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Sociodemographic Factors Associated With Obstacles to Abortion Care: Findings From a Survey of Abortion Patients in Mexico City

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A B S T R A C T

Background: First-trimester abortion was legalized in Mexico City in 2007, and services are now provided at public and private sites throughout the city. However, little is known about the obstacles women face when seeking abortion care.
Methods: We surveyed women who obtained abortion services ($n = 398$) at three public sector facilities in Mexico City to identify the obstacles women faced when obtaining abortions. We used logistic regression to test whether obstacles varied by sociodemographic characteristics.
Results: Women with low education were more likely than high school–educated women to report difficulty getting appointments. Unmarried women and women with low education were more likely than married women or high school educated women to report difficulty getting time off work for appointments and arranging for transportation to the facility. Separated or divorced women were more likely than married women to report partner or other family member opposition to the abortion. Women who lived outside of Mexico City were more likely than Mexico City residents to report difficulty with transportation.
Conclusion: Education, marital status, and place of residence were associated with the obstacles women reported. Strategies to improve access to care should be targeted to the groups at highest risk of experiencing obstacles: Women with primary education or lower, single women, separated/divorced women, and those residing outside of Mexico City.

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Background

Unsafe abortion has historically been a significant public health problem in Mexico, contributing to high rates of maternal death and ill health (Juárez Palma, Singh, & Bankole, 2010; Juarez Singh, Garcia, & Diaz Olavarrieta, 2008). One factor underlying abortion-related mortality and morbidity in Mexico is restrictive legislation. Abortion is prohibited in most states of Mexico except for a few limited circumstances, such as cases of rape or when a woman's life or health is in danger (Grupo de Información en Reproducción Elegida [GIRE], 2010a). Thus, many pregnancy terminations in Mexico occur clandestinely in unsafe settings, often leading to complications and death (Juarez

et al. 2008; Juárez et al., 2010). Although women with economic means are able to pay for safe clandestine abortions, those who lack resources or knowledge are more likely to seek unsafe care and to suffer the negative consequences.

Mexico City passed groundbreaking legislation that legalized abortion in the first trimester of pregnancy in 2007. Abortion is legal on demand for the first 12 weeks' gestation and with some restrictions after that. The law also took steps to make new services accessible: The law stipulated that public sector hospitals throughout Mexico City provide abortion free of charge for residents and on sliding-fee scales for women from other states (Madrazo, 2009; Sánchez-Fuentes, Paine, & Elliott-Buettner, 2008). Abortion services are currently provided at 17 public sector sites; women can also obtain abortions in the private sector for a fee. More than 55,000 legal abortions have been performed in the public sector since the program began in 2007 (GIRE, 2010b).

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This policy is an important step in reducing abortion-related mortality and morbidity in Mexico, but significant reductions will only be achieved if the new legal services are accessible to women. Little is known about the obstacles women seeking abortion services face.

We undertook this exploratory study to assess obstacles to abortion care reported by women who used public sector abortion services in Mexico City. We tested whether obstacles reported varied by women's sociodemographic characteristics, hypothesizing that certain groups of women, such as out-of-state residents and younger and unmarried women, would face greater obstacles to care than others. Previous research has found that young and unmarried women are particularly vulnerable when seeking abortion care (Jejeebhoy, Kalyanwala, Zavier, Kumar, & Jha, 2010; Varga, 2002). Out-of-state residents may face greater obstacles because abortion is still highly restricted in their states and they have to travel farther to obtain abortion services than Mexico City residents do. Our research focuses on barriers experienced at the individual level, and the associations we found can usefully inform policy and service modifications.

Methods

We analyze data collected from a survey with a convenience sample of women who obtained abortion care in Mexico City between September and December 2009. Women were recruited for the study from 3 of the 13 public sector sites offering abortion care at the time (5 general hospitals, 7 maternity hospitals, and 1 primary health center). The sites in our study were chosen to reflect the three types of public sector sites that offer abortion services, including a general hospital, a maternity hospital, and a primary health center. We selected the highest-volume site that could participate in each category. For one category, the highest-volume site was unable to participate, so we selected the second-highest volume site. The sites included performed 46% of all public sector abortions from the beginning of the legal abortion program through the end of 2009 (Secretaría de Salud del Distrito Federal [SSDF], 2010).

All recruitment sites offer both surgical and medication abortion. Surgical procedures are typically performed with vacuum aspiration; relatively few are done with suction curettage. Medication abortions are performed using misoprostol alone, because mifepristone is not yet approved in Mexico. The type of abortion procedure women receive is generally determined by gestational age (SSDF, 2008).

To obtain appointments, women must first bring in several documents, including proof of residency and a government-issued identification card. Appointments are available on weekdays, and the waiting time depends on client load, varying from the same day to 15 days. Women traveling from out of state are given priority for appointments. Medication and surgical abortions both require two separate visits. For medication abortions, the second visit is a follow-up to confirm the success of the procedure. For surgical abortions, women receive counseling and complete preliminary laboratory work at the first visit; they are scheduled for a second visit, usually a day or two later, to have the abortion performed. All women must be accompanied on the day of the procedure by another adult who serves as a support person.

