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Greasing the wheels: The impact of COVID-19 on US physician attitudes and practices regarding medication abortion ☆,☆☆

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ABSTRACT

Objective: To explore US provider perspectives about self-sourced medication abortion and how their attitudes and clinic practices changed in the context of the COVID-19 pandemic.
Study Design: We conducted a multi-method study of survey and interview data. We performed 40 baseline interviews and surveys in spring 2019 and 36 follow-up surveys and ten interviews one year later. We compared pre- and post-Likert scale responses of provider views on the importance of different aspects of standard medication abortion assessment and evaluation (e.g., related to ultrasounds and blood-typing). We performed content analysis of the follow-up interviews using deductive-inductive analysis.
Results: Survey results revealed that clinics substantially changed their medication abortion protocols in response to COVID-19, with more than half increasing their gestational age limits and introducing telemedicine for follow-up of a medication abortion. Interview analysis suggested that physicians were more supportive of self-sourced medication abortion in response to changing clinic protocols that decreased in-clinic assessment and evaluation for medication abortion, and as a result of physicians' altered assessments of risk in the context of COVID-19. Having evidence already in place that supported these practice changes made the implementation of new protocols more efficient, while working in a state with restrictive abortion policies thwarted the flexibility of clinics to adapt to changes in standards of care.
Conclusion: This exploratory study reveals that the COVID-19 pandemic has altered clinical assessment of risk and has shifted practice towards a less medicalized model. Further work to facilitate person-centered abortion information and care can build on initial modifications in response to the pandemic.

IMPLICATIONS

COVID-19 has shifted clinician perception of risk and has catalyzed a change in clinical protocols for medication abortion. However, state laws and policies that regulate medication abortion limit physician ability to respond to changes in risk assessment.

1. Introduction

Current evidence suggests that about 2 to 7% of people in the United States (US) have terminated a pregnancy with abortion pills without seeking medical assessment or contacting a clinical

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provider [1–5]. This is referred to as a self-managed, or perhaps more accurately termed, self-sourced medication abortion.[1] Studies have found two key motivations people have for terminating a pregnancy outside the formal medical system: barriers to care and finding self-care empowering [6–8]. Additionally, half of those surveyed in a national sample expressed support for a more de-medicalized model of abortion care [9]. While people are interested in a more de-medicalized model of abortion care, there are only limited data assessing physician perspectives on de-medicalzing medication abortion and on the lay practice of self-sourced medication abortion. One survey from 2017 indicates that slightly over half of abortion providers think that self-sourced medication abortion is safe [10]. Further, evidence over the last five years has accumulated supporting decreased in-person assessments to meet patients' desire for a de-medicalized medication abortion experience. Despite this, the standard protocol for a medication abortion in the US has remained as follows: (1) an ultrasound or pelvic exam to determine an intrauterine pregnancy and gestational age, (2) laboratory tests which include testing for Rhesus (Rh) factor and hemeglobin level, and (3) a follow-up clinic visit that involves either a BHCG test or an ultrasound to confirm completion of the termination [11,12].

The COVID-19 pandemic quickly changed physician assessment of risk in the US and catalyzed the impetus for no-test medication abortion as a means to decrease risk of viral exposure. In mid-April 2020, *Contraception* published an article that provided a guideline for performing no-test medication abortion, summarizing the evidence for safe and effective medication abortion without in-clinic laboratory and ultrasound assessments [12]. Abortion clinics responded by decreasing requirements for in-person assessments, providing medications in a drive-through fashion or mailing them, and consenting individuals through on-line forms or verbally. Concurrently, the pandemic increased the demand for self-sourced medication abortion given fears of in-clinic exposure and concerns about lack of access in restrictive states, many of which tried to deem abortion as non-essential at the beginning of the pandemic [13]. These changes in the formal health care setting along with a demand in the informal health care setting effectively made the boundary between the two more permeable.

This article explores the impacts of the COVID-19 pandemic on physician perspectives about de-medicalizing medication abortion, including their support of the practice of self-sourcing medications and then managing an abortion without clinical oversight. Additionally, we report on protocol changes for medication abortion that were made during the pandemic. Understanding provider perspectives and experiences with de-medicalizing medication abortion can help inform provider education to support potential follow-up care and reduce the stigma and criminalization experienced by those who self-source medications for an abortion.

