

Cervical Cancer Screening Practice and Associated Factors in Bishoftu Town, Eastern Ethiopia

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ABSTRACT

Background: Despite a high burden of cervical cancer in Ethiopia, the practice of cervical cancer screening was low. This study was aimed to assess cervical cancer screening practice and its associated factors among women aged 15 to 49 years in Bishoftu town, Eastern Ethiopia.

Methods: A community-based cross-sectional study was conducted in 2016 on 845 women aged 15 to 49 years residing in Bishoftu town. Data were collected through face to face interview using a pretested structured questionnaire and analyzed using SPSS version 20 software. Descriptive statistics and logistic regressions were used. A 95% CI and p-value of <0.05 were considered to be statistically significant.

Results: Among all study participants, 51.2% had good knowledge of cervical cancer screening, and 74.9% had a favourable attitude towards screening. However, only 5.8% had been screened ever for cervical cancer. The level of education and source of information was associated with a favourable attitude towards cervical cancer screening. Women who had good knowledge of cervical cancer screening were more likely to have been screened than those who had poor knowledge (AOR=6.95, 95% CI (2.59-18.57)).

Conclusion: The knowledge level and attendance for cervical cancer screening among study participants were low. Thus, health education to raise awareness of the importance of cervical cancer screening should be a priority for community health leaders.

Keywords: Cervical cancer; Bishoftu town; Eastern Ethiopia

Abbreviations: AIDS: Acquired Immune Deficiency Syndrome; AOR: Adjusted Odd Ratio; CC: Cervical Cancer; CI: Confidence Interval; COR: Crude Odd Ratio; FMOH: Federal Ministry of Health; HH: Household; HIV: Human Immuno Deficiency Virus; HPV: Human Papilloma Virus; KAP: Knowledge, Attitude and Practice; Pap-test: Papanicolaou Test; SPSS: Statistical Package for Social Sciences; STI: Sexual Transmitted Infections; VIA: Visual Inspection of the Cervix with Acetic Acid; WHO: World Health Organization

BACKGROUND

Cancer of the cervix is the fourth most common cancer worldwide and the second commonest female cancer [1]. In Ethiopia, cervical cancer is the second most common female cancer among women of reproductive age [2]. Globally, the majority of cervical cancer is caused by the Human Papilloma Virus (HPV), specifically types 16 and 18 which account for 70% of cases [3].

In low-income countries, cervical cancer is associated with significant morbidity and mortality, predominantly due to a lack of access to screening and treatment services [4,5].

Cervical cancer screening aims to identify precancerous lesions. Currently, the options available are pap smear, visual inspection

with acetic acid, and HPV testing for high-risk HPV types [3]. Early detection and treatment of precancerous lesions can prevent cervical cancers [6]. However, competing health care priorities, insufficient financial resources, weak health systems, and limited numbers of trained providers have made high coverage of cervical cancer screening difficult to achieve particularly in low-income countries, like Ethiopia [3-5,7,8]. Globally, in 2012, nearly a billion women were eligible for cervical cancer screening, most of who have never been screened in their life [3].

METHODS

Study area and period

This study was conducted in Bishoftu town, Oromia Regional

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State, which lies approximately 47 km from Addis Ababa. Data were collected between 1st to 15th June 2016. Bishoftu town comprises of 9 administrative districts. There are more than ten governmental and non-governmental health facilities within the town. According to the Federal Democratic Republic of Ethiopian Central Statistical Agency, the population of Bishoftu town in 2016 was 153,847 of which 80,852 were women. Among the total female population; 39,989 were of childbearing age [9].

Study design

Community-based cross-sectional study design was employed to assess the practice of cervical cancer screening and its associated factors among women aged 15-49 years in Bishoftu town, Eastern Ethiopia.

Source population

All women aged 15 to 49 years residing in Bishoftu town.

Study population

Randomly selected women aged 15 to 49 years from selected districts of Bishoftu town.

Sample size

The required sample size for the study was determined by using a single population proportion formula based on the following assumption. The proportion of attitude towards cervical cancer screening from similar study done in Kinshasa, Democratic Republic of Congo was 52% ($p=0.52$, $q=0.48$), $Z_{\alpha/2}=1.96$ (95% confidence interval) and $d=5\%$ (0.05) [10,11]. Based on this assumption and considering the design effect of 2 and a non-response rate of 10%, the final sample size was 845.

