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Knowledge of Cervical Cancer and Its Screening Practice among Health Extension Workers in Addis Ababa, Ethiopia

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Abstract

Background: Health extension workers play a great role in creating awareness among the community and mobilizing women towards reproductive health. This study aimed to assess knowledge, attitude, practice and associated factors towards cervical cancer screening among Health Extension Workers in Addis Ababa, Ethiopia.

Method: Across sectional, interview based survey was conducted from December 8 to January 5, 2018 in Addis Ababa. Simple Random sampling technique was used to select a total of 301 study participants. Frequency tables and graphs were used to describe the study variables. Bivariate and multivariate logistic analyses were performed to see the existence and significance of association.

Results: More than half (51.5%) of health extension workers had poor level of knowledge about cervical cancer and only 27 (9.3%) of the respondents were screened in the past five years. Feeling healthy (33.9%), fear of pain during screening (16.1%) and felt free of risk factors (15.9%) were common reasons for not being screened. Knowing someone diagnosed with cervical cancer (AOR=3.5; 95% CI: 1.66-7.30) and marital status (AOR=3.4; 95% CI: 1.38-8.30) were significantly associated with practice of cervical cancer screening.

Conclusion: This study finds that there is poor knowledge among Health Extension workers in Addis Ababa about cervical cancer and its screening. Their screening practice was also found to be very low. Providing training for health extension workers and availing accessible screening services must be prioritized to increase their knowledge and enhance screening practices.

Keywords: Cervical cancer; Health extension workers; Knowledge; Cervical cancer screening practice

Abbreviations: AOR: Adjusted Odds Ratio; CI: Confidence Interval; COR: Crude Odds Ratio; ETB: Ethiopian Birr; HEP: Health Extension Program; HEWs: Health Extension Workers; HPV: Human Papilloma Virus; SD: Standard Deviation; SPSS: Statistical Package for the Social Science; VIA: Visual Inspection with Acetic acid; WHO: World Health Organization

Background

Cervical cancer is one of the reproductive organ cancers affecting women [1]. It is the fourth leading cause of cancer in women worldwide with an estimated 528,000 new cases and 266,000 deaths in 2012 [2]. Nearly 90% of cervical cancer deaths occur in less developed countries [2,3]. Low public awareness about the disease coupled with limited cervical cancer screening services for early detection and treatment as well as lack of vaccination for Human Papilloma Virus (HPV) is attributed to the higher incidence of the disease and related deaths in less developed countries [2-4].

In Ethiopia, cervical cancer ranks as the second common cause of cancer death next to breast cancer among womenof both productive and reproductive age groups [3,5,6]. The age-adjusted incidence rate of cervical cancer is 26.4 per 100,000 patients with 7,095 annual number of new cases and 4,732 deaths every year [7]. On average, the coverage of cervical cancer screening in the country is estimated at less than 1%, which comprises only 1.6% in urban and 0.4% in rural areas [8]. Similarly, records show that low awareness about the disease and very low utilization of cervical cancer screening among health care providers [9,10]. Recent studies have shown that over 80% of cervical cancer cases are detected at advanced stages of the cancer due to low level of knowledge about the disease as well as lack of awareness of available screening methods [6,11].

Ethiopia has an innovative national Health Extension Program (HEP) which offers door to door services, mainly focusing on creating awareness of rural and urban communities through health education. Starting in 2004, the HEP has made significant contributions to the health sector's accomplishments in the areas of hygiene, environmental sanitation, family health services and infectious disease prevention and control [12]. Promoting awareness about the disease and prevention activities amongst communities is crucial to save the lives of women from cervical cancer. Therefore, HEWs are expected to possess adequate knowledge about cervical cancer and its screening for sensitizing the community on the disease. Additionally, being comprised of only women allows them to act as role models for undergoing cervical cancer screening services themselves. Nevertheless, studies showing their knowledge status and cervical cancer screening practices are lacking. Therefore, this study sought to assess the current knowledge, attitude and practice of cervical cancer screening as well as associated factors towards cervical cancer among urban HEWs in Addis Ababa.