2. Study design

2.1. Study population and recruitment

This study is a subset of a larger study about physician perspectives on self-sourced medication abortion. Eligibility criteria for the parent study included having a MD/DO degree and having provided at least 3 abortions in the last 6 months at the time of recruitment, as a proxy measure for current familiarity with abortion care. JK recruited initial participants via listserves and 2 in-person conferences (Abortion Care Network and National Abortion Funds). We used criterion and targeted sampling to include a diversity of participants based on the following characteristics: medical specialty training, age group, US geographical region, state's political stance toward abortion, and clinical setting. We planned for up to 45 interviews and hypothesized that sample size would be deemed adequate when the team agreed that "data sufficiency" or "conceptual depth" had been met [14,15]. We reached data sufficiency at 40 interviews.

For this subsequent subset study, we invited all 40 previous participants to complete a follow-up survey and interview to assess how their perspectives had changed as a result of the COVID-19 pandemic. Thirty-six participants completed the follow-up survey and of those, JK interviewed ten to elaborate the answers in their surveys and to explore more deeply participants who had changed their perspectives significantly.

2.2. Data collection and instruments

After obtaining UCSF Institutional Review Board (IRB) approval, JK conducted baseline surveys and interviews between March and July, 2019. Participants completed surveys prior to their interview. Surveys included demographic questions as well as baseline perspectives regarding the importance of different evaluative and assessment steps of an in-clinic medication abortion visit. The questions were written in the form of, "It is important for a woman to [evaluative step]" with responses indicated in a six-point Likert scale ranging from "Strongly Disagree" to "Disagree" to "Slightly Disagree" to "Slightly Agree" to "Agree to "Strongly Agree."

We organized the baseline interivews based on domains derived from Fishbein's integrated model of behavior change [16] and explored a variety of topics including provider's experiences, attitudes, knowledge of self-sourcing medication abortion. We also asked participants about how medical culture and professionalism influenced their role as a physician. With participant permission, we digitally recorded interviews and then transcribed them verbatim.

One year following the initial interview, we invited participants to complete a follow-up survey which included open-ended responses to questions focused on how the COVID-19 pandemic had affected their clinical practice of medication abortion and if their perspectives about self-sourced medication abortion had changed. Additionally, the survey included the same 6-point Likert-scale questions from the baseline survey and a question about changing clinical practices, as follows: "What new approaches have been used in your clinical setting(s) since the COVID-19 pandemic? Do not include changes that were made prior to the COVID-19 pandemic." The surveys were intentionally made to be brief given the time constraints providers were experiencing due to the pandemic. We employed purposeful sampling by asking those to participate in interviews if their survey answers indicated that deeper discussion would provide additional information. Interview topics included current and future trends of medication abortion and abortion provision in general, provider-patient interactions and connection in a time of minimal contact, as well as shifts in risk tolerance in the context of the COVID-19 pandemic. Thirty-one of those responding to the follow-up survey agreed to be interviewed, and JK conducted follow-up interviews over zoom between April 22-July 1, 2020 until participant responses suggested that we had closely approached theoretical sufficiency [14].

[1] The process of people terminating a pregnancy on their own used to be called *self-induced abortion*. As the favorability of the term *self-induce* has decreased over the years, *self-manage* has become a more popular term, especially as evidence for the safety of medication abortion inside and outside the clinic has amounted. Participants in this study, however, noted that most everyone manages a medication abortion on their own, given that misoprostol is taken at home and that most of the symptoms occur at home. As such, participants in this study suggested that the more specific term for lay people terminating a pregnancy with pills without physician supervision is a *self-sourced* medication abortion. Following their lead, that is the language adopted in this paper.

2.3. Analysis

The primary analysis team included a family medicine doctor and anthropologist (JK) and a research assistant (SS). A clinician researcher (CD) and public health researcher (KH) reviewed the transcripts and the quantitative data for accuracy throughout the analysis process. All team members identify as women and are supportive of abortion rights and access to care.

In order to determine whether respondents' attitudes toward in-clinic management of medication abortion changed due to COVID-19, JK and SS compared frequencies of Likert responses for each question from the initial and follow-up surveys. Based on the small sample size and skewed nature of the data, we used non-parametric tests to assess whether there were any significant differences between baseline Likert responses and follow-up Likert responses for the overall cohort, and between and within major subgroups, including age and specialty.

JK and SS analyzed transcripts from the baseline interviews using ATLAS.ti software using deductive-inductive directed content analysis [17,18]. We developed a priori themes based on domains from Fishbein's integrated model of behavior change and concepts derived from literature on medical professionalism [19–25]. JK and SS coded transcripts independently, reviewing coding with CD and KH to identify discrepancies and emergent codes, until inter-coder consensus was reached. We applied the final code book to all 40 interview transcripts and themes were derived from the analysis. Additionally, JK and SS characterized participants into groups based on the degree of empowering and stigmatizing language that participants used when they described self-sourced medication abortion.

JK and SS applied the original code book to the follow-up interviews and performed content analysis focused on how participant perspectives had changed from the previous interview. We re-characterized the participants based on the language they used to describe self-sourced medication abortion and then compared that assignment to their previous designation from the initial interviews.

3. Results

Thirty-six of the original 40 participants responded to our follow-up survey. Table 1 shows the demographic data for these respondents. Participants practiced in a total of 23 states in five regions throughout the United States. We used the Guttmacher Institute's State Abortion Policy Landscape Report [26] to assign categories to the state where the participant practiced and found that these assignments correlated with participant's self-assessment of whether they worked in a state with restrictive or supportive abortion regulations.

3.1. Changes in clinic protocols for medication abortion

Clinics made significant changes in their initial assessments, medical treatments and follow-up protocols for medication abortion in the context of COVID-19. Table 2 reports the changes that participants observed at any of the clinics in which they worked. More than half of the participants reported that clinics increased their gestational age limits (52%), began telemedicine for follow-up (67%), and removed the requirement for Rh-testing for some or all patients (49%) in response to COVID-19.

3.2. COVID-19 catalyzed change by altering assessment of risk

Interviewed participants noted that their clinics had considered changing their protocols prior to COVID-19, given the strong evidence for decreasing clinical assessment. However, the COVID-19 pandemic catalyzed clinics to enact these changes. For example, a provider explained:

> COVID has changed a lot. I think it's helped us push into the modern age of telehealth quicker than we would have otherwise. It's finally gotten a lot of people to start really critically thinking about the data on how much of what we do is actually necessary, clinically for patient safety and outcomes, versus what have we just always done and is traditional. So, do we need that physical exam? Do we need those labs? Do we need that vital sign when, in order to get it, we have to put our patient and our staff at risk? [Midwest, restrictive state]

This provider further noted that it was helpful to have evidence already in place showing the safety of a medication abortion without laboratory and ultrasound assessment in order for clinics to quickly adhere to a new standard of care. When asked about why it took the pandemic to make this happen if the evidence was there prior, another provider explained how the pandemic re-aligned previous incentives:

> Health care is not patient-centered… [It] has always been provider-centered. And this was the first opportunity for us to like be forced to... I guess it aligned. Patient-centeredness aligned with provider-centeredness. Because we didn't want to get our staff sick. We didn't want to get sick ourselves. We didn't want our patients to get sick. So, like, we were all in this together to figure this out in a way… I'm very cynical about health care wanting to change. We don't want to change because of financial incentives. We don't want to change because of inertia. We don't want to change because we feel like providers should be the center of the universe and not patients. [East coast, supportive state]

In summary, as a provider from a Northwest, less restrictive state suggested, "COVID-19 greased the wheels" to institutionalize practices like a no-test medication abortion. While it took the COVID-19 pandemic to break the inertia of status quo, this provider hoped that clinics would not go "back to business as usual" after the pandemic.

3.3. Clinics responded to new consumer pressures

In the clinics that implemented no-test medication abortion, providers remarked on an increase in demand. In contrast, participants who worked at clinics in which medication abortion continued with the same requirements for in person testing did not see "the same avalanche of patients" requesting medication abortion. Respondents' experiences suggest that the clinics which changed their protocols to minimize in-clinic contact during the COVID-19 pandemic saw increased demand for medication abortion, while clinics that continued their standard in-clinic evaluations saw preferences for aspiration procedures.