Sampling technique

A multistage sampling technique was used in this study. First, 3 of the 9 districts were selected using a simple random sampling technique. A sampling frame was prepared using the house numbers and individual households in the selected 3 districts were selected using a simple random sampling technique. For households with more than one woman aged 15 to 49 years, only one woman was selected using a lottery method. Finally, proportionate sample size allocation was used for each selected district to get the final sample size. Closed houses during data collection were revisited by the interviewers three times, at different intervals, and those that remained unavailable were excluded from the study and were replaced by the next nearest house. Incomplete data collected by the interviewers were completed during the next field visit to achieve the maximum sample size.

Data collection and processing

A pre-tested structured questionnaire was developed after reviewing comparable relevant literature. The questionnaire was originally prepared in English and was translated into regional working language, Afaan Oromo, by experts. The Afaan Oromo was then translated back to the English language to check its accuracy. Fifteen female nurses were recruited and trained on the data collection procedure. All completed questionnaires were reviewed by the principal investigators.

Data analysis and quality management

Data entry was done using Epi-Info version 3.5.3 after checking for completeness. It was then cleaned and exported to SPSS Version 20 for analysis. Frequencies and other descriptive statistics were done.

Bivariate analysis was used to examine the association between dependent and independent variables; Odds Ratios (ORs) and their 95% Confidence Intervals (CIs) were calculated. All variables that had a p-value of <0.2 in the bivariate analysis were included in the multivariate logistic regression analysis model to determine the factors associated with dependent variables. Statistical significance was set at a p-value of <0.05 .

MEASUREMENTS

Knowledge assessment

Knowledge of the respondents on cervical cancer screening was assessed using some basic knowledge assessing questions. A total of 12 correct responses were documented from 8 multiple-choice questions. Correct and incorrect responses were scored 1 and 0 respectively. The minimum score was 0 and the maximum was 12. Those respondents who scored less than the mean score were considered to have poor knowledge and those respondents who scored greater than or equal to the mean score were considered to have good knowledge of cervical cancer screening.

Attitude assessment

The attitude of the study participants towards cervical cancer screening was assessed using seven-question surveys with a Likert scale (Table 2). Participants were asked if they strongly agreed, agreed, were neutral, disagreed, or strongly disagree with each of the seven questions. The responses were summed up and a total score was obtained for each respondent with a maximum of 35 and a minimum score of 7 possible. Those who scored greater than or equal to the mean were considered to have a favourable attitude towards cervical cancer screening while those who scored less than the mean were considered to have an unfavourable attitude.

Practice assessment

The practice of attending cervical screening was assessed. Those who had attended a screening for cervical cancer at least once or more in their lifetime were regarded as practising cervical screening. Those who had never attended a screening for cervical cancer were regarded as having no practice of cervical cancer screening.

RESULTS

Socio-demographic characteristics of the study population

A total of 845 women of reproductive age participated in this study, a response rate of 100%. The age of participants ranged from 15-49 years with a mean age of 32 years (SD \pm 6.8). The majority of participants were married (73.3%), self-employed (43.4%), parous (67.5%), and educated (94.2%).

Risk exposure among study participants

One hundred-seven (13.4%) of the study participants had first sexual intercourse before 18 years of age. Just, 1.0% of respondents had had more than one sexual partner. Of the study participants, 0.6% and 2.9% were cigarette smokers and HIV/AIDS positive respectively. The majority of study participants, 602 (71.2%), had used modern contraceptives at some point in time (Table 1).

Knowledge, attitude, and practice of cervical cancer screening

The majority of study participants, 73.3%, had some information about cervical cancer. 51.2% and 48.8% had good and poor knowledge scores respectively. 46.7% and 47.2% of participants did not know the cause and prevention of cervical cancer respectively. The majority, 85%, reported treatment options for cervical cancer.

However, only 28.4% believed in the existence of screening methods. Seven questions to assess attitudes were combined and a mean score was obtained to classify respondents as having either a favourable or unfavourable attitude towards cervical screening. The mean score was 24 with results ranging from 12-34. Most of the study participants, 74.9%, had a favourable attitude towards cervical cancer screening. Among 845 study participants, only 5.8% had ever been screened for cervical cancer, the main reason being lack of awareness about screening (Table 2).