Women were eligible to participate in the study if they were 18 years old or older and were seeking first-trimester abortions. Women seeking surgical abortions were recruited for the study

the day of their procedures, and women seeking medication abortions were recruited the day of their follow-up visit because surveys had to be filled out after the abortion had been completed.

Women were first informed about the study by staff at the sites and, if interested, they were referred to one of the interviewers. One interviewer was stationed at each site for most days of the study period, and hours varied by site. The study interviewers met with women individually after their appointments in private spaces, explained the purpose of the study, obtained women's verbal consent if they wished to participate, and then administered a structured survey that took 20 minutes to complete. Participation was anonymous, and all women received a $10 gift card as compensation. The study protocol was approved by the Committee on Human Research at the University of California, San Francisco, and by the Mexico City Ministry of Health.

The sample size for the study was determined so that, with 80% power, the study could detect an expected difference of 15 percentage points in overall ratings of care for the primary health center versus either of the hospitals, because the primary health center is typically less crowded. We determined we would need a sample of 134 women per recruitment site.

The survey questions assessed women's experiences obtaining abortion care, their views on the quality of the services, and their sociodemographic characteristics. The outcome measure was whether women experienced obstacles in obtaining abortions. We conceptualized obstacles as a multidimensional construct, as recommended in the literature (Bertrand, Hardee, Magnani, & Angle, 1995). Our measures assessed four potential obstacles in three domains: 1) Getting an appointment (administrative domain), 2) finding transportation to the facility (geographic domain), 3) getting time off work for their appointment(s) (psychosocial domain), and 4) partner or other family member opposition to the abortion (psychosocial domain). We also created a summary measure of the total number of obstacles. Few women reported more than two obstacles, so this measure was coded as no obstacles, one obstacle, or two or more obstacles. The questions we used to measure obstacles were adapted from previous studies (Drey et al., 2006; Picker Institute, 1999).

The independent variables were measures of women's sociodemographic characteristics and the site of care. The sociodemographic characteristics included age (years), marital status (single, married or in consensual union, or separated or divorced),[1] parity (0, 1, or 2 or more), current place of residence (Mexico City or other Mexican state), and education (primary or less, middle school, high school, or university or higher). The site of care was coded as general hospital, maternity hospital, or primary health center.

All data were first entered into an Epi-Info Database, cleaned, and then transferred to Stata (version 9.2; StataCorp, College Station, TX) for analysis. We carried out a descriptive analysis to estimate the proportion of women reporting each obstacle. We then estimated bivariate associations between women's sociodemographic characteristics, the site of care, and each of the obstacles using chi-square tests. We estimated multiple logistic regression models for each obstacle, which included all of the independent measures except parity. We excluded parity from

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[1] Two women who reported being widowed were excluded from the analysis because two was too few to obtain reliable estimates of the obstacles they faced. We considered it inappropriate to group them with other marital status groups because the nature of the obstacles they faced might be different.

these models because it was collinear with marital status and marital status had stronger associations with the outcomes. We also estimated a multivariable ordinal logistic regression model for the summary obstacle measure, which was on an ordinal scale. The multivariable ordinal regression included the same independent measures as were included in the multiple logistic regression models. We tested whether the assumption of proportional odds ratios (ORs) was valid for the multivariable ordinal regression model using the Brant test (Long & Freese, 2006). We chose reference groups for the models based on our hypotheses about which groups would have increased risks of experiencing obstacles. We report adjusted ORs, 95% confidence intervals, and p values as measures of association.

Results

Study interviewers invited 597 women to participate, and 402 agreed to take part, for a participation rate of 67%; we did not track reasons for refusal. The sample used for analysis included women who provided complete data on all of the outcomes and independent variables ($n = 398$). The sociodemographic characteristics of participants are shown in Table 1. The mean age was 25.5 years, more than half were single, and 40% had less than a high school education. The majority resided in Mexico City (71%); 29% resided in other states.

The obstacle most frequently reported was difficulty getting time off work, which was reported by 26% of participants. The next most frequently reported obstacle was partner or other family member opposition to the abortion, reported by 19%. Sixteen percent reported having difficulty finding transportation to the facility, and 16% reported that getting appointments had been difficult. Forty-two percent of respondents reported no obstacles, 42% reported one obstacle, and 16% reported two or more obstacles.

Table 2 shows the adjusted associations between women's sociodemographic characteristics and each obstacle from the multiple logistic regression models. The only variable associated with difficulty in getting appointments was education. Women with a primary level of education or lower were more likely to

report difficulty getting appointments than were women with a high school education (OR, 4.1; $p < .01$).

Several variables were associated with difficulty finding transportation, including education, marital status, and place of residence. Women with a primary level of education or lower were more likely than women with a high school education to report difficulty finding transportation (OR, 3.1; $p < .05$). Women who were single and those who were separated or divorced had greater difficulty finding transportation than did women who were married (ORs, 2.8 and 3.7, with $p < .01$ and $p < 0.05$, respectively). Those who resided outside of Mexico City were also more likely to report difficulty finding transportation than were women who lived in Mexico City (OR, 2.8; $p < .01$).

Variables associated with difficulty getting time off work were marital status and education. