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Correlates of cervical cancer screening among women living with HIV in Kenya: A cross-sectional study

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Abstract

Objective: Cervical cancer is the leading cause of cancer-related death among Kenyan women. It is important to identify how demographics and knowledge of cervical cancer are associated with screening to determine best practices for targeted screening efforts.

Methods: We conducted a sub-analysis of women who were asked about cervical cancer from a cross-sectional study of women attending large HIV care and treatment programs across Kenya between June and September 2016.

Results: 1671 of 3007 (56%) women reported ever being screened, 804 (48%) of whom were screened within the last 12 months. Prevalence of screening was highest among women who were older (adjusted prevalence ratio [APR] age 35–49 vs. 18–24: 2.26, 95% CI: 1.68–3.05, $P < 0.001$), employed (APR: 1.55, 95% CI: 1.24–1.93, $P < 0.001$), married (APR: 1.27, 95% CI: 1.01–1.59, $P = 0.047$), had at least secondary education (APR: 1.45, 95% CI: 1.19–1.77, $P < 0.001$), with longer time since HIV diagnosis (APR: 1.09/year average increase, 95% CI: 1.04–1.13, $P < 0.001$). 36% knew cervical cancer is treatable.

Conclusion: Characteristics linked to social or economic capital are correlated with cervical cancer screening. Integrating cervical cancer screening into HIV care and educating patients on the

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AUTHOR CONTRIBUTIONS

Conceptualization and writing original draft: KEK, LOE, CJM, ALD; Writing-review and editing: JK, BS, ALD, KEK, LOE, CJM, ALD; Data analysis: KEK, CJM, ALD; Study implementation: BS, JK, AL, CJM, ALD.

DISCLAIMER

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the funding agencies.

CONFLIC TS OF INTEREST

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need for annual screening and potential treatment are important strategies for increasing screening uptake.

Keywords

cancer screening; cervical cancer; early detection of cancer; health systems; HIV; Kenya; reproductive health

1 | INTRODUC TION

Cervical cancer is the leading cause of cancer-related death among women in Kenya and the fourth most common cancer in women globally.[1,2] Women living with HIV (WLWH) are disproportionately impacted by cervical cancer and, compared to HIV-uninfected women, have significantly higher risk of developing cervical dysplasia and more rapid progression to cervical cancer.[3] Kenya's national guidelines recommend screening all WLWH annually[4];yet, screening rates among WLWH are lower than HIV-uninfected women.[5] Lower screening rates among WLWH may be attributed to vertically-focused programs and funding for HIV, but reasons for lack of screening coverage have not been well characterized.

Screen and treat technologies like visual inspection with acetic acid (VIA), followed by cryotherapy and/or Loop Electrosurgical Excision Procedure (LEEP), have been successfully adopted in low- and middle-income countries (LMICs) and allow mid-level providers to offer screening and treatment during primary care or regular antiretroviral therapy (ART) visits. Integration of reproductive health in HIV care has been shown to increase uptake of health services and is accepted by clients and healthcare workers.[6] However, integration can also introduce challenges of increased workload for service providers, fragmented care, additional needs for quality assurance to maintain expertise in screen and treat programs, and protectiveness over funds historically reserved for HIV-specific care.[6–8] Integrating cervical cancer screening into HIV care is feasible and acceptable in many LMICs,[9] but success of integration efforts may be impacted by resource allocation based on HIV burden.

Individual barriers to cervical cancer screening among WLWH may be similar to HIV-uninfected women, including less education, lower income, rural residence, and lack of knowledge about cervical cancer or human papillomavirus (HPV).[5,10–13] Additionally, the complexity of Kenya's national guidelines, in which screening recommendations differ based on age, HIV status, and clinical equipment, may introduce challenges to implementation at the provider-level.