Methods and Materials

A cross sectional study was conducted in ten administrative sub cities of Addis Ababa, Ethiopia, from December 8 to January 5, 2018. The required sample size for the study is determined by using single

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population proportion formula by assuming 95% confidence interval, 5% margin of error and prevalence of knowledge of 60.8% were taken from a similar study done in Addis Ababa among female health care workers [9]. After making finite population correction and taking 5% non-response rate the final sample size was calculated to be 301.Study participant were selected by simple random sampling method using the list of HEWs from respective sub cities as sampling frame. Data were collected by face to face interview using semi structured questionnaire prepared in Amharic language. Training was given for data collectors and supervisors on the objective of the study and data collection procedures. Pre-test was done at 5% total sample size and modifications were made accordingly. The data were checked, coded, entered and cleaned by using Epi data 3.1 and SPSS version 20 statistical software was used for analysis. The dependent variable of the study knowledge, attitude and practice were treated as dichotomous variables. Knowledge about cervical cancer was measured using fourteen item multiple choice questions. HEWs with score of a mean value or above were considered as having good knowledge; the others were categorized as having poor knowledge.

The practice of cervical cancer screening was assessed by self-reported action towards screening for premalignant cervical lesion in the past five years of the survey. Those who get screened for cervical cancer within the past five years were considered as having a good practice and otherwise considered as having poor practice. Descriptive statistics such as percentages and frequency tables were computed for selected variables. Bivariate logistic analysis along with 95% confidence interval was done to see existence and association between independent variables and practice of cervical cancer screening. Variables found associated with dependent variables and whose p-value is less than 0.25 were entered in to multivariate logistic regression using backward logistic regression and p-value less than 0.05 with 95% confidence interval was used to determine the level of significance in multivariate logistic regression model and OR with 95% CI was reported for significant variables related to outcome variable.

Letter of ethical clearance was secured from the Institutional Review Board (IRB) of Jimma University. Letter of permission was obtained from Addis Ababa city administration health Bureau ethical review committee and respective sub cities health offices and written informed consent was obtained from study participants before data collection.

Results

Sociodemographic characteristics of the respondents

A total of 291 study participants were participated in this study and making a response rate of 96.7%. Majority of respondents (55.3%) were in the age category of 25-29 years (28.33 ± SD 4.2 years) and 52.9% were married. Of the total, 72.9% were Orthodox Christians followed by protestant religion 16.8% and 71.5% were diploma holders and 28.5% were degree graduate in their academic status. Among the total 40.2% had work experience of six years and above and 55% had an income of 2,000-3,999 ETB (US $71.43-142.82) per month. Forty four percent of HEWs had experienced pregnancy and majority have 1-2 children. Similarly, 44% had been using modern contraceptives and of this 35.2% use oral contraceptive followed by 26.6% implants and 19.5 injectable (Table 1).

Knowledge of HEWs about cervical cancer

Among the total study participant, only 48.5% had scored equal to or above the mean value. Only 46.4% were aware that HPV is the commonest cause of cervical cancer and 45.1% of respondents knew that it is transmitted by sexual intercourse and 48.5% don't know HPV transmission ways and 6.2% have miss understanding and said it is transmitted by droplets that come out of the nose and mouth of persons with the infection. Respondents also gave multiple responses on questions about common risk factors of cervical cancer. This includes having multiple sexual partners (57%), start of sexual intercourse at early age (49.8%), sexually transmitted infections (33.7%), HPV infection (32.3%), cigarette smoking (27.1%) and genetic predisposition (23.4%) (Table 2).

Knowledge on common presenting symptoms and treatment of cervical cancer

Common presenting symptoms of cervical cancer identified by respondents were foul smelling vaginal discharge (55.7%), abnormal

Variables	Category	Frequency	Percentage (%)
Age	20-24 years	46	15.8
	25-29 years	161	55.3
	30-34 years	57	19.6
	35-39 years	22	7.6
	40-44 years	5	1.7
Education level	Diploma	208	71.5
	Degree	83	28.5
Religion	Orthodox Christians	212	72.9
	Protestant Christians	49	16.8
	Muslim	23	7.9
	Catholic	7	2.4
Work experience	Less than two years	86	29.6
	Two up to five years	88	30.2
	Six years and above	117	40.2
Marital status	Unmarried	137	47.1
	Married	154	52.9
Total monthly income of family	2000-3999 ETB	160	55
	4000-5999 ETB	74	25.4
	6000-7999 ETB	22	7.6
	8000-9999 ETB	16	5.5
	≥ 10000 ETB	19	6.5

Table 1: Socio-demographic characteristics of HEWs in Addis Ababa, Ethiopia.

