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Acceptability of, and preference for, HPV self-sampling for physically Disabled women: a cross-sectional survey

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Abstract

Background: Physically Disabled women face multiple barriers to cervical screening, contributing to lower uptake and increased health inequalities. Human papillomavirus (HPV) self-sampling has been shown to increase screening participation in under-screened populations, but little is known about its acceptability for Disabled women.

Methods: A cross-sectional online survey with 1,493 UK-based participants who identified as having a physical disability, impairment, condition, or difference that makes cervical screening difficult or impossible. Participants completed questions on the acceptability of HPV self-sampling, attitudes and beliefs relating to self-sampling, and future screening preferences. Descriptive statistics and multinomial logistic regression were used to analyse responses.

Results: Most participants (63.3%) reported that they would be able to carry out self-sampling themselves and (59.1%) would be willing for a healthcare professional to use a self-sampling kit on their behalf. Many (70.5%) had concerns about not performing the test correctly. Around half (53.0%) would prefer self-sampling at home if offered a screening choice. Women who had never attended screening, or who had delayed/missed appointments, were significantly more likely to prefer self-sampling (odds ratios 13.11 and 5.25, respectively) than women who had always attended. Approximately a fifth of participants (18.7%) would prefer a non-speculum clinician-taken test.

Conclusion: HPV self-sampling was acceptable to many physically Disabled women and preferred over conventional screening, particularly among those who had delayed/missed screening or never attended. Implementation should include tailored accessible instructions to support HPV self-sampling, disability-informed clinical support, and consideration of non-speculum clinician-taken samples to ensure equitable access and reduce inequalities in cervical screening.

Keywords: HPV self-sampling, cervical screening, physical disability, inequalities, women's health

Introduction

Persistent infection with high-risk human papillomavirus (HPV) is responsible for more than 90% of cases of cervical cancer.[1] In addition to primary HPV prevention through HPV vaccination, which has been available in the UK since 2008, cervical screening provides secondary prevention by allowing for the detection of HPV and precancerous cell changes, the latter of which can then be treated. In the UK, women and people with a cervix (henceforth 'women') aged 25 to 64 are eligible for cervical screening every five years as part of the NHS cervical screening programme.[2] Despite the programme saving an estimated 5000 lives annually,[3] there are documented inequalities in uptake of cervical screening; for example, by socioeconomic status and ethnicity.[4] HPV self-sampling (which allows women to take a vaginal swab themselves and does not require a speculum) has the potential to address some of the barriers to screening.

In 2021, UK researchers conducted a large-scale feasibility trial, YouScreen, inviting more than 27 000 women who were overdue for cervical screening to use an HPV self-sampling kit. Of the 2712 women who used the self-sampling kit and completed a questionnaire about the kit, 71.3% indicated they would opt for self-sampling in the future.[5] The UK HPValidate trial (which ran from 2021 to 2023 and aimed to find out if vaginal self-tests were as accurate as clinician-assisted sampling in identifying HPV[6]) included an embedded sub-study that tested user experience and acceptability of HPV self-sampling. The authors found that 85% of women would like to be given a choice between self-sampling or clinician-based sampling and 71.7% of participants stated this would improve cervical screening.[6,7] The results of these trials informed a recent National Screening Committee consultation and the decision for NHS England to roll out self-sampling for those overdue their appointment in early 2026.[8] In the future self-sampling may also be offered to all women at the point of invitation.

While the findings from YouScreen and HPValidate, as well as from the introduction of HPV self-sampling in other countries such as Australia and France,[9,10] suggest that self-sampling is acceptable

to many under-screened women, these data do not include information about physical disability. However, research suggests that healthcare systems and environments often create barriers to cervical screening for Disabled women. Such barriers include difficulty getting transport to appointments, lack of accessible facilities in clinics, difficulty getting into position for speculum insertion on the examination table, and healthcare practitioners' lack of knowledge of physical disability.[11,12] Barriers such as these lead to lower screening uptake in this population.[13,14] While HPV self-sampling may increase screening uptake for physically Disabled women, there has been very little research to understand the extent to which this is the case and any challenges that this population may face, with only two qualitative studies to date that we are aware of. The first is a 2020 Danish report in which seven wheelchair users were interviewed about HPV self-sampling.[15] The women reported that self-sampling would make it easier for some women to access cervical screening, but it would not be suitable for all Disabled women. The second study consisted of interviews with 56 physically Disabled women in the US who tried HPV self-sampling and suggests that self-sampling may be acceptable to some Disabled women as an alternative to clinician-led cervical screening.[11]