3.4. Changes in provider perspectives

Figure 1 illustrates pre- and post-survey differences regarding respondents' agreement with statements about the necessity of evaluative steps of the standard in-clinic medication abortion process as well as a question about overall assessment of the safety of a medication abortion without clinician assistance (N = 36). Comparing the frequency of agreement to the statements at baseline and follow-up suggests that participants recognized a decreased need for in-clinic assessment and evaluation after COVID-19. Particularly, after COVID-19, fewer participants consider an ultrasound necessary before a medication abortion in order to confirm correct dating (decrease of 50% from 18 to nine respondents) or to confirm an intrauterine pregnancy (decrease of 61% from 18 respondents to seven). After COVID-19, only 2 participants believe an ultrasound is necessary to confirm completion of a termination. Moreover, only

Table 1
Demographic characteristics of physicians who provide abortions that completed both baseline survey and interview and follow-up survey about their changing attitudes towards de-medicalizing medication abortion (N = 36)

Participant Characteristic	n	%	Participant Characteristic (cont'd)	n	%
Age (Years)			**Specialty**		
20-35	17	47%	Family Medicine	28	78%
36-50	13	36%	OB/GYN	7	19%
51+	6	17%	Internal Medicine	1	3%
Gender			**Reproductive Health Fellowship**		
Male	5	14%	Family Medicine	7	19%
Female	30	83%	OB/GYN	4	11%
Genderqueer	1	3%	No fellowship	25	69%
Race/Ethnicity			**Years Providing Abortion Care**		
White, non-Hispanic	28	78%	0-10	23	64%
Black, non-Hispanic	0	0%	11-20	7	19%
Asian	6	17%	21+	6	17%
Hispanic/Latinx	2	6%	**Number of Medication Abortions Per Month**		
Multiracial	0	0%	0-10	17	47%
Religious Affiliation			11-20	9	25%
Affiliated	12	33%	21+	10	28%
Unaffiliated	24	67%	**Number of Procedural Abortions Per Month**		
Geographic Region			0-10	7	19%
Northeast	9	25%	11-20	8	22%
Midwest	7	19%	21+	21	58%
Southeast	4	11%	**Types of Institutions Where Providers**		
Southwest	5	14%	**Do Their Abortion Work**[a]		
West	11	31%	Academic	13	36%
Guttmacher Institute2020			Emergency Room	0	0%
State Abortion Policy Landscape (Corresponding to the State Where Providers Do Their Abortion Work)			Primary Care Clinic	8	22%
Hostile	15	42%	Planned Parenthood	19	53%
Neutral	4	11%	Other nationally-based clinic	3	8%
Supportive	17	47%	Other locally-based clinic	13	36%

[a] Fourteen participants do their abortion work at more than one type of institution.

Table 2
Changes in medication abortion protocols after March 2020, in response to COVID-19 (as reported by participants, N = 33).[a]

Changes to Protocols	N	%
Initial Assessment		
Telemedicine for intake visit	14	42%
Remote consent (by phone or online)	11	33%
No ultrasound for some	8	24%
No ultrasound for most or all	4	12.1%
No Rhesus factor labs up to eight weeks	12	36%
No Rhesus factor labs at all	4	12%
No hemoglobin screening	14	42%
Gestational age limit increased[b]	17	52%
Medication Delivery		
Medication pickup	4	12%
Medications provided via mail[c]	2	6%
Follow-up		
Telemedicine for follow-up	22	67%

[a] Participants' responses were not specific to one site, but reflective of changes implemented at any of the institutions where they do abortion work. Three participants reported that their practice locations did not provide medication abortion services at the time of survey and were removed from this table.

[b] Gestational age limits increased from 10-weeks gestational age to 12-weeks at one participant's practice site(s), and from 10-weeks to 11-weeks gestation at all other participants' practice sites.

[c] Prior to a judge's ruling in July 2020, medications could only be provided via mail if the recipient was a participant of the TelAbortion Study, a research project evaluating the use of telemedicine for providing medication abortion.

