Clinician acceptability of self-collected human papillomavirus swabs as a primary cervical cancer screening method

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Abstract

Objective To determine knowledge and acceptability of and opinions about human papillomavirus (HPV) self-screening as an alternative to Papanicolaou testing among Canadian primary care providers (PCPs: family physicians and nurse practitioners) and obstetrician-gynecologists (OB-GYNs).

Design Descriptive, cross-sectional, anonymous, online pilot survey.

Setting Two academic teaching hospitals in downtown Toronto, Ont.

Participants Staff physicians and nurse practitioners in the Department of Family and Community Medicine and the Department of Obstetrics and Gynecology at Women's College Hospital and St Michael's Hospital.

Main outcome measures Recommended patient groups for, potential advantages and disadvantages of, and likelihood of recommending HPV self-sampling for cervical cancer screening.

Results The overall response rate was 30.9%. More than three-quarters of survey respondents were female PCPs. Slightly more than half of clinicians had poor knowledge of HPV self-sampling. However, more than three-quarters would recommend it if there were adequate collection of cervical samples, high patient acceptability, and high sensitivity (almost 100% of respondents), followed by high specificity and cost-effectiveness (more than 80% of respondents). Primary care practitioners were more likely than OB-GYNs to agree that HPV self-sampling made screening easier and less embarrassing for patients. Although not statistically significant, OB-GYNs tended to be more concerned than PCPs were about patients failing to follow up on abnormal HPV results and missed opportunities to address other health issues.

Conclusion Although knowledge of HPV self-sampling for cervical screening was poor, it was generally acceptable to clinicians if certain screening test conditions were met. However, the potential for missed opportunities to visualize pathology and address other health concerns were raised. These and other clinical practice and health systems issues must be addressed before broad implementation of HPV self-sampling in Canada.

Editor's key points

- Cervical cancer morbidity and mortality are largely preventable through population-based screening and appropriate follow-up. Although current Canadian screening programs use cytology-based Papanicolaou testing, some provincial jurisdictions have recommended transitioning to human papillomavirus (HPV) screening. This study aimed to assess the acceptability of patient self-sampling among primary care providers and obstetrician-gynecologists who provide cervical cancer screening.
- More than half of respondents indicated that their knowledge of self-sampling was poor or very poor, but clinicians were interested in offering this option to patients if certain screening test characteristics were met.
- Enthusiasm for HPV self-sampling was high, especially for women who do not participate in Pap screening and for groups at higher risk of having challenges with speculum examinations or being underscreened. Of interest, almost 60% of clinicians indicated they would offer HPV self-sampling to women aged younger than 30 years, even though such screening is not recommended in this group.

Points de repère du rédacteur

- La morbidité et la mortalité dues au cancer du col sont largement évitables au moyen d'un dépistage populationnel et d'un suivi approprié. Quoique les programmes canadiens de dépistage utilisent actuellement les tests de Pap par cytologie, certaines provinces ont recommandé d'adopter plutôt le dépistage du virus du papillome humain (VPH). Cette étude visait à évaluer si un autoprélèvement par les patientes était acceptable pour les professionnels des soins primaires et les obstétriciens-gynécologues qui offrent le dépistage du cancer du col.
- Plus de la moitié des répondants ont indiqué que leurs connaissances de l'autodépistage étaient faibles ou très faibles, mais les cliniciens étaient prêts à offrir cette option aux patientes si certaines caractéristiques du test de dépistage étaient respectées.
- La détection du VPH par autoprélèvement a suscité un grand enthousiasme, surtout pour les femmes qui ne participent pas au dépistage par test de Pap et les groupes à risque plus élevé d'éprouver des difficultés à subir un examen avec spéculum ou encore qui sont sous-dépistés. Fait à souligner, près de 60 % des cliniciens ont signalé qu'ils offriraient le test du VPH par autoprélèvement aux femmes de moins de 30 ans, même si un tel dépistage n'est pas recommandé dans ce groupe.

