening at the health center level within the town, that is nearer to the partakers than wherever it had been only at the hospital level. Moreover, eligible women were actively requested and offered VIA screening within the current study compared to the previous studies. This might need helping women to simply establish and access the service and utilize it consequently. Current cervical cancer interference promotion programmed spread throughout the country and there are sensitization implementation activities, which can lead to higher uptake in our study.

The results of this study were lower than the study findings in Debremarkos town, 21% [23]. This distinction may be due to variations in population characteristics and study settings. It may be attributed to the inadequate number of health facilities that give cervical cancer screening services, health-seeking behavior of the study participants, and knowledge of the women of the preventive measures for cervical cancer [33].

The higher odds of cervical cancer screening uptake were determined among respondents who had good knowledge. The odds of cervical cancer screening uptake were about two times more likely among women who had good knowledge in comparison to women who had poor knowledge regarding cervical cancer screening uptake. The result's supported by studies done in Tanzania [34], Botswana [35], and China [35]. The possible reason may be explained by the fact that the rise of women's knowledge regarding cervical cancer and screening benefits directly leads women to utilize the screening service. This finding is comparable to alternative previous studies [19, 29,

36]. Women's having good knowledge regarding the severity and risk factors of cervical cancer will have higher health-seeking behavior, in order that they will utilize screening services for cervical cancer uptake. This study is consistent with studies in developing countries normally wherever knowledge of cervical cancer and screening is poor.

Women who have a good perceived benefit about cervical cancer screening uptake were about 2 times more likely to undergo screening in comparison to their counterparts. This result is similar to the findings of a study in Uganda [37]. This was consistent with the hypothesis of the health belief model that state that perceived severity and therefore the threat of cervical cancer, perceived benefit, perceived self-efficacy, and net benefit about the preventive action of cervical cancer screening necessitates individuals to have an interaction with preventive actions like cervical cancer screening service uptake [38]. Similarly, it might be explained by women's view of cervical cancer screening benefits. If they perceive that they are benefiting from cervical cancer screening, they look for screening and treatment to safeguard themselves.

The odds of cervical cancer screening uptake were about 3 times more likely to undergo cervical cancer screening among higher self-efficacy women compared to their counterparts. This is consistent with the study done in Bishoftu, East Shoa [38], Nigeria [39], and Gonder [26] reported that the confidence of women concerning screening resulted in increased screening uptake. This may be because of developing confidence through information dissemination for cervical cancer screening.

The odds of cervical cancer screening uptake were about 6 times more likely to occur among women living in urban compared to women living in rural. This study is in line with the studies done in Ethiopia [8] and Kenya [21]. This may be because of the high coverage of mass media and health facilities in urban compared to rural.

The odds of cervical cancer screening uptake were about 6 times more likely to occur among women who have above five family numbers compared to their counterparts. The probability of cervical cancer screening uptake is increasing as family size will increase. This is often may be as a result of as family size will increase, they will be multipara so that they would possibly visit a hospital.

### Strength of the study

This study reflects a real-life observe and results of the VIA approach presently enforced by the Ethiopian Federal Ministry of Health during which women's visiting a health facility for routine services were invited and uptake was measured. We tend to postulate that this magnitude of uptake throughout one visit is representative of the strategy while not extra campaigns.

### Limitations of the study

Since the study was cross-sectional, the temporal - cause-effect relationship may not be well addressed.

### Conclusions and Recommendations

The proportion (20.6%) of cervical cancer screening uptake in the Kellam Wellega zone was low compared to the national target which is above 80%. Good knowledge, higher self-efficacy, good perceived benefit, urban residency, and above five family size were significantly associated with cervical cancer screening uptake in the Kellam Wellega zone. Therefore, to extend the uptake of cervical cancer screening among age-eligible women, it is better to form awareness programs for early detection and treatment of cervical cancer, and promotion through the mass media, and health talks concerning cervical cancer screening, and therefore the obtainable facilities. Timeserving screening in health facilities may be promoted to boost cervical cancer screening uptake for all age-eligible women. Moreover, to push cervical cancer screening, it is better to integrate cancer management programmers into existing primary sexual and generative health care services, strengthen multi-sectoral collaboration, and improve public health awareness to tackle the devastating impact of cervical cancer. its additionally vital to tell that each woman is liable to cervical cancer, particularly when beginning gender, and screening remains elementary within the fight against cervical cancer before turning into invasive or dead. Health acquisition that teaches in small stages, the application of cervical screening to push favorable attitudes towards screening and boost women's confidence to endure screening is additionally counseled. Therefore, ladies management, rising information towards cervical cancer screening, enhancing perceived susceptibleness and severity to cancer, and characteristic history of ladies area unit are essential methods to boost cervical cancer screening of ladies'.

## Declarations

### Acknowledgments

The authors would like to thank all respondents for their willingness to participate in the study.

### Competing interests

No conflicts of interest in this work among authors.

### Ethics approval and consent to participate

All methods of this study were carried out under the Declaration of Helsinki's ethical principle for medical research involving human subjects. Ethical approval to conduct this study was obtained from the ethical review committee of Dambi Dollo University (Ref. No: DaDURE/004/21). An official letter was sent to the Kellam Wollega zonal health office. Permission letter was delivered to woreda health office. Then, woreda health office sent supportive letter to respective public health facilities. For uneducated participants informed consent was obtained from their parents or friends and for educated participants it was taken from participants themselves. Confidentiality and privacy of the information was maintained. The participants were informed that participation is voluntary.

### Publication consent

All authors of the study were agreed to publish the study on Pub Med journal. Publication consent was obtained from publication office of Dambi Dollo University after reviewing the mother document.

### Availability of Data

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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### Authors contribution

EB has been working on data analysis and writing up the final results, HM has been working on proposal preparation and GF has been working on overall activities.

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