Comparing the safety, effectiveness, and acceptability between self-sampling and physician sampling for HPV testing of women aged 25-69: a systematic review

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Background

Introduction

- Cervical cancer is the fourth most diagnosed cancer in women worldwide.
- The papanicolau smear test had previously been the mainstay of screening programmes. However, there has been a shift towards high-risk human papillomavirus testing as the causal link between persistent HPV infection and invasive cervical cancer has been established.
- In Singapore, screening rates for cervical cancer have stagnated to around 45%.
- Common barriers to cervical screening include discomfort, embarrassment and inconvenience.
- HPV self-sampling may overcome such obstacles and increase screening uptake.

Aim

- To determine if self-sampling tools are effective in detecting hrHPV strains and pre-invasive cervical lesions of CIN 2 and above compared to physician collected sampling and patient acceptability for healthy, immunocompetent women aged 25 to 69 years of age.

Methods

- A systematic search was conducted using Medline, Scopus, EMBASE, CINAHL, Central register of controlled trials electronic databases for articles published from January 2012 to December 2022.
- Identified randomized trials and observational studies that evaluated the use of HPV self-sampling tools.
- Two authors independently reviewed abstracts and full-text articles for inclusion and assessed study quality.
- Risk of bias in each study was assessed using appropriate tools.
- We adopted a qualitative synthesis and presented the results in a narrative format due to the heterogenous nature of the studies.

Results

Overall

- One hundred and thirty-one articles met our inclusion criteria and were analysed.
- The majority of articles were graded to be of low to moderate risk for bias.
- The research methodologies were varied.

Cross sectional study	96
Randomized controlled trial	32
Cohort study	3

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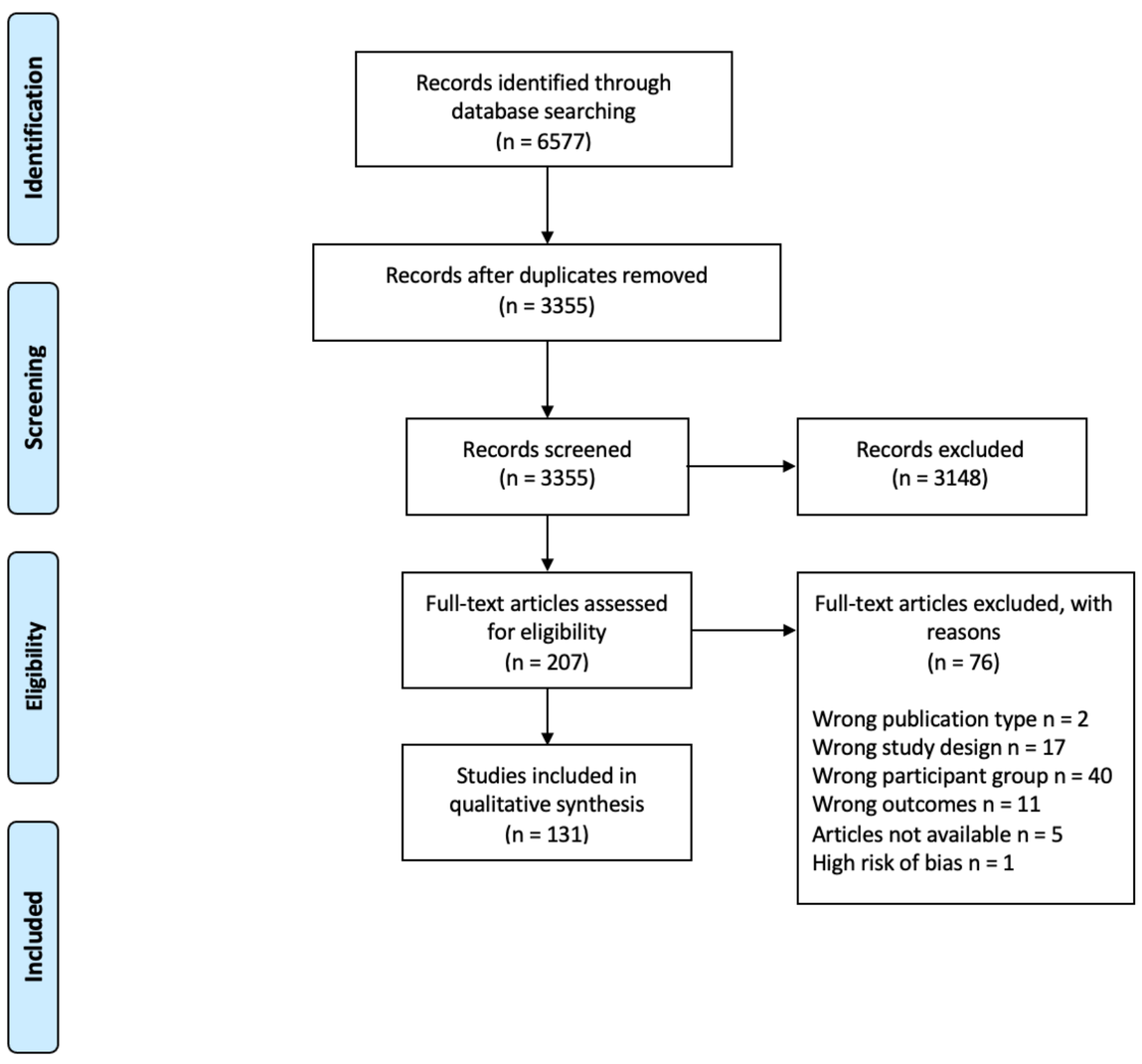

Efficacy in detecting hrHPV strains

- Thirty-five articles compared concordance between self-sampling and physician sampling, using K=0.60 as minimal inter-rater agreement levels.
- Twenty-four articles that tested for hrHPV showed at least substantial agreement levels.
- All studies (N=10) that tested for HPV 16/18 strains showed at least substantial agreement levels.
- This suggests that HPV DNA test using vaginal self-sampling and physician sampling are comparable in terms of efficacy in detecting HPV DNA, with higher degrees of agreement in HPV 16/18 strains.

Patient acceptability

- Seventy-three studies reviewed patient acceptability.
- Most articles showed good acceptability.
- Only 1 study suggested that women are more likely to recommend pap smear to their friends compared to self-sampling.
- Only 3 studies demonstrated greater preference for physician sampling over self-sampling.

Conclusion

- HPV DNA test using vaginal self-sampling and physician sampling are comparable in terms of efficacy in detecting HPV DNA, with higher degrees of agreement in hrHPV strains including HPV 16/18.
- Among patients, there are high levels of acceptability with self-sampling.
- Within our local context, implementation of self-sampling option bridges may help bridge the gap between medical professionals and communities, increase outreach and improve screening uptakes.