Acceptabilité par les cliniciens des tests du virus du papillome humain par autoprélèvement comme méthode primaire de dépistage du cancer du col

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Résumé

Objectif Déterminer les connaissances, l'acceptabilité et les opinions concernant l'autodépistage du virus du papillome humain (VPH) comme solution de rechange au test de Papanicolaou chez les professionnels canadiens des soins primaires (PSP : médecins de famille et infirmières praticiennes) et les obstétriciens-gynécologues (OB-GYN).

Type d'étude Sondage descriptif expérimental en ligne, transversal et anonyme.

Contexte Deux centres hospitaliers universitaires d'enseignement au centre-ville de Toronto (Ontario).

Participants Des médecins et des infirmières praticiennes membres du personnel du Département de médecine familiale et communautaire et du Département d'obstétrique et gynécologie à l'Hôpital Women's College et à l'Hôpital St Michael's.

Principaux paramètres à l'étude Les groupes de patientes visés, les avantages et les inconvénients potentiels, et la probabilité de recommander le test du VPH par autoprélèvement pour le dépistage du cancer du col.

Résultats Le taux global de réponse se situait à 30,9 %. Plus de 75 % des répondants au sondage étaient des femmes PSP. Un peu plus de la moitié des cliniciens ne connaissaient pas bien le test du VPH par autoprélèvement. Par ailleurs, plus de 75 % le recommanderaient sous réserve d'une collecte adéquate des spécimens cervicaux, de l'acceptabilité par les patientes et d'une grande sensibilité (près de 100 % des répondants), conditions suivies par une grande spécificité et la rentabilité (plus de 80 % des répondants). Par rapport aux OB-GYN, il était plus probable que les PSP conviennent que l'autoprélèvement facilite le dépistage pour les patientes et le rend moins embarrassant. Sans qu'il s'agisse d'une différence statistiquement significative, les OB-GYN, par rapport aux SPS, avaient tendance à se préoccuper davantage de l'omission par les patientes de faire un suivi dans le cas de résultats anormaux au test du VPH et des possibilités ratées d'aborder d'autres problèmes de santé.

Conclusion Même si les connaissances à propos de l'autoprélèvement pour la détection du VPH aux fins du dépistage du cancer du col étaient faibles, cette méthode était généralement acceptable pour les cliniciens, sous réserve que le test de dépistage respecte certaines conditions. Cependant, la possibilité de ne pas avoir l'occasion de visualiser la pathologie et d'aborder d'autres problèmes de santé a été soulevée comme préoccupation. Ces inquiétudes et d'autres considérations de la pratique clinique et du système de santé doivent être réglées avant la mise en application généralisée du test du VPH par autoprélèvement au Canada.

Cervical cancer morbidity and mortality are largely preventable through population-based screening and appropriate follow-up for cervical abnormalities. Although current Canadian screening programs use cytology-based Papanicolaou testing, some provincial jurisdictions have recommended transitioning to human papillomavirus (HPV) screening.[1] Human papillomavirus is found in 99.7% of cervical cancers, and HPV testing is more sensitive than Pap screening for detecting high-grade cervical abnormalities, including cancer.[2-5] Because most HPV infections are transient and clear on their own in younger people, guidelines currently recommend that cervical screening with HPV testing begin at age 30.[6]

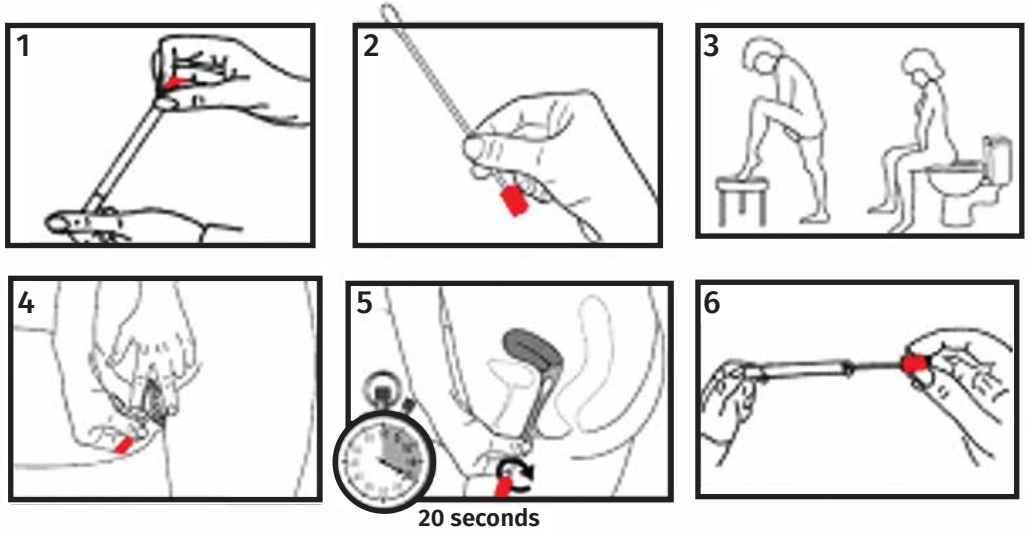
Participation in Ontario's organized Pap screening program has been stable at 65% for almost a decade—well below the targeted 80% rate[7,8]; the national average of eligible Canadian women who participated in at least 1 provincial Pap testing program (2010 to 2013) was 70.2%.[8] Therefore, other options are needed to engage the 30% of the population who are underscreened, many of whom are lesbian, gay, bisexual, trans, queer or questioning, and members of related communities; immigrants; Indigenous; older; or of lower socioeconomic status.[9-13] Although not endorsed in current Canadian guidelines, HPV self-sampling is an alternative to Pap tests that is highly acceptable to women.[14-17] For self-sampling, the patient inserts a sampling swab or brush high into the vagina, rotates it, and places it in the transport vehicle (**Figure 1**). Self-sampling can be done at home or in the office.

When offered, self-sampling has increased participation in cervical screening among women who do not engage in regular Pap testing.[9-11] Cervical self-sampling for HPV has been shown to be as accurate as clinician-collected samples.[5,6,12,13] Among both patients and health care providers, confidence in correct self-collection of cervical samples has been the main limitation expressed in some studies.[17,18] Self-sampling is now integrated into organized cervical screening programs in Australia, Denmark, and the Netherlands for underscreened and never-screened women, and some proponents have recommended it be offered as an option for the general population.[16,17,19]

However, there is limited information about clinicians' views on HPV self-sampling,[18,20] particularly among Canadian health care providers.[21] In Mao and colleagues' study, clinicians at the University of Washington in Seattle who performed Pap tests were generally supportive of HPV self-sampling, but raised concerns about the adequacy of self-collected cervical samples and potential missed opportunities to address other health care needs if cervical screening was not performed during in-office visits.[18] In a qualitative study of 19 Canadian and international cancer screening health care providers and policy makers, most participants thought that HPV self-sampling was an appropriate screening alternative for hard-to-reach populations.[21] As in Mao and colleagues' study,[18] they were also concerned about missed opportunities to discuss other preventive reproductive health topics without an in-office screening visit.[20]

This cross-sectional survey pilot study sought to determine the perceived level of knowledge and acceptability of and opinions about HPV self-sampling as an alternative to Pap testing among primary care providers (PCPs: family physicians and nurse practitioners) and

Figure 1. Human papillomavirus self-sampling



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obstetricians-gynecologists (OB-GYNs) who regularly perform cervical cancer screening.

Methods

An anonymous, online survey was distributed to all staff physicians and nurse practitioners in the Department of Family and Community Medicine and the Department of Obstetrics and Gynecology of 2 academic teaching hospitals in downtown Toronto, Ont, during March and April 2019. Residents and trainees were excluded because we aimed to determine attitudes of clinicians experienced with cervical screening. A modified Dillman approach was used to implement the survey.[22] The survey link was e-mailed to eligible participants through their respective departmental listservs at Women's College Hospital or St Michael's Hospital, with 2 generic reminder e-mails occurring at 2-week intervals. Survey data were collected using Qualtrics software. The study was approved by the research ethics boards of Women's College Hospital and St Michael's Hospital.