It is important to identify factors that impact cervical cancer screening rates among WLWH to improve integrated service delivery. We examined the relationship between county HIV burden and delivery of cervical cancer screening at facilities providing ART in Kenya and identified demographic factors associated with screening.

2 | METHODS

2.1 | Study design and sampling

We conducted a cross-sectional study of WLWH to assess integration of family planning services in HIV care and treatment facilities. Facilities were eligible for inclusion if they served more than 1000 female ART clients annually, as previously described.[14] Only 1 of 109 facilities meeting ART client volume eligibility criteria declined participation and the Northeastern region was excluded from sampling as there were no facilities with >1000 female ART clients annually. Women were eligible for study participation if they were HIV-infected, between the ages of 15–49 years, reported having vaginal intercourse in the previous 6 months, and able and willing to provide informed consent. Since the primary objective of the study was to assess integration of family planning services in HIV care, women who were currently pregnant or previously underwent sterilization or a hysterectomy were excluded. The study was conducted between June and September 2016; in July 2016 questions on cervical cancer screening were added to the questionnaire. Data from WLWH surveyed before cervical cancer questions were added and from women under the age of 18 were excluded. In 2016, when this study was conducted, national guidelines recommended screening at age 18 or at time of diagnosis for WLWH.

2.2 | Study procedures

The survey was administered by a trained study nurse in a private area within each facility. Median duration of surveys was ~30 min and women were screened in local languages, as preferred. The survey assessed sociodemographics, obstetric history, sexual history, and ART use. Women were asked questions about their familiarity with cervical cancer screening, including screening history and true/false questions to assess knowledge about screening.

This study was approved by the University of Washington Institutional Review Board, the Kenya Medical Research Institute Scientific and Ethics Review Unit, and the Associate Director for Science at the U.S. Centers for Disease Control and Prevention (CDC). The study was also reviewed in accordance with the CDC human research protection procedures and determined to be research, but CDC investigators did not interact with human subjects or have access to identifiable data for research purposes.

2.3 | Key definitions and statistical analysis

We defined up-to-date cervical cancer screening as having received screening within the past 12 months based on the Kenya National Guidelines recommendation for annual screening among WLWH.[4] We defined ever screened for cervical cancer screening as being screened at least once in a lifetime with either a pap smear or VIA. County HIV burden was defined by the Kenya Country Operation Plan (COP) 2015 Strategic Direction Summary. Counties were classified based on the President's Emergency Plan for AIDS Relief (PEPFAR) Kenya strategy for scale-up of funding to reach 80% ART coverage in high- and medium-HIV burden counties and sustained financial support in low-burden counties.[15]

We accounted for facility-level clustering and applied a sampling weight to account for the subset of facilities that collected cervical cancer data. We used chi-square tests and t-tests with robust standard errors to compare continuous and categorical variables, respectively. We identified correlates of cervical cancer screening among WLWH using univariate Poisson generalized linear models with a log-link function, which is appropriate for non-rare binary outcomes.[16,17] We used a multivariate Poisson generalized linear model, adjusting for factors that were identified as significant in the univariate analysis. We assessed collinearity by calculating the variance inflation factor (VIF): values <10 indicated lack of collinearity.[18] STATA 15 (STATA Corp., College Station, TX, USA) svy commands were used for all analyses.

3 | RESULTS

Overall, 3007 clients attending 67 ART clinics in 21 counties across Kenya were included in this analysis. The mean age was 34 years old, 42% had a secondary education or higher, and 77% were employed (Table 1). The mean time since HIV diagnosis was 6 years. Nearly all women (97%) were on ART, with a mean duration of time on ART of 5 years. The majority (78%) attended clinics in a county designated as high- or medium-HIV burden. Demographic characteristics were similar across county HIV burden. Women in low-HIV burden counties were slightly older, with more than half (55%) between the ages of 35–49, compared to 44% in high- or medium-HIV burden counties ($P = 0.008$). Almost half (47%) of women living in low-HIV burden counties reported traveling an hour or more to reach their clinic, compared to 38% of women in high- or medium-HIV burden counties ($P = 0.021$).

