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Acceptability of self-testing for trichomoniasis increases with experience

Jill S Huppert[1], **Elizabeth A Hesse**[1], **Molly A Bernard**[1], **Yang Xiao**[2], **Bin Huang**[2], **Charlotte A Gaydos**[3], and **Jessica A Kahn**[1]

[1]Division of Adolescent Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, USA

[2]Center for Epidemiology & Biostatistics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, USA

[3]Division of Infectious Diseases, School of Medicine, STD Laboratory, Johns Hopkins University, Baltimore, Maryland, USA

Abstract

Objectives—Self-testing and point-of-care (POC) tests could improve the detection of sexually transmitted infections (STIs) in adolescents. This study aimed to (1) validate a scale measuring acceptability of self-testing for trichomoniasis, (2) compare acceptability of self versus clinician testing using a POC test for trichomoniasis, (3) examine changes in acceptability after experience and review of results, and (4) examine predictors of acceptability.

Methods—Women (14–22 years old) performed the POC test and completed surveys assessing acceptability of self and clinician testing at baseline, after testing, and after discussion of results. Factor analysis examined scale structure; changes in mean scale scores were assessed with mixed models. Generalised linear models examined predictors of acceptability.

Results—Of 247 participants, 54 (22%) had a positive POC test for trichomoniasis. Factor analysis confirmed four acceptability subscales: trust of results, confidence, comfort, and effects of testing. At baseline, trust and confidence were higher, and comfort was lower, for clinician versus self testing. For self-testing, all subscale scores increased from baseline to after testing, and trust increased from after testing to after discussion. Trust of self and clinician results was not

Correspondence to Jill S Huppert, Division of Adolescent Medicine, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue—MLC 4000, Cincinnati, OH 45229-3039, USA; jill.huppert@cchmc.org.

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Patient consent Obtained. CCHMC IRB approved consent forms were signed by the patients. The IRB approved a waiver of the requirement for signature of parent because of a risk of breach of confidentiality regarding sensitive material of the study.

Ethics approval The study was reviewed and approved by the institutional review board of Cincinnati Children's Hospital Medical Center.

Contributors JH took primary responsibility for the conception and design of the study, acquisition of data, drafting of the manuscript, critical revision, statistical expertise, obtaining funding, and administrative, technical and material support. EH contributed acquisition of data, drafting of the manuscript, and critical revision. MB provided acquisition of data, drafting of the manuscript, and critical revision. YX performed analysis and interpretation of the data and provided statistical expertise. BH contributed conception and design, analysis and interpretation of data, statistical expertise, and critical revision. CG contributed to the conception and design of the study, obtaining funding, analysis and interpretation of data, and supervision of technical work. JK contributed to the conception and design of the study, analysis and interpretation of the data, critical revision, and administrative, technical, or material support. All authors, external and internal, had full access to all of the data in the study, and take responsibility for the integrity of those data, and the accuracy of the data analysis.

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significantly different after discussion. A positive attitude towards home testing predicted higher self-test acceptability on all subscales. Tampon use was associated with increased self-test comfort at baseline. Concordance between self and clinician results predicted increased trust of self testing after discussion.

Conclusions—Many young women lack confidence in their ability to self-test for trichomoniasis. Allowing women to try a POC test and review the results with a clinician increases acceptability of self-testing.

INTRODUCTION

New strategies are needed to remove barriers that adolescents face in the detection of sexually transmitted infections (STIs). Others have examined strategies such as self-collection (non-invasive samples)[1–8] and point-of-care (POC) tests to improve the diagnosis of STIs.[9–12] Self-collection may be advantageous for women who dislike pelvic examinations or in settings where providers cannot perform pelvic examinations. POC diagnostic STI tests are advocated to increase accurate and timely treatment of infections. However, with a true self-testing strategy, women could self-collect and perform a POC test either in a clinic or at home. Making such tests available and acceptable could prevent unnecessary office visits, decrease costs, and result in less embarrassment than clinician testing for STIs. With these advantages, a self-testing strategy could reduce the burden of STIs in vulnerable young women.

Trichomoniasis, caused by the parasite *Trichomonas vaginalis*, is an STI commonly found in sexually active adolescents and young adult women.[13–19] Infection can increase a woman's risk of acquiring other STIs, including HIV.[20] In pregnant women, trichomoniasis is associated with premature rupture of the membranes and preterm delivery.[2122] A simple POC test for trichomoniasis has been shown to be nearly as sensitive as nucleic acid amplification and takes only minutes to perform.[18] At present, the POC test is cleared by the Food and Drug Administration only for use by clinicians in clinical settings.

Recently, we showed that adolescent women can self-collect and perform the POC test for trichomoniasis as reliably as the clinician.[23] However, acceptability of self-testing is still unknown. In many studies, adolescent women report a preference for non-invasive tests such as urine tests and self-obtained vaginal swabs.[24–26] Yet, in a prior study, adolescent women trusted clinician-obtained swabs for human papillomavirus (HPV) testing more than self-obtained swabs.[27] Similarly, clinical experience with home pregnancy tests suggests that adolescents might not use self-collected or self-performed tests and might trust these results less than clinician testing.

Few validated measures are available to assess the acceptability of self-testing for STIs, and none for trichomoniasis. It is unknown whether adolescents prefer self or clinician testing for trichomoniasis, which factors predict acceptability of self-testing, and whether acceptability of self-testing improves after performing the test. Thus we designed a study with the following aims: (1) to validate a scale to measure acceptability of self and clinician testing for trichomoniasis; (2) to compare the preferences for and acceptability of self versus clinician testing for STIs using a simple POC test for trichomoniasis; (3) to examine how acceptability changes after experience with testing and review of test results; and (4) to examine whether acceptability is associated with sociodemographic, behavioural or gynaecological factors.

METHODS

Participants

Participants were recruited from a teen clinic and emergency department of a paediatric hospital between July 2006 and August 2008 for a study examining the accuracy and acceptability of self versus clinician testing for trichomoniasis. Accuracy of testing has been described in our prior work.[23] Eligible women were 14–22-year-olds who reported sexual intercourse in the preceding 6 months, were willing to perform self-testing, and had a clinical pelvic examination at the visit. The protocol was approved by the hospital's institutional review board with a waiver of parental permission for those <18 years old. Written informed consent was obtained from all participants.

Study procedures

At baseline, participants completed questionnaires assessing demographics, sexual and gynaecological history, and acceptability of self and clinician testing.[23] After the baseline acceptability survey had been completed, participants were tested for trichomoniasis as well as chlamydia and gonorrhoea. Participants could perform self-testing either before or after clinician testing, depending on clinician availability. For self-testing, participants self-obtained vaginal specimens and then performed the POC test for trichomoniasis themselves (OSOM TV Trichomonas Rapid Test; Genzyme Diagnostics, Cambridge, Massachusetts, USA).[23] For clinician testing, the provider obtained a vaginal swab during the pelvic examination, and a trained research assistant performed the POC test outside the examination room. Both POC test results were given to the clinician. After clinician testing and self-testing, but before she was given the results of clinician testing, the participant completed a second (post-test) acceptability survey. The researcher or clinician then discussed test results with the participant, comparing the results she had recorded for her self-test with those found on the clinician test. After this discussion, she was asked to complete a third (post-discussion) acceptability survey. If either the self or clinician POC test was positive for trichomoniasis, she was treated by the clinician.

Survey design and content

Acceptability—Acceptability of self and clinician testing was assessed in the baseline and post-test surveys using a 13-item scale for clinician testing and a 15-item scale for self testing (table 1), based on previously validated scales assessing the acceptability of self and clinician testing for HPV.[27] Each item was scored from 1 to 3, with lower scores indicating lower acceptability. The 15-item scale for self-testing included two additional items assessing confidence in ability to perform the test and perceived effects of testing.

The content of the third survey (post-discussion) was as described above for the first 53 participants. However, participants felt several questions on the third survey were repetitious. In response, the survey was shortened to six items and made optional after the first 100 participants.

Preferences—Preferences for STI testing were assessed on the post-test survey: `If all of these options for STI testing were available, what would be your first choice if you needed an STI test?' Responses were categorised as: (*a*) prefers clinician testing (doctor does a pelvic examination, doctor tests your urine, or doctor tests your vaginal swab); (*b*) prefers self-testing (you test your urine at home or you test your self-collected vaginal swab at home); and (*c*) no preference. Willingness to test oneself at home if the POC test was available over the counter was assessed at all three time points. Possible responses were: definitely would, probably would, or would not test myself.

Demographics, sexual history and gynaecological history questionnaire—We assessed participant characteristics that were potential predictors of acceptability, including age, race, health insurance, lifetime number of sexual partners, history of STIs, condom use at last sexual intercourse, STI diagnosis (chlamydia or gonorrhoea) at the visit, prior pregnancy, prior pelvic examination/Papanicolaou test, and current use of hormonal contraception. Items indicating comfort with genital touching (douching, use of tampons or vaginal medications) and experience with self-testing and self-treatment (use of a home pregnancy test or over-the-counter vaginal medication) were each scored as ever/never. We recorded study factors that might influence acceptability: order of testing, POC test results, and concordance between self and clinician test results.

Analyses

Data were analysed using SAS V.9.2 and Stata V.8.2. Exploratory factor analysis was performed on baseline self-test acceptability survey data using principal component analysis with orthogonal rotation. Factor loadings >0.4 and a scree plot were criteria to determine which items contributed to each factor. Confirmatory factor analysis was performed on post-test survey data.

We compared means of individual items for self to clinician testing at each time point using paired t tests. Because the number of items differed between the self and clinician scales and between subscales, we compared the mean scores for each subscale and total acceptability scale rather than generating a summary score. The changes in subscale scores over time were assessed separately for self and clinician testing using paired t tests. The difference between self and clinician testing over time was compared using paired t tests. Because there were multiple outcomes (subscale scores) at each time point, we used multivariate repeated-measures mixed generalised linear models (GLMs) to model changes in mean subscale acceptability scores over time and to compare self with clinician testing. Predictors of acceptability (overall and subscale scores) at each cross-sectional time were assessed with separate GLMs.

RESULTS

Overall, 274 women were recruited, 27 withdrew, and 247 (90%) completed self and clinician POC tests plus baseline and post-testing surveys; 161 (59%) women completed the post-discussion survey. Participants' mean age was 17.7 years. The majority (86%) were African–American; 56% had Medicaid insurance, 16% had private insurance, and 22% had either no insurance or insurance status was unknown. Most participants (90%) reported a prior pelvic examination; 22% had a positive POC test for trichomoniasis, and 28% had either chlamydia or gonorrhoea. Characteristics associated with STI risk were often reported: prior STI (76%); no condom used at last intercourse (63%); and two or more lifetime sexual partners (92%). Many women had used products requiring genital touching, such as douches (33%), tampons (66%) and prescription vaginal medications (30%). Sixty per cent had used a home pregnancy test.

At baseline, 71% reported willingness to self-test for trichomoniasis at home if the test was available over the counter. However, 49% preferred clinician testing by either a pelvic examination or giving a self-collected sample to the clinician. Self-collection and home-testing were preferred by 23%, while 28% were undecided. Although 245 (99%) performed and interpreted her self-test correctly, self-test results were discordant from clinician results for 10 (4%) women.[23]

Scale performance

Exploratory factor analysis of the self-testing acceptability scale determined four underlying subscales including `comfort' (six items), `trust in test results' (two items), `confidence in ability to obtain the specimen and perform the test' (three items) and `perceived effects of testing' (four items). Internal consistency reliability was good for the overall scale (Cronbach's α 0.77) and subscales: comfort (0.69), confidence (0.70), trust (0.89) and perceived effects (0.75). Confirmatory factor analysis confirmed the four-factor structure and demonstrated a good model fit (comparative fit index=0.94).

Comparison of acceptability of self to clinician testing at baseline

Overall acceptability and subscale scores are reported in table 1 (self-testing scores) and table 2 (clinician testing scores) and displayed graphically in figure 1. At baseline, the mean overall acceptability score was not significantly different for self versus clinician testing. However, subscale scores for trust and confidence were lower for self-testing than for clinician testing. In contrast, the subscale for comfort was higher for self-testing than clinician testing.

