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Original Research Article

Attitudes of US adults toward using telemedicine to prescribe medication abortion during COVID-19: A mixed methods study

Kathryn J. LaRoche, Kristen N. Jozkowski, Brandon L. Crawford, Katherine R. Haus

Indiana University Bloomington, School of Public Health, Bloomington IN, United States

Abstract

Objectives: We explored public opinion about using telemedicine to provide medication abortion during the COVID-19 pandemic in 2020. We also investigated the associations between socio-demographic characteristics and support for using telemedicine in this context and explored factors that influenced respondents’ attitudes on the topic.

Study design: In a nationally representative, web-based survey of US adults (n = 711), we asked open-and closed-ended questions about using telemedicine to prescribe medication abortion during COVID-19. We used multinomial logistic regression to assess the relationship between socio-demographic characteristics, endorsement of abortion labels, and political affiliation and support for telemedicine in this circumstance. Then, we conducted content and thematic analyses with the open-ended data to explore what influenced respondents’ opinions.

Results: Overall, 332 (44%) of respondents supported using telemedicine for medication abortion during the pandemic; 237 (35%) opposed and 138 (21%) were unsure. Respondents who identified as prochoice were more likely to support using telemedicine for abortion during the pandemic than those who identified as prolife were to oppose it in this context (RRR 2.95; 95% CI 1.31–6.64). Via our content and thematic analysis, we identified that concerns about safety, the legitimacy of telemedicine, and the belief that abortion should occur as early in the pregnancy as possible influenced respondents’ beliefs about using telemedicine for medication abortion.

Conclusions: More respondents supported using telemedicine for medication abortion during COVID-19 than opposed it. Among respondents who expressed support, most thought that medication abortion was safe and that telemedicine was equivalent to the in-person provision of care.

Implications: There appears to be support among US adults for the provision of medication abortion via telemedicine during COVID-19. Policymakers may consider public sentiment as well as clinical evidence when considering legislation about abortion.
The role of both federal courts and the Supreme Court in blocking and reinstating components of the mifepristone REMS suggest these regulations are based on factors beyond medical evidence. Supreme Court decisions are sometimes influenced by broader public opinion on issues, which is important for maintaining public confidence in the court and its decisions [9,10]. Yet, we do not know how US adults feel about the provision of medication abortion through telemedicine. This information may help policymakers better understand whether there is public support for regulations like the REMS/ETASU and specific telemedicine bans for mifepristone.

Using an explanatory mixed-methods design, we assessed US adults' attitudes toward the use of telemedicine to provide medication abortion during the COVID-19 pandemic. Specifically, we quantitatively assessed correlates of attitudes toward telemedicine for medication abortion and then qualitatively assessed why respondents held these attitudes.

2. Material and methods

2.1. Data collection

We collected these data in October and November 2020 using Ipsos KnowledgePanel, a nationally representative, probability-based web panel (see [11] for more information about Ipsos’ KnowledgePanel). These data are part of a four-wave online longitudinal survey designed to examine abortion attitudes. Wave 1 of our survey was distributed to 1636 panelists and 919 completed the survey (response rate of 56.2%). The current study uses data from Wave 2 which was distributed to the 916 panelists who completed Wave 1; 711 completed Wave 2 (response rate of 77.6%). There were no significant differences between the Wave 1 and Wave 2 samples across gender, age, race and ethnicity, and political affiliation.

The KnowledgePanel is weighted to match the US benchmarks of gender, age, race/ethnicity, education, census region, household income, home ownership, metropolitan areas, and Hispanic origin. For Wave 2, a raking process was used to adjust the Wave 1 weights to represent the above-mentioned benchmarks. The original weights for Wave 1 served as the starting weights for Wave 2. The Institutional Review Board at Indiana University approved the study protocol.

2.2. Measures

2.2.1. Outcome variable

We introduced respondents to medication abortion and telemedicine by saying: “There are oral medications that can be used to end a pregnancy. With medical services during the coronavirus outbreak being limited, there was an increase in the use of telemedicine (doctor visits using the internet). However, use of telemedicine for abortion services is not legal in all states.”