3.1 | Cervical cancer screening

A total of 1671 (56%) women reported ever being screened for cervical cancer and 804 (48%) of these women were classified as having up-to-date screening; this represents 27% (804/3007) of the study population. Women in low-HIV burden counties were more likely to have been screened for cervical cancer than women in high- and medium-HIV burden counties, but this difference was not significant (63% vs. 53% respectively; $P = 0.082$) (Figure 2a). There was no difference in prevalence of up-to-date screening by county HIV burden ($P = 0.978$). Cervical cancer screening was associated with having a least a secondary education [prevalence ratio (PR): 1.24, 95% confidence interval (CI): 1.02–1.50], being employed (PR: 1.83, 95% CI: 1.49–2.25), and being married (PR: 1.25, 95% CI: 1.00–1.56) (Table 2; Figure 1). Compared to women aged 18–24 years, women 25–34 years old were 2.32 times more likely to ever be screened (PR: 2.32, 95% CI: 1.85–2.91) while women aged 35–49 were 2.71 times more likely to ever be screened (PR: 3.55, 95% CI: 2.71–4.66). For each additional year since HIV diagnosis, prevalence of screening increased by 13% (PR: 1.13/year average increase, 95% CI: 1.10–1.17), and for each year on ART, prevalence of screening was 12% higher (PR: 1.12/year average increase, 95% CI: 1.09–1.16). Age, education, employment, marital status, and years since HIV diagnosis remained significantly associated with cervical cancer screening in a multivariate model (Table 2).

Women aged 18–24 were most likely to have received up-to-date cervical cancer screening (61%). Women aged 35–49 years were least likely (44%, PR compared to age 18–24: 0.50, 95% CI: 0.34–0.73) to be up-to-date with screening, followed by women aged 25–34 (58%, PR compared to age 18–24: 0.66, 95% CI: 0.46–0.96) (Table 3). Employed women were more likely to have up-to-date screening than unemployed women (50% vs. 38%, PR: 1.61, 95% CI: 1.18–2.20). In a multivariate model adjusting for employment, women aged 25–34 and aged 35–39 were 42% and 59% less likely to be up-to-date with screening, respectively [adjusted prevalence ratio (APR) comparing age 25–34 to 18–24: 0.58, 95% CI: 0.38–0.87; APR comparing age 35–49 to 18–24: 0.41, 95% CI: 0.27–0.64]. Employment remained associated with up-to-date screening (APR: 1.83, 95% CI: 1.32–2.55).

3.2 | Knowledge and familiarity with cervical cancer screening

Overall, women were knowledgeable about cervical cancer. The majority of women had heard of cervical cancer (92%) and cervical cancer screening (89%). Most women correctly answered questions about cervical cancer screening, symptoms, and prevention (59–63%), but only one-third (36%) knew cervical cancer is treatable (Table 4).

4 | DISCUSSION

In this large national evaluation in Kenya, we found half of women had a history of cervical cancer screening and 48% of these women were up-to-date with screening. Cervical cancer screening among WLWH was substantially higher than national estimates of 3–14%[11,19] and previously reported screening prevalence in other studies among the general population in Kenya (6–14%).[5,12,13] The high screening prevalence in our study may be attributed to higher engagement in care, as nearly all women were on ART, requiring regular contact with the healthcare system.

Our findings are consistent with previous research in Kenya that found women who were older, educated, and wealthier—often linked to employment and being married—were more likely to receive cervical cancer screening.[5,11,12] However, few studies have assessed screening among a population of WLWH, specifically. Women who are educated and employed may have increased access to information, support, or social capital, which has been associated with cervical cancer screening.[20,21] Screening rates were higher among women with a longer time since HIV diagnosis, reflecting more opportunities for screening associated with longer engagement in care.