Variables	Number of responded 'yes'	Percentage (%)
Knowledge of HEWs regarding risk factors (n=291)**		
Having multiple sexual partner	166	57
Start of sexual intercourse at early age	145	49.8
Sexually transmitted infections	98	33.7
HPV infection	94	32.3
Cigarette smoking	79	27.1
Genetic predisposition	68	23.4
Don't know	37	12.7
Knowledge of HEWs regarding symptoms of cervical cancer (n=291)**		
Foul smelling vaginal discharge	152	55.7
Abnormal vaginal bleeding	149	51.2
Post coital bleeding	117	40.2
Pain during sex	106	36.4
Post-menopausal bleeding	76	26.1
Don't know	16	5.5

Note: **Multiple responses were accepted.

Table 2: Knowledge on risk factors and common symptoms of cervical cancer among HEWs in Addis Ababa, Ethiopia.

vaginal bleeding (51.2%) and post coital bleeding (40.2%). Majority (81.4%) knew that cervical cancer is cured if detected and treated early whereas, (17.5%) answered that it is not cured. Of those who responded cervical cancer is cured if detected and treated in early stage, (30.8%) have identified chemotherapy, (29.1%) radiotherapy, while (13.5%) were not able to mention any treatment options.

Knowledge on prevention methods of cervical cancer

Getting regular screening and vaccinating against HPV were reported as preventive measures for cervical cancer by (56%) and (27.1%) of respondents, respectively. Among 56% who knew that there are screening procedures to detect precancerous cells of the cervix, majority of respondents (85.5%) reported pap smear test followed by (25.3%) visual inspection with acetic acid. Regarding start age for cervical cancer screening, (38.5%) knew it should at age of 21 or three years after sexual debut. Similarly, regarding screening intervals (43.4%) knew that it is every three to five years (Table 3).

Attitude of respondents towards cervical cancer screening and uptake of screening

Little over half (51.5%) of HEWs had a positive attitude towards cervical cancer screening. If cervical cancer screening services are easily available and free of charge, majority of them (76.7%) of respondents were agreed to undergo screening and (73.3%) strongly agree to recommend their clients to utilize screening services. However, currently, only 9.3% had screened for cervical cancer within the past five years of this survey. Of those who had screened (32.4%), (24.3%) and (21.6%) had screened in a government hospital, private hospital and family guidance association clinics, respectively. A majority, 54% had undergone screening only once in their life time. Some of the reasons for not getting screened were (32.7%) feeling healthy, (19.9%) screening procedures may have pain and (16.8%) pelvic examination is embarrassing (Figure 1).

Factors associated with practice of cervical cancer screening

Logistic regression analysis showed that marital status and knowing someone diagnosed with cervical cancer was found to be significantly associated with the practice of cervical cancer screening. HEWs workers who knew someone diagnosed with cervical cancer were 3.5 times more likely to practice cervical screening than those who didn't know someone diagnosed with cervical cancer (AOR=3.5; 95% CI: 1.66-7.30). Married HEWs workers were 3.4 times higher in practicing cervical cancer screening compared to unmarried (AOR=3.4; 95% CI: 1.38-8.30) (Table 4).

Variables	Number of responded 'yes'	Percentage (%)
Knowledge on screening procedures (n=291)		
Are there screening procedures to detect precancerous cells of cervix?	166	57
If yes, mention screening procedures that you may know (n=166)**		
Pap smear test	142	85.5
Visual inspection with acetic acid	42	25.3
Minimum age of women to start getting screened for cervical cancer (n=166)		
At age of 21 or three years after sexual debut	64	38.5
At age of 25-35 years	55	33.1
Above 35 years	37	22.3
Don't know	10	6.1
Knowledge on screening interval or frequency (n=166)		
Every three to five years	72	43.4
Every year	63	37.9
Every ten years	7	4.2
Don't know	24	14.5

Note: **Multiple responses were accepted.

Table 3: Knowledge on cervical cancer screening procedures, eligibility and interval among HEWs in Addis Ababa, Ethiopia.

