Acceptability of Cervical Cancer Self-screening in Singapore (ACCSS)

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Introduction

Singapore has seen a rise in the incidence of cervical cancer despite a national screening programme, driven by a suboptimal uptake of cervical cancer screening among women[1]. Self-sampling for human papillomavirus (HPV) testing is an attractive option to increase cervical screening rates particularly amongst the under-screened population[2]. HPV self-sampling is a potential intervention which can overcoming barriers to traditional cervical cancer screening such as fear, discomfort as well as the inconvenience of attending a health centre for screening.[3]

We aim to establish the acceptability of HPV self-sampling for cervical cancer screening in the primary care setting in Singapore. A secondary aim is to compare the concordance between HPV self-sampling and sampling by a healthcare professional.

Methods

Study design

- A prospective study of 106 women eligible for cervical cancer screening in a polyclinic in Singapore from February to October 2023. We utilized a crossover study design.

Study population

- Inclusion criteria: Women aged between 30-69 years who were scheduled to attend the polyclinic for cervical cancer screening
- Exclusion criteria: Pregnancy, previous total hysterectomy, previous history of cervical cancer, currently menstruating, virgo intactas and women with recent negative cervical cancer screening.

Study intervention

- Participants were allocated into 2 equal groups in a 1:1 ratio by block randomisation, with the first arm undergoing the HPV self-sampling before nurse-sampling and the second arm in the reverse sequence.
- FLOQ swabs were used for HPV self-sampling (Figure 1) and Cervibrush swabs for nurse-collected HPV, and all swabs were all processed using Roche-Cobas 6800 HPV assay
- Participants completed a questionnaire to assess their experience of self-sampling.

Sample size and statistical analysis

Descriptive analyses were conducted on participants' perceptions and ratings of the sampling methods. Agreement of self- and nurse-collected HPV results were assessed using Cohen's kappa (κ).

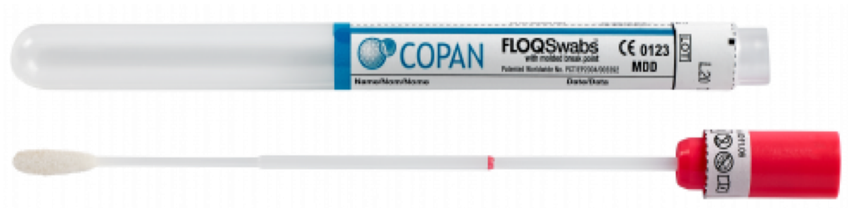

Figure 1. COPAN FLOQswab used for HPV DNA self—sampling test

Results

We present our preliminary findings for the first 106 women recruited in our study. The results of participants preferences for the type of HPV sampling method is summarized in Table 1.

- Most participants found HPV self-sampling easy to perform (87.7%) and comfortable (90.6%)
- Only a minority found the process anxiety-inducing (5.7%), embarrassing (1.9%), or unpleasant (7.5%).
- For future cervical cancer screening, participants preferred self-sampling (74.3%) over nurse/physician-sampling (25.7%).
- Women would more likely participate in future screening if the option of self-sampling was available (91.5%).
- 74.5% of participants were willing to pay for the self-sampling screening themselves.

Out of the 106 results, only 2 of the self-screening swabs yielded invalid results (1.9%). 98.1% of the self-sampling swabs were in concordance with the nurse-collected swabs. Concordance analysis revealed a substantial agreement between the self- and nurse-collected samples with a kappa value of 0.79 ($p<0.001$).

Patient experience on HPV self-sampling					
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
It was easy to perform	75 (70.8%)	18 (17.0%)	11 (10.4%)	1 (1.0%)	1 (1.0%)
Process was comfortable	75 (70.8%)	21 (19.8%)	6 (5.7%)	3 (2.83%)	1 (1.0%)
Did not feel anxious during the procedure	78 (73.6%)	16 (15.1%)	6 (5.7%)	5 (4.7%)	1 (1.0%)
Did not feel embarrassed during the procedure	94 (88.7%)	8 (7.6%)	2 (1.9%)	1 (1.0%)	1 (1.0%)
The process was not unpleasant	84 (79.3%)	12 (11.3%)	3 (2.8%)	6 (5.6%)	2 (1.9%)

Patient preferences on future cervical cancer screening				
	Self-sampling at home	Self sampling at clinic	Physician/nurse-sampling	Does not matter
Preference for cervical cancer screening	74 (56.1%)	31 (23.5%)	12 (9.1%)	15 (11.4%)
	Yes		No	
More likely to participate in cervical cancer screening with self-sampling	97 (91.5%)		9 (8.5%)	
Willing to pay for cervical cancer screening by self-sampling	79 (74.5%)		27 (24.5%)	

Table 1. Participants' preferences regarding the type of HPV sampling method

Conclusion

The acceptability of HPV self-screening among Singapore women in the primary care setting is high. HPV self-sampling overcomes barriers such as fear, discomfort as well as the inconvenience of attending a health centre for screening. The introduction of HPV self-screening in Singapore can potentially improve access to cervical cancer screening, detecting pre-cancerous cervical lesions before the development of malignancy, thus reducing the burden of cervical cancer.

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