



# Knowledge, Attitude, Practice and Associated Factors of Cervical Cancer Screening Among Women in Dessie Referral Hospital and Dessie Health Center, Northeast Ethiopia

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## ABSTRACT

**Introduction:** Cervical cancer is one of the priority issues in the world. About 85% deaths occur in developing countries. Knowledge, attitude & practice towards cervical cancer screening are important in developing programs targeted at prevention and control.

**Objective:** To assess the KAP and associated factors of cervical cancer screening

**Methods:** Cross sectional study with stratified random sampling.

**Results:** Women with good knowledge (44.6%), good attitude (42.1%) had screened (8.3%) for CC. Rural women had 77% less knowledge than urban. Tertiary level educated had 3 times more knowledge than illiterate. 51-65 years had 72% less good attitude than 21-30 years. Multipara were 3 times more screening practice than nullipara. Poor knowledgeable women had 67% less screening practice than good knowledge. Poor attitude had 86% less screening than good attitude women.

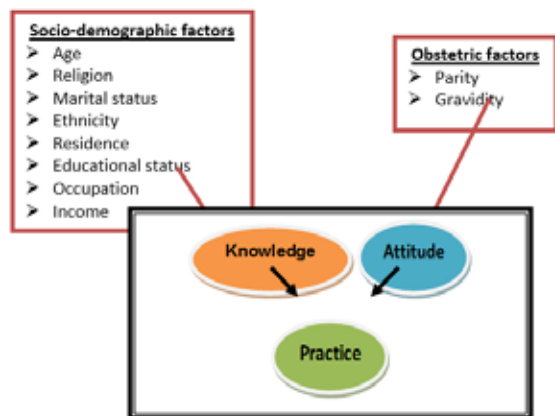
**Conclusion:** knowledge and attitude towards CCS was moderate while practice was very low. Programs should target at increasing the awareness

**KEYWORDS :** Cervical cancer screening, Human papilloma virus

## INTRODUCTION

Cervical cancer is the third most commonly diagnosed and the fourth leading cause of death in women worldwide, accounting about 9% of the total new cancer cases and 8% of the total cancer deaths among females in 2008. About 85% of these cases and deaths occur in developing countries and the highest incidence rates are in Africa, South-Central Asia and South America. Rates are lowest in Western Asia, Australia/New Zealand, and North America (1, 4). High prevalence of HPV infection, low awareness about CC and poor screening practice are some of the factors contributing for the high burden of CC in SSA. Others like socio economic factors (e.g. war), biological factors (e.g. immune compromise), poor treatment and supportive care infrastructures about cervical cancer and its screening tests (23). Even if many women are dying from this cancer, the knowledge and attitude of the community is negligible. Currently, teaching hospitals and other referral hospitals of Ethiopia have started providing Pap test and VIA tests as a provider initiated or opportunistic screening. This study assessed the knowledge, attitude and practice of CCS and the associated factors among women in Dessie Public Health Institutions, North East Ethiopia. Therefore, findings of this study will be used as a preliminary data for further studies and to advocate & develop programs targeted at cervical cancer prevention and control.

**Figure 1: The conceptual framework of factors affecting KAP of CCS**



## General objective

To assess the Knowledge, attitude, practice and associated factors of cervical cancer screening among women in Dessie Referral Hospital and Dessie Health Centers.

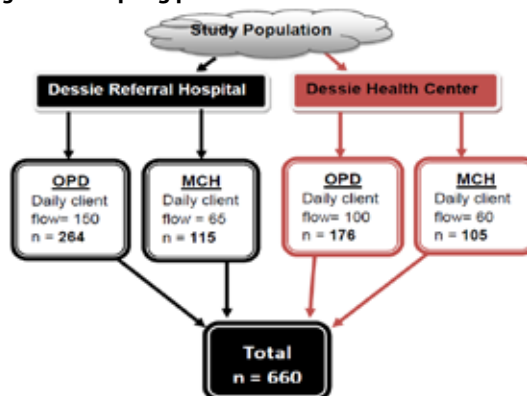
## Specific objectives

- To determine Knowledge of women on Cervical Cancer Screening
- To determine Attitude of women towards Cervical Cancer Screening
- To determine Practice of Cervical Cancer Screening among women
- To identify factors associated with Knowledge, attitude and practice of Cervical Cancer Screening among women