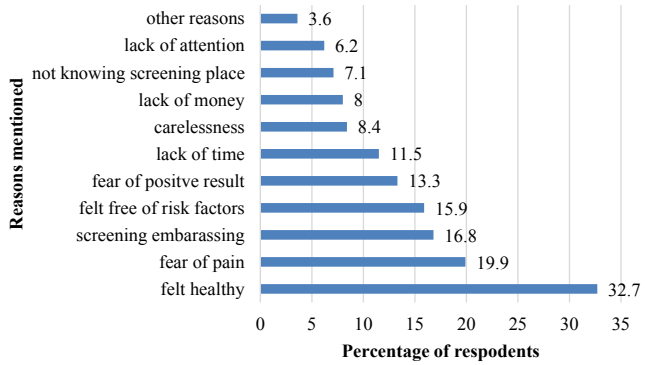

Figure 1: HEWs' reasons for not undergoing cervical cancer screening.

Discussion

Adequate knowledge about cervical cancer and its screening is crucial for HEWs as it determines their screening practice of cervical cancer. Our study has shown that only 48.5% of respondents had good knowledge about cervical cancer and its screening. This finding is lower than studies conducted in Addis Ababa 60.8% [9] and Southern Ethiopia (86.9%) [13,14]. This variation can be attributed to the respondents of previous studies focusing on health professionals who have level of education and work in hospital and health centers. Many studies agree that low level of knowledge about cervical cancer and lack of awareness of available screening methods identified as the most important factors hindering the use of available cervical cancer screening services [6,11,15]. The finding of the poor knowledge level of HEWs implies that cervical cancer did not receive due attention and focus by the national health system and prevention programs as other diseases such as tuberculosis, HIV and malaria remain to be the country's priorities. Regarding the cause of cervical cancer; 46.4% of the respondents identified human papillomavirus as the most common cause of cervical cancer and 44.7% knew that it is a sexually transmitted virus. This finding is in line with the studies conducted in other developing countries [15,16]. However, this value is very low compared with studies in developed countries like Italy where the knowledge about HPV as causative agent of cervical cancer is 93.3% among young women. [17]. This difference is due to Italy having a free HPV vaccination program for 12 years old female adolescents which contributes to their high level of knowledge about HPV. Respondents identified the risk factors of cervical cancer as having multiple sexual partners (57%), start of sexual intercourse at early age (49.8%) and sexually transmitted infections (33.7%). This finding is consistent with the studies conducted in Addis Ababa [9] and India [18].

Primary prevention (vaccination against HPV) and secondary prevention (screening of cervical cancer) help to reduce incidence and mortality of cervical cancer. Good knowledge and understanding of these preventive measures of cervical cancer among women are essential for women to utilize services. Nevertheless, our study identified that

Variables	Cervical cancer screening		COR (95% CI)	AOR (95% CI)	p-value
	Yes (%)	No (%)			
Work experience					
Below 2 years	69 (2.1)	77 (26.9)	1	1	
2-5 years	6 (2.1)	80 (27.9)	0.963 (.298-3.114)	0.880 (0.260-2.976)	
6 years & above	25 (8.7)	92 (32.2)	3.487 (1.361-8.937)*	2.463 (0.909-6.672)	
Monthly income					
2000-3999 ETB	13 (4.5)	146 (51.1)	1	1	
4000-5999 ETB	13 (4.5)	57 (19.9)	2.561 (1.120-5.859)*	1.245 (0.489-3.167)	
6000-7999 ETB	5 (1.7)	17 (5.9)	3.303 (1.049-10.403)*	2.469 (0.671-9.078)	
≥ 8000 ETB	6 (2.2)	29 (10.2)	2.324 (0.816-6.615)	0.572 (1.69-1.928)	
Marital Status					
Unmarried	7 (2.4)	127 (44.4)	1	1	
Married	30 (10.5)	122 (42.7)	4.461 (1.889-10.537)*	**3.383 (1.379-8.300)****	**0.008**
Educational status					
Diploma	25 (8.7)	179 (62.6)	1		
Degree	12 (4.2)	70 (24.5)	1.227 (0.585-2.577)		
Knowing someone diagnosed with cervical cancer					
Yes	20 (7)	58 (20.3)	3.874 (1.904-7.882)*	**3.476 (1.657-7.293)****	**0.001**
No	17 (5.9)	191(66.8)	1	1	
Ever been pregnant					
Yes	27 (9.5)	101 (35.3)	3.956 (1.835-8.531)*	1.941 (0.703-5.358)	
No	10 (3.5)	148 (51.7)	1		
Current use of modern contraceptive					
Yes	25 (8.7)	103 (36.0)	2.953 (1.419-6.147)*	1.178 (0.444-3.123)	
No	12 (4.2)	146 (51.1)	1	1	
Overall knowledge					
Poor	18 (6.3)	138 (48.3)	1		
Good	19 (6.6)	111 (38.8)	1.312 (0.657-2.620)		
Attitude towards cervical cancer screening					
Positive	20 (7)	127 (44.4)	1.130 (0.565-2.259)		
Negative	17 (5.9)	122 (42.7)	1		

Note: *Statistically significant in bivariate analysis; ** statistically significant in multivariate analysis; OR=1 is reference category.
Key: COR: Crude Odds Ratio; AOR: Adjusted Odds Ratio; CI: Confidence Interval.

