PREVALENCE OF VIA POSITIVE CERVICAL LESIONS AND DETERMINANT FACTORS AMONG WOMEN ATTENDING REGULAR GYNECOLOGY OUTPATIENT DEPARTMENT (RGOPD) AT SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE (SPHMMC)

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ABSTRACT

BACKGROUND

Cervical cancer is one of the leading causes of death for middle-aged women in the developing world. But it is a preventable disease by using relatively inexpensive technologies to detect abnormal cervical tissue before it progresses to invasive cervical cancer. In Ethiopia, the incidence of cervical cancer is 35.9 per 100,000 women. There is scarce data on prevalence of precancerous cervical lesions and the determinant factors in Ethiopia.

OBJECTIVE

The main objective of this study is to determine the prevalence of VIA positive precancerous cervical lesion among women attending RGOPD at SPHMMC and to identify the determinant factors.

METHODOLOGY

Hospital- based cross sectional descriptive analytic study was conducted among 226 women visiting RGOPD at SPHMMC. All women aged 30-45 attending RGOPD & willing to give consent were included until the required sample size was attained during the study period.

RESULTS

A total of 224 questionnaires were collected for analysis with response rate of 99.1%. The mean age of the study participants was 35.7 years (SD 4.97). Fifty-four of the participants were found to have VIA positive precancerous cervical lesions making prevalence of VIA positive precancerous lesion 24.1%. Age at marriage and age first sexual intercourse were found to have strong association with risk of precancerous cervical lesion. Early age at birth of first child was found to be negatively associated with risk of having precancerous cervical lesion.

CONCLUSION AND RECOMMENDATION

The prevalence of VIA positive precancerous cervical lesion is higher than reports of most studies and emphasis should be given on incorporation of cervical cancer screening program into other reproductive health services. Age at marriage and age at first sexual intercourse were factors identified to have strong association with prevalence of precancerous cervical lesion. Promoting delayed onset of sexual activity and delaying the age at marriage are important measures as a primary prevention approach.

KEYWORDS: VIA, cervical cancer

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INTRODUCTION

Cervical cancer remains a major public health problem in developing countries. It kills about 270, 000 women every year and more than 85% of these deaths occur in the developing world[1]. In addition to the existing socio-economic factors, lack of cervical cancer screening programs in developing countries plays a significant part for the inequity. Historically, prevention efforts largely focused on Pap smear.

In developing countries where there is limited access to Pap smear, VIA is considered as alternative early detection method[1].In Ethiopia, less than 10% of women reported ever having had a pelvic examination and the screening prevalence is less than 1 %. There are very few studies done in Ethiopia concerning cervical cancer[2, 3, 4, 5,6].

A good VIA program can detect at least 90% of all precancerous cases. With a cure rate of 85% for cryotherapy, a combined program of VIA and cryotherapy would effectively prevent 76% of cervical cancer deaths[7]. More than 95 % of women in sub-Saharan Africa have never been screened[1]. Understanding factors associated with the precancerous cervical cancer lesion among women helps us to take an action in each factor to decrease the morbidity and mortality of cervical cancer. While waiting for clinically applicable vaccination programs, improving screening coverage to the widest possible population and close management and follow-up of women with precancerous lesions is one of the important measures that should be considered.

The results of this study will be an important input to the FMOH to inform the strategy for future scale-up of cervical cancer screening and better reach women with cervical cancer screening service. The result of the study will also show us the burden of precancerous cervical lesions hence helps bring the need for screening in front for future health planning.

Thus, this study was conducted to determine the prevalence of VIA positive precancerous cervical lesions among women attending RGOPD at SPHMMC and to identify the determinant factors.

METHOD

This is a hospital based cross sectional study conducted at SPHMMC in Addis Ababa, Ethiopia in the year 2015. Cervical cancer screening program using VIA has been implemented in the hospital since 2009 for the detection of precancerous lesions among clients coming for routine HIV care. Since 2010, the screening service was extended to OBGYN department regular outpatient clinic. There are two trained nurses in each of the clinics working on regular basis.

All women aged 30 to 45 years attending

RGOD for gynecologic evaluation and willing to give consent were included in the study. Women with any of the following were excluded from the study: pregnant women, women who had already undergone hysterectomy, women who had treatment for precancerous cervical lesion in the past 24 months and women who have been screened previously and knew their results.

Sample size was determined using a single population proportion formula by taking P=16 %. (the anticipated prevalence of VIA positive precancerous cervical lesion from the study done in Sudan[8]. Sample size was determined to be 226. Women who fulfilled the inclusion criteria and willing to participate in the study were consecutively included in the study during the study period till the required sample size was met.