## MATERIALS AND METHODS

The study was conducted from April 16 to May 6, 2013 with Institutional based cross sectional study design by using single population proportion formula for sample size calculation. Stratified random sampling technique was used with structured questionnaire in health institutions of Dessie town which is located 401 Km Northeast of Addis Ababa in Amhara regional state, Ethiopia. According to the 2007 National Censuses, the total population was about 151,174 with 78,242 female and 120,095 urban populations (24). Dessie has one public referral hospital, three private general hospitals and 4 public health centers. The referral hospital is designed to serve up to 5,000,000 populations and the health center serves up to 25,000 populations. Data was analyzed by using SPSS version 20.0. Ethical clearance was obtained from the concerned body.

**Figure 2: Sampling procedure**



**Study Variables**

**A).Independent variables**

Age, Marital status, Level of education, Religion, Residence, Ethnicity, Family income, Occupation , Parity, Gravidity

**B).Dependent (Outcome) variables:** Knowledge, Attitude, Practice

**RESULTS**

**Socio demographic characteristics**

A total of 660 (379 from DRH and 281 from DHC) eligible women were approached and interviewed. About 603 were agreed to participate giving a response rate of 91.6% and 57 were refused to participate in this study. Therefore, data from the remaining 603 participants were available for analysis. Of the respondents 461(76.5%) were aged between 21-40 years with mean age of 34 yrs (SD±10.45). About 386 (64%) participants were married and About 303 (50.2%) participants were followers of Orthodox Christianity. Most of the participants were urban dwellers (n=518, 85.9%) and 267 (44.3%) were multi para.

**Knowledge of Cervical Cancer Screening:** 54.4% have ever heard of cervical cancer screening and 44.6% had good knowledge of cervical cancer screening. Regarding source of information about cervical cancer screening, 54% heard from mass media and 17.1% heard from health care providers. 8.9% knew at least one type of screening test. From these respondents 6.1% knew Pap, 2.1% knew HPV and only 0.6% knew VIA screening tests.

**Attitude towards cervical cancer screening:** 42.1% had good attitude and 57.9% had poor attitude towards cervical cancer screening.

**Cervical cancer screening:** 8.3% had undertaken the screening test in their life time. Among the screened, about 70% respondents did the test by their own initiative. Almost equal proportion of the respondents stated lack of awareness (43.8%) and absence of cervical cancer symptoms (43.4%) for not doing the screening.

**Table 1: The associated factors of cervical cancer screening knowledge among women in DRH and DHC, Dessie, Ethiopia, April 2013**

Variables	Knowledge of CCS		Crude OR (95%CI)	Adjusted OR (95%CI)
	Good	Poor		
Age group (years)				
21-30	140 (47.0%)	158 (53.0%)	1.000	
31-40	81 (50.6%)	79 (49.4%)	1.157(0.788-1.700)	
41-50	37 (37.4%)	62 (62.6%)	0.674(0.422-1.074)	
51-65	11 (23.9%)	35 (76.1%)	0.355(0.174-0.725)*	
Parity				
0	60 (44.4%)	75 (55.6%)	1.000	
1	58 (48.7%)	61 (51.3%)	1.189(0.725-1.949)	
2-4	127 (47.6%)	140 (52.4%)	1.134(0.748-1.719)	
5+	24 (29.3%)	58 (70.7%)	0.517(0.288-0.928)*	
Marital status				
Single	45 (45.9%)	53 (54.1%)	1.000	
Married	186 (48.2%)	200 (51.8%)	1.095(0.702-1.709)	
Divorced	19 (42.2%)	26 (57.8%)	0.861(0.422-1.755)	
Widowed	19 (25.7%)	55 (74.3%)	0.407(0.211-0.784)*	
Religion				
Orthodox	153 (50.5%)	150 (49.5%)	1.000	
Muslim	97 (35.5%)	176 (64.5%)	0.540(0.387-0.755)*	

