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Original Research

Cervical Cancer Screening Practice and Associated Factors among Women of 21-49 Years in Nekemte Town, West Ethiopia

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Abstract

Cervical cancer is one of the most frequently occurring type of reproductive organ cancers in women worldwide. Within the forecasted changes in population demographics in the next two decades, even if current global cancer rates remain unchanged, the estimated incidence of 12.7 million new cancer cases in 2008 will rise to 21.4 million by 2030. To assess cervical cancer screening practice and associated factors among women of 21-49 years in Nekemte town, West Ethiopia. A community based cross-sectional study design was conducted from June 11-20/2016.Multi stage sampling was utilized and a total of 786 women were included in the study. Data was checked for completeness and entered to EPI data and analyzed using SPSS version 20. Variables found to have association with the dependent variables ($p<0.25$) in Bivariate analysis were entered in to multiple logistic regression for controlling the possible effect of confounders. Finally, the variables that have p-value of <0.05 were considered statistically significant. The strength of association between independent and dependent variable was assessed using odds ratio with 95% confidence interval. A total of 786 women aged 21-49 years were participated in this study with a response rate of 93%. The proportion of cervical cancer screening practice was 3.1%. Knowledge and attitude of the respondents were significantly associated with cervical cancer screening practice with an adjusted odd ratio(AOR) of 7.52, 95% CI (2.36–23.91) and 3.778, 95% CI (1.063-13.428), respectively. This study revealed that the life time cervical cancer screening practice is low. Knowledge and attitude towards cervical cancer screening were found to be significant predictors of cervical cancer screeningpractice. Health offices and their stakeholders should work on community at the grass root level through sustained community involvement to improve knowledge and attitude towards cervical cancer screening.

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INTRODUCTION

Cervical cancer is the second most common cancer in women worldwide. In Sub-Saharan Africa, nearly 70% of women afflicted with the condition live in rural areas, in poverty, and lack access to basic amenities like water and health care infrastructure (Tekim, 2012).

In addition, majorities are at the prime of reproductive life when demand of motherhood and socioeconomic responsibilities in the family places an enormous burden on them. Delays in diagnosis and poor healthcare seeking behavior are common with these patients (Coleman,*etal*, 2011).

In the year 2012, estimates of the worldwide number of cervical cancer cases and deaths amounted to 527,624 and 265,653, respectively (Ferlay *et al*, 2013). More than 80% of global

invasive cervical cancer (ICC) cases occur in developing countries and come with a higher mortality/incidence ratio (WHO/ICO, 2010).

Current estimates indicate that every year 7095 women are diagnosed with cervical cancer and 4732 die from the disease. Cervical cancer ranks as the 2nd most frequent cancer among women between 15 and 44 years of age in Ethiopia. Data is not yet available on the HPV burden in the general population of Ethiopia. However, in the Eastern Africa about 4.7% of women in the general population are estimated to harbor cervical HPV-16/18 infection at a given time and 68.3% of invasive cervical cancers are attributed to HPVs 16 or 18. 3(WHO/ ICO, 2014)

In Ethiopia, cancer is a growing but neglected problem. Reports from retrospective review of biopsy results have shown that cervical cancer is the most prevalent cancer among women in the country followed by breast cancer(Bekele, 2005)

Owning overwhelming of burden of communicable diseases, cancer has received low priority for health care services in Ethiopia. However, taking into account the ever increasing burden of cancer, the government of Ethiopia has taken a number of initiatives aimed at preventing cancer. Despite this cancer has increasingly become causes for morbidity and mortality and in the next few decades, it is even going to be a contributor to global morbidity and mortality. In Ethiopia cervical cancer has been cited as one of the emerging public health problems

Surprisingly in Ethiopia, only 1% of age eligible women receive effective screening for cervical cancer and 90% of women have never had a pelvic examination at all (Ferlay, 2013, Gakidou, 2008).

