Feasibility of Multilevel Pregnancy Tests for Telemedicine Abortion Service Follow-Up: A Pilot Study

By Erica Chong, Wendy R. Sheldon, Danielle Lopez-Green, Cecilia Gonzalez H., Bárbara Hernández Castillo Marián Gulías Ogando, Nirdesh Tuladhar and Jennifer Blum

CONTEXT: *Telemedicine clients wishing to confirm a successful medication abortion outside of a clinic setting are commonly instructed to use high-sensitivity urine pregnancy tests, which can take up to four weeks to yield accurate results. Multilevel urine pregnancy tests (MLPTs), which provide accurate results in one week, are a promising alternative, but their use has not been evaluated within telemedicine services.*

METHODS: *From November 2017 to May 2018, 165 eligible and consenting pregnant people who contacted safe2choose—an organization providing telemedicine abortion services internationally—for medication abortion were enrolled in a pilot study and mailed a package containing medication abortion drugs, two MLPTs and instructions. Data on 118 participants who completed a web-based evaluation survey two weeks after the package was sent were analyzed to examine participant experiences and satisfaction with the service.*

RESULTS: *Responding participants were from 11 countries, including Mexico, the Philippines and Singapore. Ninety-three percent used both MLPTs, and 91% of those who used both tests used them at the correct time intervals. Among the 95% of participants whose MLPT results indicated that their pregnancy hormone levels decreased from before to after medication abortion, 86% correctly interpreted the results to mean that they were no longer pregnant. Satisfaction was high, with all indicating that the supplied information was helpful; more than nine out of 10 noted that they would want to use the MLPTs again.*

CONCLUSIONS: *Incorporating MLPTs into telemedicine abortion services is feasible and associated with high client satisfaction. Enabling people to manage their own abortion follow-up care could greatly improve their overall abortion experience.*

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At the time the research was conducted, Erica Chong was director, Wendy R. Sheldon was director and Jennifer Blum was Vice President for Programs and Strategic Initiatives–all at Gynuity Health Projects, New York. Danielle Lopez-Green was client relations manager, Cecilia Gonzalez H. was IT manager, Bárbara Hernández Castillo was distribution manager and Marián Gulías Ogando was technical and training manager–all at safe2choose.org. Nirdesh Tuladhar was executive director, Women First Digital.

There is growing demand for medication abortion through telemedicine in many settings worldwide,[1–5] particularly during the COVID-19 pandemic.[6,7] Telemedicine for medication abortion uses information and communications technologies to facilitate access to and use of abortion medications. It may entail remote provision of information, counseling and clinical care, including assessment of eligibility, provision of abortion drugs and guidance related to their use.

Solid evidence is accumulating that remote provision of medication abortion services is safe, effective and highly acceptable to individuals seeking abortion.[1–5,8–11] A recent systematic review of the literature on telemedicine abortion services, which included clients from low- and middle-income countries, reported medication abortion success rates of 94–96%; these rates are comparable to those reported for in-person abortion care.[8] In addition, telemedicine clients of services in Australia and the United States reported nearly universal satisfaction with these services.[2,3]

Most aspects of medication abortion care can be delivered just as effectively remotely using communications technologies as in person at a clinic;[2,3,12] provision of remote follow-up care, however, presents some challenges. The main aim of medication abortion follow-up is to confirm successful pregnancy termination. In-person follow-up typically occurs 1–2 weeks after ingestion of the abortion drugs and traditionally entails an ultrasound, pelvic examination or serum pregnancy testing.[13] International guidance by provider and health organizations, however, agree that these assessments are costly and medically unnecessary.[12,14] Because medication abortion is highly effective,[15] follow-up care is not needed for the majority of people; yet providers and clients frequently desire some type of objective reassurance that the procedure has been a success.[12,16–18]

Alternate methods for post–medication abortion follow-up care include ongoing monitoring for symptoms of continuing pregnancy (symptomatic assessment) and use of a high-sensitivity pregnancy test approximately 3–4 weeks after the abortion drugs are taken.[2,9,11] Symptomatic assessment may not provide the desired reassurance, and use of a high-sensitivity pregnancy test requires a long wait before the abortion outcome can be ascertained. Consequently, these methods may not help to alleviate an individual's

anxiety and could delay or prevent receipt of additional care, in the rare cases of continuing pregnancy due to failed medication abortion.

One strategy to address these issues and potentially improve both the quality and effectiveness of medication abortion follow-up care for telemedicine clients is the use of multilevel pregnancy tests (MLPTs). These tests measure the approximate concentration of human chorionic gonadotropin (hCG), a hormone produced during pregnancy, in urine.[13] Use of MLPTs for medication abortion follow-up typically involves an initial test just prior to administration of the abortion drugs and a second test 1–2 weeks later. A decline in hCG concentration indicates no continuing pregnancy, while a stable or rising concentration indicates the need for further evaluation. Because hCG levels naturally fall beginning in the late first trimester in continuing pregnancies, use of MLPTs is appropriate only in the early first trimester.

One MLPT product that has been extensively studied in numerous country settings—including Vietnam, Tunisia, Moldova and Uzbekistan—for medication abortion follow-up is the dBest test. This test is a plastic device housing treated test strips that is dipped into a urine sample. It displays readings for five hCG levels (25, 100, 500, 2000 and 10,000 mIU/ml) and has been found to be highly effective, with sensitivity of 100% at identifying continuing pregnancy in people up to 63 days since their last menstrual period.[13,17–22] To date, all studies of this MLPT product for use in abortion follow-up have involved a health provider offering initial, in-person instruction on its use, and most have required participants to return to the clinic to compare their MLPT results with results from a standard clinical assessment of their abortion outcome. A recent meta-analysis of these study findings suggests that for most women, use of this type of MLPT is an effective substitute for an in-person clinic follow-up visit.[13]

Considering the advantages of the dBest MLPT, we hypothesized that its use in lieu of symptomatic assessment or a high-sensitivity pregnancy test would improve the quality of telemedicine abortion services. To ascertain if this was the case, we designed a pilot study to examine the use of and satisfaction with self-administered MLPTs for follow-up among people receiving telemedicine abortion services. To our knowledge, this is the first study to assess use of MLPTs as part of a telemedicine abortion service.

Telemedicine Abortion Service

Gynuity Health Projects partnered with safe2choose—a nonprofit global social enterprise that promotes reproductive health and access to safe abortion—to develop and conduct the pilot study. Safe2choose maintains a website that supports people who want an abortion using pills or manual vacuum aspiration. Its multilingual counselors provide information and advice about abortion through e-mail or live chat and, when needed, referrals to trusted, prochoice health care providers.

At the time of this study, safe2choose shipped medication abortion pills by mail to people in more than 35 countries, including India, Indonesia, Mexico, Nigeria and Singapore—both to countries where abortion was legal and where it was restricted. The medication abortion service cost US$90 but was offered on a sliding fee scale, depending on what clients could afford.

METHODS

Sample Recruitment

Participants were recruited from November 2017 to May 2018. Visitors to the safe2choose website completed a short online consultation form; pregnant people with gestations of 56 days or fewer since their last menstrual period who were seeking medication abortion from safe2choose, and who could read English or Spanish, were eligible to participate in the pilot study. Although studies have shown that outpatient medication abortion remains highly effective through 77 days' gestation,[23,24] we set the cutoff at 56 days to account for shipping time and the dBest MLPT's indicated accuracy up to 63 days' gestation. Eligible individuals were shown a description of the study and, if they agreed to join, electronically signed a form to provide informed consent. All eligible, consenting individuals were entered as participants into the study, which was approved by the Allendale institutional review board and registered on ClinicalTrials.gov with the identification code NCT03207880.

Of the 1,266 potential clients who met the eligibility criteria for the study, 740 (58%) provided consent electronically. Of those, 165 (22%) completed their order with safe2choose, which mailed them a medication abortion package.

Abortion and Testing Protocol

The safe2choose study package contained the combined medication abortion protocol—one 200 mg tablet of mifepristone and eight 200 mcg tablets of misoprostol—and two MLPTs. The World Health Organization recommends the use of 200 mg of mifepristone administered orally, followed 1–2 days later by 800 mcg of misoprostol administered vaginally, sublingually or buccally;[14] additional misoprostol was sent in the event that additional doses were necessary. In addition, each package included two disposable cups for collecting urine for the MLPTs, written instructions (in English or Spanish) on how to use the tests for medication abortion follow-up and a diary card for recording test results. Participants also received an e-mail with specific instructions on how to use and interpret the MLPTs and a link to a 90-second YouTube video with step-by-step instructions. There was no synchronous consultation offered, but participants were informed that they could contact safe2choose by e-mail or live chat at any time if they had questions.