Change in acceptability over time

Self-testing—Compared with baseline, the overall self-testing acceptability increased significantly after experience with testing (table 1). The multivariate repeated-measures mixed model confirmed that the trust in self-test results subscale score increased significantly from baseline to post-testing and again from post-testing to post-discussion, when multiple outcomes were controlled for. Similarly the mixed model confirmed that confidence, comfort and perceived effects scores increased significantly from baseline to post-testing, but did not show a significant change from post-testing to post-discussion (figure 1, table 1). At baseline, 93% were definitely or probably willing to test themselves at home, which did not change after testing (93%) or discussion (95%).

Clinician testing—Both the overall clinician-testing acceptability and comfort subscale scores increased significantly from baseline to post-testing, and again from post-testing to post-discussion of test results ($p<0.01$) (table 2). The multivariate repeated-measures mixed model determined that the increase in comfort was significant (figure 1).

Comparison of trust in results for self versus clinician testing over time

Trust of self-testing was lower than trust of clinician testing at baseline (figure 1). After experience with testing, trust of self-testing increased, but was still less than trust of clinician testing. However, after discussion of test results, trust of self-testing was no longer significantly lower than trust of clinician testing. Using a mixed model to control for multiple comparisons, we confirmed no other significant effects, and the time-by-rater interaction was significant at $p<0.001$.

Predictors of acceptability of self-testing

GLM modelling demonstrated that, at baseline, several characteristics were significantly associated with higher overall self-testing acceptability (table 3): older age, successful tampon use, and willingness to test oneself at home. After experience with self-testing, successful tampon use and willingness to test oneself at home were associated with higher acceptability of self-testing, and after discussion of test results, willingness to test oneself at home remained a significant predictor of self-testing acceptability.

We examined predictors of each of the four acceptability subscales by developing separate GLMs for each survey time point (table 3). Except for trust of test results at baseline, all

subscales were positively associated with willingness to test oneself at home at each time point. Tampon use and use of vaginal medication were significantly associated with higher ratings of self-test comfort at baseline. In addition, after discussion of test results, concordance between self and clinician test results predicted trust of self-test results.

The following variables were not associated with overall acceptability or subscales: race, number of sexual partners, condom use, POC test positive, prior pelvic examination, prior home pregnancy test, and order of testing.

DISCUSSION

In this study of young women who performed a simple POC test for trichomoniasis, we found that the scale we developed to measure acceptability of self-testing for trichomoniasis demonstrated good internal consistency and reliability. The subscales were consistent with the same four-factor structure described for acceptability of self-sampling for HPV.[27]

At baseline, overall acceptability did not differ for self and clinician testing. However, analysis of acceptability subscale scores showed that participants perceived self-testing for trichomoniasis as more comfortable than clinician testing, were less confident of their ability to collect/perform the test, and trusted the results less than clinician testing. Two other studies have assessed acceptability of self-testing for STIs.[2829] Adult women in South Africa were randomised to home testing versus clinic-based testing for STIs. Both groups performed a POC test for trichomoniasis similar to the one we describe. Acceptability was assessed after testing using four items that measured two subscales: comfort (pain with self-sampling) and confidence (easy to collect the sample, follow test instructions, and read the results). Over 90% responded positively to confidence questions, and only 15% reported pain with sampling. Acceptability was not compared with clinician sampling.[28] One study of self-testing for HIV among adult men in China described acceptability as confidence in performing the test (easy to understand and use) and perceived effects of testing (would recommend to others). After performing the self-test, over 90% endorsed self-testing as easy to use and would recommend, but self-testing was not compared with clinician testing.[29] Differences in measuring and reporting acceptability in these studies highlight the need for well-defined scales in order to compare results across studies.

We found several similarities to studies evaluating acceptability of self-sampling. Kahn *et al* found that adolescent women rated clinician sampling to detect HPV higher than self-sampling for confidence, perceived effects and trust of results.[27] Another group compared acceptability of a self-obtained swab for HPV testing with clinician testing using a six-item scale that measured embarrassment, discomfort, anxiety, relaxation, unpleasantness and confidence. Women were more confident in clinician testing, but it was also rated as more embarrassing, unpleasant and anxiety-provoking, and less comfortable and relaxing than self-sampling.[30] In a third study, acceptability of self-sampling for chlamydia/gonorrhoea was defined as five items encompassing preferences (provider testing vs self-swab), unpleasantness and confidence in ability to perform the test (instructions were clear, easy to get the swab). The majority (>90%) endorsed high satisfaction with self-sampling for each item.[31] These results are consistent with our findings and speak to the validity and generalisability of the constructs `comfort' and `confidence' which we describe. However, few other studies besides ours have measured the construct `trust in test results'.