Ethical clearance was obtained from the IRB of the college. A written informed consent was obtained from each woman willing to participate in the study.
The test providers were three nurses and one health officer already trained on VIA. They were given training on data collection tool and procedures for one and half day by the principal investigator. Information on socio-demographic, reproductive and behavioral factors was collected using structured

questionnaires by the providers in each of the screening clinic. Code was given to each questionnaire after completion of the interview. The medical record number and the code were documented in a separate log book. For those women found to have VIA positive test; treatment was provided (cryotherapy) in the respective clinics. Data entry was done by the principal investigator using the statistical package for social sciences (SPSS) for window version 20. Initially bivariate analysis was done using more than 26 different independent variables. Factors with statistical significance from the bivariate analysis were again run into the multivariate analysis process.

RESULTS

Among the 226 women recruited for the screening, two were excluded from the study as the VIA test finding was inconclusive (was difficult to visualize the SCJ). A total of 224 questionnaires were collected for analysis with response rate of 99.1%. The mean age of the study participants was 35.7 years (SD=4.97), majority being in the age group of 30 to 34 accounting for 46%. Majority of the participants, 206(92%) are urban dwellers (Table 1) depicts the socio demographic characteristics of the study participants.

Table1: Socio-demographic characteristics of women screened for precancerous cervical lesion at SPHMMC, Addis Ababa, Ethiopia, 2015(n=224)

VARIABLES	FREQUENCY	PERCENTAGE	MEAN±SD
AGE (IN YEARS)			35.7±4.97
30-34	102	46	
35-39	59	26	
40-45	63	28	
RELIGION			
ORTHODOX	**148**	**66**	
MUSLIM	45	20	
PROTESTANT	31	14	
MARITAL STATUS			
SINGLE	**18**	**8**	
MARRIED	190	84.8	
DIVORCED	10	4.5	
WIDOW	**6**	**2.7**	
PLACE OF RESIDENCE			
URBAN	**206**	**92**	
COUNTRY SIDE	18	8	
EDUCATIONAL STATUS			
NO FORMAL EDUCATION	43	19.2	
PRIMARY SCHOOL	42	18.8	
SECONDARY	**90**	**40.2**	

ABOVE SECONDARY	49	21.9
OCCUPATION		
GOV EMPLOYEE	**64**	**28.6**
MERCHANT	**26**	**11.6**
DAILY LABORER	**10**	**4.5**
HOUSEWIFE	**86**	**38.4**
FARMER	**8**	**3.6**
OTHER	**30**	**13.4**

The mean age of menarche was at 14.4 years(SD=8.9) and 150(67%) of the had their first menses at age less than 15 years. The sexual history showed that the mean age of coitarche was 19 years (SD=3.6) and 70.5% of the participants had single sexual partner, 29.5% of the had two or more lifetime sexual partners.

The mean age at marriage and at first child birth were 20 years (SD=8.1) and 21.4 years (SD=4.6) respectively. About 41.5% of the participants got married at age 18 years and less. Majority of them 128(57%) gave birth to their first child at age 19 years and above.

Thirty-six (16.1%) of participants stated every history of pelvic infection and self or partner history of STD, 13(5.8%). Only four (1.8%) of participants stated ever history of genital ulcer and 3(1.3%) of them had history of genital ulcer in the partner.

Nineteen (8.5%) of the women has family history of cervical cancer. Majority of them were non-reactive for RVI (74.1%), the rest 18.3 % their serostatus for RVI was unknown and 17(7.6%) were found to be reactive. Table 2 and table 3 show the reproductive health and behavioral characteristics respectively.

Table 2: Reproductive health characteristics of women screened for precancerous cervical lesion at SPHMMC, Addis Ababa, Ethiopia, 2015. (n=224)

VARIABLES	FREQUENCY	PERCENTAGE	MEAN ± SD
AGE OF MENARCHE			**14.4±8.9**
<15	150	67	
≥15	74	33	
AGE AT FIRST MARRIAGE			20±8.1
≤18	93	41.5	
≥19	113	50.4	
AGE AT FIRST CHILD BIRTH			**21.4±4.6**
≤18	56	25.6	
≥19	127	57	
NOT GAVE BIRTH	41	18.3	
PARITY			**2.3±1.8**
0	41	18.3	
1-4	153	68.3	
≥5	30	13.4	
GRAVIDITY			**2.9±2.04**

0	28	12.5
1-4	153	68.3
≥5	43	19.2
HISTORY OF ABORTION		
YES	100	44.6
NO	124	55.4
HISTORY OF USE OF CONTRACEPTIVE		
YES	153	68.3
NO	71	31.7

Table 3: Behavioral characteristics of women screened for precancerous cervical lesion at SPHMMC, Addis Ababa, Ethiopia.2015 (n=224)

VARIABLES	FREQUENCY	PERCENTAGE	MEAN± SD
AGE AT FIRST SEXUAL INTERCOURSE			19(3.5)
≤15	32	14.3	
≥16	192	85.7	
LIFE TIME NUMBER OF SEXUAL PARTNERS			1.4±0.7
1	158	70.5	
≥2	66	29.5	
HISTORY OF SMOKING			
YES	2	1	
NO	222	99	
EVER HISTORY OF PELVIC INFECTION			
YES	36	16.1	
NO	188	83.9	
EVER HISTORY OF STD			
YES	24	10.7	
NO	200	89.3	
EVER HISTORY OF STD IN PARTNER			
YES	13	5.8	
NO	211	94.2	
EVER HISTORY OF GENITAL ULCER			
YES	4	1.8	
NO	220	98.2	
EVER HISTORY OF GENITAL ULCER IN PARTNER			
YES	3	1.3	
NO	221	98.7	
FAMILY HISTORY OF CERVICAL CANCER			
YES	19	8.5	
NO	205	91.5	
HIV SEROSTATUS			
NR	166	74.1	
R	17	7.6	
UNKNOWN	41	18.3	
VIA RESULT			
POSITIVE	54	24.1	
NEGATIVE	170	75.9	

Of the total 224 participants, 54 of them were found to have VIA positive precancerous cervical lesions. In this study the prevalence of VIA positive precancerous cervical lesion is found to be 24.1%. The remaining 170 (75.9%) of the women were found to have negative VIA test.

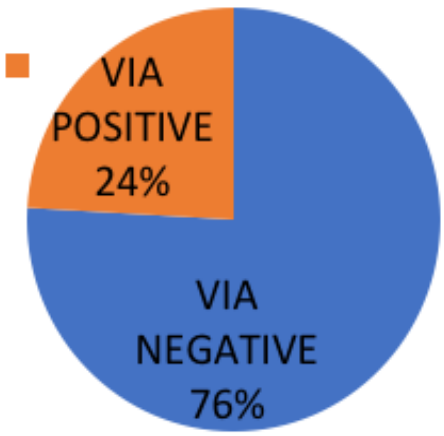

Figure1: Proportion of women with respect the VIA test result; SPHMMC, Addis Ababa, Ethiopia, 2015

About 62.9 % of those women with VIA positive precancerous lesion were found to had early age at marriage, and significant proportion of them stated single life time sexual partner 62.9% and only two of them had more than three life time sexual partner. Of those women who gave birth and found to have VIA positive lesion, 50 % they had their first birth at age ≥19years.

About 1/3 of them were in the age group ≥40 years and majority of them, about 77.7 % stated age at coitarche of above 16 yrs.

Table 4 shows the reproductive and sexual characteristics of those women found to have VIA positive cervical lesions.

Table 4: Reproductive and sexual characteristics of those women found to have VIA positive cervical precancer lesion, SPHMMC, Addis Ababa, Ethiopia, 2015

VARIABLES	FREQUENCY	PERCENT
AGE		
30-34	21	38.8
35-39	14	25.9
≥40	19	35.1
AGE AT COITARCHE		
≤15	12	22.2
≥16	42	77.7
AGE AT MARRIAGE		
≤18	34	62.9
≥19	20	37.1
AGE AT BIRTH OF FIRST CHILD		
≤18	22	40.7
≥19	27	50
LIFE TIME SEXUAL PARTNER		
1	34	62.9
2-3	18	33.3
>3	2	3.7

The results of bivariate analysis revealed that, early age at marriage (age≤18), age at coitarche (age<16) and age of the women above 40yrs are significantly associated with prevalence of VIA positive cervical lesions. (P value0.05)? Under the bivariate analysis, age at birth of first child was also found to have association with precancerous cervical lesion. Age <18yrs at birth of first child was with less odd of developing precancerous lesion.

Of those variables found to have association with prevalence of VIA positive lesions in the bivariate analysis, multivariate analysis revealed that three of the factors, age at marriage and age at first sexual intercourse, age at birth of first child to have significant association with 5% level of significance. After controlling the effect of factors including sexual partner number, age, and parity, those women who married at age less than 18 were found to have nearly three times odds of developing precancerous cervical lesion. (AOR=2.898, 95% CI:1.468,5.720).

