Client satisfaction and experience of home use of mifepristone and misoprostol for medical abortion up to 10 weeks' gestation at British Pregnancy Advisory Service: a cross-sectional evaluation

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Running Title: Satisfaction with home medical abortion.

Abstract

Objective: Evaluate satisfaction and experience with telemedicine and home use of mifepristone and misoprostol for abortion to 10 weeks' gestation.

Design: Cross-sectional evaluation.

Setting: British Pregnancy Advisory Service (BPAS) clinics in England and Wales.

Population: 1,144 clients who used mifepristone and misoprostol at home from 11 May to 10 July 2020.

Methods: We sent a text message with a link to a web-survey 2-3 weeks after treatment. Questions evaluated satisfaction and experiences, including telephone consultations and provision of medicines by post or collection from clinic. We used bivariate and multivariate regression to explore associations between client characteristics and outcomes.

Main Outcome Measures: Overall satisfaction (5-point Likert scale) and reported contact with a healthcare provider (HCP).

Results: Respondents primarily described home use of medications as 'straightforward' (75.8%) and most were 'very satisfied' (78.3%) or 'satisfied' (18.6%) with their overall experience. Being 'very satisfied' was associated with parity (aOR 1.53, 95% CI 1.09-2.14) and pain control satisfaction (aOR 2.22, 95% CI 1.44-3.44). HCP contact was reported by 14.7%; mainly to BPAS' telephone aftercare service (76.8%). Dissatisfaction with pain control (aOR 3.62 95% CI 1.79-7.29) and waiting >1 week to use mifepristone (aOR3.71, 95% CI 1.48-9.28) were associated with HCP contact. If needed in future, most (77.8%) would prefer home use of mifepristone and misoprostol and pills by post (68.9%).

Conclusions: Satisfaction with home use of mifepristone and misoprostol is high. Most clients do not need HCP support during or after home use, but aftercare should be available.

Funding: None.

Key words: Termination of pregnancy: medical; Termination of Pregnancy; mifepristone; misoprostol; telemedicine, telemedical abortion

Tweetable Abstract: High satisfaction is associated with home medical abortion by telemedicine up to 10 weeks' gestation.

Introduction

Despite evidence that home use of mifepristone and misoprostol for medical abortion is safe and effective, regulations remain common.[1,2] In the United Kingdom (UK), law dictates where abortion medicines can be administered.[3] In 2018, England, Wales and Scotland approved a person's home for the use of misoprostol,[3] whereas mifepristone remained restricted to a clinic or hospital until the COVID-19 pandemic.

In March 2020, the UK government imposed a nationwide 'lockdown' to control the spread of Sars-CoV-2 (COVID-19). National guidance detailing recommendations to ensure abortion access even during the pandemic was issued jointly by the Royal College of Obstetricians and Gynaecologists (RCOG), British Society of Abortion Care Providers (BSACP), Faculty of Sexual and Reproductive Healthcare (FSRH), and Royal College of Midwives (RCM). They recommended using telemedicine to preserve access while protecting healthcare staff and clients from infection.[4]

Telemedicine in medical abortion care has been the subject of several recent studies as means to removing barriers to service access, reducing stigma, and improving outcomes and satisfaction.[5–9] A range of models have been described, from telemedicine used to complement in-person care to fully telemedical models.[5] Telemedical abortion improved access to abortion, while remaining safe and effective.[7,8,10,11] A systematic review of telemedicine for medical abortion ≤10 weeks' gestation concluded it was highly acceptable to clients with rates of success and complications compared to in-clinic care.[5]

In response to the COVID-19 pandemic, the England and the Welsh governments issued temporary approvals for home use of mifepristone and misoprostol up to 10 weeks' gestation.[12] The Scottish government separately approved home mifepristone without gestation limit but with

clinical guidance for use up to 12 weeks' gestation.[13] Updated national guidance now endorses a fully telemedical model for medical abortion including telephone assessment, gestational age determination by last menstrual period with ultrasound only when necessary, and direct-to-client provision of medications.

In response, the British Pregnancy Advisory Service (BPAS)- one of country's main abortion providers- rapidly transformed its service model to primarily telemedicine consultations and provision of medicines for medical abortion via post or in-clinic collection.

To evaluate these service changes, we conducted a web-based survey with clients who accessed BPAS abortion services during the COVID-19 pandemic using the new care pathway. Recognising the potential for this model to significantly decrease barriers to care, with applications during and beyond the pandemic, we aimed to understand client acceptability and experiences.