Using a closed-ended question format, we asked “During times such as the coronavirus outbreak, do you think doctors should be able to prescribe oral medications for abortion using telemedicine?” Response options included yes, no, and unsure. We then prompted respondents to explain their close-ended response by asking “Please tell us why telemedicine [should be / should not be] available for abortion medication when there is an outbreak” or “Please tell us why you are unsure about prescribing abortion medication by telemedicine during an outbreak.”

2.2.2. Predictor variables

Respondents completed socio-demographic questions (see Table 1). Because of their strong association with general abortion attitudes [12,13], we also asked respondents when they thought life begins1 (see Table 1 for response options) and how they identify in terms of abortion in two different ways. First, we asked whether respondents consider themselves to be prochoice or pro-life [14] (i.e., abortion label). We recognize there is disagreement about the accuracy of these terms and that these labels overlook the nuance present in abortion attitudes [12,15,16]. Nevertheless, they are widely used and retain cultural salience across the US. Second, to capture complexity in abortion identity, all respondents were also asked two separate items: “To what degree do you identify as ‘prolife’ (‘prochoice’) in regard to abortion?” with slider options ranging from zero to six (six indicating strongest endorsement of the term). By asking about abortion labels in this way, the sliders capture nuance related to both the strength (i.e., how intensely respondents identify with these terms) and complexity (i.e., the possibility that people identify to some degree with both terms) respondents might feel regarding endorsement of these labels.

2.3. Quantitative analysis

From the 711 respondents comprising the full sample, 49 (6.89%) cases were missing data for the following variables: supporting the provision of medication abortion during the pandemic (n = 4, 0.6%), political affiliation (n = 3, 0.4%), abortion identity label (n = 3, 0.4%), prochoice slider (n = 6, 0.8%), prolife slider (n = 4, 0.6%), and when life begins (n = 35, 4.9%). Of the 35 missing cases for when life begins, 5 (14.3%) were true missing values and 30 (85.7%) were omitted because the respondents selected “upon feeling fetal movement” (n = 15) or “other” (n = 15). Respondents who provided these response options were omitted because it does not make sense to combine these response options with any of the other response option groups and these two groups (i.e., upon feeling fetal movement; other) were not large enough to stand on their own in the model. Multiple imputation was used to account for missing data for the “when the life begins” question resulting in an analytic sample of 699 respondents. We used multinomial logistic regression to estimate the odds that an individual would support, oppose, or be unsure regarding the use of telemedicine for abortion. Opposition to using telemedicine for abortion during the pandemic was the base outcome, with coefficients representing the relative risk ratios for supporting or being unsure of using telemedicine for abortion compared with opposing it. Guided by previous research [17], our predictor variables included socio-demographics, respondents’ perceptions of when life begins, abortion labels, and abortion sliders. To further assess how complexity in people’s abortion identity may relate to attitudes toward use of telemedicine for medication abortion, we examined how people concurrently responded to the abortion labels and abortion slider questions with respect to our outcome variable. Table 3 shows the probability of endorsing an assumed ideological position (prochoice = supporting telemedicine for abortion; prolife = opposing telemedicine for abortion) at high (6) and low (0) scores for the prochoice and prolife sliders. We organized the columns by corresponding and dissonant scores. We completed all quantitative analyses in Stata 16. Because the data are weighted, all analyses were completed using the svy modules within Stata.

2.4. Qualitative analysis

We included all responses that were intelligible and relevant to the question, resulting in 551 responses for analysis (535 English, 16 Spanish). We carried out content and thematic analysis

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1 Respondents were not provided information about the response categories associated with the item assessing when life begins because this item was intended to assess perceptions, which may not necessarily be accurate.
Table 1
Sociodemographic characteristics and abortion attitudes of a representative sample in the United States in 2020 (N = 711)

|                        | Unweighted n | Weighted % of Mean |
|------------------------|--------------|-------------------|
| **Gender**             |              |                   |
| Men                    | 371          | 48.5              |
| Women                  | 340          | 51.5              |
| **Race/Ethnicity**     |              |                   |
| White                  | 523          | 62.9              |
| Hispanic               | 67           | 16.5              |
| Black                  | 65           | 12                |
| Other race/ethnicity   | 56           | 8.6               |
| **Age**                |              |                   |
| 18–25                  | 248          | 38                |
| 26–35                  | 248          | 38                |
| 36–45                  | 170          | 23.9              |
| **Region**             |              |                   |
| Northeast              | 121          | 17.3              |
| Midwest                | 172          | 20.8              |
| South                  | 248          | 38                |
| West                   | 170          | 23.9              |
| **Political affiliation** |           |                   |
| Republican             | 221          | 31.8              |
| Democrat               | 237          | 36.5              |
| Independent/Other      | 182          | 21                |
| No preference          | 68           | 10.7              |
| **Abortion identity label** |         |                   |
| Prolife                | 266          | 39.6              |
| Prochoice              | 365          | 49.4              |
| Unsure                 | 77           | 11.1              |
| **Pro-life slider (range 0–6)** | 3.34     |                   |
| **Pro-choice slider (range 0–6)** | 3.23     |                   |
| **Life begins** f      |              |                   |
| Implantation or earlier| 275          | 41.8              |
| Detection of fetal heartbeat | 224     | 34                |
| Viability              | 88           | 12.4              |
| Third trimester or later| 85          | 11.9              |
| Support for telemedicine provision of medication abortion during the pandemic g| 237 | 34.9 |
| No                     | 237          | 34.9              |
| Unsure                 | 138          | 21.3              |
| Yes                    | 332          | 43.8              |

* Missing data (n = 3, 0.4%).
* Missing data (n = 3, 0.4%).
* Missing data (n = 6, 0.8%).
* Missing data (n = 4, 0.6%).
* Missing data (n = 5, 0.7%).
* Omitted data (n = 30, 4.2%).
* Missing data (n = 4, 0.6%).

Table 2
Support among US adults for the use of telemedicine for abortion during the COVID-19 pandemic in 2020 across abortion identity labels

|                        | Prolife | Prochoice | Unsure | Total |
|------------------------|---------|-----------|--------|-------|
| n                      | %       | n         | %      | N     |
| Yes                    | 33      | 11.3      | 255    | 74.3  | 313   | 43.9 |
| No                     | 180     | 71.3      | 29     | 8.6   | 224   | 35.3 |
| Unsure                 | 41      | 17.4      | 53     | 17.1  | 125   | 18.6 |
| Total                  | 254     | 100.0     | 337    | 100.0 | 662   | 100.0|

3. Results

In the sample, 340 (51.5%) identified as women, 523 (63.6%) as white, and the mean age was 48.3 years (IQR = 28); see Table 1. In the sample, 332 (43.8%) of respondents supported the use of telemedicine for medication abortion during the pandemic whereas 237 (34.9%) opposed it and 138 (21.3%) were unsure. Support for the use of telemedicine for medication abortion during the pandemic is broken down across abortion identity labels in Table 2.

3.1. Multinomial logistic regression

Overall, we found that differences in support for the provision of telemedicine for abortion during the COVID-19 pandemic were mostly related to abortion identity labels. The complete multino-
mial estimates regarding stance on the use of telemedicine for abortion during the COVID-19 pandemic can be found in Table 3.

There were no significant differences across gender, race/ethnicity, or age in support for using telemedicine for medication abortion during the pandemic. For political affiliation, those who indicated no preference were more likely than Republicans to be unsure regarding use of telemedicine for abortion versus those who opposed it (RRR 3.98; 95% CI 1.47–10.79). The likelihood of supporting versus opposing telemedicine for abortion was significantly different across responses for when life begins. Specifically, those who indicated life begins at the detection of a fetal heartbeat (RRR 2.36; 95% CI 1.28–4.37) or viability (RRR 3.15; 95% CI 1.02–9.69) were more likely than those who think life begins at implantation or earlier to support telemedicine abortion than oppose it.