3 still agree that it is important to know a person's Rhesus status or their hemoglobin level prior to prescribing medications for an abortion, a sharp decline from baseline survey where over one-third believed that blood type and hemoglobin level were important laboratory confirmation steps for a medication abortion.

3.5. Structural-political factors impacted abortion provider capacity to shift their individual beliefs and practices

In the baseline interviews (N = 40), we found that half of the participants were confident that self-sourced medication abortion was safe, effective and empowering (n = 20). A little less than half were more ambivalent and fell short of fully embracing self-sourced medication abortion even though they agreed that self-sourced medication abortion was a safe and valid option (n = 18). In this group, many of the providers imagined that most people seeking self-sourced medication abortion were desperate. The final group of people felt that self-sourced medication abortion was not safe (n = 2), and that in-clinic evaluation was necessary.

In our follow-up interviews, we interviewed 3 people that were originally categorized into the pro- self-sourced medication abortion category, 6 in the ambivalent category and one from the unsupportive category. All of the participants who expressed unquestioned support for self-sourced medication abortion in the baseline interviews were still supportive of self-sourced medication abortion and the changes in response to COVID-19 only confirmed their previous beliefs. Of those who were originally categorized as ambivalent, 5 of the 6 participants shifted the language that they used to describe self-sourced medication abortion to more supportive, indicating that they now not only believed it to be safe and effective, but an empowering, option. A provider described how seeing the no-test medication abortion in practice changed her views on self-sourced medication abortion:

[The pandemic] has really made me much more willing to embrace self-administered medical abortions... at the family planning clinic where I work, we're really doing pretty much no-touch abortions. We're trusting that women know their last period and we have them either drive up and pick up their meds or we put them in the mail to them. It really has just made me more thoughtful about the whole process and how it really is okay for women to