Methods

On 8 of April 2020, BPAS launched a telemedical abortion service including remote consultations and provision of medical abortion. Clinicians (nurses or midwives) performed consultations via telephone (or video call for clients under 18 years) to assess eligibility for medical abortion and whether an in-person assessment was needed, for example to perform an ultrasound or for safeguarding concerns. We performed ultrasounds when indicated (for example, unsure last menstrual period (LMP), history of irregular menses or atypical LMP, vaginal bleeding/spotting or pelvic pain in the last 48 hours, intrauterine contraception in place at the time of conception, history of ectopic, or history of prior tubal surgery). After remote or in-person confirmation of eligibility for treatment, clinicians offered clients the option to receive

123 medicines by post or collect medicines for home use from a clinic. Clients at exactly 70 days of
124 gestation were required to take mifepristone in the clinic and to return in 24-48 hours for
125 administration of misoprostol in the clinic after which they were discharged to complete the
126 abortion at home. Per the Abortion Act (1967), two doctors reviewed all abortion requests and
127 provided the necessary signatures before prescribing the medicines.[14]

128 Via post or in-clinic collection, we provided clients with mifepristone, misoprostol,
129 codeine for pain (unless contraindicated), written instructions, precautions, and information on
130 how to access a 24-hour BPAS telephone helpline for questions or concerns. We instructed
131 clients to take mifepristone 200 mg orally followed one to two days later by misoprostol 800
132 mcg vaginally or buccally. We provided an additional 400 mcg of misoprostol with instructions
133 to use it three-to-four hours after the first dose of misoprostol. We recommended that clients use
134 over the counter NSAIDs for pain management along with the codeine. We instructed clients to
135 perform a low-sensitivity pregnancy test (Quadratech check4-HCG, 1000 mIU/ml) and a self-
136 assessment checklist to screen for ongoing pregnancy (less than four days of vaginal bleeding,
137 persistent pregnancy symptoms, no return of menses after four weeks) three weeks post abortion.

138 From 11 May to 10 July 2020 we sent a text message invitation to all clients who had a
139 medical abortion 10 weeks' gestation or less in the last 10-21 days and had agreed to be
140 contacted for the service evaluation. The invitation included a link to a web-based survey. After
141 a brief introduction, survey questions focused on client experience with the following aspects of
142 abortion care: consultation, information provision, method of gestational age assessment (LMP
143 or ultrasound), how medicines were received, experience with use of medicines, pain
144 management, assessment of abortion outcome, contact with a HCP (defined as contact with the
145 BPAS helpline, BPAS clinic, hospital/A&E, or general practitioner), acceptability (5-point Likert

satisfaction scale) and future preferences. In addition, we asked respondents to provide sociodemographic information and a brief medical history including whether they had a positive diagnosis of COVID-19 or suspected symptoms. The project was granted exemption from the need for ethical review by the BPAS Research and Ethics Committee (REC) and determined not to need ethical review through NHS Research Authority on the basis that it was a service evaluation.

We analysed responses from those who used mifepristone and misoprostol at home. We used descriptive statistics to analyse the sociodemographic, health characteristics, and experiences of the respondents. We used chi-squared tests in a bivariate analysis to evaluate the association between covariates and the outcomes of being 'very satisfied' with overall experience and contact with a HCP during the abortion. We considered a two-sided $p < 0.05$ as statistically significant.

We fitted multivariate logistic regression models to examine the association between selected covariates and outcomes as described. We included covariates that were statistically significant in the bivariate analysis and a priori variables thought or known to be associated with abortion experience (age, gestational age, parity, prior abortion, certainty of LMP, no ultrasound, and pain control satisfaction) in the multivariate model. We performed a stepwise model selection and retained variables with a p value of ≤ 0.20 in the bivariate analysis in the initial multivariate model. We kept variables that had a p-value of ≤ 0.25 in the final multivariate model. We used SAS 9.4 (SAS Institute, Cary, NC) to perform data analysis.

Results

A total of 1,333 clients completed the survey; our analysis includes the 1,144 who used both mifepristone and misoprostol at home (Figure 1). Of those, 1,028 (89.9%) received

medicines by post and 116 (10.1%) collected them from a clinic. Table 1 provides sociodemographic and health characteristics. Most clients had a telephone consultation and did not require an in-person assessment (n=1,054, 92.1%).

In Table 2, we describe client satisfaction, experience with home use of mifepristone and misoprostol, and future preferences. Nearly all clients were either satisfied or very satisfied (n=1010, 96.9%) overall. The majority (n=867, 75.8%) reported that home use was straightforward, 230 (20%) said they had some questions but mostly understood, and 18 (1.6%) needed more guidance. Clients reported using the following medicine for pain control: 64% took codeine (n=732), 41.1% took paracetamol (n=470), 39.2% took ibuprofen (n=448), and 13.1% took no pain medications (n=150). The majority of clients were satisfied with pain control (n=883, 79.5%). One hundred and sixty-eight clients (14.7%) contacted a HCP for help or advice during the abortion process. Fifty-five clients (32.7%) made contact to more than one type of HCP. In most cases (n=129, 76.8%) the contact was to the BPAS telephone aftercare service. Thirty-six (3.1%) clients visited a hospital or A&E of which most (n=25, 69.4%) also contacted the BPAS telephone aftercare service or went to a BPAS clinic. We asked about preferences if another abortion were needed in future. Most (78.4%, n=787) would opt for a telephone consultation, medical abortion with home use of mifepristone and misoprostol (n=890, 77.8%), and receipt of medications by mail (n=788, 68.9%).

To assess the relationship between being overall ‘very satisfied’ and respondent characteristics, we performed a multivariate logistic regression, shown in Table 3. After adjusting for confounders, we identified an association between being ‘very satisfied’ and being parous (aOR 1.53, 95% CI 1.09-2.14) or being satisfied with pain control (aOR 2.22, 95% CI

1.44-3.44). A lapse of more than a week between receiving the medicines and using them was associated with less likelihood of being 'very satisfied' (aOR 0.29, 95% CI 0.12-0.71).

To assess the relationship between client characteristics and contact with a HCP during their abortion, we performed a multivariate logistic regression in Table 3. After adjusting for confounders, we found an association between contact with a HCP and dissatisfaction with pain control (aOR 3.62 95% CI 1.79-7.29) or waiting more than a week between receipt and use of medicines (aOR 3.71, 95% CI 1.48-9.28).

Discussion

Main Findings

We found high overall satisfaction with a predominantly telemedical abortion model and the home use of mifepristone and misoprostol. This was reflected in future preferences with most respondents reporting that if they had another abortion in the future, they would prefer a medical abortion with the medications mailed to them to use at home. We also found that for most respondents the use of medications at home was 'straightforward', and that 85% did not need to seek assistance from a HCP during or after the abortion.

Strengths and Limitations

Our evaluation draws on a large client population; however, our data represents only 9.5% of the clients who had a medical abortion at BPAS during the evaluation period. Eighteen percent of the clients we contacted went on to participate in our survey, which may lead to sampling bias and limits the generalisability of the results. Other limitations include recall bias, lack of socioeconomic, geographic, or race data, lack of information on reasons for contact with a HCP. As the evaluation was conducted during a pandemic, this may have influenced clients' willingness or ability to contact a HCP, especially for in-person assessment due to potential risk for COVID-19 exposure.

Interpretation

Previous studies of home use of mifepristone and misoprostol have reported high levels of satisfaction and acceptability, which support our findings.[2,15] We identified some associations with client satisfaction, which could be used to guide clinical practice. Respondents who reported satisfactory pain control had twice the odds of being 'very satisfied'. This finding is consistent with other studies demonstrating that pain control is predictive of satisfaction with medical abortion.[16–18] It also emphasises the need to prepare clients for anticipated pain with medical abortion and to provide effective pain management options. To date, clinical trials on medical abortion have failed to identify an optimal pain control regimen beyond NSAIDs,[19–21] leading to calls for more research in this area.[22] Dissatisfaction with pain control, reported by 8.4% of respondents to our evaluation, was associated with half the odds for being very satisfied with their overall experience and nearly four times higher odds for contact with a HCP. We do not have information about the reason for contact with a HCP, but as part of our routine counselling, we advise clients to contact us if pain is not adequately managed.

Parous respondents had about 50% higher odds of being 'very satisfied' overall compared to nulliparous ones. Other medical abortion acceptability studies have reported similar findings.[16] This association may exist because parous people have more experience with obstetrical/gynaecological procedures and thus have different expectations or level of preparedness than a nulliparous person. Data also suggest that a parous cervix dilates more easily which could result in less pain.[23] Our findings, while not novel, could indicate that nulliparous clients need different counselling points than parous clients.

We found that clients who waited more than a week to take their medicines had about a 30% lower odds of being 'very satisfied' overall and had nearly four times the odds of making

contact with a HCP. Our survey did not evaluate reasons for client's timing of administration. Abortion service users have reported that control and flexibility over the timing of administration as the most common reason for choosing home versus in clinic use of mifepristone.[15] Some respondents may have had more hectic situations and simply needed to wait for the right time to use the medicines, thus perhaps their circumstances could have affected their overall satisfaction rather than the abortion itself. With many people 'sheltering in place' during the pandemic, clients may have struggled to find a private moment for the abortion, thus leading to increased time lapse between receipt and administration and lower satisfaction.