Understanding cervical cancer screening practice and associated factors among the community will help in addressing practical and strategic need of cervical cancer prevention program in Ethiopia. Studies in this respect seem to be limited in this country which resulted in information gap among practitioners, researchers and policy makers. Among the exiting literatures few studies were dedicated to assess the issue in concern taking only clients as study subjects.

Therefore, the main purpose of this research was to identify factors affecting cervical cancer screening practice and recommend ways to increase cervical screening practice by the community.

Materials and Methods

Study area

The study was conducted in Nekemte town, which is 331km away from Addis Ababa and 110 km North East of Gimbi town and 250 km North West of Jimma town.According to population projection from the 2007 Ethiopian census report,2016 total population for this town is 1,835,344 of whom 936,594 were males and 898,750 were females (CSA, 2007). According to the town health office, thereare two Hospitals (Nekemte Referral Hospital and Wollega University Teaching Referral Hospital), three health centers (one is none governmental),51 clinics, eight pharmacies, three drug whole sales,28 drug shops and four rural drug vendor providing health services to the population of Nekemte town and nearby areas. Cervical cancer screening (VIA) service is available in Nekemte Referral Hospital.

Study Design and Period

A community based cross-sectional study design was employed to assess Cervical cancer screening practice and associated factors among Women of 21-49 years Lives in Nekemte town, Western Ethiopia, from June 11-20, 2016.

Source population

All women aged 21-49 years residing in Nekemte town.

Study population

Women of 21-49 years residing in the randomly selected Sub-Cities of Nekemte town

Study Unit

Women of 21-49 years who were interviewed from the sampled households

Inclusion criteria

All women aged of 21-49 years residing in the study area for at least six months.

Exclusion criteria

Women who are seriously ill, who already develop cervical cancer and unable to respond to the questions were excluded

Sample size determination

The sample size was determined using a formula for estimation of single population proportion with the assumption of 95 % confidence interval, a margin of error 5 % and by using an assumption of

the proportion of cervical cancer screening practice 50% among women of 21-49 years in Nekemte town and a design effect of 2. Based on this assumption, the actual sample size for the study was computed using single population proportion formula as indicated below.

Sample size was calculated using single proportion formula.

$n = \frac{(Z_{\alpha/2})^2(pq)}{d^2} = \frac{(1.96)^2 * 0.5 * 0.5}{(0.05)^2} = 384$ using design effect=2 total n=678

Where $Z_{\alpha/2}$ = 95% confidence interval (1.96)

P=estimated proportion

d = Marginal error =5%

To compensate the non-response rate, 10 % of the determined sample was added up on the calculated sample size and the final sample size was 845.

Sampling procedure

Multi stage sampling was used. From the 6 Sub-Cities, 3 were selected by lottery method. From the selected Sub-Cities again 50% of zones were selected by lottery method. Households in the selected zones were selected using a systematic sampling technique and the numbers of households sampled from the selected Sub- Cities were determined using proportionate-to-population size. For households with more than one woman aged 21-49 years in one household, only one woman was selected using lottery method. For closed household (HH) during data collection, the interviewers were revisited the household to get the respondents.

Data collection procedures

A pre-tested structured questionnaire was developed after reviewing similar literatures. The questionnaire was prepared in English and translated to regional working language, Afan Oromo, by professional. To check for consistency of the meaning, Afan Oromo was translated back to English languageThree supervisors and six data collectors were recruited and trained on procedures of data collection. All completed questionnaires were reviewed by the principal investigator.

The questionnaires were Pre-tested 10 days before the actual data collection on 42 eligible age group women (5% of the sample size) from Bakenisa Kese Sub City of Nekemte town, which was notincluded in the study.

Data quality management

Data quality was maintained by training and appropriate supervision of data collectors. Overall supervision was made by the principal investigators. Each question was explained in the language the participants understand and questionnaire was filled on the spot so as to get unbiased remarks.

Data Analysis and Quality Management

The filled questionnaires were checked for completeness and entered in to EPI data statistical software. It was then cleaned and transferred to SPSS Version 20 for analysis. Frequencies and cross tabulations were used to summarize descriptive statistics of the data and tables and graphs were used for data presentation. Bivariate analysis was used primarily to check which variables have association with the dependent variable individually. Variables with $p<0.25$ were entered in to Multiple Logistic regression for controlling the possible effect of confounders. Multi-collinearity between exposure variables was checked with VIF. Hosmer and Lemeshow goodness of fit of test was used to assess the model fitness assumption.Finally, the variables which have p-value <0.05 were considered statistically significant.

The strength of association between independent and dependent variable was assessed using odds ratio with 95% confidence interval.

Ethical considerations

Ethical clearance was obtained from the Ethical review board of Wollega University. Communication with the different town and Sub-Cities administrators were made through formal letter obtained from Wollega University. After the purpose and objective of the study have been informed, writteninformed consent was obtained from each study participants. Participants were also informed that participation is on voluntary basis and they can withdraw from the study at any time if they are not comfortable about the questionnaire. In order to keep confidentiality of any information provided by study subjects, the data collection procedure was anonymous.

Measurements

Knowledge assessment

Knowledge of the respondents on cervix cancer and pre-cancer cervical lesion screening was assessed by using some basic knowledge assessing

questions. A total of 10 correct responses were documented from 10 multiple choice questions. Each right response was given a score of 1 and a wrong response given a score of 0. The minimum score has been 0 point and the maximum point was 10. Those respondents who scored less than the mean score were considered as they have poor knowledge and those respondents who score ≥ the mean score were assumed as they have good knowledge on cervical cancer and its screening.

Attitude assessment

Attitude of the study participants on cervical cancer and screening was assessed by using the following rules. First, 10 questions with Likert scale were used. The questions on Likert's scale had positive and negative responses that ranged from strongly agree to strongly disagree. The responses were summed up and a total score was obtained for each respondent. The maximum score was expected to be 50 and the minimum score to be 10. Finally, those scored ≥ the meanswere considered positive attitude and those scores less than the mean were considered as Negative attitude.

Practice assessment

The practice was assessed based on the respondent's experience towards screening for pre-cancer cervical lesion (Papanicolaou/VIA test). Those respondents who screen for cervical cancer at least one time and more were regarded as having practice and those respondents who never screened for cervical cancer in life time were regarded as having no practice on screening.

RESULTS

A total of 786 women aged 21-49 years were participated in this study with a response rate of 93%. The mean age of respondents was 33 years with standard deviation (SD± 6.8) with the minimum and maximum age of 21 years and 49 years respectively. Concerning ethnicity, 604(76.8%) of respondents were Oromo. Regarding marital status 559(71.1%) of the respondents who participated in this studywere married. Protestant Christianity was the main religion followed among the respondents which accounted for 335(42.6%).

Table 1: Socio-demographic characteristics of study participants, Nekemte town, West Ethiopia, (June 2016) (n=786)

Characteristics		Frequency	**Percent (%)**
Variables	Alternatives	Frequency	Percent
Age group	21-29	277	35.2
	30-39	353	44.9
	40-49	156	19.8
Religion	Protestant	335	42.6
	Orthodox	292	37.2
	Muslism	108	13.7
	Catholic	31	3.9
	Wakefata	20	2.5
Ethnicity	Oromo	604	76.8
	Amhara	114	14.5
	Gurage	49	6.2
	Tigre	19	2.4
Marital status	Married	559	71.1
	Single	100	12.7
	Divorced	70	8.9
	Widowed	57	7.3
Educational level	Cannot read & write	61	7.8
	Read & write only	79	10.1
	Grade1-6	101	12.8
	Grade7-8	124	15.8
	Grade 9-12	235	29.9
	Diploma	147	18.7
	Digree & above	39	5.0
Occupation	Government employee	118	15.0
	Non-government employee	34	4.3
	Dailylaboreer	109	13.9
	Housewife	237	30.2
	Student	79	10.1
	Privatebusiness	178	22.6
	Houseservant	22	3.94
Monthly household income	<=900	240	30.5
	901-1500	187	23.8
	1501-2500	164	20.9
	>2500	195	24.8

Sexual and Reproductive characteristics of the respondents

Regarding sexual and reproductive characteristics, 550(74.1%) of the respondents had sexual intercourse for the first time at the age of 18 years and above. From the total respondents 564(82.2%) had married for the first time at the age of 18 years and above, the rest are less than 18 years.

