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Human Papillomavirus DNA self-testing to promote cervical cancer screening practices of WLHIV: Revisiting the evidence

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To the Editor

Only a quarter of women living with HIV (WLHIV) undergo Papanicolaou (Pap) smear testing in the United States [2]. The trial by Murphy et. al. aimed to increase the cervical cancer screening practice of cervical cytology testing among WLHIV through administration of Human Papillomavirus (HPV) DNA self-tests [1]. Based on the health belief model (HBM), they hypothesized that self-testing would increase self-perception of cervical cancer risk leading to increased cytology test completion. Ultimately it was found that, 1) the frequency of cytology completion was not significantly different between the study arms and was lower in those who self-tested, 2) sub-stratification by HPV results showed the unfavorable effect of cytology completion following a relative gradient (30.5%, n=11/36 among HPV-negative; 37.0%, n=10/27 among HPV-positive; and 38.7%, n=12/31 in the information-only group), and 3) At the baseline assessment, the proportion of women with a previous abnormal Pap was high in the information-only group while being a significant predictor.

The HBM expected a higher proportion of self-testing WLHIV to complete screening due to an increased self-perception of risk. The resulting higher proportion in the information-only group reveals there was a previous awareness of risk present, possibly from the high number of women in the information-only group with a previous abnormal Pap smear, which was the only significant variable. The differential effect on cytology completion is also seen between those testing HPV-negative or –positive demonstrating that HPV test results were other potential factors differentially influencing cytology completion. Negative versus positive test results have been shown to differentially impact perceptions of risk and could have modified intended actions [3]. These outside influences lead us to believe that the pure effects of self-testing on cytology completion may have been obscured by baseline confounding and (unexpected) differential effects of the mediating mechanism.

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Declaration of Interests

There are no conflicts of interest by the authors to report.

To correct the baseline imbalance of women with a previous abnormal Pap, we suggest a post-hoc multivariate regression analysis adjusting for this covariate acting as a baseline confounder; particularly as it was found to be significant and conceptually linked to outcome completion [4, 5]. An alternative is to exclude the women from all analysis and re-analyze the data. Though, we do understand that statistical power would be a concern when excluding subjects in a small sample study.

We acknowledge the work this study began towards motivating WLHIV to obtain cervical cancer screening and hope these recommendations can aid future efforts.

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Abbreviations List

HBM	Health Belief Model
HPV	Human Papillomavirus
Pap	Papanicolaou
WLHIV	Women living with HIV

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