One of the biggest changes to our abortion service model was the discontinuation of routine ultrasounds. In our evaluation, fewer than 20% had an ultrasound. Both the World Health Organization and RCOG state that routine ultrasound is not required for safe abortion care.[24,25] For most, LMP is acceptable for gestational age determination.[26,27] A 2014 systematic review found that only 2.5-11.8% of those who were eligible for medical abortion ≤9 weeks of gestation by LMP would be ineligible by ultrasound.[28] Not only is LMP highly effective in dating a pregnancy, but omitting routine preabortion ultrasound does not compromise safety, as complication rates remain low.[29,30] It appears that clients without an ultrasound had a trend towards higher odds of being 'very satisfied' overall, however we lack the reasons for why the ultrasound was done in our evaluation.

We counsel our clients to use the provided written information to guide the at-home medical abortion process, which includes signs and symptoms that need further medical assessment by a HCP. Most of our respondents (85%) did not report making contact with a HCP during or after their abortion. Of those that did, most (77.8%) reported contact to the 24-hour BPAS telephone aftercare service and 27% sought non-urgent assessment either at a BPAS clinic

or GP. Fewer (21.4% of those who contacted a HCP, 3.1% of all clients) contacted a HCP in hospital or A&E. Our rate of hospital contact is consistent with the results of self-managed medical abortion, where 3.3% of those at 9 weeks' gestation or less had hospital contact within the first 24 hours of the abortion.[31] Contact with a HCP, including a visit or referral to hospital for an assessment, does not always indicate a serious adverse event. Overall serious adverse events are very rare during medical abortion up to 10 weeks' gestation at a frequency of 0.03-0.6%.[32] Contact with a HCP is not necessarily a negative occurrence, as many clients may need additional support while they manage their abortion at home. Knowledge of the typical rate and reasons that clients contact a HCP could help providers better plan for services and support clients.

Conclusion

Abortion service models that include home use of mifepristone and misoprostol, telemedicine, and ultrasound only as indicated have been shown to be acceptable and safe.[2,5,7,8,10,26,27,29,33–36] We found similarly high satisfaction with medical abortion provided through telemedicine in the UK. Most clients are capable of managing the entire process of the abortion at home, while some will need additional support. Adequate pain control strategies are essential to providing satisfactory medical abortion care and more research is needed in this area. Our results suggest that the telemedical model of medical abortion with home use of mifepristone and misoprostol was acceptable to clients during the COVID-19 pandemic. This model of care has significant benefits and should be continued after the pandemic resolves.

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Disclosure of Interests

None to disclose.

Contribution to Authorship

The evaluation conception, design, planning, and carrying out was completed by KW, RB, and PL. Analysis was performed by JJ, MM, and KW with significant input from RB, and PL. The original manuscript was written by MM and KW with significant contribution from RB and PL and minor contributions from JJ.

Details of Ethics Approval

Ethical approval was sought from the BPAS research and ethics committee. An exemption was granted on the basis that this project was an evaluation of service.

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Table/Figure Caption List

Figure 1. Flow diagram for service evaluation of medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

Table 1. Characteristics of clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

Table 2. Acceptability, experience and future preferences for clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

Table 3. Unadjusted and adjusted odds ratios (OR) for being "very satisfied" with overall experience and for contact with a healthcare provider (HCP) for clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

Table 1. Characteristics of clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

	n=1,144	%
Age (years)		
<20	86	8.2
20-29	482	45.8
30-39	410	39.0
≥40	74	7.0
Gestational age (weeks)		
≤5	488	42.7
6-7	457	40.0
≥8	183	16.0
Unsure*	16	1.4
Consultation type		
Telephone only	1,054	92.1
Telephone and in-person	72	6.3
In-person	18	1.6
Receipt of medicines		
Via post	1,028	89.9
Collected in clinic	116	10.1
Obstetrical history		
Nulliparous	432	41.1
Parous	618	58.8
Prior ectopic	33	2.9
Prior miscarriage	292	25.5
Prior abortion	404	38.6
Medical	298	26.1
Surgical	189	16.5
Certainty of last menstrual period date		
Certain	771	67.4
Somewhat certain	314	27.5
Uncertain	59	5.2
Received ultrasound during this pregnancy**	222	19.4
Received contraception with abortion medicines	536	50.6
COVID-19 status		
Diagnosed or symptomatic	5	0.5
In self-isolation due to COVID-19 contact or medical condition	52	5.0

