

Association between smoking exposure and cervical abnormality among women living with HIV: a systematic review

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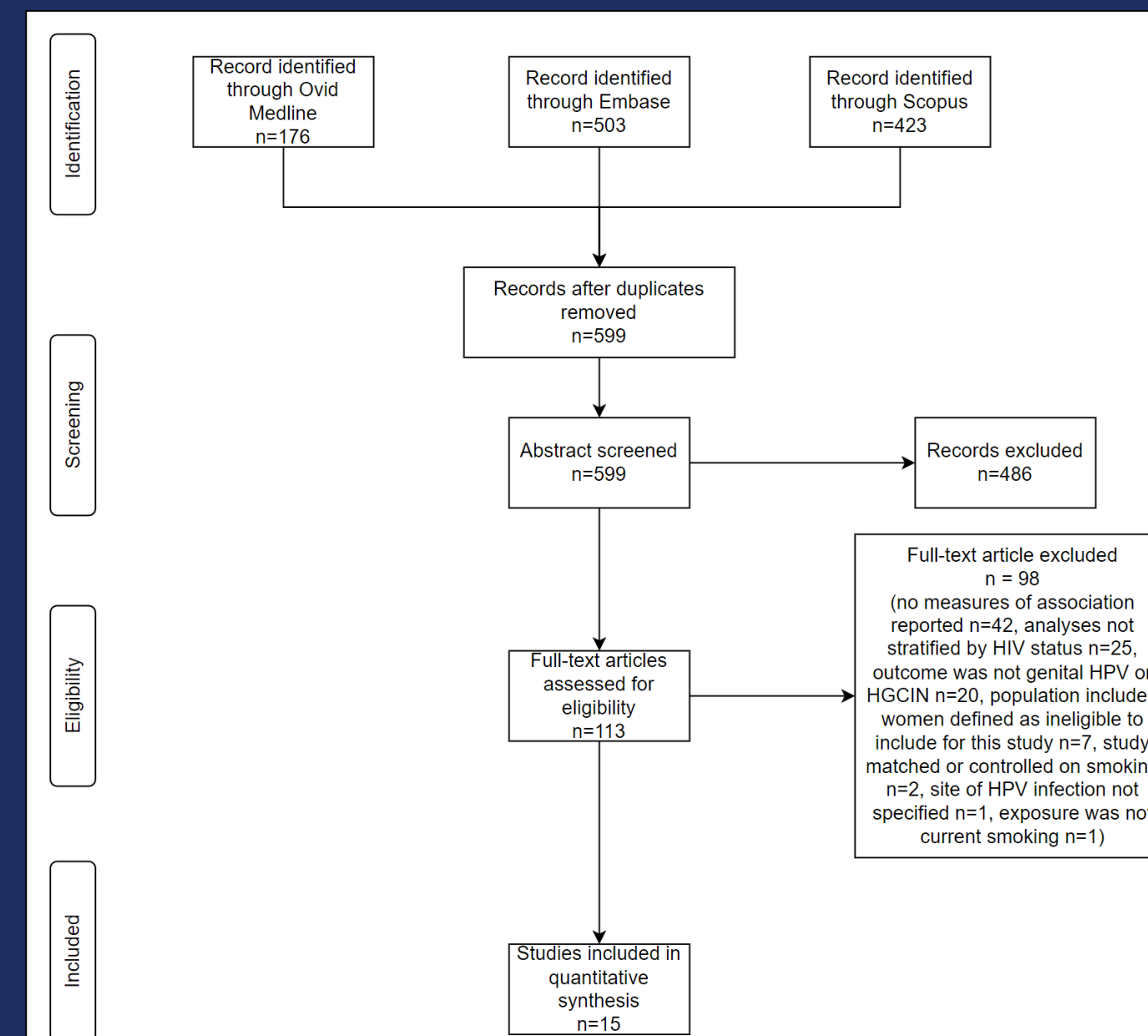
Background

- Cervical cancer is the fourth most common cancer in women worldwide
- In 2020, more than half a million new cases were detected, and more than 300,000 people died from cervical cancer
- In addition to human papillomavirus, smoking, increased parity, and infection with HIV are purported risk factors for the development of cervical cancer
- It is unclear if the effect of smoking on cervical cancer development is comparable among women with HIV (WLWH) and without HIV, or if the exposure to secondhand smoke (SHS) has a similar impact as active smoking.
- In areas with high smoking prevalence, the additional risk associated with smoking exposure may be important when designing cervical cancer screening programs, especially when recommending screening to WLWH, who are already at an increased risk of cervical cancer.