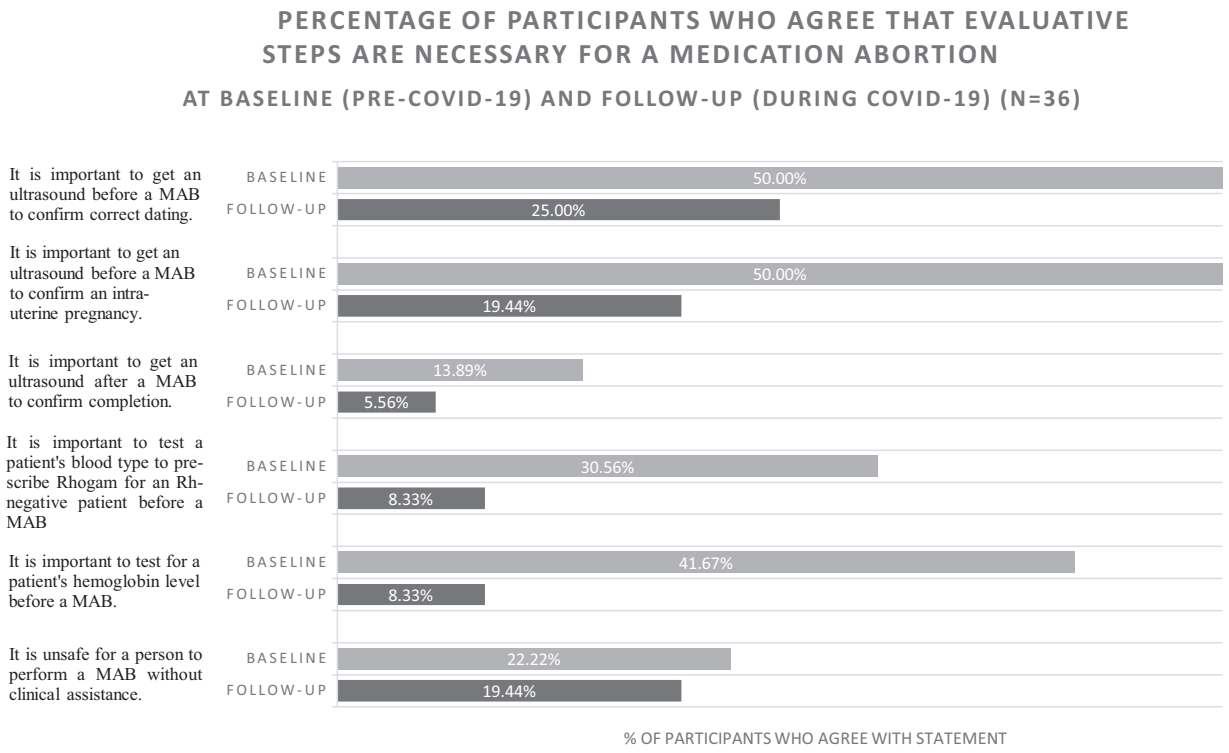

Figure. 1. Percentage of participants who agree that evaluative steps are necessary for a medication abortion at baseline (pre-COVID-19) and follow-up (during COVID-19; N = 36).

be more independent about it… The last time we talked, I was worried about people not having the emotional support that they need, or not getting quality meds if they just did it online. I was worried about the emotional support piece of it. But, I think most women have that and if they don't, they know they can get it from us… I guess [not getting quality meds] still concerns me a little bit, but I'm much more comfortable with this new process. I've done a bunch of meds by mail for women in New York City who didn't want to go out [due to COVID], and it's been great…. So, I'm a whole lot more comfortable with giving women that flexibility and kind of giving them back that power. [Rural New England, supportive state][2]

Interestingly, the provider from the southwest whose clinic did not change its medication abortion protocols clarified a different relationship between clinic protocols and her perspective about self-sourced medication abortion. While her support for self-sourced medication abortion shifted from the ambivalent to the supportive category, she was resolute that clinics should not change their standards of care to include no-test medication abortion. As she argued, "So, I think there are plenty of conditions that can be reasonably well cared for without presenting to a medical facility. But, I think if someone does come into a medical facility, they should be able to trust that they are getting the gold-standard care. And, for me, that means being absolutely certain of everything." This was the only provider in both the initial and follow-up interviews who expressed this inverse relationship between support for self-sourced medication abortion and continued labs and assessment for in-clinic protocols.

The two participants that did not support self-sourced medication abortion in the initial interviews, did not change their attitudes and remained unsupportive. Both of these participants were from states considered to have hostile abortion regulations. One of the participants explained that she did not have the option to be flexible or innovative given the politics of the state where she practices medicine. In her follow-up interview, she recognized that there were clinics that were changing their protocols in response to COVID-19 and good medical evidence; however, she stated that it was not possible in her work environment given the legal requirements in her state for a waiting period, viewing the fetus on ultrasound, and other limitations. Moreover, she reinforced her concern for the outliers that she had talked about at length in her initial interview—the small number of people whose medication abortion will not be effective or who will have an ectopic pregnancy. In sum, she repeated that she it was not her responsibility as an individual provider to be the "decision-maker" regarding public health.

4. Discussion

As part of a larger multi-methods study that aims to understand physician perspectives about self-sourced medication abortion, we focused this analysis on physician views about de-medicalizing medication abortion in the context of the COVID-19 pandemic. Overall, we found substantive changes in clinic protocols as a result of COVID-19, with interviews indicating that these changes were related to altered assessments of risk and new pressure from consumers. Our surveys and interviews revealed shifts in provider attitudes toward supporting de-medicalized models of medication abortion and self-sourced medication abortion, with structural-political factors impacting abortion provider capacity to

[2] This participant describes mailing mifepristone to patients in New York City. In July 2020, US district Judge Theodore Chuang suspended the FDA rule which requires people to have an in-person doctor's visit before undergoing medication abortion during the COVID-19 pandemic. In January 2021, after collection of data for this study, the US Supreme Court granted a request by former President Donald Trump's administration to lift the federal judge's July order and reinstated the requirement that people visit a hospital or clinic to obtain mifepristone, asking the FDA to make a decision. On April 12, 2021, the FDA sent a letter to ACOG stating they did not intend to enforce the REMS in person requirements for the remainder of the COVID-19 public health emergency.