*Per respondent report **At BPAS or another institution

Table 2. Acceptability, experience and future preferences for clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

	n=1,144	%
Satisfaction with overall experience		
Very satisfied	824	78.3
Satisfied	196	18.6
Neither satisfied nor dissatisfied	21	2.0
Dissatisfied	8	0.8
Very dissatisfied	3	0.3
Problems with receipt of medicines via post (n=1,026)	24	2.3
Time between receipt and use of medicines		
>1 week	28	2.5
Within a week	533	47.4
Same day	563	50.1
Experience with home use of medicines		
Straightforward, no questions	867	77.8
Some questions, but mostly understood	230	20.6
Needed more guidance	18	1.6
Route of misoprostol		
Buccal	131	11.8
Vaginal	898	80.5
Both**	81	7.3
Can't recall	5	0.5
Pain control satisfaction		
Satisfied	883	79.5
Neutral	135	12.2
Dissatisfied	93	8.4
Problem using pregnancy test or checklist to determine abortion outcome	180	15.7
Contacted a healthcare provider during or after the abortion	168	14.7
BPAS telephone aftercare service	129	11.3
Visited a BPAS clinic	28	2.4
Went to hospital or Accident and Emergency (A&E)	36	3.1
Visited general practitioner	17	1.5
Preference for consultation type in the future		
Telephone	787	74.3
In-person	110	10.4
Unsure	163	15.4
Preference for abortion type in the future		
Medical abortion, medicines by post to use at home	788	68.9
Medical abortion, collecting the medicines from a clinic to use at home	102	8.9
Surgical abortion	75	6.6
Not sure	145	12.7

*10 (47.6%) Took longer than expected; 1 (4.8%) items were missing; 1 (4.8%) went to the wrong address; 12 (57.1%) other
**Indicates vaginal and buccal used for the two separate doses of misoprostol

Table 3. Unadjusted and adjusted odds ratios (OR) for being "very satisfied" with overall experience and for contact with a healthcare provider (HCP) for clients who received mifepristone and misoprostol for use at home for medical abortion up to 10 weeks' gestation from British Pregnancy Advisory Service

	"*Very satisfied*" with overall experience		Contact with a HCP	
	OR (95% CI)	aOR[a] (95% CI)	OR (95% CI)	aOR[a] (95% CI)
Age				
<20	0.57 (0.35-0.92)*	0.91 (0.53-1.57)	1.26 (0.71-2.23)	0.97 (0.52-1.81)
20+	1.00	1.00	1.00	1.00
Gestational age				
≤5 weeks	1.46 (1.08-1.98)*	1.27 (0.92-1.76)	0.88 (0.63-1.23)	1.01 (0.71-1.45)
>5 weeks	1.00	1.00	1.00	1.00
Parous	1.83 (1.36-2.46)**	1.53 (1.09-2.14)*	0.65 (0.47-0.91)*	0.70 (0.48-1.01)
Prior abortion	1.10 (0.81-1.49)	0.97 (0.70-1.36)	0.91 (0.65-1.29)	1.00 (0.69-1.45)
Certainty of LMP				
Certain	1.00	1.00	1.00	1.00
Somewhat certain	0.67 (0.49-0.93)*	0.79 (0.56-1.11)	1.39 (0.97-1.99)*	1.31 (0.90-1.91)
Uncertain	0.87 (0.43-1.73)	1.44 (0.66-3.14)	0.94 (0.41-2.13)	0.49 (0.19-1.26)
Time between receipt and use of medicines				
>1 week	0.26 (0.12-0.59)*	0.29 (0.12-0.71)*	3.15 (1.36-7.32)*	3.71 (1.48-9.28)*
Within a week	1.17 (0.86-1.58)	1.26 (0.91-1.74)	1.14 (0.81-1.60)	1.16 (0.81-1.65)
Same day	1.00	1.00	1.00	1.00
No ultrasound during this pregnancy	1.55 (1.09-2.20)*	1.45 (0.97-2.15)*	0.60 (0.41-0.88)*	0.53 (0.35-0.82)*
Satisfaction with pain control				
Satisfied	2.57 (1.70-3.89)**	2.22 (1.44-3.44)**	0.99 (0.58-1.69)	1.27 (0.71-2.27)
Neutral	1.00	1.00	1.00	1.00
Dissatisfied	0.46 (0.26-0.80)*	0.48 (0.27-0.85)*	3.32 (1.71-6.45)**	3.62 (1.79-7.29)**

[a]Adjusted for age, gestational age, parity, prior abortion, certainty LMP, time between receipt and self-administration, no ultrasound, pain control satisfaction

*p<0.05, **p<0.001