The survey was adapted for a Canadian context from the one used by Mao et al,[18] and some of the concepts were expanded. The first part of the 13-question survey collected demographic data and clinical practice characteristics. One question asked participants to rate their perceived knowledge level about HPV self-sampling as an alternative to Pap testing using a 5-point Likert scale. The remaining 6 questions asked respondents to rate the importance of various screening test characteristics (ie, adequacy of sample collection, cost, acceptability for patients and clinicians, sensitivity, specificity), their likelihood of recommending HPV self-sampling to various patient groups (eg, postmenopausal women, those not participating in screening), and the potential advantages and disadvantages of HPV self-sampling using a 5-point Likert scale. The survey is available from the corresponding author on request. The adapted survey was reviewed and revised by 2 experts in cervical cancer screening and a survey methodologist, and was pilot-tested by 3 family physicians and 1 OB-GYN who were not participating in the study and who regularly perform cervical cancer screening in order to ensure readability and comprehensibility.

Data were downloaded from Qualtrics as an SPSS file, and descriptive statistical analyses were conducted using SPSS, version 25.0. We used χ^2 testing to determine associations between clinicians' practice type (PCP vs OB-GYN), age, and years in clinical practice and their opinions on HPV self-sampling. A P value less than .05 was considered statistically significant.

Results

Fifty-eight of 188 eligible clinicians completed the online survey (30.9% response rate), which was equivalent to 45 of 154 PCPs (29.2%)—41 of 144 family physicians and 4 of 10 nurse practitioners—and 13 of 34 OB-GYNs (38.2%). Overall, more than three-quarters were female. Most clinicians (63.8%) performed Pap testing weekly, and 31.0% did so daily. There were no statistical differences between PCPs and OB-GYNs in terms of demographic characteristics and clinical practice parameters (**Table 1**).

Table 2 summarizes clinician groups' perceived level of knowledge about HPV self-sampling as an alternative to Pap screening, opinions about important characteristics of the test, and thoughts on which patient populations they would likely recommend for HPV self-sampling. More than half (51.7%) rated their knowledge of HPV self-sampling as poor to very poor. There was almost complete agreement on the most important features of a self-sampling test: adequate sample collection, high acceptability to patients, and high sensitivity. High test specificity and cost-effectiveness were also considered important by more than 80% of respondents.

Overall, almost three-quarters of clinicians would recommend HPV self-sampling as an alternative to Pap testing, if all important test features were met. Although there were no significant differences between clinician groups on the patient populations they would likely recommend for HPV self-sampling, almost 80% of participants would likely offer it to all women 30 years of age and older, and almost 60% of respondents would offer HPV self-sampling to women younger than 30 years. In descending order, a higher percentage of participants would offer it to women who are survivors of abuse, underscreened or never-screened patients, trans men, and postmenopausal women.

Table 1. Characteristics of survey respondents

CHARACTERISTICS	TOTAL (N = 58), n (%)	PCPs (n = 45), n (%)	OB-GYNs (n = 13), n (%)
Sex			
• Female	47 (81.0)	38 (84.4)	9 (69.2)
• Male	11 (19.0)	7 (15.6)	4 (30.8)
Age, y			
• < 40	25 (43.1)	21 (46.7)	4 (30.8)
• ≥ 40	33 (56.9)	24 (53.3)	9 (69.2)
Years in clinical practice			
• < 10	22 (37.9)	18 (40.0)	4 (30.8)
• ≥ 10	36 (62.1)	27 (60.0)	9 (69.2)
Degree			
• MD	54 (93.1)	41 (91.1)	13 (100.0)
• NP	4 (6.9)	4 (8.9)	0 (0.0)
Perform Pap testing			
• Daily or weekly	55 (94.8)	42 (93.3)	13 (100.0)
• Monthly	3 (5.2)	3 (6.7)	0 (0.0)

MD—medical doctor, NP—nurse practitioner, OB-GYN—obstetrician-gynecologist, PCP—primary care provider.