Table 2: Sexual and Reproductive characteristics among the respondents, Nekemte Town, West Ethiopia (June 2016)

Variables	Alternatives	Frequency	Percent
Age at first sex(n=742)	<18 years	192	25.9
	>=18 years	550	74.1
Age at first marriage n=686	<18 years	122	17.8
	>=18 years	564	82.2
Parity (n=686)	Nulli para	21	3.1
	1-4 children	608	88.6
	5 and abovechildren	57	8.3
Contraceptive use(n=786)	Yes	530	67.4
	No	256	32.6

Knowledge of study participants about cervical cancer

Knowledge level of the respondents was assessed using ten questions. Among the study participants, more than two third 533(67.8%) of the respondents had good knowledge on cervical cancer screening while 253(32.2%) had poor knowledge on cervical cancer screening.

One hundred ninth one (24.3%) mentioned at least one risk factor for cervical cancer. while 595(75.7%) did not knowabout the risk factors. Three hundred thirty-four (42.5%) mentioned at least one prevention method and 452(57.5%) did not mention any prevention methods. With regard to sign and symptom of cervical cancer, 656(83.5%) of the study participants did not mention any sign and symptom of cervical cancer.

Attitude towards cervical cancer screening

Regarding Attitude level of the respondents, this study revealed that from the total respondents 414(52.7%) had positive attitude towards cervical cancer screening and the remaining 372 (47.3%) had negative attitude towards cervical cancer screening. From all the respondents 69(8.8%) strongly agreed that cervical cancer is highly prevalent in our country and is a leading cause of death amongst all pregnancies and also 125 (15.9%) of them strongly agreed that anyone including themselves can have cervical cancer and 25(3.2) of the respondents strongly agree that hearing about cervical cancer on the Mass-media make women think about getting cervical cancer screening.

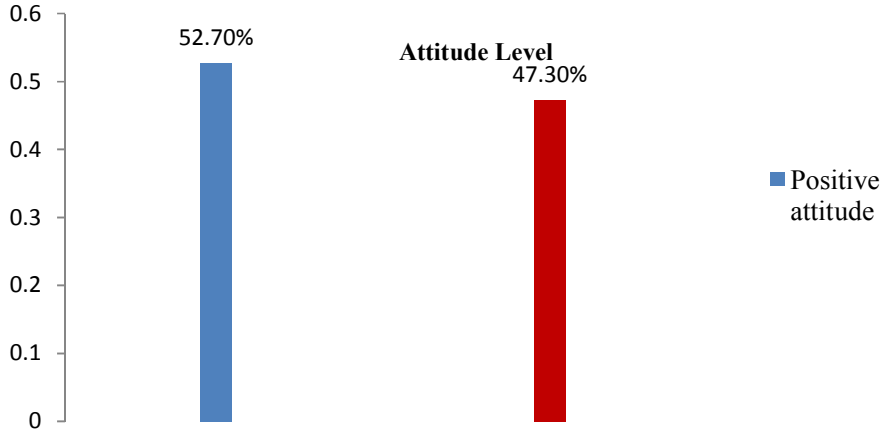

Figure 1: Distribution of Attitude level of respondents on cervical cancer and its screening in Nekemte Town, West Ethiopia (June 2016)

Cervical cancer screening practice among the study respondents

From the total respondents 24(3.1%) had been screened for cervical cancer. Seven hundred sixty-two (96.9%) of the respondents were not screened for cervical cancer.