Participants were instructed to perform the first MLPT immediately prior to swallowing the mifepristone tablet and to record the result on the diary card. Participants

recorded which of the five hCG levels (25, 100, 500, 2,000 or 10,000) best matched their test results; a sixth option on the diary card (0) represented an hCG concentration range of less than 25 mIU/ml. They were advised to take four pills of misoprostol sublingually 24–48 hours later by holding the pills under their tongues for 30 minutes and then swallowing any remaining fragments. If participants experienced less bleeding and cramping than told to expect, they were recommended to take two more misoprostol tablets three hours after the first dose and, if needed, an additional two misoprostol tablets three hours later.

Participants were instructed to use the second MLPT one week after using the first test, record the result on the diary card and compare the two levels. If the hCG level from their second test was lower than that from their first, participants were informed that it meant that the abortion was successful and that they were no longer pregnant; if the hCG level from their second test was the same or higher than that from their first, however, they were recommended to contact safe2choose for additional consultation about their abortion status. A counseling guide was developed to assist the safe2choose staff in responding to questions related to clinical management with the MLPTs.

Evaluation

Two weeks after receiving their medication abortion packages, participants received a web-based evaluation survey by e-mail. The survey collected information about use of and satisfaction with the MLPT, utility of the different instructional materials provided, and MLPT results and assessment of current pregnancy status. Safe2choose sent participants up to two reminder e-mails to take the survey. As compensation for their time, participants who completed the follow-up survey received reimbursement of up to $30, depending on how much they paid for the safe2choose medication abortion service; the MLPTs were provided free of charge.

The 39-question survey comprised predominantly closed-ended questions—many included "Other" as an option that participants could select to enter responses not covered in the categories provided—and a small number of open-ended questions. The survey took roughly 10–15 minutes to complete, or less if participants were shown fewer questions on the basis of their answers (e.g., they did not use the MLPTs).

The study objectives were assessed by evaluating the degree of interest in using MLPTs for follow-up as part of telemedicine abortion services, whether or not delivery of medication abortion packages with MLPTs was successful, use of MLPTs to determine abortion outcome, participant ability to correctly use and interpret MLPTs on their own, any actions taken by participants because of their interpretation of the MLPT results, and user satisfaction with the MLPTs and related instructional materials. Satisfaction with the MLPTs was assessed by asking about multiple dimensions in the evaluation survey. The impact of the tests on overall satisfaction with the service was measured with a 3-point scale (decreased, did not change or increased satisfaction); the utility of the test results was also measured with a 3-point scale (very, somewhat or not at all helpful). Participants were asked if they would want to use the tests in the future (yes, no, unsure). A semistructured question asking about feelings experienced after learning the result of the second test offered some response options along with an open-field "Other" option.

In addition to the online survey, we obtained data from the online consultation form, and from a form completed by safe2choose indicating the number of times that each participant contacted safe2choose, and the mode of and reason for contact.

In determining a sample size for this pilot study, we were guided by cost and time constraints, the potential diversity of the participant population, the multiple outcomes of interest and the low anticipated response rate; on the basis of these considerations, we concluded that data from 100 participants would be sufficient.[25] The study therefore sought to collect data until 100 surveys were completed or for a period of 12 months, whichever came first. Eight of the 165 participants who ordered medication abortion from safe2choose had their packages seized, and one participant did not collect the package. Of the remaining 156 participants who received their packages, 76% partially or fully completed the survey, resulting in an analytic sample of 118. Because some participants had already started the process by the time we collected our 100th survey, we slightly exceeded our target sample.

Analysis

We used chi-square or Fisher's exact tests to compare client characteristics between those who completed the survey and those who did not, and to compare feelings about and satisfaction with the MLPTs between those who believed that they were no longer pregnant and those who thought that they may still be pregnant, among participants who completed the survey. If a test included at least one cell with fewer than five observations, Fisher's exact test was used; otherwise, chi-square tests were used. We considered two-tailed p values less than 0.05 to be statistically significant.

For two open-ended questions in the survey—"Do you have any other comments?" and "Do you have any suggestions?"—two of the coauthors independently reviewed and coded the responses, and they discussed and resolved any discrepancies. Because this study was not designed as a qualitative study, the reviewers assigned broad codes of "positive," "neutral" and "negative" to comments and recurring themes, and identified keywords. Both reviewers selected quotations that were illustrative of these themes for inclusion.