We found cervical cancer screening rates did not vary by county HIV burden (Figure 2a). These results are promising and suggest that facility-level factors that may differ by HIV burden, including funding for reproductive health services, provider training, and time allotted for service provision, do not impact cervical cancer screening delivery. While other studies have documented lower screening prevalence in rural areas,[11] we did not find any association between travel time to clinic, which may serve as a proxy measure for rural residence, and cervical cancer screening. However, women in our study were on ART, which requires frequent visits to a clinic for treatment refills.

While older women were more likely to have ever received screening, they were less likely to have up-to-date screening (Figure 2b). These results suggest that women receive screening at a younger age but perhaps not in subsequent years when they are at highest risk of developing cervical lesions and cancer.[22] It is important to balance the recommendation to screen young WLWH, while prioritizing timely screening and re-screening of women at highest risk of cervical lesions and cancer due to combined risk of age and HIV status. Since this study was conducted, Kenya's national guidelines for screening WLWH increased the recommended age at first screening from 18 to 25 years, or at the time of HIV diagnosis.[4,23] These updated guidelines more closely follow WHO recommendations to prioritize women aged 30–49 years old.[22] Monitoring of cervical cancer screening rates is critical to determine whether updated recommendations will increase the proportion of women who receive annual screening.

Familiarity with and knowledge of cervical cancer screening and symptoms was higher among women who had previously been screened for cervical cancer. These results are consistent with research showing higher cervical cancer screening rates among women with knowledge of HPV and cervical cancer.[5,10,12] Only 36% of women knew that cervical cancer is a treatable disease. This may be a response to high mortality associated with common late-stage cervical cancer diagnoses in Kenya, illustrating a need for patient education on the importance of routine annual screening, symptoms, and availability of treatment with early detection of precancerous cervical lesions.

Our study had several strengths. We had a large sample of WLWH who attend high-volume ART facilities across the country. We assessed whether screening was up-to-date according to national guidelines, which has not been well categorized in previous research in LMICs. Our participants were WLWH, which allowed us to examine clinical factors related to HIV care. Our study also had some limitations. Results may not be generalizable to WLWH who have not been diagnosed, did not attend HIV care and treatment programs, or who sought care at low-volume clinics. We cannot distinguish between women who were not offered vs. declined screening and did not ascertain detailed information about the technical capacity for providers to offer cervical cancer screening or county-level policies regarding prioritization of screening. We were unable to assess temporality between knowledge of cervical cancer and screening receipt.

Despite higher prevalence of ever being screened, only 27% of WLWH in the study reported screening within the last year, suggesting there is significant room for improvement in screening women within the recommended 12-month interval. To prevent development of cancer, cervical lesions must be detected and treated early, heightening the need for routine screening, especially among high-risk WLWH. We found that for each year since HIV diagnosis, prevalence of cervical cancer screening was higher, even after adjusting for age. Since women on ART consistently interact with the healthcare system, integration of cervical cancer screening into routine HIV care allows for increased uptake of annual screening among WLWH. Focusing screening efforts on populations at highest risk of cancer due to HIV infection and age should be combined with efforts to increase screening access among women with limited social or economic capital. Integrating cervical cancer services into HIV care can increase opportunities for screening and treatment among women

attending ART clinics who are unemployed, unmarried, or less educated and may be less likely to access cervical cancer screening.