The multivariate analysis on sexual behavior also revealed that those women who had their first sexual intercourse at age less than 16 had significant increased odds of having precancerous lesion. (AOR= 7.973, 95% CI:1.762,36.068,)

Women who had birth of their first child at age of less than 19 years were found to have 60% less odds having precancerous cervical lesion. (AOR=0.379, 95% CI: 0.166,0.865)

Table 5 shows the association of various factors with VIA positive cervical lesions on multivariate analysis.

Table 5: Association of various factors with VIA positive cervical lesions on multivariate analysis at SPHMMC, Addis Ababa, Ethiopia, 2015

RISK FACTOR	VIA RESULT POSITIVE	COR	95%CI	AOR	95%CI	P-VAL
Age at marriage		2.680	1.411, 5.089	2.898	1.468,5.720	<0.002
≤18	34(62.9%)					
≥19	20(37.1%)					
Age at first sexual intercourse		6.510	2.331,18.185	7.973	1.762,36.086	<0.007
≤15	42(77.7%)					
≥16	12(22.2%)					
Age at birth of first child		0.413	0.208, 0.208	0.379	0.166,0.865	<0.021
≤18	22 (40.7%).					
≥19	27 (50%)					

Risk factor	AOR	95%CI	P-value
Age at marriage	2.898	1.468,5.720	<0.002
Age at first sexual intercourse	7.973	1.762,36.086	<0.007
Age at birth of first child	0.379	0.166,0.865	<0.021

DISCUSSION

The prevalence of VIA positive precancerous cervical lesion in this study was 24.1%. The finding of this is study higher than findings of most studies done in similar setups.

A comparative cross-sectional study conducted on prevalence and predictors of Pap smear cervical epithelial cell abnormality among HIV-positive and negative women attending gynecological examination at Debremarkos hospital (Ethiopia) revealed an overall prevalence of 14.1% (9). The findings of this study are consistent with a study done among 4,444 women aged 25–65 years in Kerla, India; 24.2% of women were tested VIA positive

which was using low threshold VIA test[10]This study is an institution-based study which included those women who came for certain gynecologic compliant and apparently healthy women were systematically excluded which may lead to overestimation of the burden of the problem. The other explanation for the high prevalence of precancerous cervical lesion in this study is, age of
women included in this study was between age 30 to 45 years, with mean age of 34 year but most of the studies with low prevalence included women of young age group in the study population (as young as 25 years).

This study result revealed that women who married at age less than 18 have nearly three times odds of developing precancerous cervical lesion. (AOR=2.898, 95% CI:1.468,5.720, p=0.002). This finding adds to the widely observed association between risk of cervical cancer and early age at marriage. Early marriage has been identified as one of the important risk factors in substantial number of studies[6, 11, 12].

According to the IARC/ICO series of case control studies, it was found that women reporting age at first sexual intercourse ≤16 years of age had a 2.3–2.5-fold risk of ICC and 1.8– 2.1-fold risk for age at first sexual intercourse 17– 20 years of age[13].
The finding of this study also showed that those women who had their first sexual intercourse at age less than 16 had significant increased odds of having precancerous lesion. (AOR= 7.973, 95% CI:1.762,36.068, p=0.007).

Studies which assessed reproductive behaviors revealed a positive association between younger age at birth of first child and risk of cervical cancer[11,14,15].
In this study it was found that women who had birth of their first child at age of less than 19 years were found to have 60% less odds having precancerous cervical lesion. (AOR=0.379,95%CI,0.166,0.865). This bears similarity with finding of a study from Rwanda, which showed older age at first pregnancy as a risk factor for precancerous cervical lesion (OR=2.10; 95% CI: 1.20,3.67)[16].

CONCLUSION

The analysis of this study revealed that the prevalence of precancerous cervical lesion is 24.1%. This figure is much higher than the findings of many of the studies and could be considered high for the general population. Considering the setup where the study is conducted, SPHMMC which receives clients from different parts of the country as well as from 14 catchment health centers in Addis Ababa, the finding of this proportion of VIA positive precancerous lesion may not be an exaggerated one.

Early age at first sexual debut and early marriage were found have strong association with prevalence of VIA positive cervical lesion.

Emphasis should be given on increasing knowledge of women and the society at large about the adverse consequences early marriage.

Delaying the age at marriage and age at initiation of sexual activity are important primary preventive approaches to decrease the burden of cervical cancer.

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