Aim

We conducted a systematic review to assess the effect of active and passive smoking exposure on the risk of both cervical HPV and high-grade cervical intraepithelial neoplasm (HGCIN) incidence, prevalence, and clearance among women living with HIV.

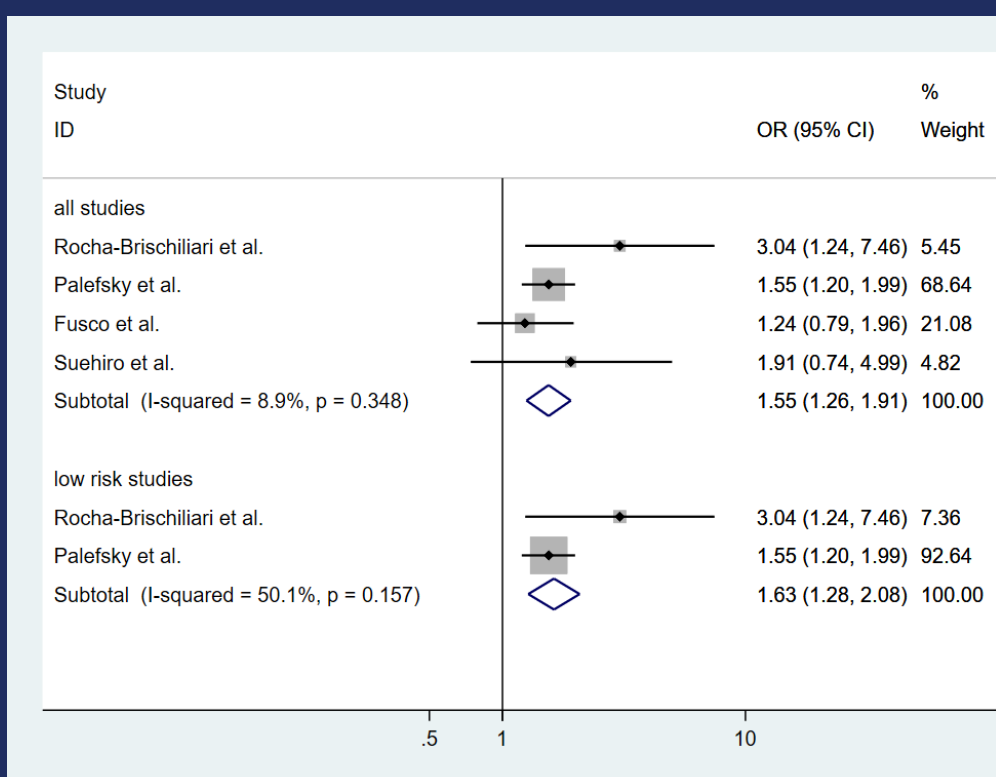
PRISMA Flow Chart



Methods

- Queried search terms HIV, HPV, active smoking, passive smoking, and cervical neoplasms in Ovid Medline, Embase, and Scopus databases
- From these studies, we extracted relevant information for the analysis, including sample size, type of exposure assessed, smoking products, covariates in the analysis, and any measures of association that were reported
- Two reviewers independently abstract the data, and a third reviewer resolved discrepancies
- Assessed the pooled effect of current active smoking and second hand smoke exposure on both HGCIN and cervical HPV infection
- The homogeneity of included studies was evaluated by I^2 . When there was no critical heterogeneity ($I^2 < 50\%$), a fixed-effect model was used, otherwise, a random-effect model was used (i.e., $I^2 \geq 50\%$).
- We assessed risk of bias using the Risk of Bias Assessment Tool for Nonrandomized Studies

Effect of current smoking on genital HPV prevalence among WLWH



Findings

- We identified 15 studies that meet the inclusion criteria for the final analysis.
- Among WLWH, current active smoking is associated with increased risk of new HPV infections (HR=1.33, 95% CI 1.10-1.60), HPV prevalence (OR pooled = 1.55, 95% CI 1.26-1.91), high-grade cervical intraepithelial neoplasia (HGCIN) incidence (HR=1.5, 95% CI 1.2-2.0), and HGCIN prevalence (PR=3.69, 95% CI 1.54-8.78)
- There doesn't appear to be an association between current active smoking and HPV clearance or HGCIN progression
- We did not identify any study that evaluated the association between SHS exposure and HPV-related cervical abnormalities among WLWH.
- Future studies are needed to comprehensively evaluate the effect of exposure to SHS on the natural history of cervical cancer development among WLWH