Table 4: Factors associated with practice of cervical cancer screening among HEWs in Addis Ababa, Ethiopia.

regular cervical screening and vaccination against HPV are mentioned as one prevention methods for cervical cancer by 57% and 29.6% of respondents, respectively, which is like earlier studies conducted in the country [9,14]. This finding is not surprising as HPV vaccination pilot program is in its early stages in Ethiopia. [5].

The general recommendation for start age of cervical cancer screening is at age of twenty one or three years after the first sexual intercourse; and screening frequency is every three years [1]. In this study, 38.3% knew the recommended start age and; and 44.3% reported the correct screening interval. Consistent findings were observed in studies conducted in other developing countries [19,20]. Similarly, low knowledge level of respondents is noted regarding cervical screening modalities. Among the total respondents only 57% knew about screening procedures and of this majority (85.5%) of respondents knew about pap smear test and 25.3% about visual inspection with acetic acid as screening procedures for precancerous cells of the cervix. These values are lower than the study conducted in Cameroon which showed 84% of nurses knew about pap smear as a screening procedure for precancerous cells of cervix [21,22]. This variance owes to the fact that Cameroon's study was conducted on nurses who were working in hospitals and unlike HEWs, they had exposure in theory and in practice. This contributes to their increased knowledge of the screening procedures. In this study, 81.4% knew that cervical cancer can be cured if detected and treated early on and 30.8% identified chemotherapy, 29.1% radiotherapy and 27.8% surgery as treatment options. Similar findings were reported in other studies [9,15].

The study also indicated that the HEW's attitude towards cervical cancer screening was positive at 51.5%. Similar findings were observed in a study conducted in Northern Ethiopia [10].

Cervical cancer screening is the most successful preventive method in reduction of incidence and mortality from cervical cancer. However, low screening coverage results in patients' being diagnosed at later stages of the disease which always has minimal survival rate [6,11]. Nevertheless, in this study, only 9.3% of the respondents were screened for cervical cancer within the past five years of this survey. This is consistent with findings of studies conducted in Southern Ethiopia 11.4% [14], South western Nigeria 10% [23], Northern Ethiopia (Mekele) 10% [10]. These low screening practices indicate that there are low public awareness and limited screening services for the disease in developing countries, including Ethiopia. The respondents reason for not being screened were feeling healthy (32.7%), assuming screening may be painful (19.9%), felt free of risk factors (15.9%), which reveals their poor level of knowledge about the screening procedures and its importance. Consistent findings were reported in studies conducted in Ethiopia and other developing countries [10,14,15,20]. Health education and appropriate testing facilities will help reduce personally perceived

barriers and increase the practice of cervical cancer screening amongst HEWs.

In this study, knowing someone diagnosed with cervical cancer and being married had significant association with practice of cervical cancer screening. These findings are in line with the study conducted in other developing countries [19,20]. Respondents who knew someone with the disease were likely to have received information about of benefits screening for early detection and treatment from the patient or her family members. Whilst married respondents were likely to have learnt about screening during visits to health facilities for different reproductive health services.

Conclusion

HEWs that are frontline professionals and have been serving as a bridge between the health system and the community and as such they need to have adequate knowledge and positive attitude about cervical cancer and its prevention methods. However, our study finds poor knowledge among HEWs in Addis Ababa regarding cervical cancer and its screening. Similarly, their attitude towards screening and practice of getting screened is also poor. Based the findings, this study makes two recommendations. Firstly, the Addis Ababa Health Bureau must provide continuous training on causes, risk factors, available screening procedures and vaccination of cervical cancer for HEWs. And secondly, the Ministry of Health must establish and expand cervical cancer screening services at all health centers.

Competing Interests

The Authors declare that they have no competing interests.

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