Factors associated with the practice of cervical cancer screening

Women who knew someone diagnosed with cervical cancer were 2.88 times more likely to have attended for cervical cancer screening than those women who did not know someone diagnosed with cervical cancer (AOR=2.88, 95%CI (1.47-5.61). Women who had good knowledge of cervical cancer and its screening were more likely to have attended cervical cancer screening than those who had poor knowledge (AOR=6.95, 95% CI (2.59-18.57) (Table 3).

Table 1: Risk of exposure to cervical cancer among the study participants in Bishoftu town, Eastern Ethiopia, 2016.

Variables	Frequency	Percentage
Age at first sexual intercourse (n=798)		
<18 years	107	13.4
≥ 18 years	691	86.6
Number of sexual partners (n=798)		
One	790	99.0
Two or more	8	1.0
Hormonal contraception use		
Yes	602	71.2
No	243	28.8
Smoking habit		
Yes	5	0.6
No	840	99.4
HIV test result (n=790)		
Non-reactive	767	97.1
Reactive	23	2.9

Table 2: Attitude towards cervical cancer and screening among study participants in Bishoftu town, Eastern Ethiopia, 2016.

Variables	Attitude status of the study participant on Likert scale				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Cancer of the cervix is highly prevalent in Ethiopia and is one of the leading cause of death from cancer	124 (14.7)	253 (29.9)	20 (2.4)	335 (39.6)	113 (13.4)
Any adult women including you can acquire cervical cancer	148 (17.5)	422 (49.9)	18 (2.1%)	217 (25.7)	40 (4.1)
Cancer of the cervix cannot be transmitted from one person to another	124 (14.7)	268 (31.7)	41 (4.9)	313 (37.0)	99 (11.7)
Screening helps in prevention of cancer of the cervix	179 (21.2)	518 (61.3)	25 (3.0)	87 (10.3)	36 (4.3)
Screening causes no harm to the client	154 (18.2)	401 (47.5)	21 (2.5)	220 (26.0)	49 (5.8)
Screening for pre-cancer cervical lesions is not expensive	110 (13.0)	273 (32.3)	48 (5.7)	382 (45.2)	32 (3.8)
If screening is charge-free and causes no harm, will you be the screen?	207 (24.5)	495 (58.6)	38 (4.5)	90 (10.7)	15 (1.8)

DISCUSSION

In this study, the major sources of information were mass media and health professionals. This finding is consistent with a study conducted in Ogun State, Nigeria where health professionals and mass media were the commonest sources of information for cervical cancer and its screening [12,13]. As previous studies conducted in the Democratic Republic of Congo [10] and Ethiopia [4], participants with a higher level of education and those who obtained information from mass media and health professionals were associated with an increased level of knowledge about cervical cancer and its screening. This highlights the importance of educating the community and the role of the media and health professionals in raising awareness.

This study showed that knowledge about the risk factors of cervical cancer (including smoking, multiple sexual partners, sexual intercourse at an early stage, and low socioeconomic status) was low. This finding is better than studies done in Nigeria, and Ghana [12,13]. This could be explained by differences in educational status. By contrast, one study from South Africa showed the majority of the respondents knew at least one risk factor for cervical cancer [12]. This difference might be attributed to the fact that South Africa has a national cervical cancer screening policy. In Ethiopia, there are no organized and multidisciplinary preventive and curative strategies for cervical cancer which may account for the lower result of her [14].

As a result of effective screening options, HPV vaccination, and effective treatment options for precancerous lesions, cervical cancer is a preventable disease. But in this study, unlike other studies in Ethiopia and South Africa [4,14], only half of the respondents mentioned at least one preventive option for cervical cancer.

Most of the study participants had a favourable attitude towards cervical cancer screening. This might be explained by the higher level of education of study participants. The role of mass media and health professionals in increasing awareness of the participants towards cervical cancer and its screening might be reasons for a favourable attitude towards screening. But it is still lower than in other studies conducted in Northeast Ethiopia [7] and India [15].

Despite good knowledge and a favourable attitude, the screening practice of study participants was found to be low though this service is given free of charge. This may be related to the discomfort associated with the screening procedure. Therefore, this low rate

Table 3: Association between practice on cervical cancer screening and different characteristics of study participants in Bishoftu town, Eastern Ethiopia, 2016.

