INPLASY

Human Papillomavirus Self-sampling in Asia: A Systematic Review

INPLASY202520107

doi: 10.37766/inplasy2025.2.0107

Received: 24 February 2025

Published: 24 February 2025

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ADMINISTRATIVE INFORMATION

Support - Beijing Municipal Health Commission, Capital's Funds for Health Improvement and Research (grant number: 2022-1G-2112); Beijing Hospitals Authority's Ascent Plan (grant number: DFL20221201); Demonstration Construction Project of Clinical Research Ward of Beijing Obstetrics and Gynecology Hospital, Capital Medical University (grant number: BCRW202109); Laboratory for Clinical Medicine, Capital Medical University.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202520107

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 February 2025 and was last updated on 24 February 2025.

INTRODUCTION

Review question / Objective P: Asian women; I: HPV self-sampling; C: HPV clincian sampling, biopsy; O: The accuracy and acceptance of self-sampling to clinician sampling for HPV testing in Asia.

Rationale Human papillomavirus (HPV) self-sampling may be an accurate and effective alternative sampling method to conventional cervical cancer screening methods. There is a notable gap in the literature regarding studies focused specifically on Asian populations.

Condition being studied Most cervical cancers develop due to persistent high-risk human papillomavirus (HR-HPV) infections.Cervical cancer screening programs, including cervical cytology (Pap smear), visual inspection with acetic acid (VIA), and HPV testing, must be applied to reduce the occurrence of cervical cancer. Currently, national screening programs for cervical cancer are widely provided in Asian countries including China, India, Japan, and Thailand(7). However, the uptake rates of these programs remain low, indicating that personal barriers hamper the participation of female patients(8,9). It has been hypothesized that offering HR-HPV self-sampling may increase the participation rate compared to clinician sampling(10-14). HPV self-sampling may be a more acceptable option for patients in Asia who have never been screened or who are under-screened for cervical cancer.

METHODS

Search strategy The PubMed, Cochrane Library, Cumulative Index to Nursing & Allied Health Library (CINHAL), and Web of Science databases were searched for studies reported from the establishment of the database to October 31, 2022. A final update of the search was completed before the final extraction and synthesis of the results on February 23, 2023. The reference lists of the included articles were also screened to identify publications that met the eligibility criteria. Database-specific Boolean operators (AND, OR, NOT) and truncation symbols (* and " ") were used. The following search terms were used to identify eligible studies:
1.cervical dysplasia OR cervical intraepithelial neoplasia OR cervix neoplasms OR papillomavirus OR papillomavirus, human OR human papillomavirus OR papillomavirus, infections
AND
2. self-collected OR self-test OR self-obtained OR self-sampling
AND
3.Asia OR Asian OR Afghanistan OR Armenia OR Azerbaijan OR Bahrain OR Bangladesh OR Bhutan OR Brunei OR Cambodia OR China OR Cyprus OR Georgia OR India OR Indonesia OR Iran OR Iraq OR Israel OR Japan OR Jordan OR Kazakhstan OR Korea, North OR Korea, South OR Kuwait OR Kyrgyzstan OR Laos OR Lebanon OR Malaysia OR Maldives OR Mongolia OR Myanmar OR Nepal OR Oman OR Pakistan OR Palestine OR Philippines OR Qatar OR Saudi Arabia OR Singapore OR Sri Lanka OR Syria OR Tajikistan OR Thailand OR Timor-Leste OR Turkmenistan OR Turkey OR United Arab Emirates OR Uzbekistan OR Vietnam OR Yemen.

Participant or population Asian women.

Intervention HPV self-sampling.

Comparator HPV clincian sampling, biopsy.

Study designs to be included Randomized controlled trials, prospective cohort studies, cross-sectional studies, comparative studies, and other non-randomized controlled trials.

Eligibility criteria Articles were included in the review if they included participants who underwent cervicovaginal self-sampling for HPV DNA testing; measured the accuracy, concordance, and acceptability of cervicovaginal self-sampling and clinician sampling for HPV; focused on Asian patients; were conducted in Asian countries and were in English. Studies that did not use vaginal or cervical specimens for examination were excluded from the review. Studies that focused on non-Asian populations, or did not report relevant outcomes related to the accuracy of self-sampling, concordance with clinician-collected samples, or women's acceptance of self-sampling, were excluded.

Information sources Electronic databases.

Main outcome(s)
The accuracy and acceptance of self-sampling to clinician sampling for HPV testing inAsia.

Additional outcome(s) None.

Quality assessment / Risk of bias analysis Two independent reviewers evaluated the risk of bias for all included studies by using the Quality Assessment Tool for Diagnostic Accuracy Studies-2 (QUADAS-2).
Heterogeneity was assessed using Cochran's Q test and the I^2 statistic. Begg's rank correlation test was performed to further assess publication bias. A funnel plot was used to visualize publication bias.

Data management Descriptive data were extracted independently by two authors, and a third reviewer was consulted to resolve any differences in data collection. The citation, objectives, location, population characteristics, description of the type of HPV screening, description of any additional intervention components, study design, sample size, numerical outcomes, results, and limitations were extracted from each included study.
After finalizing the data extraction, two authors reviewed the data and the full texts to accurately classify HPV self-sampling.

Strategy of data synthesis The diagnostic test sensitivity and specificity were based on colposcopy-confirmed cases of high-grade squamous intraepithelial lesion (HSIL), previously called cervical intraepithelial neoplasia 2+ (CIN2+) or CIN3+, and detection of cervical cancer and HPV infection. The sensitivity was defined as the number of identified cases of HSIL and cervical cancer (positive for both HPV and colposcopy) divided by the total number of colposcopy-confirmed cases. Specificity was defined as the number of cases without HSIL or cervical cancer (negative on both HPV and colposcopy) divided by the total number of colposcopy-negative cases. The HPV detection rate was defined as the HPV-positive cases divided by the total number of women enrolled. Agreement was defined as the

concordance between self-sampled HPV tests and clinician-sampled HPV tests (the percentage of agreement with positive test results and the percentage of agreement with negative test results). Acceptability was defined as the percentage of women willing to participate in the HPV test and their preference between HPV self-sampling and cliniciansampling.

Subgroup analysis None.

Sensitivity analysis None.

Language restriction English.

Country(ies) involved China.

Keywords Human papillomavirus; clinician sampling; self-sampling; Asia; cervical cancer; screening

Contributions of each author

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