Others	19 (70.4%)	8 (29.6%)	2.328(0.989-5.482)	
Residence				
Urban	258 (49.8%)	260 (50.2%)	1.000	1.000
Rural	11 (12.9%)	74 (87.1%)	0.150(0.078-0.289)*	0.231(0.114-0.467)**
Educational status				
Illiterate	38 (24.1%)	120 (75.9%)	1.000	
Primary	62 (37.1%)	105 (62.9%)	1.865(1.152-3.017)*	1.397(0.831-2.347)
Secondary	114 (57.9%)	83 (42.1%)	4.337(2.734-6.882)*	2.492(1.460-4.253)**
Tertiary	55 (67.9%)	26 (32.1%)	6.680(3.695-12.077)*	3.150(1.543-6.430)**
Occupation				
House wife	90 (36.6%)	156 (63.4%)	1.000	1.000
Private work	55 (40.7%)	80 (59.3%)	1.192(0.775-1.832)	0.805(0.505-1.282)
Gov't employee	68 (72.3%)	26 (27.7%)	4.533(2.692-7.634)*	1.928(1.050-3.543)**
NGO employee	28 (73.7%)	10 (26.3%)	4.853(2.253-10.453)*	2.261(0.945-5.407)
Student	28 (31.1%)	62 (68.9%)	0.783(0.467-1.312)	0.492(0.280-0.863)**

\*independently statistically significant  
\*\*adjusted statistically significant

**Table 2: The associated factors of cervical cancer screening attitude of women in DRH and DHC, Dessie Ethiopia, April 2013**

Variables	Attitude on CCS		Crude OR (95% CI)	Adjusted OR (95% CI)
	Good	Poor		
Age group				
21-30	133(44.6%)	165(55.4%)	1.000	1.000
31-40	79(49.4%)	81(50.6%)	1.210(0.823-1.778)	1.254(0.837-1.881)
41-50	35(35.4%)	64(64.6%)	0.678(0.424-1.087)	0.810(0.491-1.337)
51-65	7(15.2%)	39(84.8%)	0.223(0.096-0.514)*	0.282(0.118-0.675)**
Parity				
0	56(41.5%)	79(58.5%)	1.000	
1	57(47.9%)	62(52.1%)	1.297(0.789-2.131)	
2-4	115(43.1%)	152(56.9%)	1.067(0.702-1.623)	
5+	26(31.7%)	56(68.3%)	0.655(0.368-1.167)	
Marital status				
Single	34(34.7%)	64(65.3%)	1.000	
Married	186(48.2%)	200(51.8%)	1.751(1.104-2.777)*	
Divorced	16(35.6%)	29(64.4%)	1.039(0.496-2.174)	
Widowed	18(24.3%)	56(75.7%)	0.605(0.308-1.188)	
Religion				
Orthodox	134(44.2%)	169(55.8%)	1.000	
Muslim	105(38.5%)	168(61.5%)	0.788(0.565-1.100)	
Others	15(55.6%)	12(44.4%)	1.576(0.714-3.481)	
Residence				
Urban	230(44.4%)	288(55.6%)	1.000	1.000
Rural	24(28.2%)	61(71.8%)	0.493(0.298-0.815)*	0.543(0.309-0.956)**
Educational status				
Illiterate	47(29.7%)	111(70.3%)	1.000	1.000
Primary	77(46.1%)	90(53.9%)	2.021(1.279-3.191)*	1.756(1.045-2.950)**

Secondary	86(43.7%)	111(56.3%)	1.830(1.176-2.848)*	1.635(0.932-2.866)
Tertiary	44(54.3%)	37(45.7%)	2.809(1.613-4.890)*	2.489(1.215-5.096)**
Occupation				
House wife	113(45.9%)	133(54.1%)	1.000	1.000
Private work	47(34.8%)	88(65.2%)	0.629(0.407-0.970)*	0.453(0.284-0.724)**
Gov't employee	45(47.9%)	49(52.1%)	1.081(0.671-1.740)	0.639(0.356-1.148)
NGO employee	18(47.4%)	20(52.6%)	1.059(0.534-2.100)	0.621(0.275-1.403)
Student	31(34.4%)	59(65.6%)	0.618(0.374-1.022)	0.550(0.316-0.955)**

\*independent statistically significant  
 \*\*adjusted statistically significant