The current study is the first survey to explore the acceptability of and attitudes towards HPV self-sampling among physically Disabled women. There are more than 8 million Disabled women in the UK[16] and so this is an important and overlooked dimension of inequality to consider when implementing this new technology within the national screening programme. Our study was informed by substantial patient and public involvement (PPI) work, which resulted in adoption of the Social Model of Disability[17] to inform the recruitment strategy, whereby women who identified as having a "physical disability, impairment, condition or difference" were invited to take part.

The aim of this study was to investigate the acceptability of HPV self-sampling for women with a physical disability, impairment, condition or difference. This was explored through two research questions:

1: To what extent is HPV self-sampling acceptable for women with a physical disability, impairment, condition, or difference?

2: What factors affect their preferences regarding future screening?

Method

Patient and Public Involvement (PPI)

One of the co-authors, SR, was the PPI lead for this project. We additionally recruited 14 physically Disabled women (ages 26–63) as our stakeholder advisory group. SS and EK met regularly with SR, and we met with the stakeholder advisory group three times to develop the materials. We presented the advisory group with a first draft of the survey, and they helped us to develop the recruitment method, refine the questions and publicize the study. They also were invited to comment on a draft of this manuscript and their comments have been incorporated and acknowledged.

Design

The data reported here were collected as part of a larger cross-sectional survey that explored current screening attendance and preferences, as well as attitudes and preferences relating to self-sampling. Only the self-sampling aspect of this survey is reported here. We conducted the survey using two recruitment approaches: i) an online panel, and ii) charities advertising and existing links. The first wave of data was collected in July 2024 and the second was collected between September 2024 and May 2025. The survey was delivered on the online survey platform Qualtrics.

Participants

Eligibility criteria: To be eligible for the survey, participants were asked to identify as having a physical disability, impairment, condition or difference that makes cervical screening challenging or impossible, be aged 25–64 (screening age), be living in the UK, and to have previously been invited to cervical screening (even if they did not attend). Participants were not eligible to take part if they

had received a total hysterectomy (to remove all of the womb and cervix). Those who took part via Prolific received the eligibility criteria in a short survey format to assess suitability to access the main survey. The main survey included the eligibility criteria as questions that all participants were required to answer before completing the full survey; these questions also served as screening questions for those individuals recruited through charities.

We aimed to recruit a sample of 1500 participants so as to provide precise estimates of proportions with margin of error no worse than ± 0.025, at a 95% confidence level using an asymptotic method, and greater precision for estimates of continuous variables.

Online panel recruitment: 1439 participants were recruited through the online panel company Prolific. The first wave of Prolific participants (*n*=1000) was recruited in July 2024. We returned to Prolific for a second wave of recruitment (*n*=439) in March 2025 due to low uptake of recruitment using alternative methods such as charities and PPI links. Participants were paid £0.10 for completing the eligibility survey and £3.00 for completing the main survey. For the main study, participants who failed more than one attention check question (out of four) were not reimbursed and their data were excluded from analysis.

Charity-based/PPI links recruitment: To ensure representation of a range of disabilities and conditions, we aimed to supplement data collected via Prolific by recruiting extra people through relevant charities (e.g., SCOPE, Spinal Injuries Association, Brittle Bone Society) and our PPI stakeholder members' personal networks; *n*=54 participants were recruited using this method. Participants who were recruited through this method completed the main survey on Qualtrics and were reimbursed with a £5.00 voucher.

Measures

The full survey is available at: https://osf.io/fbmd2. All participants were presented with a participant information sheet outlining the nature of the study and were required to provide online consent.

To explore HPV self-sampling, participants were first presented with a short extract explaining what self-sampling is, including an image of what a self-sampling kit might look like. Participants were then asked the question 'Do you think you would be able to do self-sampling yourself?'. Those who did not answer 'no' were presented with the seven items in the 'Concerns' and 'Autonomy' subscales from the HPV Self-sampling Attitudes and Beliefs scale;[18] the items were answered on a five-point Likert scale: 'strongly disagree'– 'strongly agree'. Items are listed in Table 4.

Participants were then asked two further questions related to preferences about self-sampling: 'Would you be willing to have someone e.g. a family member/personal assistant/carer assist you with the self-sampling test?' and 'Would you be willing to have a doctor or nurse use the self-sampling kit to take your sample?' Participants were finally asked about their future screening preferences with an item adapted from a study by Drysdale et al:[19] 'If you were offered a choice of screening, which would you choose?' with the following options: 'Screening done in the same way as now by a nurse or doctor (with a speculum)'; 'A nurse or doctor using the self-sampling kit to take my sample (without a speculum)'; 'Self-sampling kit to do myself at home'; 'I don't know which screening option I would choose'; 'Not applicable - I wouldn't have any cervical screening at all'; 'Prefer not to say'.

Participants were asked: 'Does your physical disability, condition, impairment or difference affect you in any of the following areas?'. This question was based on the harmonised 10-item Disability checklist[20] with additional items adapted from the International Classification of Functioning, Disability, and Health[21] to include pain, sexual function and urinary function. Participants were then

asked if they used assistive devices. If they answered 'yes', they were provided with a list of options from the Melbourne School of Population and Global Health.[22]

Six items modified from Jo's Cervical Cancer Trust[23] survey relating to cervical screening status were provided to measure participants' previous experience and future intentions relating to cervical screening attendance. Participants were asked 'Which of the following best describes your previous participation in cervical screening?' and were provided with response options 'I have never attended', 'I have attended but sometimes delayed or missed my screening appointment (more than 6 months)', 'I have always attended when invited (within 6 months)'. If participants selected 'I have never attended' this would filter to a question asking if this was due to their physical disability, impairment, condition or difference. This question was also asked of participants who selected 'I have sometimes delayed or missed screening'.

Socio-demographic questions were asked to record participants' gender and ethnic background (wording taken from UK Census, 2021[24]), location, religion, education (wording taken from YouGov, 2020[25]), household income, relationship status, and language.

Finally, a debrief was provided directing participants to The Eve Appeal website and helpline (eveappeal.org.uk) for further support and advising participants to contact their GP if they have any questions.

Data analysis

We calculated descriptive statistics for participant characteristics, previous screening participation, practicality and preferences relating to self-sampling, and attitudes and beliefs relating to self-sampling.

We used multinominal logistic regression to explore preferences for future screening. Variables representing demographic characteristics, previous screening attendance and aspects of disability were specified *a priori* as predictor variables and entered as blocks in the model (see Table 5). These

predictors were checked for collinearity. The outcome variable comprised three preferences: i) 'A nurse or doctor using the self-sampling kit to take my sample (without a speculum)'; ii) 'Self-sampling kit to do myself at home'; iii) 'Screening done in the same way as now by a nurse or doctor (with a speculum)'. The last of these was the reference category, such that the odds ratios (ORs) from the analysis indicate how much larger (ORs greater than 1) or smaller (ORs less than 1) the odds were of preferring self-sampling with a nurse or doctor, or of self-sampling done at home, than the odds of preferring screening done in the usual way.

The goodness-of-fit of the full model was evaluated via a deviance chi-square test (where a non-significant test indicates satisfactory goodness-of-fit) and the percentage of correctly classified cases was calculated. The explanatory power of the model was measured using the Nagelkerke pseudo-R^2 statistic (range 0–1), indicating the degree to which values of the outcome variable can be explained by the model.[26] For each predictor variable, a p value was calculated via a likelihood ratio test. Statistical significance was set at $p \leq 0.05$ (two-tailed) and 95% confidence intervals were derived for all ORs. Analyses were conducted in IBM SPSS Statistics v 30.

Ethical approval

This study was granted ethical approval from Keele University Research Ethics Committee (REF: REC Project Reference 0787) and the University of Sheffield School of Psychology research ethics committee (REF: 064385).

Results

1602 participants took part in the survey. Of these, 109 respondents were excluded due to either incomplete survey responses (n=88), more than one failed attention checks (n=8), or on the basis of ineligibility (n=13). After exclusions there were 1493 participants included in the analysis. Participant characteristics are shown in Table 1. The mean (SD) age was 41.71 (10.96) years. All respondents were female by sex, with 98.1% identifying as women. A large majority (89.7%) were of white

ethnicity, with 89.3% identifying as English, Welsh, Scottish, Northern Irish, or British. Most (60.8%)
of respondents held a degree-level qualification or higher, and 84.3% lived in England. The majority
(61.1%) were married or living with a partner and 22.6% were single. The dataset is available at:
https://osf.io/ufx8r/files/dm7cs.

In terms of previous screening participation, 660 participants (44.2%) had always attended, 698
(46.8%) had sometimes delayed or missed an appointment, and 131 (8.8%) had never attended.

Table 1. Participant characteristics.

Age; mean (SD)		41.71 (10.96)
Gender identity; *n* (%)	Male	2 (0.1)
	Female	1464 (98.1)
	Non-binary	17 (1.1)
	Other	9 (0.6)
	Prefer not to say	1 (0.1)
Ethnicity; *n* (%)	English, Welsh, Scottish, Northern Irish, British	1333 (89.3)
	Irish	5 (0.3)
	Gypsy or Irish traveller	1 (0.1)
	Any other white background	26 (1.7)
	White and Black Caribbean	13 (0.9)
	White and Black African	8 (0.5)
	White and Asian	13 (0.9)
	Any other mixed or multiple background	11 (0.7)
	Indian	14 (0.9)
	Pakistani	7 (0.5)
	Bangladeshi	6 (0.4)
	Chinese	12 (0.8)
	Any other Asian background	1 (0.1)
	Caribbean	15 (1.0)
	African	10 (0.7)
	Any other Black, Black British or Caribbean background	4 (0.3)
	Arab	1 (0.1)
	Other	8 (0.5)
	Prefer not to say	2 (0.1)
	Missing	3 (0.2)
Main language; *n* (%)	English	1487 (99.6)
	Other	6 (0.4)
Highest qualification; *n* (%)	Degree equivalent or higher*	913 (61.2)
	Other or no qualifications	567 (38.0)
	Don't know	5 (0.3)
	Prefer not to say	8 (0.5)
Region where respondent lives; *n* (%)	England	1258 (84.3)
	Northern Ireland	26 (1.7)
	Scotland	135 (9.0)
	Wales	74 (5.0)
Relationship status; *n* (%)	Married/living with partner	910 (61.1)
	In relationship but not living together	126 (8.4)

	337 (22.6)
Single	337 (22.6)
Widowed	14 (0.9)
Divorced	71(4.8)
Separated	22 (1.5)
Prefer not to say	12 (0.8)
Missing	1 (0.1)

Percentages may not sum to exactly 100 owing to rounding. SD = standard deviation.
* Undergraduate (e.g. BA, BSc) or postgraduate (e.g. MA, MSc, PhD) degree or other technical, professional or higher qualification.

Practicality and preferences relating to self-sampling

Regarding self-sampling, 63.3% believed they could perform it themselves, 23.8% were unsure, and 9.4% said they could not (Table 2). Among those who had ruled out the possibility of being able to perform self-sampling (*n* = 548), 24.5% might be willing and 16.6% would be willing to have assistance from someone they know. Over half of all respondents (59.1%) would be willing to have a healthcare professional use the self-sampling kit.

Table 2. Practicality and preferences relating to self-sampling, *n* (%).

Statement	No	Yes	Maybe	Don't know	Prefer not to say
Do you think you are able to do self-sampling yourself? *n* = 1493	140 (9.4)	945 (63.3)	355 (23.8)	53 (3.5)	0 (0.0)
Would you be willing to have someone (e.g. family member, personal assistant, carer etc) assist you with the self-sampling test? *n* = 548*	302 (55.1)	91 (16.6)	134 (24.5)	21 (3.8)	0 (0.0)
Would you be willing to have a doctor or nurse use the self-sampling kit to take your sample? *n* = 1493	111 (7.4)	883 (59.1)	440 (29.5)	57 (3.8)	2 (0.1)

* This question only posed to those answering 'no', 'maybe' or 'don't know' to the question on being 'able to do self-sampling yourself'.