RESULTS

Sample Characteristics

The 118 respondents in the analytic sample reported a mean age of 25 years and resided in 11 countries; most resided in Mexico (64%), the Philippines (9%) and

TABLE 1. Percentage and number of participants in a pilot study to test the feasibility of using multilevel pregnancy tests with telemedicine abortion services, by selected characteristics, according to level of study participation, 2017–2018

Characteristic	Consented (N=740)	Completed follow-up survey (N=118)
Mean age (range)†	24.29 (12–40)	24.89 (17–40)
Years of school completed		
<6	15.2 (110)	8.5 (10)
6–11	13.8 (100)	10.3 (12)
≥12	71.0 (515)	81.2 (95)
Missing data	*2.0 (15)*	*0.8 (1)*
Country of residence		
Mexico	35.7 (264)	63.6 (75)
Philippines	25.0 (185)	8.5 (10)
India	10.4 (77)	0.8 (1)
Malaysia	6.4 (47)	5.9 (7)
Singapore	4.5 (33)	8.5 (10)
Other‡	18.1 (134)	12.7 (15)
Estimated gestational age at time of online consult (in wks.)		
≤5	55.8 (413)	49.2 (58)
6	21.2 (157)	27.1 (32)
7	14.2 (105)	20.3 (24)
8	8.8 (65)	3.4 (4)
Method of pregnancy confirmation		
Urine pregnancy test	76.0 (549)	65.5 (76)
Blood pregnancy test	14.8 (107)	25.0 (29)
Ultrasound	9.2 (66)	9.5 (11)
Missing data/other§	*2.4 (18)*	*1.7 (2)*

†We classified participants ≤12 as 12 years of age; there were six such cases in the consented group. We classified participants ≥40 as 40 years of age; there were 14 such cases in the consented group, and two in the group that completed the follow-up survey. Eleven and one surveys, respectively, were missing age data. ‡Bahrain, France, Hong Kong, Hungary, Nigeria, Saudi Arabia, South Korea, Sri Lanka, Taiwan, Thailand and the United Arab Emirates. §"Bleach test," "physical work," "scret," "symptoms" or unspecified. *Note*: Percentage distributions do not include missing data, and may not add to 100.0% because of rounding.

Singapore (9%; Table 1). Approximately half of the analytic sample estimated their gestational age at the time of the online consultation as five weeks or less, and 66% reported using a urine pregnancy test to confirm their pregnancy status. Eighty-three percent of 114 participants in the analytic sample paid up to US$90 for the safe2choose service, and 17% paid nothing (not shown); the lowest price paid was US$8 and the average price paid was US$29.

The analytic sample participants tended to be more educated, to have completed the online consultation at an earlier gestational age and to have confirmed their pregnancy with a blood pregnancy test more than the full sample. Although residents of Mexico constitute approximately one-third of consented participants, they represent almost two-thirds of the analytic sample. Overall, the majority of all participants who consented and who completed the survey had completed at least 12 years of schooling and sought care at six weeks' gestation or less. There were no significant differences in demographic characteristics between those who completed the survey and those who received a package but did not complete a survey, except for method of pregnancy confirmation: the latter participants reported using a urine pregnancy test or ultrasound more than those who completed the survey.

Medication Abortion Experiences

All participants who completed the follow-up survey and reported on the medications taken took the mifepristone, and all but one (99%) took some misoprostol (Table 2). Eighty-two percent of 115 responding participants reported taking only the first four tablets of misoprostol; the 4% who took fewer than four pills of misoprostol (including the individual who took no misoprostol) all identified bleeding or the abortion "working well" as reasons for taking less than the recommended dose (not shown). Ten percent of participants reported seeking medical care before taking the follow-up survey—for reasons including too much bleeding, pain, fever or concerns about still being pregnant.

Although 41% of survey participants reported still experiencing some pregnancy symptoms (e.g., breast tenderness, nausea, need to urinate frequently, and exhaustion or tiredness), 82% of 117 responding participants believed that their abortions had been successful; of those who indicated a reason for this belief, the most commonly cited was the results of the MLPT (83%), followed by the absence of pregnancy symptoms (43%). Of the 18% of participants who were unsure if their abortions were successful at the time of the follow-up survey, most (18 of 21) contacted safe2choose for guidance (not shown); of those who did not, one sought care from another provider, one had not yet taken the second MLPT, and the third had noted declining hCG levels on the MLPT but had doubts about whether to trust it.