Table 3: Cervical cancer screening practice among the study participants, Nekemte townWest Ethiopia, June 2016

Variables	Frequency	Percent
Have ever screened for cervical cancer(n=786)		
Yes	24	3.1
No	762	96.9
How many times screened(n=24)		
Once	23	95.8
More than once	1	4.2
When was last time screened(n=24)		
Within the past three years	23	95.8
More than three years	1	4.2

Factors associated with cervical cancer screening practice

Among the variables which were analyzed using multivariable logistic regression, Knowledge level and attitude level were found to be statistically significant since they have association with the outcome variable at p-value <0.05. A multivariate analysis on cervical cancer screening practice revealed a statistical association with knowledge. Women who were knowledgeable oncervical cancer were 7.52 times more likely to practice cervical cancer screening than women who were not knowledgeable (AOR= 7.52, 95% CI:2.364-23.908). Similarly, women who have positive attitude towards cervical cancer screening were 3.78 times more likely to exercise cervical cancer screening than women who have negative attitude towards cervical cancer screening (AOR=3.78,95%CI:1.06-13.43).Themultiple logistic regression model was checked with Hosmer and lemeshow and fit at (p-value =0.49).

Table 4: A logistic regression model for predictor variables of cervical cancer screening practice, Nekemte town, West Ethiopia, June 2016

Variables	Categories	Cervical cancer screening practice		Crude OR(95% CI)	AOR(95% CI)
		Practice	No practice		
Age group	21-29years	6(2.2%)	271(97.8%)	1	1
	30-39years	14(4%)	339(96%)	1.865(0.707-4.919)	2.266(0.769-6.677)
	40-49years	4(2.6%)	152(97.4%)	1.189(0.330-4.278)	1.432(0.356-5.760)
Occupation	Employed	9(5.9%)	143(94.1%)	2.432(1.032-5.733)	1.544(0.532-4.482)
	Student	1(1.3%)	78(98.7%)	0.495(0.064-3.820)	2.509(0.214-29.382)
	Unemployed	14(2.5%)	541(97.5%)	1	1
Education	Primary education	8(2.2%)	357(97.8%)	1	1
	Secondaryeducation	16(3.8%)	405(96.2%)	1.763(0.746-4.168)	1.461(0.506-4.216)
Marital Status	Never married	1(1%)	99(99%)	1	1
	Ever married	23(3.4%)	663(96.6%)	3.434(0.459-25.715)	3.639(0.355-37.292)
Monthly family income	<=900	8(3.3%)	232(96.7%)	1	1
	901-1500	3(1.3%)	184(98.4%)	0.577(0.244-2.340)	0.487(0.141-1.675)
	1501-2500	4(2.4%)	160(97.6%)	1.054(0.274-4.046)	0.677(0.156-2.933)
	>2500	9(4.6%)	186(95.4%)	2.5(0.917-6.816)	0.790(0.231-2.706)
Previes HIV test	Yes	23(3.4%)	655(96.6%)	3.757(0.502-28.112)	2.690(0.340-21.284)
	No	1(0.9%)	107(99.1%)	1	1
Knowledge Level	knowledgeable	20(7.9%)	233(92.1%)	11.35(3.838-33.579)	7.518(2.364-23.908)*
	Not knowledgeable	4(0.8%)	529(99.2%)	1	1
Attitude Level	Positive attitude	21(5.1%)	393(94.9%)	6.573(1.944-22.219)	3.778(1.063-13.428)*
	Negative attitude	3(0.8%)	369(99.2%)	1	1

NB: *= p-value < 0.05

DISCUSSION

The current cervical cancer screening practice in this study is 24(3.1%) which is higherthan 2008 report from Ethiopia, where only less than 1% of age eligible women were screened (Gakidou, 2008). This might be due to an intervention that has been taking place since 2008 onawareness creation about cervical cancer screening in the country. On other hand this study is conducted among town residents which make the practice higher to national data. Additionally, the government is expanding the screening centers which might have increased screening practice. Screening itself has become a routine procedure for gynecologic patients and is part of the standard care for women who are diagnosed as HIV positive. Recently, there is also a campaign to screen all HIV positive women who are on ART who were not screened before.