There were significant differences across abortion labels. Specifically, the likelihood of being unsure for supporting telemedicine for abortion, versus opposing it, were significantly higher among those who identified as prochoice (unsure: RRR 2.95; 95% CI 1.31–6.64; support: RRR 5.20; 95% CI 2.45–11.03) or unsure with regard to abortion identity label (unsure: RRR 4.78; 95% CI 2.02–11.30; support: RRR 2.620; 95% CI 1.05–6.55) than those who identify as prolife. Additionally, the prochoice slider was significant in both models–higher scores were associated with a higher likelihood of being unsure or supporting telemedicine, versus opposing it. The likelihood of supporting telemedicine for abortion, versus opposing it, significantly decreased as the prolife slider scores increased. However, the likelihood of being unsure versus opposing the use of telemedicine for abortion were not significantly different as slider scores increased.

Figure 1 shows the predicted probabilities for supporting, opposing, or being unsure regarding use of telemedicine for abortion across abortion labels and slider scores. This figure helps to examine the probability of endorsing the assumed ideological positions of a group (prolife = oppose; prochoice = support) at the extreme ends of the corresponding (prolife label and prolife slider; prochoice label and prochoice slider) and dissonant (prolife label and prochoice slider; prochoice label and prolife slider) slider scores. High dissonant scores represent individuals with a complex abortion identity.

Table 3

| Gender (ref = men)               | Unsure vs Oppose RRR (95% CI) | Support vs Oppose RRR (95% CI) |
|----------------------------------|-----------------------------|-------------------------------|
| Women                            | 0.93 (0.54–1.62)            | 1.06 (0.61–1.86)              |
| Race/ethnicity (ref = white)     |                             |                               |
| Hispanic                         | 1.01 (0.43–2.41)            | 0.83 (0.36–1.94)              |
| Black                            | 1.84 (0.74–4.60)            | 0.67 (0.26–1.77)              |
| Other race/ethnicity             | 1.01 (0.37–2.71)            | 0.51 (0.17–1.51)              |
| Age                              | 0.99 (0.98–1.01)            | 1.08 (0.98–1.01)              |
| Political affiliation (ref = Republican) |                     |                               |
| Democrat                         | 1.17 (0.55–2.50)            | 1.48 (0.72–3.03)              |
| Independent/Other                | 1.4 (0.70–2.80)             | 2.08 (1.04–4.14)              |
| No preference                    | 3.98 (1.47–10.79)           | 2.75 (0.83–9.13)              |
| Life begins (ref = implantation or earlier) |                   |                               |
| Detection of fetal heartbeat    | 1.58 (0.86–2.93)            | 2.36 (1.28–4.37)              |
| Viability                        | 0.58 (0.14–2.40)            | 3.15 (1.02–9.69)              |
| Third trimester or later         | 1.6 (0.31–8.13)             | 3.85 (0.85–17.44)             |
| Abortion identity (ref = Pro-life) |                     |                               |
| Prochoice                        | 2.95 (1.31–6.64)            | 5.20 (2.45–11.03)             |
| Unsure                           | 4.78 (2.02–11.30)           | 2.62 (1.05–6.55)              |
| Prolife slider (0–6)             | 0.9 (0.73–1.11)             | 0.75 (0.61–0.93)              |
| Prochoice slider (0–6)           | 1.29 (1.07–1.56)            | 1.56 (1.27–1.90)              |

A multinomial logistic regression model was used to test for significant differences in levels of support for the use of telemedicine for abortion during the COVID-19 pandemic.

For the prochoice and Pro-life sliders, a higher score represents a stronger corresponding sentiment.

3.2. Content and thematic analysis

We found that respondents’ feelings about using telemedicine for medication abortion during the pandemic were tied to perceptions of safety for the regimen and service delivery strategy, feelings about telemedicine in general, concerns about timing of abortion care, and the belief that abortion should take place as early as possible.
3.2.1. Perceptions of safety are closely tied with attitudes about using telemedicine for abortion

Respondents (n = 120, 22%) made comments about the perceived safety of providing medication abortion via telemedicine. This was true of those respondents who supported, opposed, or were unsure. People who were in favor of telemedicine made comments about how they thought telemedicine and/or medication abortion was a safe option. One woman explained “I believe abortion medication has a low risk for serious side effects. Due to this low risk a healthcare provider should be able to make the decision over telemedicine whether it is appropriate for a patient.” Conversely, those who were opposed to or unsure about telemedicine brought up safety as a point of concern. Another woman who was unsure on the closed-ended item noted, “I would be worried about the safety of these medications”.