Table 2. Clinicians' opinions on the importance of various features of screening tests and appropriate patient groups for HPV self-sampling

KNOWLEDGE, IMPORTANCE OF SCREENING FEATURES, AND APPROPRIATE POPULATIONS	OVERALL (N = 58*), n (%)
Current knowledge	
Current knowledge of HPV self-swabs as alternative to Pap testing	
• Poor or very poor	30 (51.7)
• Fair, good, or very good	28 (48.3)
Importance of various features of screening tests	
Patient able to obtain adequate sample	
• Neutral	1 (1.8)
• Fairly to very important	55 (98.2)
Patient acceptability	
• Neutral	1 (1.8)
• Fairly to very important	55 (98.2)
Clinician acceptability	
• Not very important or neutral	17 (30.4)
• Fairly to very important	39 (69.6)
Cost-effectiveness	
• Not at all important or neutral	10 (17.9)
• Fairly to very important	46 (82.1)
High sensitivity	
• Neutral	1 (1.8)
• Fairly to very important	55 (98.2)
High specificity	
• Not very important or neutral	5 (8.9)
• Fairly or very important	51 (91.1)
Offer HPV self-swabbing if important screening features met	
• Do not know or neutral	4 (7.1)
• Probably yes	12 (21.4)
• Definitely yes	40 (71.4)
Appropriate patient populations for HPV self-screening	
Postmenopausal women	
• Not at all likely, not very likely, or neutral	8 (14.5)
• Fairly to very likely	47 (85.5)
Women who do not participate in Pap screening	
• Not at all likely or not very likely	4 (7.1)
• Fairly to very likely	52 (92.9)
Women with a history of trauma	
• Not very likely or neutral	2 (3.6)
• Fairly to very likely	54 (96.4)
Trans men with a cervix	
• Not at all likely, not very likely, or neutral	5 (8.9)
• Fairly to very likely	51 (91.1)
All women < 30 y old	
• Not at all likely, not very likely, or neutral	23 (41.1)
• Fairly to very likely	33 (58.9)
All women ≥ 30 y old	
• Not at all likely, not very likely, or neutral	12 (21.4)
• Fairly to very likely	44 (78.6)
Everyone eligible for cervical cancer screening	
• Not at all likely, not very likely, or neutral	15 (26.8)
• Fairly to very likely	41 (73.2)

HPV—human papillomavirus.
*Not all participants answered all questions.

Table 3 summarizes respondents' opinions on the advantages and disadvantages of HPV self-sampling versus Pap testing. Clinicians agreed completely that increasing screening rates was an advantage of HPV self-screening. Most also rated decreased pain and embarrassment for patients and time savings for patients and clinicians as important advantages. Compared with OB-GYNs, PCPs were more likely to report that important advantages were that HPV self-sampling made screening easier for clinicians (86.0% vs 46.2%; $P = .01$) and less embarrassing for patients (95.3% vs 66.7%; $P = .02$). Although not statistically significant, more PCPs believed that it was important that HPV self-sampling was less painful and uncomfortable for patients than OB-GYNs did (100.0% vs 84.6%; $P = .051$). While there were no statistically significant differences in clinician groups' views on the disadvantages of HPV self-sampling, slightly more OB-GYNs were concerned about patients failing to follow up on abnormal HPV results than PCPs were (84.6% vs 51.2%; $P = .052$).

When physicians' opinions about HPV self-sampling were compared by age and years in clinical practice, we found that younger clinicians (87.5% vs 56.3%; $P = .02$) and less experienced ones (< 10 years in practice) (90.4% vs 57.1%; $P = .02$) were more concerned about missed diagnosis of pathology than their older and more experienced colleagues were. Less experienced physicians were also more likely to recommend HPV self-sampling to all women aged younger than 30 years (69.8% vs 45.7%; $P = .01$).

Discussion

This study of academic PCPs and OB-GYNs who provide cervical cancer screening found that their knowledge of HPV self-sampling as a screening modality was poor. This is not surprising since Ontario's cervical screening program uses Pap testing and does not yet offer HPV screening, even with clinician-collected samples. Nevertheless, clinicians were interested in offering this option to patients if certain screening test characteristics were met. As found in Mao and colleagues' study of US clinicians, our participants deemed accurate