Attitudes and beliefs relating to self-sampling

Among the 1,353 participants who responded to the Tatar et al[18] attitude items (Table 3), 70.5% expressed some level of concern about not performing the self-sampling correctly, while fewer reported concerns about harming oneself (14.1%) or infection (14.5%). Most (90.5%)

disagreed/strongly disagreed that they would feel embarrassed doing self-sampling. Many (77.2%)

agreed/strongly agreed it would save them travelling to a healthcare professional, and 86.5%

agreed/strongly agreed it would give them greater control over their body. Additionally, 71.9%

agreed/strongly agreed they would be more comfortable performing the swab themselves

compared to having it done by a healthcare professional.

Table 3. Attitudes and beliefs relating to self-sampling, *n* (%). Median categories are italicized. Denominator *n* = 1353 (respondents who said they would not be able to do self-sampling excluded).

Statement	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
If I did HPV self-sampling, I would worry that I am not doing it right	94 (6.9)	202 (14.9)	105 (7.8)	*636 (47.1)*	316 (23.4)
If I did HPV self-sampling, I could harm myself	537 (39.7)	*470 (34.7)*	154 (11.4)	163 (12.0)	29 (2.1)
If I did HPV self-sampling, I could get an infection	500 (37.0)	*438 (32.4)*	218 (16.1)	167 (12.3)	30 (2.2)
I would feel embarrassed doing HPV self-sampling	958 (70.8)	267 (19.7)	61 (4.5)	52 (3.8)	15 (1.1)
I would be more comfortable doing the swab myself using HPV self-sampling than having an HPV test done by a healthcare professional	47 (3.5)	118 (8.7)	215 (15.9)	*386 (28.5)*	587 (43.4)
I would prefer doing HPV self-sampling at home because it would save me travelling to see a healthcare professional	39 (2.9)	90 (6.7)	153 (11.3)	*433 (32.0)*	638 (47.2)
If I did HPV self-sampling, I would be more in control of my body	16 (1.2)	32 (2.4)	135 (10.0)	400 (29.6)	*770 (56.9)*

Preferences for screening

The most favoured screening method was a self-sampling kit to use at home (53.0%), followed by a

healthcare professional using the kit without a speculum (18.7%) and conventional screening with a

speculum (17.1%); see Table 4.

Table 4. Preferred method of screening (*n* = 1493)

	n (%)
Self-sampling kit to do myself at home	792 (53.0)
A nurse or doctor using the self-sampling kit to take my sample (without a speculum)	279 (18.7)

Screening done in the same way as now by a nurse or doctor (with a speculum)	256 (17.1)
I don't know which screening option I would choose	161 (10.8)
Not applicable - I wouldn't have any cervical screening at all	5 (0.3)

The multinomial regression model (Table 5) showed adequate fit to the data (p = 0.944), correctly classified 805/1319 (61.0%) of cases, and explained 17.1% of the values of the outcome variable (Nagelkerke R^2 = .171). Ethnicity (Block 1) was a non-significant predictor and explained less than 0.5% of the variability of the outcome values. Previous screening practice (Block 2) was a significant predictor (p < 0.001), explaining 12.2% of the variability of the outcome values. Specifically, those who had never attended screening and those who had sometimes delayed or missed screening were 2.97 times and 2.65 times more likely, respectively, to favour a nurse or doctor using a self-sampling kit over screening done in the usual way than were those who had always attended. Never-attenders and those delaying or missing screening were 13.11 times and 5.25 times more likely, respectively, to favour using a self-sampling kit at home over screening done in the usual way than were always-attenders.

Among the variables representing aspects of disability in Block 3, only sexual function was a significant predictor (p < 0.001). Those with a disability relating to sexual function were 2.95 times more likely than those without to favour a nurse or doctor using a self-sampling kit over screening done in the usual way, and 1.68 times more likely to favour using a self-sampling kit at home over screening done in the usual way. Collectively, the variables relating to aspects of disability in Block 3 explained only 3.9% of the values of the variability in the outcome variable.

Table 5. Multinomial logistic regression for screening preferences; n = 1319. The analysis excluded respondents who indicated that they would not have any form of cervical screening (n = 5), or did not know what their preference would be (n = 161), or had missing values on one or more variables in the model (n = 8).

Predictor variable	Level	Nurse or doctor using self-sampling kit (without speculum); n=276*		Self-sampling kit to do myself at home; n=787*		p value for predictor variable**
		Odds ratio	95% CI	Odds ratio	95% CI	
Block 1 – demographic characteristics						
Ethnicity (reference category: black and other minority ethnic groups)	White (n=1211)	0.659	0.355, 1.223	0.621	0.368, 1.049	0.209
Block 2 – screening practice						
Previous attendance at cervical screening (reference category: always attended)	Never attended (n=119)	2.966	1.085, 8.107	13.113	5.577, 30.831	<0.001
	Sometimes delayed or missed (n=621)	2.645	1.803, 3.881	5.252	3.774, 7.309	
Block 3 – aspects of disability						
Pain	Yes (n=886)	1.427	0.954, 2.134	1.397	0.993, 1.966	0.126
Mobility	Yes (n=772)	0.846	0.538, 1.332	1.013	0.686, 1.494	0.619
Mental health	Yes (n=516)	0.755	0.511, 1.115	0.795	0.569, 1.110	0.313
Stamina, breathing or fatigue	Yes (n=363)	1.099	0.696, 1.738	0.952	0.644, 1.409	0.745
Sexual function	Yes (n=332)	2.951	1.867, 4.667	1.679	1.101, 2.560	<0.001
Dexterity	Yes (n=319)	1.220	0.756, 1.968	1.119	0.745, 1.679	0.718
Urinary/bowel function	Yes (n=297)	1.013	0.634, 1.620	1.182	0.786, 1.779	0.582
Social or behavioural	Yes (n=209)	1.236	0.708, 2.158	1.334	0.827, 2.153	0.489
Memory	Yes (n=188)	0.759	0.418, 1.378	0.787	0.478, 1.294	0.589
Learning, understanding or concentrating	Yes (n=164)	1.026	0.531, 1.985	1.190	0.682, 2.076	0.762
Hearing	Yes (n=78)	1.030	0.425, 2.494	1.547	0.754, 3.174	0.326
Vision	Yes (n=48)	0.910	0.355, 2.334	0.970	0.441, 2.134	0.980
Type of assistive device (reference category: no device)	Mobility device (n=368)	0.933	0.580, 1.503	1.145	0.767, 1.708	0.640
	Other device (n=46)	0.931	0.350, 2.478	0.675	0.289, 1.572	

Deviance X^2 = 1179.43, df = 1258, p = 0.944. Nagelkerke pseudo-$R2$ = .171. Estimates and p values are from the full model, such that each OR is adjusted for all other variables in the model.

* Reference category: Screening done in the same way as now by a nurse or doctor (with a speculum); n=256. ** Based on likelihood ratio test, for full and reduced model. CI = confidence interval.

Discussion

To our knowledge, this is the first study to quantitatively explore the acceptability to physically Disabled women of HPV self-sampling. Over half of participants in this study reported that they would be able to carry out self-sampling and around half expressed a preference for this method over other methods, including conventional speculum-based screening. These findings are consistent with previous qualitative studies with physically Disabled women, which suggest that self-sampling could alleviate barriers associated with clinician-led screening.[11,15] Importantly, women who had never attended screening, or who had delayed or missed appointments, were markedly and significantly more likely to prefer self-sampling than those who had always attended. This finding mirrors results from studies in under-screened populations[7,19] and further supports NHS England's planned roll out of self-sampling to under-screened women.

With the exception of sexual function, specific types of disability did not predict screening preference, underlining the fact that different options need to be available for women to be able to select the screening method that best suits them. Those participants whose disability related at least in part to sexual function expressed preferences (for non-speculum clinician sampling and for self-sampling) that may reflect concerns linked to the use of a speculum, possibly related to heightened discomfort on its insertion or its association with penetration.[27]

Whilst use of a self-sampling kit at home was the most favoured option, almost a fifth of our participants expressed a preference for non-speculum clinician sampling and a similar number would prefer conventional speculum sampling. These findings reinforce the important message that there is not one solution to making cervical screening more accessible for physically Disabled women and further work is needed to increase the inclusivity of screening. We are not aware of planned work to introduce non-speculum clinician sampling, although we note that Landy et al[28] found that offering non-speculum clinician-sampling and self-sampling to older women with lapsed screening

attendance increased uptake, with non-speculum sampling being favoured by those who dislike the speculum but prefer a clinician to take a sample.