achieve this shift in their beliefs and practices. These data confirm that the COVID-19 pandemic has played a substantial role in changing clinic practices in the United States and in influencing individual physician's attitudes toward supporting self-sourced medication abortion by responding to new clinic pressures and shifting physician perspectives around risk. Changes made to clinical protocols were remarkable given the considerable stress experienced by the healthcare workforce, particularly at clinical sites that continued to provide abortion care during this time [27]. According to our informants, the COVID-19 pandemic did not completely alter the landscape, but rather, formalized protocols that allowed for a more de-medicalized medication abortion process. These changes had been previously supported by the evidence but had not been put in place due to the lack of incentives previous to the COVID-19 pandemic. The COVID-19 pandemic served as the catalyst to enact protocol changes.

As providers witnessed clinics adopting no-test medication abortion, they found themselves re-assessing the need for in-clinic assessment and they expressed more support for self-sourced medication abortion. Most of the participants in this sample shifted their support from ambivalence to full support of self-sourced medication abortion in the context of the COVID-19 pandemic. Importantly, providers altered the language they used to describe self-sourced medication abortion as an empowering, and not a desperate, option. This shift in language is crucial for decreasing stigma and for supporting care centered around the person's choices and risk assessment and not the provider's perspective. The participants who did not change their views were located in states with more restrictive abortion laws and regulations that limited clinics' ability to change protocols. These physicians were unable to change their practices to aline with the evidence-based standards of care enacted in other settings.

We were fortuitous to have a sample that had been previously investigated so that we could quickly survey and interview the participants for changing attitudes and compare these to their previous responses. However, we were limited in our capacity to obtain a larger sample size due to our desire to rapidly assess ongoing changes on both the systems and individual level. Another limitation is that the baseline interview could have been, and likely was, a catalyst for changing perspectives. We recruited participants from all parts of the United States and we oversampled California providers as they also represent a plurality of abortion providers in the United States so we believe this study is generalizable to physicians practicing abortions across the United States. However, this study is likely not transferrable to other parts of the world where no-test medication abortion and self-sourced medication abortion are more common. The research team included people who are and are not abortion providers and who are at different stages of comfortability with de-medicalizing medication abortion. This allowed us to understand the specifics of clinical care from a variety of perspectives. Having an independent coder who did not perform any of the interviews or personally know any of the participants ensured that the data analysis was trustworthy and credible.

This study demonstrates a shift in clinical care delivery and provider perception as a response to unusual circumstances. While the stress of the COVID-19 pandemic on the US medical system created the potential to decrease patient-centeredness, clinics that provide abortion care responded by becoming more patient-centered. Specifically, by decreasing the number of required in-person visits and assessments, clinics met patients' needs and improved access to abortion care. This step toward patient-centered goals by altering models of care is consistent with a broader movement that recognizes the importance of self-care and community-based models for improving access to care [11,28]. Such models can be particularly helpful in areas with low access to clinical care and in which communities have been marginalized or previously harmed by the formal health care system.

Moreover, the shift in physician attitude toward supporting self-sourced medication abortion suggests the emergence of a new kind of sensibility, at least among abortion providers, which questions physician privilege. By expressing support of a more de-medicalized model of abortion care, these physicians are inverting traditional hierarchies of expertise. By shifting the locus of control from health care professionals to those who are choosing to manage their reproductive health with or without them, physicians can empower people and improve access to medication abortion. This validation not only decreases the stigma around self-sourced medication abortion but also has the potential to decrease stigma around abortion more generally by demonstrating that physicians trust that people can manage their own reproductive choices in safe and effective ways.

Authors contribution

Jennifer Karlin: conceptualization, methodology, interviews, formal analysis, data interpretation, writing original draft, editing, correspondence, funding acquisition; Shashi Sarnaik: software management, data curation, table and figure design, formal analysis, data interpretation, project administration, editing; Kelsey Holt: methodology, conceptualization, data interpretation, writing-review & editing; Christine Dehlendorf: conceptualization, methodology, funding acquisition, data interpretation, writing-review & editing; Carole Joffe: conceptualization, data interpretation, writing-review & editing; Jody Steinauer: conceptualization, data interpretation, writing-review & editing.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.contraception.2021.04.022.

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