Table 3. Clinicians' opinions about HPV self-swabbing versus Pap testing

OPINION	TOTAL (N = 58*), n (%)	PCPs (n = 45*), n (%)	OB-GYNs (n = 13*), n (%)	*P* VALUE
Advantages of self-administered HPV testing				
Easier for clinicians to provide screening				
• Not at all important, not very important, or neutral	13 (23.2)	6 (14.0)	7 (53.9)	.01
• Fairly to very important	43 (76.8)	37 (86.0)	6 (46.2)	
Time-saving for clinicians				
• Not at all important, not very important, or neutral	16 (29.1)	11 (26.2)	5 (38.5)	.50
• Fairly to very important	39 (70.9)	31 (73.8)	8 (61.6)	
Time-saving for patients				
• Neutral	7 (12.5)	6 (14.0)	1 (7.7)	> .99
• Fairly to very important	49 (87.5)	37 (86.0)	12 (92.3)	
More patients likely to undergo screening				
• Fairly to very important	56 (100.0)	43 (100.0)	13 (100.0)	> .99
Decreased pain and discomfort for patients				
• Neutral	2 (3.6)	0 (0.0)	2 (15.4)	.051
• Fairly to very important	54 (96.4)	43 (100.0)	11 (84.6)	
Decreased embarrassment for patients				
• Neutral	6 (10.9)	2 (4.7)	4 (33.3)	.02
• Fairly to very important	49 (89.1)	41 (95.3)	8 (66.7)	
Provider should perform screening				
• Not at all important, not very important, or neutral	50 (89.3)	40 (93.0)	10 (76.9)	.13
• Fairly to very important	6 (10.7)	3 (7.0)	3 (23.1)	
Disadvantages of self-administered HPV testing				
Adverse effects of lack of contact with patients				
• Not at all important, not very important, or neutral	32 (57.1)	24 (55.8)	8 (61.6)	.76
• Fairly to very important	24 (42.9)	19 (44.2)	5 (38.5)	
Missed opportunities to address or detect other health issues				
• Not at all important, not very important, or neutral	13 (23.2)	11 (25.6)	2 (15.4)	.73
• Fairly to very important	43 (76.8)	32 (74.4)	11 (84.6)	
Missed diagnosis of pathology owing to lack of visualization of genitourinary structures during Pap testing				
• Not at all important, not very important, or neutral	17 (30.3)	14 (32.6)	3 (23.1)	.73
• Fairly to very important	39 (69.6)	29 (67.4)	10 (76.9)	
Decreased testing for sexually transmitted infections				
• Not at all important, not very important, or neutral	17 (30.3)	13 (30.2)	4 (30.8)	> .99
• Fairly to very important	39 (69.6)	30 (69.8)	9 (69.2)	
Increased difficulty to follow up with abnormal results				
• Not at all important, not very important, or neutral	23 (41.1)	21 (48.8)	2 (15.4)	.052
• Fairly to very important	33 (58.9)	22 (51.2)	11 (84.6)	

HPV—human papillomavirus.
*Not all participants answered all questions.

sampling, patient acceptability, and high sensitivity to be the most important test characteristics.[18] As HPV self-sampling performs as well as or better than Pap screening for these characteristics,[5,12,13,16,17] clinicians may be very amenable to offering it when it becomes available.

Enthusiasm for HPV self-sampling was high, especially when used for women who do not participate in Pap screening and for groups at higher risk of having challenges with speculum examinations or being underscreened, such as those with a history of trauma, trans men, and postmenopausal women. Interestingly, almost 60% of clinicians would offer HPV self-sampling to women aged younger than 30 years, although clinician- or self-collected HPV testing for cervical screening is not recommended for younger women at this time. Rates of transient HPV infections are higher in this age group, and detection could lead to unnecessary and harmful treatment.[23] Other studies of clinicians in the United States and Ireland have shown knowledge gaps in certain aspects of HPV infection and vaccination facts that can lead to inappropriate screening.[23,24] These knowledge gaps must be addressed before HPV screening with clinician-collected sampling or self-sampling is implemented in Canada.

Our clinicians perceived that HPV self-sampling has distinct advantages for patients and health care providers alike, such as ease in providing screening and time advantages, as well as decreased embarrassment and discomfort for patients. Women participating in cervical cancer screening have also identified these advantages.[9-12,18] Thus, having the option of offering HPV self-sampling could decrease clinician- and patient-related barriers to cervical cancer screening and lead to improved participation rates. Although family physicians are the main providers of preventive health care, not all offer Pap screening in their practices, and not all women feel comfortable having a Pap test performed, especially by a male physician.[25] Additionally, one chart review study showed that in a Canadian multicultural, urban environment, female patients of male family physicians were 2 times less likely to have Pap testing than patients of female physicians were. These authors also described earlier studies that identified this sex difference, which has persisted over 2 decades despite societal and medical cultural changes.[26] Reasons cited for this sex difference included male physicians being less comfortable performing pelvic examinations for patients at either end of the screening age spectrum, and that women in those age groups are less comfortable with male physicians.[26] Availability of HPV self-sampling could increase the number of family physicians who offer screening in their practices and engage never-screened or underscreened women in opportunistic screening during in-office visits for other health concerns, as well as provide patients with a preferred option.