Concerns about performing the test correctly were widespread in our participants, highlighting the need for accessible tailored instructions and reassurance from healthcare professionals. While this is frequently a concern for non-disabled women too, currently, the instructions for self-sampling kits typically use images of non-disabled bodies, which are often shown in weight-bearing positions to demonstrate how to insert the swab. The planned roll-out of HPV self-sampling in the UK to women who never or rarely attend their routine cervical screening appointments is an ideal opportunity to consult with Disabled women to ensure the kits and their instructions are as accessible as possible.

Reassuringly, most participants in our study did not report concerns about harming themselves, getting an infection, or feeling embarrassed using the kits. Furthermore, many indicated that the kits would offer empowerment, with many participants agreeing that if they did self-sampling they would be more in control of their body. These findings suggest that self-sampling offers a very acceptable alternative to conventional sampling for many physically Disabled women.

Strengths and limitations

This is the first study to systematically explore the acceptability of HPV self-sampling among physically Disabled women. We were able to recruit a substantial number of participants in this overlooked demographic. Previous trials in the UK and internationally have shown that HPV self-sampling is acceptable and can improve uptake among under-screened groups[5,6,7,9,10] but did not include Disabled populations. Given that Disabled women face many barriers to cervical screening – e.g., Vinson et al[11] – our findings address a major evidence gap[12,13] and provide important new evidence that HPV self-sampling could help to reduce these barriers to make cervical screening more accessible for some physically Disabled women.

Both the design and recruitment process of the study were informed by extensive patient and public involvement and as a result the research is grounded in the Social Model of Disability.[17] Using this as the lens through which we designed the study meant that we asked women to self-identify as having a physical disability, impairment, condition or difference. This enabled us to bypass challenges associated with the absence of systematic reporting about Disability in primary care health records and access women with a wide range of physical disabilities and conditions, including those that are less visible.

In terms of limitations, most participants were recruited via an online panel, which may have resulted in over-representation of women with higher digital literacy and education. The cross-sectional design explored attitudes and intentions but did not assess actual use of self-sampling kits, or how collection and return would work for Disabled women, which is something that would benefit from future research. Lastly, non-speculum clinician-taken sampling is not currently available in the UK and, in its absence, we cannot be sure what the 18.7% of women who preferred this option over self-sampling or speculum sampling would choose.

Implications for practice

To ensure successful implementation of HPV self-sampling and maximize uptake among under- and never-screened physically Disabled women, it will be important to ensure that self-sampling kits and instructions are accessible for those who are able and wish to use them, as concerns about correct use were common in our participants. Importantly, self-sampling will not be a suitable option for all physically Disabled women and other options such as non-speculum clinician sampling should also be considered. Training for healthcare professionals should emphasize disability confidence and inclusive communication, enabling them to actively remove barriers and support women who require assistance. Crucially, service models should offer a choice based on the patient's individual needs and preference between self-sampling, non-speculum clinician-assisted self-sampling, and conventional screening. Finally, Disabled people should be meaningfully involved in the roll-out of

self-sampling, ensuring that it contributes to reducing the barriers currently faced rather than creating new ones.

Conclusion

This study provides the first quantitative evidence on the acceptability of HPV self-sampling among physically Disabled women. The findings show that self-sampling would be acceptable to many Disabled women and could prove to be a preferred option to conventional speculum-based screening, particularly among those who have previously missed or delayed attendance. Our findings highlight the importance of accessible instructions and reassurance from healthcare professionals to help meet patient needs and facilitate cervical screening. Ensuring the voices of Disabled women are implemented in the roll-out of self-sampling will be essential to ensuring this new aspect of the NHS cervical screening programme aims to reduce inequalities in preventive healthcare for Disabled women.

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Author contributions

EK and SS programmed the software, EK collected the data, JS conducted the statistical analysis and prepared the tables, EK, SS and JS wrote the main manuscript text. SS, CAC, AF, CH, SR, JS and KWB contributed to the funding application. All authors contributed to conceptualization of the study and methodology and reviewed the manuscript.

Statements and Declarations

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