In the past few years, increased funding has been directed toward cervical cancer screening and prevention from major donors including PEPFAR, UNITAID, and Global Fund. In addition, HPV vaccination – a necessary component of cervical cancer elimination – is becoming widespread and increasingly accessible in LMICs.[24] Kenya's National HPV Vaccination Program was rolled out in October 2019 and provides free vaccination for all 10-year-old girls. Alongside these positive advances, screening will remain a necessary strategy for cervical cancer elimination, as women who are no longer age-eligible to receive the vaccine remain at risk. Further research is needed to better characterize facility-level barriers to screening delivery to support integration efforts and equip facilities with the resources needed to deliver equitable, high-quality screening services and subsequent treatment. Understanding and overcoming these barriers will allow Kenya to move toward the World Health Assembly cervical cancer elimination strategy of 70% screening coverage with 90% of women with lesions receiving treatment by 2030.[25]

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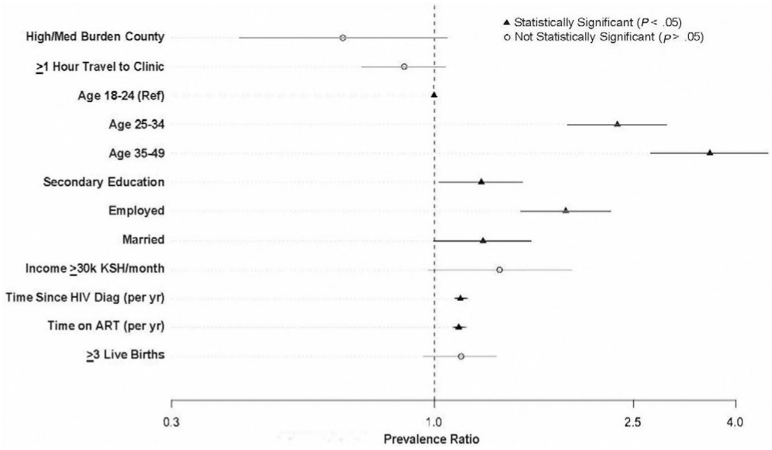

FIGURE 1.

Univariate correlates of cervical cancer screening among women living with HIV in Kenya