Opinions of PCPs and OB-GYNs varied in terms of the advantages attributed to self-sampling; almost twice as many PCPs as OB-GYNs believed self-sampling would make it easier to provide screening. Likewise, PCPs were 1.5 times more likely to feel that HPV self-sampling would decrease patient embarrassment. These differences likely reflect the circumstances of cervical screening in specialty versus primary care settings: most Pap tests performed by OB-GYNs are a component of a gynecological examination conducted for a clinical problem, whereas in primary care most are done purely for preventive screening. Self-sampling would usually not eliminate the need for an examination in a gynecological setting, whereas it could in primary care.

As identified by US and Australian clinicians, our physicians had concerns about missed opportunities to address other health issues,[18,21,24,27] including sexually transmitted infection (STI) testing, if HPV self-sampling replaced traditional cytologic screening.[18,27] As STI rates are increasing, this is a valid concern, particularly for those younger than 25 years who have the highest STI rates. A Canadian study found that STI screening rates in an urban family practice decreased after Pap screening guidelines increased the recommended screening interval from 2 to 3 years.[28] Cervical screening with HPV testing is currently recommended to begin at age 30 years, while STI risks are highest in younger populations. Developing processes and opportunities for STI screening that are unlinked to cervical screening is essential to ensuring that those at the highest risk of STIs receive this preventive health intervention. Self-collected swabs for *Chlamydia trachomatis* and *Neisseria gonorrhoea* are recognized as being more accurate than clinician-collected swabs or urine testing,[29] and self-sampling technologies that combine HPV and STI testing would address both concerns for those older than 30 years.

Some of our clinicians, particularly OB-GYNs, were also concerned that some women with abnormal HPV results might not attend follow up care. We hypothesize that PCPs' longitudinal relationship with their patients may make them less concerned about the potential for loss to follow-up. Additionally, a recent review demonstrated that at least 80% of underscreened women who received a positive HPV self-sampling result were motivated to follow up with their physician for Pap testing or colposcopy.[16] Physicians and underscreened or never-screened women might not be aware that a positive HPV result combined with follow-up cytology testing is more sensitive in detecting precancerous lesions than a Pap test alone.[13,16,17,30] These findings confirm that PCPs and OB-GYNs who perform cervical cancer screening, as well as the general population, need more targeted education on HPV infection and testing and on screening guidelines (eg, delayed age of screening and wider 5-year screening interval) before different jurisdictions transition to HPV testing.

Limitations

This exploratory study has limitations. The study population included only PCPs (family physicians and nurse practitioners) and OB-GYNs in urban academic practices, and results are likely not generalizable. Further research among clinicians and trainees representing a broader range of practice settings is needed. However, our results mirrored those found in the University of Washington clinic physicians' study.[18] Unfortunately, our 30.9% response rate was low, but also similar to many clinician surveys (35%).[31] It is possible there was selection bias and respondents were more familiar with and interested in the topic than nonrespondents were. Nonetheless, half of our participants rated their knowledge about HPV self-sampling as poor to very poor. Although we found some differences between PCPs and OB-GYNs, our small study sample did not allow for a robust comparison of the groups, or to explore whether HPV self-sampling was more acceptable among male clinicians, given research suggesting that they may be less comfortable with Pap screening.[26]

Conclusion

Although knowledge is limited, most PCPs and OB-GYNs

would offer HPV self-sampling for cervical cancer screening. Clinicians had concerns about missed opportunities to visualize pathology and address other health issues in clinic, but also noted advantages for both patients and providers. More research is needed to determine opinions among a broader population of clinicians and trainees and develop targeted interventions that address their concerns.

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Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

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