3.2.2. Respondents had apprehension about the legitimacy of telemedicine

Respondents' opinions were also closely tied to their perceptions of telemedicine in general; just over a third (n = 199, 36%) of respondents mentioned telemedicine in their response. For example, many respondents who expressed support for prescribing medication abortion this way described telemedicine as equivalent to the in-person provision of care. One man said, “It is the same doctor and the same patient. They just are not meeting in person.” Another man added, “[Telemedicine] should be available at all times, outbreak or not.”

However, among respondents who did not support telemedicine for abortion, some conceptualized the modality as less legitimate compared with in-person care. Of those who mentioned telemedicine, 85 (43%) expressed that it was inferior. One man said, “The doctor cannot realistically gain enough information from a phone call to be sure that his actions are correct.”

Other respondents commented that telemedicine was inappropriate for providing abortion specifically (n = 46, 8%). These respondents discussed feeling that the seriousness of abortion was incongruous with what they thought was the casual and insufficient nature of telemedicine. One woman explained, “Because having an abortion is a very difficult and extremely important decision, I believe a woman should have in-person (and extensive) counseling from her doctor regarding this choice”.

Ten respondents (2%) expressed thinking telemedicine would make abortion “too easy” to get, while a small proportion raised concerns about the potential for misusing the medications through telemedicine (n = 24, 5%). Specifically, some respondents were concerned about the possibility of patients obtaining medication for someone else. One woman said, “Because we [can’t] tell the truth over telemedicine … It could be a scam sometimes.” Another woman expanded on this idea by saying, “Because you [don’t] actually know if the person you are talking to is really [pregnant]. She may be lying and getting the medication for someone else.”

3.3. Respondents felt that abortion should happen as early as possible

Just over one in ten respondents who supported using telemedicine for abortion during COVID-19 explained that the time-sensitive nature of abortion influenced their opinion (n = 59, 11%). One woman said the service should be available and explained “Because time is of the essence … Abortion is time-sensitive; it cannot wait. The earlier it is done, the better.”

In general, respondents expressed a strong desire for abortion to occur as early in the pregnancy as possible and emphasized that telemedicine could facilitate patients accessing timely care. One man said that telemedicine “… would help to get the abortion in [an] amount of time that is suitable” while another woman noted that telemedicine could “… ensure abortions happen as EARLY in the pregnancy as possible”.

4. Discussion

We explored US adults' attitudes toward certain restrictions surrounding mifepristone that form a component of the REMS and
ETASU. We did not specifically mention the REMs in our items because these regulations are an opaque piece of healthcare policy that we anticipated would be challenging for respondents to interpret. Instead, we focused on the provision of medication abortion through telemedicine which – despite demonstrated safety and efficacy – is limited directly because of the REMs [2]. As the REMs has been increasingly featured in mainstream media through a series of court decisions, including a ruling in the Supreme Court [8], it is important to understand how the public feels about components that comprise these regulations.

Research about abortion attitudes in the US consistently finds that individual attitudes are highly contextual [21,22], and as such, identifying specific circumstances under which individuals express support for, or opposition to, abortion, is warranted. In our nationally representative sample of US adults, 44% of respondents reported favoring using telemedicine for medication abortion during the COVID-19 pandemic compared with 35% who opposed it. This finding builds on previous research that indicates US women support alternative models of medication abortion care that take place outside of a medical facility [23].