Variables	Practice on cervical cancer screening		COR, 95% CI	AOR, 95% CI
	No practice (%)	Practice (%)		
Age				
15-24	97 (100)	0	0.000	
25-34	392 (93.3)	28 (6.7)	1.04 (0.58-1.87)	
35-49	307 (93.3)	21 (6.7)	1	NA
Educational status				
No formal/primary	297 (97.1)	9 (2.9)	1	1
Secondary	301 (93.8)	20 (6.2)	2.19 (0.98-4.89)	1.31 (0.56-3.02)
Higher education	198 (90.8)	20 (9.2)	3.33 (1.49-7.89)*	
Age at first sex				
<18 years	100 (93.5)	7 (6.5)	1	1.51 (0.63-3.59)
≥ 18 years	650 (94.1)	41 (5.9)	0.90 (0.39-2.06)	
Knowing someone diagnosed with cervical cancer				
Yes	83 (84.7)	15 (15.3)	3.79 (1.98-7.25)*	2.88 (1.47-5.61)*
No	713 (95.4)	34 (4.6)	1	
Knowledge score				
Poor	407 (98.8)	5 (1.2)	1	1
Good	389 (89.8)	44 (10.2)	9.21 (3.61-23.46)*	6.95 (2.59-18.57)*
Attitude				
Favorable	206 (97.2)	6 (2.8)	1	1
unfavorable	590 (93.2)	43 (6.8)	2.50 (1.05-5.96)*	1.20 (0.47-3.07)
Number of children				
Nulliparous	192 (95.5)	9 (4.5)	1	NA
1-4 children	532 (93.3)	38 (6.7)	1.52 (0.72-3.21)	
≥ 5 children	72 (97.3)	2 (2.7)	0.59 (0.12-2.81)	
Religion				
Orthodox	517 (95.5)	26 (4.8)	0.56 (0.30-1.06)	
Catholic	13 (92.9)	1 (7.1)	0.86 (0.10-7.01)	
Muslim	75 (93.8)	5 (6.2)	0.74 (0.26-2.10)	
Protestant	191 (91.8)	17 (8.2)	1	NA

COR: Crude Odds Ratio; odds ratio by bivariate analysis; 95% CI: confidence interval at the 95% level

*p-value ≤ 0.05; AOR: Adjusted OR: odds ratio by multiple logistic regression

NA: Not Applicable

of attendance requires further exploration to fully understand why women do not attend for this life-saving intervention. The finding is consistent with other studies in Sub-Saharan Africa and other developing countries [4,7,11,16,17]. On the other hand, because of relative improvement in awareness about cervical cancer in Ethiopia, the level of current cervical cancer screening practice is higher than comparative studies in Kenya [11] and South Ghana [12].

Like other studies conducted in Ethiopia and Tanzania [7,18-20], women who practised cervical cancer screening are women with good knowledge scores and those who know someone diagnosed with cervical cancer.

The study found that nearly half of the study participants had poor knowledge of the causes, risk factors, and preventive methods of cervical cancer and its screening. The majority of women had a favourable attitude towards cervical cancer screening but, the

practice of attending for pre-cervical cancer screening was low. Thus, raising awareness of cervical cancer and its screening should be a priority for the community by trained health workers. This could be done through the use of mass media like television and radio, in health promotion and raising awareness.

CONCLUSION

The knowledge level and attendance for cervical cancer screening among study participants were low. Thus, health education to raise awareness of the importance of cervical cancer screening should be a priority for community health leaders.

DECLARATIONS

Ethics approval and consent to participate

Ethical clearance was obtained from the Research Ethics Review Committee (RERC) of Wollega University. Bishoftu town health office was informed of the study's aims and objectives

and permission was obtained. Following an explanation of the purpose and objectives of the study, written informed consent was obtained from each study participant. Additionally, written consent was obtained from guardians for those below 18 years of age. The participants were assured that all information was used only for the study. Confidentiality was assured by not recording the participant's name on the questionnaire.

Consent to publish

Not applicable

Availability of data and materials

The data sets are available from the corresponding author on a reasonable request.

Competing interests

Authors declare that they have no financial and non-financial competing interests.

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Authors' contributions

Ebo GG conceived the study, its overall design, and execution, designed the questionnaire, performed data collection, performed the statistical analysis, and served as the lead author of the manuscript.

Heyi WD conceived the study, participated in the design of the questionnaire, performed the statistical analysis, drafted the manuscript, and assisted in the design of the study and data analysis.

Tilahun T participated in the design of the questionnaire, in drafting and finalizing the manuscript, and assisted with the design of the study and data analysis. All authors read and finally approved this manuscript for submission.