**Table 3: The associated factors of cervical cancer screening practice.**

Variables	Practice of CCS		Crude OR	Adjusted OR
	Yes	No		
Age group				
21-30	16 (5.4%)	282 (94.6%)	1.000	
31-40	20 (12.5%)	7.5%	2.518 (1.266-5.009)*	
41-50	10 (10.1%)	89.9%	1.980 (0.868-4.520)	
51-65	4 (8.7%)	42 (91.3%)	1.679 (0.535-5.262)	
Parity				
0	6 (4.4%)	129 (95.6%)	1.000	1.000
1	3 (2.5%)	116 (97.5%)	0.556 (0.136-2.274)	0.475(0.113-2.004)
2-4	34 (12.7%)	233 (87.3%)	3.137 (1.283-7.672)*	3.060(1.207-7.757)**
5+	7 (8.5%)	75 (91.5%)	2.007 (0.650-6.193)	2.706(0.818-8.950)
Marital status				
Single	3 (3.1%)	95 (96.9%)	1.000	
Married	40 (10.4%)	9.6%	3.661 (1.108-12.094)*	
Divorced	2 (4.4%)	43 (95.6%)	(0.237-9.137)	
Widowed	5 (6.8%)	69 (93.2%)	2.295 (0.530-9.926)	
Religion				
Orthodox	35 (11.6%)	268 (88.4%)	1.000	1.000
Others	15 (5.5%)	285 (94.5%)	0.403 (0.215-0.755)*	0.442(0.226-0.864)**
Residence				
Urban	49 (9.5%)	469 (90.5%)	1.000	
Rural	1 (1.2%)	84 (98.8%)	0.114 (0.016-0.836)*	
Educational status				
Illiterate	10 (6.3%)	148 (93.7%)	1.000	
Primary	15 (9.0%)	1.0%	1.461 (0.636-3.355)	
Secondary	14 (7.1%)	2.9%	1.131 (0.489-2.623)	
Tertiary	11 (13.6%)	70 (86.4%)	2.326 (0.943-5.734)	
Occupation				
House wife	25 (10.2%)	221 (89.8%)	1.000	
Private work	8 (5.9%)	127 (94.1%)	0.557 (0.244-1.271)	
Gov't employee	9 (9.6%)	85 (90.4%)	0.936 (0.420-2.087)	
NGO employee	5 (13.2%)	33 (86.8%)	1.339 (0.479-3.742)	
Student	3 (3.3%)	87 (96.7%)	0.305 (0.090-1.036)	
Knowledge of CCS				
Good	38(14.1%)	231(85.9%)	1.000	1.000

Poor	12(3.6%)	322(96.4%)	0.227(0.116-0.443)*	0.332(0.163-0.673)**
Attitude to CCS				
Good	42(16.5%)	212(83.5%)	1.000	1.000
Poor	8(2.3%)	341(97.7%)	0.118(0.055-0.257)*	0.136(0.061-0.303)**
			*independent statistically significant	**adjusted statistically significant

**DISCUSSION**

328(54.4%) women have ever heard about cervical cancer screening. This is higher than the findings in Addis Ababa (18.8%) and the difference could be the time period (22). But it is lower than that of the Kuwaiti women where by 76.9% had ever heard of CCS (16). The difference may be due to the higher contribution of media in Kuwait superimposed with the very low emphasis given to CCS in Ethiopian setting.

44.6% had good general knowledge of cervical cancer screening. Nonetheless, it is higher than the Southeast Nigerian women accounting about 26.85% of women (17). The discrepancy might be the difference in the study population in which the Nigerian study was a community based one. But it consisting with the findings of Iran (45.4%) and Kuwait (52.3%) (13, 16). The difference in the number of women who have ever heard of cervical cancer screening and who have good knowledge verified that all who heard were not knowledgeable.

Among women who have ever heard of cervical screening, mass media was the primary source of information regarding cervical cancer screening accounting 177(54%) of respondents. This is not consistent with findings in Addis Ababa in which the primary source of information for the majority of women (65.4%) were health institutions (22). This gap may attribute to the availability and expansion of alternative information sources in this day.

Among women ever heard of CCS, only 20(6.1%) knew Pap test as a screening test which is far less than the 47.4% Nigerian women (17). This difference may be explained by the fact that, in Ethiopia, Pap testing is given a due emphasis only in the recent times and hence less advocacy and promotion activities were done.

254 (42.1%) women had good attitude towards cervical cancer screening. This finding is far lower than in Iran by which 96.5% of women had good attitude (13). The difference may be due to the socio economic difference between the two countries. But it is higher than Kuwaiti women where 30.6% women had adequate attitude (16).