In addition to measuring baseline acceptability in more depth than others, ours is one of few studies to compare clinician- and self-testing subscales with each other over time. This approach revealed important details that would have been missed by measuring total acceptability. Although both confidence and trust of self-test results were initially lower than

clinician results, scores improved over time until they were equivalent to those for clinician-test results. After discussion of test results, women whose test results were concordant with clinicians' results had higher trust scores. In contrast, Kahn *et al* found an increase in confidence, but not in trust, of self-sampling results over time; however, HPV test results were not available at the visit.[27] We believe that by using a POC test we were able to give immediate feedback and positive reinforcement when the self-test was performed and interpreted correctly, which influenced the participant's trust and confidence around self-testing.

While acceptability of self-testing increased over time, there was no change in willingness to test at home. Similarly, others reported no change in HPV testing preferences over time (about 62% preferred clinician testing at each time point).[27] In contrast, others have found that successful participant experience with self-testing influenced preferences: women randomised to home testing were more likely than those randomised to clinic testing to prefer self-sampling and self-testing at home over clinic.[28] It is possible that the experience of testing oneself at home, without supervision, confers a sense of confidence and empowerment that self-testing in clinic does not.

Similar to others,[27] we found that comfort of clinician testing was initially rated as lower than self-testing, but increased over time, suggesting that the pelvic examination was less uncomfortable than expected. Across many studies, women acknowledge that self-testing and self-sampling is more comfortable than clinician testing regardless of participant characteristics, settings and type of test.[272830]

The main factor that predicted acceptability was an open attitude towards self-testing–that is, women who were willing to test themselves at home endorsed higher overall acceptability, confidence, comfort and perceived effects of testing. Experience with products (eg, tampons) that require genital touching was associated with increased comfort subscales, congruent with our clinical experience. Others have demonstrated that comfort with genital touching predicted acceptability of a vaginal contraceptive ring.[32]

Self-testing is a novel strategy that could remove barriers that adolescents face in getting screened for STIs. Women would be expected to choose self-testing for trichomoniasis and other STIs for the same reasons that they choose home pregnancy testing: improved privacy, wider access, faster results, and lower cost than requesting testing from a clinician. Self-testing for common STIs (such as chlamydia, gonorrhoea and trichomoniasis) would be ideal, but thus far only a reliable POC test for trichomoniasis is available. Still, a positive POC test for trichomoniasis would be useful, as it could serve as an entry point for a wider STI screen. For example, a positive test result for trichomoniasis could motivate adolescents to seek screening for other infections as well. Although home self-testing for STIs would eliminate clinician counselling and treatment of positive results that the adolescent would get during an in-person visit with testing, a similar situation occurs with home pregnancy testing. The package inserts for over-the-counter home pregnancy tests contain the advice to speak with a clinician regarding positive results. Further, the package insert for the already marketed home pH test advises women to seek evaluation from their clinician for further testing and diagnosis. Similarly, if any POC STI test was available for home use, the package insert would advise women to confirm their results with a clinician and to seek evaluation for other concomitant infections.

Strengths of this study are its large sample size and use of a validated measure for assessing acceptability of trichomoniasis self and clinician testing. A limitation to our study is that all women agreed to self-testing as a condition of study participation; thus, they may represent a group that has higher self-testing acceptability than others. Alternatively, since we recruited

women from clinical care settings, participants may have been biased to prefer clinician testing over self-testing. We did not measure perceived severity of the disease, a factor that might influence acceptability. We did not measure the impact of cost of testing on acceptability. Women in Brazil report that they would pay up to $4 for an STI self-test kit,[33] and currently home STI testing kits are advertised online at $40–$250. Also, we were unable to assess whether higher acceptability and theoretical willingness to test oneself at home translated into actual self-testing behaviour. Future studies should evaluate acceptability in non-clinical samples and compare reported acceptability with measurable outcomes such as STI testing patterns and disease rates.

Implications

In this first study to comprehensively evaluate the acceptability of self-testing for trichomoniasis, our results suggest that women initially perceive self-testing as more comfortable but less reliable than clinician testing, and many lack confidence in their ability to perform a POC test and interpret the results. As self-testing for STIs becomes more widely available, women may need to be reassured about the accuracy of these tests. Allowing a woman to try a POC STI test in the office and review her results with the clinician was a simple, hands-on strategy that increased acceptability and trust of self-test results regardless of her baseline preferences or other sociodemographic factors. This `skills-based' approach to patient education may be invaluable for enhancing the use of any POC STI tests by adolescents, should they become available in the future.

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Key messages

- Self-testing is an important strategy for overcoming barriers to STI prevention such as lack of resources or patient discomfort with pelvic examinations.
- Adolescent women who performed a point-of-care (POC) self-test for trichomoniasis initially considered clinician testing more reliable but less comfortable than self-testing.
- Allowing women to try a self-test and review results with the clinician was a simple, hands-on strategy that increased acceptability and trust of self-testing.
- This `skills-based' approach may be invaluable for enhancing the use of POC tests by adolescents, should they become available in the future.

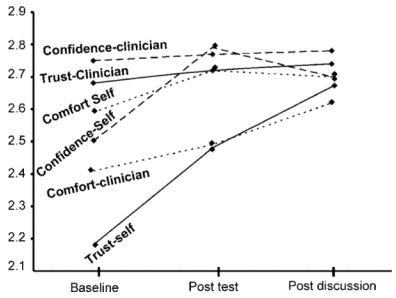

Figure 1.
Change in three acceptability subscales for self-testing and three subscales for clinician testing over time. The Y-axis is the mean scale score (range 1–3) (the subscale `perceived effects of testing' did not change by time or rater, and is not displayed to improve readability).

Table 1

Acceptability of self-testing for trichomoniasis at three time points*

	Baseline	Post-testing		Post-discussion	
	Mean (95% CI)	Mean (95% CI)	p Value†	Mean (95% CI)	p Value‡
Trust of test result	**2.18 (2.13 to 2.24)**	**2.48 (2.42 to 2.54)**	**<0.001**	**2.67 (2.59 to 2.75)**	**<0.001**
Believe test result is correct	2.17 (2.12 to 2.23)	2.46 (2.39 to 2.53)	<0.001	2.66 (2.57 to 2.75)	<0.001
Trust the test result	2.19 (2.13 to 2.26)	2.50 (2.43 to 2.57)	<0.001	2.69 (2.61 to 2.77)	<0.001
Confidence in ability to collect and perform test	**2.50 (2.44 to 2.55)**	**2.79 (2.74 to 2.84)**	**<0.001**	**2.70 (2.56 to 2.84)**	**0.87**
Not hard to collect from the right place	2.39 (2.32 to 2.47)	2.77 (2.71 to 2.83)	<0.001	2.66 (2.49 to 2.82)	1.00
Not hard to collect specimen correctly	2.54 (2.47 to 2.61)	2.80 (2.74 to 2.86)	<0.001	2.72 (2.56 to 2.88)	1.00
Not hard to do the test correctly	2.55 (2.48 to 2.62)	2.81 (2.75 to 2.86)	<0.001	2.75 (2.61 to 2.89)	0.84
Comfort of procedure	**2.59 (2.54 to 2.64)**	**2.72 (2.67 to 2.78)**	**<0.001**	**2.70 (2.57 to 2.83)**	**0.25**
Procedure is not uncomfortable	2.38 (2.29 to 2.47)	2.57 (2.48 to 2.65)	<0.001	2.57 (2.37 to 2.78)	0.42
Procedure is not painful	2.70 (2.63 to 2.77)	2.84 (2.78 to 2.89)	<0.001	2.74 (2.59 to 2.90)	0.42
Procedure is not unpleasant	2.37 (2.28 to 2.45)	2.63 (2.56 to 2.71)	<0.001	2.64 (2.46 to 2.82)	0.57
Procedure is not embarrassing	2.77 (2.70 to 2.83)	2.81 (2.75 to 2.87)	0.14	2.68 (2.51 to 2.86)	0.42
Not bothered by procedure	2.64 (2.56 to 2.71)	2.71 (2.64 to 2.78)	0.12	2.75 (2.60 to 2.90)	0.26
Swab is not hard to insert	2.70 (2.64 to 2.76)	2.78 (2.72 to 2.85)	0.026	2.79 (2.65 to 2.92)	1.00
Perceived effects of testing	**2.70 (2.65 to 2.74)**	**2.78 (2.73 to 2.82)**	**<0.001**	**2.79 (2.73 to 2.84)**	**0.72**
Would feel in control of one's health	2.55 (2.48 to 2.63)	2.70 (2.64 to 2.77)	<0.001	2.73 (2.65 to 2.80)	0.28
Testing is a good thing to do for health	2.75 (2.69 to 2.81)	2.79 (2.73 to 2.84)	0.21	2.82 (2.75 to 2.89)	0.05
Would recommend testing to a friend	2.72 (2.66 to 2.79)	2.77 (2.71 to 2.83)	0.08	2.79 (2.72 to 2.86)	0.42
Testing would encourage further care	2.75 (2.70 to 2.81)	2.84 (2.79 to 2.89)	0.003	2.82 (2.75 to 2.88)	0.36
Overall mean acceptability score	**2.55 (2.51 to 2.58)**	**2.72 (2.68 to 2.75)**	**<0.001**	**2.75 (2.69 to 2.80)**	**0.26**