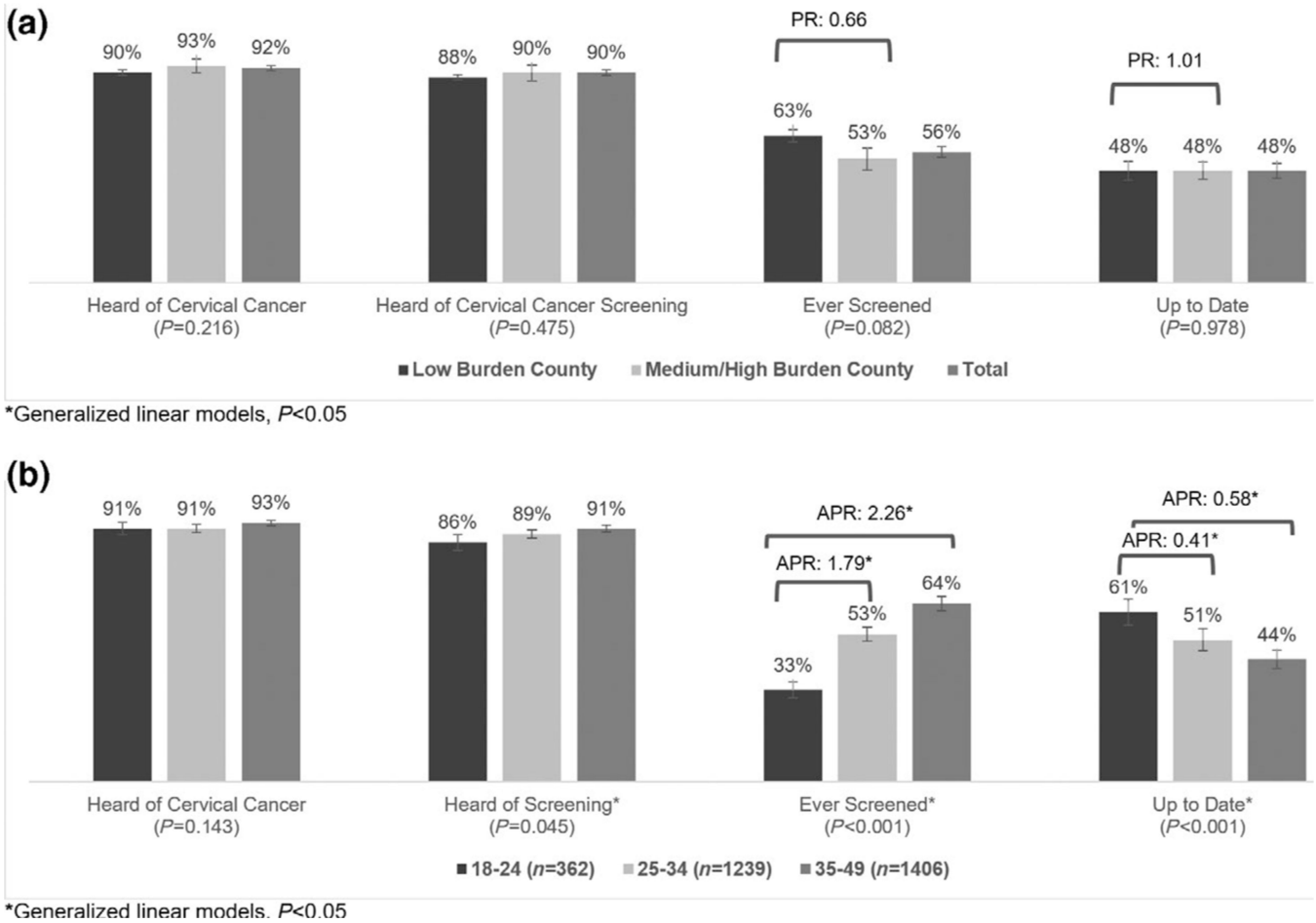

FIGURE 2.

(a) Familiarity and experiences with cervical cancer screening among Kenyan women living with HIV, by county HIV burden, 2016. (b) Familiarity and experiences with cervical cancer screening among Kenyan women living with HIV, by age, 2016

TABLE 1

Characteristics of Kenyan women attending HIV care and treatment programs, by county HIV burden, 2016

		n **(%) or mean (SE)**		
	n [a]	**High/medium HIV burden county (*n* = 2336)**	**Low HIV burden county (*n* = 671)**	**Total (*n* = 3007)**
Sociodemographic				
Age (years)	3007			
18–24		300 (13%)	62 (9%)	362 (12%)
25–34		995 (43%)	244 (36%)	1239 (41%)
35–49		1041 (44%)	365 (55%)	1406 (47%)
Age (years)	3007	33 (0.31)	35 (0.49)	34 (0.28)
At least secondary education	3006	987 (42%)	272 (41%)	1259 (42%)
Employed	2998	1801 (77%)	519 (78%)	2320 (77%)
Household monthly income ≥30,000 KSH	2473	436 (22%)	57 (12%)	493 (20%)
Married	2996	1395 (60%)	365 (55%)	1760 (59%)
≥1 h travel time to clinic	2999	887 (38%)	316 (47%)	1203 (40%)
Number of lifetime sexual partners	2728	3 (0.10)	3 (0.14)	3 (0.08)
HIV clinical history				
Time since HIV diagnosis (years)	2886	6 (0.16)	6 (0.23)	6 (0.13)
Currently on ART	3007	2253 (96%)	657 (98%)	2910 (97%)
Time since ART initiation (years)	2793	5 (0.11)	5 (0.27)	5 (0.10)
WHO clinical staging (self-reported)	3007			
I/II (early)		960 (41%)	228 (34%)	1188 (39%)
III/IV (advanced)		120 (5%)	19 (3%)	139 (5%)
Don’t know		1256 (54%)	424 (64%)	1680 (56%)
Reproductive history				
Number of live births	2697	3 (0.07)	3 (0.11)	3 (0.06)

Abbreviations: ART, antiretroviral therapy; KSH, Kenyan shilling; SE, standard error; WHO, World Health Organization.