In contrary to the knowledge and attitude of women on CCS, screening practice was very low accounting only 50(8.3%) of women. The finding is in line with that of Addis Ababa in which only 6.5% of women practiced cervical screening test (22). The reasons for not being screened raised by majority of women were lack of awareness and absence of symptoms of cervical cancer, both accounting almost equal proportion (43.8% and 43.4% respectively). This finding, in part, agreed with findings in Addis Ababa by which 41.2% said no gynecologic symptoms (22). It is also consistent with a finding in Democratic republic of Korea by which 48% reported absence of symptoms and the same proportion reported lack of awareness about screening (15).

70% were screened by their own initiative. The finding contradicted with a study in Addis Ababa where 72.2% were indicated by doctor/nurse consultation and 20.7% personal initiative (22). The gap may be explained by the fact that, advocacy and promotion of cervical cancer screening by health care providers may be better or initiated earlier in Addis Ababa than in Dessie. The low contribution of health care providers in provision of information regarding cervical cancer screening can be an indicator of the low emphasis given for the prevention and control of cervical cancer.

Regarding the factors associated with Knowledge of cervical cancer residence, educational status and occupation were found to be significant predictors (Table 6). Rural dwellers were less likely to have good knowledge than urban dwellers. This is in line with the reality that urban dwellers are more accessible for health services and modern

technology, which can be taken as a fertile ground in gaining information regarding health issues, than rural women.

Women with secondary education were more than 2 times more likely to have good knowledge than illiterate women. Similarly women with tertiary education were about 3 times more likely to have good knowledge than illiterate women. The finding is in line with a study in Qatar (14)

Occupation is also another significant determinant of knowledge of cervical cancer screening by which government employed women had better knowledge than house wives. This finding agreed with a study in Qatar (14). However, student women were less likely to be knowledgeable than housewives. The implication is that employed women would have a better empowerment than unemployed. They would have also better social network in getting information about screening.

Attitude was best predicted by age, residence, educational status and occupation (Table 7). Women aged over 50 years were less likely to have good attitude than women aged below 30 years. Rural women were also less likely to have good attitude than urban women. The explanation behind this may be urban women may get more information outlets than rural women. Women with primary education and tertiary education were more likely to have good attitude than illiterate women. Private worker and student women were less likely to have good attitude than house wives.

The statistically significant variables for cervical cancer screening were parity, religion, knowledge and attitude (table 8). Women who have given 2-4 births (multipara) were more likely to practice cervical cancer screening than those who haven't given birth (nullipara). This finding could be due to the fact that women who have given more births would visit health institutions more frequently than nulliparas and then can get better advice from health care providers. Similarly, other religions were less likely to practice screening than Orthodox Christians. This may be due to the provision of health education in Orthodox churches by health extension workers.

Knowledge and attitude greatly influence whether a woman undertake cervical cancer screening. Women who haven't performed screening mostly have poor knowledge and poor attitude towards CCS. Women with poor knowledge were about 67% less likely to undertake screening than women with good knowledge. The Result is in line with a study in Nigeria with significance level of 0.031 (20). Similarly, women with poor attitude were 87% less likely to practice screening than women with good attitude. This result contradicted with Iranian women where CCS was not affected by attitude (13).

Modifying knowledge and attitude of women either precedes or can be accomplished in parallel with the screening program. Indeed, modifying the attitude of a society may be a little bit cumbersome because attitude is not something that could be developed in a day or a month rather it is developed through a period of time and integrated with the cultural aspects of a society. It is also a product of multitude of attributes that could not be measured easily.

## Conclusions

The proportion of women with good knowledge and good attitude towards cervical cancer screening was moderate. Life time cervical cancer screening was very low. Residence, educational status and occupation were statistically significant predictors of knowledge while attitude was best predicted by age, residence, educational status and occupation. Cervical cancer screening was significantly affected by parity, religion, knowledge and attitude.

## Recommendations

Hospitals and health centers should provide health education targeted at increasing awareness of women on cervical cancer screening. Policy makers should consider alternative information outlets like mass media and giving special emphasis for the rural women by developing programs that can be implemented at the local level. NGOs should consider advocating cervical cancer as that of HIV. Further similar studies are preferred at a community level including a qualitative component.

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