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High Level of Agreement between Clinician-Collected and Self-Collected Samples for HPV Detection among South African Adolescents

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To the Editor,

A number of investigators have reported reasonably high concordance between clinician-collected and self-collected specimens for detection of human papillomaviruses (HPV),^{1–6} and meta-analyses have concurred that self-sampling may be a viable alternative under some circumstances.^{7,8} Potential advantages of self-sampling for HPV testing include greater acceptability,² inexpensiveness, and practicality in low-resource settings.⁷ However, inadequate agreement between these methods for high-risk HPV (HR-HPV) has also been reported.⁹ Several investigators have noted increased detection of low-risk HPV (LR-HPV) among self-collected samples,^{3,5,7} which may reflect a greater tropism for vaginal over cervical epithelium of some phylogenetic species. There has been significant variability in self-sampling methods among studies of this subject as well as variability in the ages of study subjects. We conducted a pilot study of clinician-collected versus self-collected genital samples for HPV testing among a notably young age group (16- and 17-year-old South African females) using a simple self-sampling method.

In our small cohort of South African adolescents (N = 15), samples from self-collected vaginal Dacron swabs were collected during the same visit as clinician-collected cervical specimens. Patients were instructed to insert the swab high into the vagina and twirl it for 10 seconds. Human papillomavirus genotyping was performed using the Roche Linear Array kit, which uses polymerase chain reaction (PCR) to detect 37 human genital HPV genotypes, including all 18 HR-HPV types.¹⁰ All specimens were β -globin positive. We found a high prevalence of HPV, with good agreement between clinician-collected and self-collected samples (Table 1). The κ statistic for HR-HPV was 0.73 ($P = .009$, SE = 0.18), and for LR-HPV it was 0.59 ($P = .03$, SE = 0.19). Sixty percent of samples obtained from both methods

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were positive for any HPV, and 53% of samples from both methods were positive for any HR-HPV. A greater prevalence of LR-HPV was found among self-collected samples (47% vs 27%, $P = .45$). All participants had cervical smears performed; 1 showed atypical squamous cells of uncertain significance, and all others were normal.

Our new data are limited in their precision as a result of the small sample size, but they support prior suggestions that agreement between clinician-collected and self-collected samples for HR-HPV is high and that LR-HPV is more frequently detected among self-collected vaginal specimens. For epidemiologic and research purposes, clinician-collected and self-collected specimens may be complimentary. Human papillomavirus testing is not currently recommended for adolescents and does not have a well-established clinical application. Although some comparisons among self-collection techniques have been reported,^{11,12} there is a dearth of data comparing vaginal lavage to the simpler swab method. Although overall patient acceptance of self-sampling has been reported to be high,^{2,6,11} in the only reported evaluation of preference between lavage and swab techniques, swabs were overwhelmingly preferred.¹³ The simple self-collection technique used in our study and others may be most appropriate. Our self-sampling cohort is among the youngest reported on the subject and supports the extension of evidence for reasonably high agreement between clinician-collected and self-collected samples for HPV detection to this age group.

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Table 1Comparison of Human Papillomavirus DNA Test Results of Clinician-Collected and Self-collected Samples^a

HPV Type	Clinician-Collected, n (%)	Self-collected, n (%)	κ (P^b)
High-Risk HPV			
Any	8 (53.3)	8 (53.3)	0.73 (.009)
16	4 (26.7)	4 (26.7)	1.00 (.001)
18	1 (6.7)	1 (6.7)	1.00 (.07)
26 ^c	1 (6.7)	0 (0.0)	0.00 (1.00)
35	1 (6.7)	1 (6.7)	1.00 (.07)
45	1 (6.7)	1 (6.7)	1.00 (.07)
51	1 (6.7)	1 (6.7)	1.00 (.07)
52	1 (6.7)	1 (6.7)	1.00 (.07)
56	0 (0.0)	1 (6.7)	0.00 (1.00)
58	1 (6.7)	0 (0.0)	0.00 (1.00)
68	1 (6.7)	1 (6.7)	1.00 (.07)
73	2 (13.3)	1 (6.7)	0.63 (.13)
Low-Risk HPV			
Any	4 (26.7)	7 (46.7)	0.59 (.03)
6	1 (6.7)	1 (6.7)	1.00 (.07)
54	0 (0.0)	1 (6.7)	0.00 (1.00)
61	2 (13.3)	3 (20.0)	0.76 (.03)
62	1 (6.7)	0 (0.0)	0.00 (1.00)
70	1 (6.7)	1 (6.7)	1.00 (.07)
71	0 (0.0)	1 (6.7)	0.00 (1.00)
81	1 (6.7)	1 (6.7)	1.00 (.07)

Abbreviation: HPV, human papillomavirus

^aHPV genotypes not listed were not present in any specimen^bAll P values were calculated using exact methods and are not approximations^cProbable high risk