[a]Number of observations with complete information included in the model.

TABLE 2

Correlates of ever being screened for cervical cancer among Kenyan women attending HIV care and treatment programs, 2016 (n = 3007)

	Ever screened							
	n (%) or mean (SE)				Poisson generalized linear models			
	n [a]	Yes	No	*P* [b]	Crude PR (95% CI)	*P*	Adjusted PR[c] (95% CI)	*P*
Geographic								
High/medium-HIV burden county	3007	1246 (41%)	1090 (36%)	0.081	0.66 (0.41, 1.06)	0.082		
Sociodemographic								
Age (years)	3007			**<0.001**				
18–24		119 (4%)	243 (8%)		Ref	–	Ref	–
25–34		659 (22%)	580 (19%)		2.32 (1.85, 2.91)	**<0.001**	1.79 (1.40, 2.27)	**<0.001**
35–49		893 (30%)	513 (17%)		3.55 (2.71, 4.66)	**<0.001**	2.26 (1.68, 3.05)	**<0.001**
At least secondary education	3006	738 (25%)	521 (17%)	**0.029**	1.24 (1.02, 1.50)	**0.029**	1.45 (1.19, 1.77)	**<0.001**
Employed	2998	1370 (46%)	950 (32%)	**<0.001**	1.83 (1.49, 2.25)	**<0.001**	1.55 (1.24, 1.93)	**<0.001**
Household monthly income ≥30,000 KSH	2473	313 (13%)	180 (7%)	0.071	1.35 (0.97, 1.88)	0.072		
Married	2996	1018 (34%)	742 (25%)	**0.045**	1.25 (1.00, 1.56)	**0.045**	1.27 (1.01, 1.59)	**0.047**
≥1 h travel time to clinic	2999	644 (21%)	559 (19%)	0.138	0.87 (0.72, 1.05)	0.138		
Number of lifetime sexual partners	2728	3 (0.12)	3 (0.10)	0.759	1.01 (0.96, 1.05)	0.761		
HIV clinical history								
Time since HIV diagnosis (years)	2886	7 (0.16)	5 (0.17)	**<0.001**	1.13 (1.10, 1.17)	**<0.001**	1.09 (1.04, 1.13)	**<0.001**
Time since ART initiation (years)	2793	5 (0.14)	4 (0.13)	**<0.001**	1.12 (1.09, 1.16)	**<0.001**	1.03 (0.99, 1.08)	0.072
Reproductive history								
≥3 live births	2697	836 (31%)	580 (22%)	0.160	1.12 (0.95, 1.33)	0.160		

Statistically significant results (P< 0.05) are bolded.

Abbreviations: ART, antiretroviral therapy; CI, confidence interval; KSH, Kenyan shilling; PR, prevalence ratio; SE, standard error.

[a]Number of observations with complete information included in the model.

[b]Chi-square test for proportions and *t*-test for continuous measures.

[c]Adjusted for age (categorical), secondary education, employment, marital status, years since HIV diagnosis, and years on ART.

TABLE 3

Correlates of up-to-date[a] cervical cancer screening among Kenyan women attending HIV care and treatment programs, 2016 ($n = 1671$)