Counselors at safe2choose used both e-mail and live chat to communicate with participants who had been sent a package, with e-mail being the mode of communication more frequently used (mean number of contacts, 3.8 and 0.4, respectively). The majority of participants (81%) contacted safe2choose about issues related to their order or with questions about study procedures (e.g., payment, delivery, whether to send pictures of the used MLPTs); 61% asked about the abortion process or medical care (e.g., symptoms, the medication regimen, contraception). Almost one-third of participants confirmed milestones in the study (e.g., receiving their package or noting declining MLPT levels), or sought emotional support for such circumstances as rape or feeling guilty about the abortion. Few participants asked about the MLPTs specifically, and of those who did, there were fewer questions about using the test (12%) than interpreting the results (15%).

MLPT Experiences

Nearly all participants who reported on their MLPT usage used two MLPTs (93%), and used them at the appropriate time intervals (Table 3). Participants who did not use any tests (3%) reported not doing so because they changed their mind about using the tests, thought that the tests

TABLE 2. Medication abortion experience of participants who completed follow-up survey and characteristics of communication with safe2choose among participants sent a medication abortion package

Experience	%
WOMEN WHO COMPLETED FOLLOW-UP SURVEY (n=118)	
Administered mifepristone (n=117)	100.0
Administered misoprostol (n=117)	99.1
No. of misoprostol pills taken (n=115)	
4	81.7
<4	3.5
>4	14.8
Experienced ≥2 days of heavy bleeding (n=118)	62.7
Sought no additional medical care before follow-up survey (n=115)	90.4
Did not feel any pregnancy symptoms at follow-up survey (n=118)†	58.5
Perceived abortion status at time of follow-up survey (n=117)	
Complete	82.1
Incomplete/unsure	17.9
Reasons for perceiving complete abortion (n=96)‡	
Do not feel pregnant	42.7
Saw provider who confirmed abortion complete	14.6
Results of MLPTs	83.3
Results of other pregnancy test	11.5
Reasons for perceiving incomplete abortion (n=21)‡	
Still feel pregnant/pregnancy symptoms	19.0
Results of MLPTs	52.4
Results of other pregnancy test	14.3
Not confirmed by doctor/didn't take MLPTs yet	19.0
Still bleeding	4.8
WOMEN WHO WERE SENT A PACKAGE (n=165)	
Mean no. of contacts with safe2choose per participant (range)	
E-mail	3.81 (0–16)§
Live chat	0.36 (0–8)††
Topics discussed during contact	
Completion/delivery of order or study procedures	80.6
Abortion process or medical advice	61.2
Milestone confirmation or emotional support	30.3
How to use MLPT	12.1
How to interpret MLPT results	14.5

†Listed symptoms included breast tenderness, nausea, need to urinate frequently and exhaustion/tiredness. ‡Participants could give more than one reason. §Seven cases with missing data. ††Eight cases with missing data. *Notes*: Number of respondents differs because of missing survey data. MLPT=multilevel pregnancy test.

TABLE 3. Percentage of participants who used multilevel pregnancy tests for medication abortion follow-up, by experience

Experience	%
No. of MLPTs used (n=116)	
0	3.4
1	3.4
2	93.1
Timing of MLPTs	
Used first test before taking mifepristone (n=112)	90.2
Used second test ≥1 week after first test (n=104)	98.1
MLPT instruction type considered very/somewhat helpful	
Diary card (n=108)	94.4
E-mailed instructions (n=114)	94.7
Instructional video (n=88)	90.9
MLPT results reported (n=103)†	
Second level lower than first	95.1
Second level the same as first	4.9
If second level lower (n=98)	
Correctly interpreted no longer pregnant	85.7
Thought may still be pregnant	6.1
Not sure how to interpret	8.2
If second level the same (n=5)	
Correctly interpreted may still be pregnant	20.0
Thought no longer pregnant	40.0
Not sure how to interpret	40.0
Reported no difficulty using MLPTs (n=111)	99.1
Reported no difficulty understanding MLPT results (n=111)	82.0
When MLPT results indicated need to contact safe2choose, those who did (n=7)‡	57.1

†Excludes two cases who were unsure of at least one test result and three cases with missing values. ‡Comprises five participants who reported stable levels, and two participants who were not sure of either first or second test result. *Note*: MLPT=multilevel pregnancy test.

seemed too complicated or misunderstood the instructions to mean that the tests should be taken at a later time—e.g., once the bleeding had stopped (not shown). Of the three types of instructional materials provided (i.e., diary card, e-mailed instructions and instructional video), 91–95% of participants found them very or somewhat helpful, although fewer participants appeared to view the video than review the other materials.

Among participants who reported MLPT results for two tests, 95% had a lower hCG level for their second test than for their first; 5% reported the same level for both tests and none reported a higher range. Although 86% of participants with a lower hCG level for their second test correctly interpreted the results as meaning that they were no longer pregnant, 6% thought it meant that they may still be pregnant and 8% were not sure what it meant. Of the few participants who had stable levels, 20% correctly interpreted the result to mean that they may still be pregnant, 40% thought it indicated that they were no longer pregnant and 40% were unsure what the result meant. Of the seven participants who had either stable levels or difficulty reading at least one MLPT's results, four (57%) contacted safe2choose as per the instructions; of the three who did not contact safe2choose, all reported two or more days of heavy bleeding, and two reported the absence of pregnancy symptoms (not shown). All but one of the 111 replying participants reported no difficulty using the MLPT, and 82% reported no difficulty understanding the MLPT results.

After getting the MLPT results, a greater proportion of participants who believed that they were no longer pregnant than of those who thought that they may still be pregnant reported feeling relief (77% vs. 29%; Table 4), and lower proportions reported feeling stressed (2% vs. 35%) or confused (14% vs. 47%). Relatedly, a greater proportion of participants who believed that they had had a successful abortion reported finding the information from the MLPTs to be very helpful (92% vs. 71%). The majority of both groups indicated that using the MLPTs increased their overall satisfaction with the safe2choose service (89% and 77%) and that they would want to use MLPTs in the future (94% and 88%).

TABLE 4. Percentage of participants, by feelings about and satisfaction with multilevel pregnancy test, according to perceived abortion status

Measure	No longer pregnant	May still be pregnant
Feelings after result of second MLPT†,‡	(n=91)	(n=17)
Relief***	76.9	29.4
Neutral/unaffected	16.5	17.6
Stressed/nervous***	2.2	35.3
Confused**	14.3	47.1
Helpfulness of information from MLPTs*,‡	(n=88)	(n=17)
Very	92.0	70.6
Somewhat	8.0	29.4
Not at all	0.0	0.0
Overall satisfaction with safe2choose service because of MLPTs§	(n=89)	(n=17)
Decreased	1.1	5.9
Did not change	10.1	17.6
Increased	88.8	76.5
Would want to use MLPTs in the future§	(n=90)	(n=17)
Yes	94.4	88.2
No	1.1	5.9
Unsure	4.4	5.9

*p<.05. **p<.01. ***p<.001. †Participants could give more than one answer. ‡Among participants who took two MLPTs. §Among participants who completed follow-up survey. *Notes*: If a test included at least one cell with fewer than five observations, Fisher's exact test was used; otherwise, chi-square tests were used. Fisher's exact test was used to compare neutral/unaffected feelings, stressed/nervous feelings, future preference and impact of MLPT on satisfaction. Two-tailed p values <.05 were considered statistically significant. Percentage distributions may not add to 100.0% because of rounding. MLPT=multilevel pregnancy test.

Open-Ended Survey Responses

In responses to the questions "Do you have any other comments?" and "Do you have any suggestions?", 50 participants provided 64 comments and suggestions. Of those, 80% were positive, 28% were negative and 9% were both; 2% were neutral.

Positive comments and suggestions contained themes of gratitude and satisfaction, such as feedback from a 24-year-old from Mexico who wrote, "I am very grateful for all the time and the attention provided. I felt really supported during the entire process." They alluded to specific aspects of care, such as attentiveness, supportiveness, a nonjudgmental approach and information provision. An 18-year-old from Mexico said, "Safe2choose is an organization committed to the wellbeing of women, I am happy that my process was successful, and I feel totally grateful because they gave me the information in a timely manner, thanks for being sincere, tolerant and not judging in any moment the decision I made." The negative comments and suggestions related mostly to confusion about the process, doubts about whether safe2choose was a legitimate service, not having enough information, slow response times, and problems with shipping and payment.

Only nine responses mentioned the MLPTs, and they were almost evenly split between positive and negative. Besides describing the service as "very good," one 23-year-old from Mexico said that "[T]he tests gave me the opportunity of knowing the results of the treatment taking place—seeing the initial and final results makes you feel safe." Another participant, also 23 and from Mexico, appreciated the MLPTs, saying, "The tests made me feel calm and trusting knowing that they were effective and that I could be sure I wasn't pregnant anymore." This response contrasts with that of a 25-year-old from Thailand, who advised that safe2choose "provide a less confusing pregnancy test." Yet another participant—a 27-year-old from Mexico—gave mixed feedback, saying, "All the process was great, the only doubt I had was the second test."

DISCUSSION

Addition of MLPTs to a telemedicine medication abortion service was a desirable option with high satisfaction reported by most participants. In our study, the first that we know of in the literature that did not involve in-person instruction from a health provider at a clinic about how to use the MLPT, 91% of those who used both tests used them at the correct time intervals, and a majority correctly interpreted their test results. In previous studies of this type of MLPT, instructions on use and interpretation were communicated in-person by a provider. Written and video instructions appear to be sufficient to ensure successful use and interpretation, which is noteworthy because the test is considered to be more complicated to use than standard high-sensitivity urine pregnancy tests.

At the time of the follow-up survey, 18% of participants were unsure if their abortion was complete; most sought advice from safe2choose. This provides some reassurance that people managing their own abortion follow-up care can and will access help when they need it. The uncertainty demonstrated by the 14% of participants who reported a lower hCG level for their second MLPT but were unsure if they were still pregnant may be reduced with more-simplified instructional materials. Our reasoning for offering video-based instructions was to aid visual learners and those who were not highly literate; future versions of the written instructions could be more pictorial to achieve the same ends.

Medication abortion with mifepristone and misoprostol is so effective that, in most cases, a test to confirm its success is not necessary; however, clients and providers alike may value some objective means of reassurance. Even participants who thought that they might still be pregnant, or who felt confused and nervous after seeing the results of the second test, found the MLPT information to be helpful, and most indicated that they would want to use the test again. MLPT results were the most commonly cited element in participants' perception of abortion status—much more than the presence or absence of pregnancy symptoms.

Much of the world does not have access to mifepristone,[26] however, and patient use of MLPTs for follow-up after medication abortion could play an important role in identifying when further care is needed for services that use less effective abortifacient medications, such as misoprostol alone. The extremely high sensitivity of the MLPT

in identifying continuing pregnancy would be particularly useful in confirming successful abortion for misoprostol-alone medication abortion regimens, which are likely to result in higher rates of ongoing pregnancy.[27]

Limitations

A limitation of this study is that the outcomes are entirely reliant on participant self-reporting; we did not verify that participants read the MLPTs correctly (unless they sent pictures to safe2choose staff), nor did we request or collect clinical confirmation of abortion status. However, the reported proportion of decreasing and stable hCG levels corresponds with the literature on MLPTs,[13] and it comports with our expectations for the highly effective mifepristone-misoprostol regimen.[14,28] The online follow-up survey was a relatively blunt tool that needed to be brief enough to encourage a high completion rate. It was therefore unable to provide a nuanced look at how participants determined their abortion status—what elements affected their decisions and the priority of those elements, for example—or whether the MLPT results encouraged people to seek or not seek care that they might have needed.

Satisfaction with any one aspect is likely to be conflated with relief over no longer being pregnant; additionally, the MLPTs were provided free of charge, which may have affected satisfaction. The rate of participants lost to follow-up, 24%, is relatively high for research studies but quite similar to rates documented in other studies on telemedicine providers of medication abortion, which have ranged from 17% to 45%.[2–5,10,11] Participants who did not complete the survey may have been more likely not to have used or understood the tests and hesitant to reveal their confusion. Lastly, these results are not generalizable to other settings because eligibility was restricted to English and Spanish speakers, participants hailed primarily from four countries and selection bias likely exists, in that the sample of participants chose to be in the study. The findings of this pilot study suggest that a larger, randomized clinical trial comparing the use of a high-sensitivity pregnancy test with the MLPT in a telemedicine abortion service, and assessing efficiency, acceptability and satisfaction, would be beneficial.

CONCLUSIONS

As of July 2018, safe2choose no longer mails abortion medication to clients, though it still provides information and counseling. However, the growing number of online telemedicine abortion providers—such as Women Help Women, Women on Web and Aid Access—can find value in this study's findings. Particularly in the context of the COVID-19 pandemic, telemedicine abortion services are increasingly essential, and having an accurate, reliable, home-based follow-up method that yields results relatively quickly is indispensable to both clients and providers. Our findings suggest that MLPTs can be successfully integrated into remote medication abortion services. Doing so may improve the overall abortion experience and, in cases of ongoing pregnancy, could facilitate faster identification of the need for additional care.

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RESUMEN

Contexto: *Las clientas de telemedicina que desean confirmar el éxito de un aborto con medicamentos fuera del entorno de una clínica, generalmente reciben instrucciones para usar pruebas de alta sensibilidad de embarazo en orina, que pueden tomar hasta cuatro semanas para producir resultados precisos. Las pruebas multinivel de embarazo en orina (PMEO), que brindan resultados precisos en una semana, son una alternativa prometedora, pero su uso no ha sido evaluado en el contexto de los servicios de telemedicina.*

Métodos: *De noviembre de 2017 a mayo de 2018, 165 mujeres embarazadas elegibles y que dieron su consentimiento se comunicaron con safe2choose –organización que brinda servicios de aborto por telemedicina a nivel internacional–para obtener un aborto con medicamentos y se inscribieron en un estudio piloto que les envió por correo un paquete que contenía medicamentos para el aborto, dos PMEO e instrucciones. Se analizaron los datos de 118 participantes que completaron una encuesta de evaluación en línea dos semanas después de que se envió el paquete para examinar las experiencias de las participantes y la satisfacción con el servicio.*

Resultados: *Las participantes que respondieron eran de 11 países, incluidos México, Filipinas y Singapur. El 93% utilizó ambos PMEO y el 91% de quienes utilizaron ambas pruebas las utilizaron en los intervalos de tiempo correctos. Del 95% de las participantes cuyos resultados de PMEO indicaron que sus niveles de hormonas del embarazo disminuyeron desde antes hasta después del aborto con medicamentos, el 86% interpretó correctamente los resultados en el sentido de que ya no estaban embarazadas. La satisfacción fue alta, y todas indicaron que la información proporcionada fue útil; más de nueve de cada 10 señalaron que querrían volver a utilizar los PMEO.*

Conclusiones: *La incorporación de PMEO en los servicios de aborto por telemedicina es factible y está asociada con una alta satisfacción del cliente. Permitir que las mujeres manejen su propia atención de seguimiento del aborto podría mejorar en gran medida su experiencia general del aborto.*

RÉSUMÉ

Contexte: *Les patientes en télémédecine soucieuses de confirmer la réussite d'un avortement médicamenteux effectué en dehors d'une clinique sont généralement invitées à utiliser les tests urinaires de grossesse à haute sensibilité, qui peuvent produire des résultats inexacts jusqu'à quatre semaines après l'intervention. Les tests urinaires de grossesse multiniveaux (TGMN), qui produisent des résultats exacts en l'espace d'une semaine, offrent une autre solution prometteuse, mais leur utilisation n'a pas été évaluée en télémédecine.*

Méthodes: *De novembre 2017 à mai 2018, 165 personnes enceintes admises et consentantes qui s'étaient adressées à l'organisation safe2choose – prestataire de services d'avortement par télémédecine à l'échelle internationale – pour un avortement médicamenteux ont été inscrites à une étude pilote et un colis contenant des médicaments abortifs, deux TGMN et les instructions à suivre leur a été envoyé. Les données relatives à 118 participantes ayant répondu à un questionnaire d'évaluation en ligne deux semaines après l'envoi du colis ont été analysées pour examiner leur expérience et leur satisfaction concernant le service.*

Résultats: *Les participantes qui avaient répondu au questionnaire étaient originaires de 11 pays, dont le Mexique, les Philippines et Singapour. Quatre-vingt-treize pour cent avaient utilisé les deux TGMN et, parmi elles, 91% les avaient utilisés aux intervalles adéquats. Parmi les 95% de participantes dont les TGMN indiquaient des niveaux d'hormone de grossesse en baisse entre les moments où elles avaient effectué les tests avant et après l'avortement médicamenteux,*

86% avaient interprété correctement leurs résultats comme indiquant qu'elles n'étaient plus enceintes. Le niveau de satisfaction était élevé, toutes les participantes indiquant que l'information fournie leur avait été utile. Plus de neuf sur 10 faisaient remarquer qu'elles seraient disposées à réutiliser les TGMN.

Conclusions: *L'incorporation des TGMN dans les services d'avortement par télémédecine est faisable et associée à un haut degré de satisfaction. L'habilitation à gérer ses propres soins de suivi après avortement pourrait améliorer grandement l'expérience générale de l'intervention.*

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Author Contact: *echong@gynuity.org*