*Values represent mean acceptability for items, subscales and overall acceptability. Subscales are in bold and individual items are not.

†p Value determined using paired t test comparing baseline with post-test.

‡p Value determined using paired t test comparing post-test with post-discussion.

Table 2

Acceptability of clinician testing for trichomoniasis at three time points*

	Baseline	Post-testing		Post-discussion	
	Mean (95% CI)	**Mean (95% CI)**	**p Value†**	**Mean (95% CI)**	**p Value‡**
Trust of test result	**2.68 (2.63 to 2.73)**	**2.72 (2.67 to 2.77)**	**0.18**	**2.74 (2.67 to 2.82)**	**0.53**
Believe test result is correct	2.60 (2.53 to 2.66)	2.67 (2.60 to 2.73)	0.06	2.73 (2.65 to 2.81)	0.11
Trust the test result	2.76 (2.71 to 2.83)	2.77 (2.72 to 2.82)	0.81	2.75 (2.67 to 2.83)	0.66
Confidence in ability to collect	**2.75 (2.69 to 2.81)**	**2.77 (2.69 to 2.81)**	**0.56**	**2.78 (2.72 to 2.82)**	**1.00**
Not hard to collect from the right place	2.76 (2.70 to 2.82)	2.77 (2.71 to 2.83)	0.91	2.83 (2.70 to 2.96)	1.00
Not hard to collect specimen correctly	2.74 (2.68 to 2.80)	2.81 (2.75 to 2.86)	0.07	2.80 (2.67 to 2.94)	1.00
Comfort of procedure	**2.41 (2.35 to 2.47)**	**2.49 (2.43 to 2.55)**	**<0.001**	**2.62 (2.49 to 2.75)**	**<0.001**
Procedure not uncomfortable	2.16 (2.07 to 2.24)	2.26 (2.17 to 2.35)	0.03	2.49 (2.32 to 2.66)	0.03
Procedure not painful	2.52 (2.44 to 2.5p)	2.57 (2.49 to 2.65)	0.15	2.68 (2.53 to 2.83)	0.57
Procedure not unpleasant	2.21 (2.12 to 2.30)	2.32 (2.23 to 2.41)	0.01	2.52 (2.36 to 2.68)	0.06
Procedure not embarrassing	2.47 (2.39 to 2.56)	2.55 (2.46 to 2.63)	0.06	2.54 (2.34 to 2.75)	0.57
Not bothered by procedure	2.45 (2.37 to 2.52)	2.49 (2.41 to 2.57)	0.29	2.61 (2.43 to 2.79)	0.41
Swab not hard to insert	2.64 (2.57 to 2.71)	2.73 (2.67 to 2.80)	0.01	2.74 (2.59 to 2.90)	1.00
Perceived effects of testing	**2.69 (2.64 to 2.73)**	**2.65 (2.6 to 2.7)**	**0.085**	**2.74 (2.69 to 2.79)**	**0.10**
Would feel in control of one's health	2.35 (2.27 to 2.44)	2.34 (2.25 to 2.42)	0.68	2.53 (2.43 to 2.62)	<0.001
Testing is a good thing to do for health	2.88 (2.74 to 2.92)	2.81 (2.76 to 2.87)	0.04	2.86 (2.79 to 2.92)	0.16
Would recommend testing to a friend	2.83 (2.78 to 2.87)	2.79 (2.73 to 2.84)	0.15	2.84 (2.78 to 2.90)	0.09
Overall mean acceptability score	**2.57 (2.53 to 2.61)**	**2.61 (2.56 to 2.65)**	**0.020**	**2.72 (2.67 to 2.77)**	**<0.001**