	Screening up-to-date[a]							
	***n* (%) or mean (SE)**				**Poisson generalized linear models**			
	***n*[b]**	**Yes**	**No**	***P*[c]**	**Crude PR (95% CI)**	***P***	**Adjusted PR[d] (95% CI)**	***P***
Geographic								
High/medium-HIV burden county	1671	600 (36%)	646 (39%)	0.977	1.01 (0.65, 1.56)	0.978		
Sociodemographic								
Age (years)	1671			**<0.001**				
18–24		73 (4%)	46 (3%)		Ref	-	Ref	-
25–34		338 (20%)	321 (19%)		0.66 (0.46, 0.96)	**0.030**	0.58 (0.38, 0.87)	**0.009**
35–49		393 (24%)	500 (30%)		0.50 (0.34, 0.73)	**<0.001**	0.41 (0.27, 0.64)	**<0.001**
At least secondary education	1670	381 (23%)	357 (21%)	0.062	1.29 (0.99, 1.68)	0.062		
Employed	1669	688 (41%)	682 (41%)	**0.003**	1.61 (1.18, 2.20)	**0.003**	1.83 (1.32, 2.55)	**<0.001**
Household monthly income ≥30,000 KSH	1427	153 (11%)	160 (11%)	0.982	1.01 (0.62, 1.63)	0.982		
Married	1664	490 (29%)	528 (32%)	0.893	1.02 (0.78, 1.33)	0.893		
≥1 h travel time to clinic	1669	308 (18%)	336 (20%)	0.881	0.98 (0.72, 1.32)	0.881		
Number of lifetime sexual partners	1531	3 (0.11)	3 (0.17)	0.331	1.02 (0.98, 1.06)	0.344		
HIV clinical history								
Time since HIV diagnosis (years)	1612	7 (0.17)	7 (0.22)	0.093	0.97 (0.94, 1.00)	0.095		
Time since ART initiation (years)	1562	5 (0.15)	5 (0.17)	0.104	0.98 (0.95, 1.01)	0.105		
Reproductive history								
≥3 live births	1555	377 (24%)	459 (30%)	0.202	0.86 (0.68, 1.09)	0.202		

Statistically significant results ($P < 0.05$) are bolded.

Abbreviations: ART, antiretroviral therapy; CI, confidence interval; KSH, Kenyan shilling; PR, prevalence ratio; SE, standard error.

[a]Up-to-date cervical cancer screening defined as self-reported screening within the past 12 months.

[b]Number of observations with complete information included in the model.

[c]Chi-square test for proportions and *t*-test for continuous measures.

[d]Adjusted for age (categorical) and employment.

TABLE 4

Knowledge of cervical cancer screening among Kenyan women attending HIV care and treatment programs, by screening status, 2016

		n (%)		
	Answer[b]	**Never screened (*n* = 1336)**	**Screened (*n* = 1671)**	**Total (*n* = 3007)**
Screening tests look for changes on your cervix that indicate you are risk for cancer	**TRUE** [a]	470 (35)	1320 (79)	1790 (59)
	FALSE	53 (4)	88 (5)	141 (5)
	DON'T KNOW	813 (61)	263 (16)	1076 (36)
Women should only be screened for cervical cancer when they have cancer symptoms	TRUE	200 (15)	315 (19)	515 (17)
	FALSE [a]	546 (41)	1232 (74)	1778 (59)
	DON'T KNOW	590 (44)	124 (7)	714 (24)
If a woman has abnormal vaginal bleeding, discharge, or pain, she should see a medical provider to get screened for cervical cancer	**TRUE** [a]	622 (47)	1302 (78)	1924 (63)
	FALSE	57 (4)	143 (9)	200 (7)
	DON'T KNOW	657 (49)	226 (14)	883 (30)
Cervical cancer can be prevented	**TRUE** [a]	572 (43)	1205 (72)	1777 (59)
	FALSE	89 (7)	141 (8)	230 (8)
	DON'T KNOW	675 (51)	325 (19)	1000 (34)
Screening tests can help prevent cervical cancer	**TRUE** [a]	572 (43)	1225 (73)	1797 (59)
	FALSE	99 (7)	192 (11)	291 (10)
	DON'T KNOW	665 (50)	254 (15)	919 (31)
There is no treatment for cervical cancer	TRUE	319 (24)	539 (32)	858 (28)
	FALSE [a]	330 (25)	775 (45)	1085 (36)
	DON'T KNOW	687 (51)	377 (23)	1064 (36)

[a] Chi-square test, $P < 0.05$.

[b] Correct answers bolded.