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REFERENCES

1. Team WHO. Human Papillomavirus (HPV) and cervical cancer. World Health Organization. 2015.
2. Bruni L, Albero G, Serrano B, Mena M, Gómez D, Muñoz J, et al.

Human papillomavirus and related diseases report. HPV Information Centre. 2019:1-62.

3. WHO guidance note. Comprehensive cervical cancer prevention and control: A healthier future for girls and women. World Health Organization. 2013.
4. Getahun F, Mazengia F, Abuhay M, Birhanu Z. Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia. *BMC cancer*. 2013;13(1):2.
5. Terefe Y, Gaym A. Knowledge, attitude and practice of screening for carcinoma of the cervix among reproductive health clients at three teaching hospitals, Addis Ababa, Ethiopia. *Ethiopian J of Reprod Health*. 2008;2(1).
6. American Cancer Society. Global Cancer Facts and Figures 3rd Edition. Am Cancer Society. 2015;800:1-64.
7. Andargie A, Reddy PS. Knowledge, attitude, practice and associated factors of cervical cancer screening among women in Dessie Referral Hospital and Dessie Health Center, Northeast Ethiopia. *Glob J Res Anal*. 2016;4:12.
8. Federal Democratic Republic of Ethiopia Ministry of Health. National Cancer Control Plan. Disease Prevention and Control Directorate 2016-2020, Ethiopia. 2015:1-85.
9. Federal Democratic Republic of Ethiopia Central Statistical Agency. Population Projection of Ethiopia for all Regions at wereda level from 2014-2017. 2013.
10. Ali-Risasi C, Mulumba P, Verdonck K, Broeck DV, Praet M. Knowledge, attitude and practice about cancer of the uterine cervix among women living in Kinshasa, the Democratic Republic of Congo. *BMC Women's Health*. 2014;14 (1):30.
11. Sudenga SL, Rositch AF, Otieno WA, Smith JS. Knowledge, attitudes, practices, and perceived risk of cervical cancer among Kenyan women: brief report. *Int J Gynecol Cancer*. 2013;23(5):895-899.
12. Ebu NI, Mupepi SC, Siakwa MP, Sampsel CM. Knowledge, practice, and barriers toward cervical cancer screening in Elmina, Southern Ghana. *Int J Women's Health*. 2015;7:31-39.
13. Abiodun OA, Fatungase OK, Olu-Abiodun OO, Idowu-Ajiboye BA, Awosile JO. An assessment of women's awareness and knowledge about cervical cancer and screening and the barriers to cervical screening in Ogun State, Nigeria. *IOSR- J Dent Dent Med*. 2013;10(3):52-58.
14. Hoque M, Hoque E, Kader SB. Evaluation of cervical cancer screening program at a rural community of South Africa. *J Public Health*, 2008;5(2):111-116.
15. Varadheswari T, Dandekar RH, Sharanya T. A study on the prevalence and KAP regarding cervical cancer among women attending a tertiary care hospital in Perambalur. *Int J Prev Med Res*. 2015;1(3):71-78.
16. Hyacinth HI, Adekeye OA, Ibeh JN, Osoba T. Cervical cancer and pap smear awareness and utilization of pap smear test among Federal civil servants in North Central Nigeria. *Plos one*. 2012;7(10):e46583.
17. Sabeena S, Bhat PV, Kamath V, Aswathyraj S, Arunkumar G. Knowledge, attitude and practice concerning human papilloma virus infection and its health effects among rural women, Karnataka, South India. *Asian Pac J Cancer Prev*. 2015;16(12):5053-5058.
18. Bayu H, Berhe Y, Mulat A, Alemu A. Cervical cancer screening service uptake and associated factors among age eligible women in Mekelle Zone, Northern Ethiopia, 2015: a community based study using health belief model. *PloS One*. 2016;11(3):e0149908.
19. Lyimo FS, Beran TN. Demographic, knowledge, attitudinal, and accessibility factors associated with uptake of cervical cancer screening

among women in a rural district of Tanzania: three public policy implications. BMC Public Health. 2012;12(1):22.

20. John J. The knowledge, attitude, practice and perceived barriers

towards screening for premalignant cervical lesions among women aged 18 years and above, in Songea urban, Ruvuma, Doctoral dissertation, Muhimbili University of Health and Allied Sciences. 2011.