Some of our findings suggest that attitudes about providing medication abortion during COVID-19 are associated with different individual characteristics than found in prior research. Notably, identifying as Republican is often a strong predictor of having less supportive attitudes toward abortion [17,24], but we did not find this difference by political affiliation, only that those who indicated no preference for political affiliation were unsure about abortion for telemedicine. However, identifying as prochoice was more consistently associated with support for telemedicine abortion compared with prolife identity and opposition for telemedicine abortion. Additionally, our results suggest that disregarding respondents’ prochoice or prolife slider scores, those who identify as prochoice are more likely to endorse their group’s assumed ideological position regarding using telemedicine for abortion (i.e., being supportive of telemedicine for medication abortion). Put simply, some respondents who identified as prolife supported or were unsure about using telemedicine for medication abortion during the pandemic, and it was more common for prolife respondents to transgress prolife norms than it was for prochoice individuals to go against prochoice ideals. This is inconsistent with previous research indicating that identifying as prolife is associated with a more unified attitude structure in response to questions about abortion compared with identifying as prochoice [25,26].

Our qualitative analyses illuminated why some respondents might feel differently about abortion in the narrow circumstance that we investigated compared with abortion attitudes in general. Although it was common for respondents to comment on multiple issues that influenced their opinion in the same response, we found that respondents’ perceptions of safety, feelings about the legitimacy of telemedicine, and belief that abortion should occur as early in pregnancy as possible contributed to the perceived acceptability about providing medication abortion through telemedicine. In general, US adults have low levels of knowledge about both the availability and safety of abortion [27–29], and misperceptions related to safety may contribute to support for nonevidence-based regulations [30]. Although we did not directly assess respondents’ knowledge of abortion, the ways in which our respondents discussed the safety and efficacy of medication abortion in the open-ended responses demonstrated a lack of knowledge, and as such align with this previous work.

In an examination of attitudes about medication abortion, Wilcox and Riches [13] found that the fact that mifepristone-misoprostol is used early in pregnancy increased support for the regimen. In our study, we did not mention the gestational age limit for the regimen, but even without this information, respondents spontaneously brought up issues about the timing of the pregnancy in their open-ended responses. It is possible that if we had stated that medication abortion can only be used in the first trimester, respondents’ might have responded differently to the closed-ended items. Few public opinion polls that assess abortion attitudes specify gestational age—this may contribute to individuals’ interpreting the same questions differently [31]. Future research should explore if and how specifying gestational age influences abortion attitudes, particularly in the context of telemedicine.

Respondents in our sample raised concerns about the legitimacy of telemedicine, and some mentioned the potential for misuse with mifepristone in particular. Yet, even before COVID-19, telemedicine has increasingly been used to provide various healthcare services across the US; this trend was intensified by the pandemic but the prominent use of telehealth is expected to continue [32]. Thus, it is possible that as telemedicine becomes more commonplace, the acceptability of using telehealth to provide medication abortion may shift. Additionally, respondents’ concern about potential misuse of medication abortion provided through telemedicine is notable but inconsistent with the way most medication abortion is currently provided [33–35], and the potential for misuse is not specific to abortifacients. Additional research exploring whether US adults raise similar concerns for other medications provided through telemedicine could be valuable.

It is important to note limitations associated with our study. First, our outcome variable specifically asks about the provision of medication abortion via telemedicine during the COVID-19 pandemic. Thus, people’s responses may reflect their general attitudes toward abortion, attitudes about prescribing medication abortion, attitudes toward telemedicine in general, or a conflation of all of these. Additionally, we were not able to follow up or get clarification on respondents’ open-ended responses. It is likely that respondents’ answers were influenced by myriad factors, including those they did not mention and/or we could not assess in this study. However, we have confidence in our interpretations of the data and that the themes we identified have import beyond the immediate bounds of the study.

There appears to be support among US adults for providing medication abortion via telemedicine during the COVID-19 pandemic, even among those with more complex abortion identities (i.e., those who were disinsonant in their abortion identity across the labels and sliders). Although many respondents indicated potential concerns about the safety of telehealth for abortion, many also mentioned the utility of offering abortion early and more efficiently via telemedicine. In addition to considering scientific evidence indicating medication abortion provided via telemedicine is safe and effective [33,35], policymakers may also consider that public sentiment tends to support use of telemedicine for abortion.

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