*Values represent mean acceptability for items, subscales and overall acceptability. Subscales are in bold and individual items are not.

†p Value determined using paired t test comparing baseline with post-test.

‡p Value determined using paired t test comparing post-test with post-discussion.

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Table 3

Generalised linear models predicting acceptability of self-testing for trichomoniasis*

	Baseline		After self-testing		After discussion	
Outcome	**β coefficient (95% CI)**	**p Value**	**β coefficient (95% CI)**	**p Value**	**β coefficient (95% CI)**	**p Value**
Overall acceptability						
Age		0.008				
≥18	0.08 (0.02 to 0.15)					
>18	Reference					
Tampon use		0.003		0.041		
Successful	0.1 (0.03 to 0.17)		0.07 (0 to 0.14)			
Unsuccessful	Reference		Reference			
Willing to test at home		<0.001		<0.001		<0.001
Yes	0.39 (0.27 to 0.51)		0.32 (0.19 to 0.45)		0.34(0.15 to 0.54)	
Undecided	0.23 (0.1 to 0.36)		0.08 (−0.06 to 0.23)		−0.09 (−0.29 to 0.12)	
No	Reference		Reference		Reference	
Trust of test results						
Willing to test at home				0.044		0.003
Yes			0.26 (0.02 to 0.5)		−0.05 (−0.41 to 0.31)	
Undecided			0.13 (−0.13 to 0.4)		−0.37 (−0.74 to 0.01)	
No			Reference		Reference	
Concordance†						0.008
Yes					0.51 (0.14 to 0.89)	
No					Reference	
Confidence: ability to collect						
Willing to test at home		0.011		0.001		0.003
Yes	0.26 (0.05 to 0.48)		0.26 (0.07 to 0.45)		0.45 (0.16 to 0.73)	
Undecided	0.12 (−0.12 to 0.35)		0.06 (−0.14 to 0.27)		Reference	
No	Reference		Reference			
Comfort of testing						
Tampon use		<0.001				
Successful	0.23 (0.13 to 0.33)					

Outcome	Baseline β coefficient (95% CI)	Baseline p Value	After self-testing β coefficient (95% CI)	After self-testing p Value	After discussion β coefficient (95% CI)	After discussion p Value
Unsuccessful	Reference					
Vaginal medication ‡		0.004				
Yes	0.15 (0.05 to 0.25)					
No	Reference					
Willing to test at home		<0.001		<0.001		<0.001
Yes	0.39 (0.21 to 0.58)		0.34 (0.14 to 0.54)		0.6 (0.37 to 0.84)	
Undecided	0.32 (0.12 to 0.52)		0.08 (−0.14 to 0.3)		Reference	
No	Reference		Reference			
Perceived effects of testing						
Willing to test at home		<0.001		<0.001		<0.001
Yes	0.55 (0.39 to 0.71)		0.39 (0.24 to 0.55)		0.52 (0.32 to 0.72)	
Undecided	0.25 (0.07 to 0.42)		0.09 (−0.09 to 0.27)		−0.05 (−0.16 to 0.26)	
No	Reference		Reference		Reference	

*Separate models are presented at three time points for five outcome variables: overall acceptability and subscales measuring trust, confidence, comfort and perceived effects of testing (15 models in total). Only significant variables are shown.

†Ever prescribed a vaginal medication.

‡Concordance between self-test results and clinician-test results.