On the contrary, this study revealed that the cervical cancer screening practice is lower than screening service utilization of women of Tanzania. The finding showed that 14% of the respondents had undergone cervical cancer screening (John, 2011). Another study done in Kenya, indicated that 22% of respondents were screened (Gichangi, 2003) and similar study done in Addis Ababa Ethiopia, cervical screening practice was 6.8%(29). Although all screening practices among these countries were low, the finding of this study tends to be lower.

According to the current study, the main reasonsfor notpracticing cervical cancer screening service is lack of information. The same result was also reported from the study done in Tanzania which indicated lack of information about the disease and screening (John, 2011).

Among the study participants, more than two third 533(67.8%) of the respondents had poor knowledge on cervical cancer screening while 253(32.2%) had good knowledge on cervical cancer screening. This finding is similar with study done in Gondar, Ethiopia and slightly lower than study conducted in Addis Ababa (Getahun,2013, Eyerusalem, 2015). This could be due to the fact that the Addis Ababa study was facility based and this study was community based, the respondents in the Addis Ababa study might have relatively higher contact with health professionals that could increase their knowledge about cervical cancer screening.

In this study, knowledge is statistically significant with cervical cancer screening practice. Women who had good knowledge on cervical cancer screening were 7.5 times more likely to be screened than women who had poor knowledge (AOR = 7.52, 95% CI: 2.36–23.91). Consistent finding was also reported from study done in Mekelle, Ethiopia which reported that knowledge of cervical cancer screening practice increases the odds of cervical cancer screening uptake (Hinsermu B*etal,* 2015). Furthermore, one of the studies done in China reported that women who were willing to undergo screenings had higher knowledge levels (Jia, *eta*l, 2015).

The finding of this research showed that from the total respondents 414(52.7%) had positive attitude while 372 (47.3%) of them had negative attitude towards Cervical cancer screening. This study is consistent with study conducted in Tanzania in which more than half of the respondents had positive attitude towards cervical cancer screening.

In this study attitude is statistically significant with cervical cancer screening practice. Women with positive attitude on cervical cancer screening practice were 3.8 times more likely to be screened as compared to women with negative attitude (AOR=3.778, 95% CI:1.063-13.428). This finding is consistent with study conducted in North Ethiopia, Mekelle town which revealed that attitude (AOR = 3.023, 95% CI: 1.134–8.059) was found to be significant factor for cervical cancer screening practice (Hinsermu *et al,* 2015).

Limitation of the study

When interpreting the finding of this study some limitations should be considered. First, the cross sectional nature of the data made it impossible to reach at causal relationship between the different independent and outcome variables. Information bias, no standard cut off point for knowledge and attitude. Since the survey involved a sensitive matter there may be social desirability bias.

CONCLUSIONS AND RECOMMENDATIONS

This study revealed that the proportion of life time cervical cancer screening practice of women 21-49 years is low. Lack of information, being healthy, Lack of screening access and shyness were among common perceived barriers for not to undergo cervical cancer screening practices. According to this study knowledge and attitude towards cervical cancer screening were found to be significant predictors of cervical cancer screening practice. So, Health offices and their stakeholders should work on community at the grass root level through sustained community involvement to improve knowledge and attitude towards cervical cancer screening. Integration of cervical cancer screening into routine reproductive health services should be considered to increase cervical cancer screening practice.

Abbreviations

AIDS- Acquired Immune Deficiency Syndrome, CC -Cervical Cancer, CCS- Cervical Cancer Screening, HIV- Human Immunodeficiency Virus, HPV- Human Papilloma Virus, ICC-Invasive Cervical Cancer, STI-Sexually Transmitted Infection, VIA-Visual inspection of cervix with acetic acid, WHO- World Health Organization.

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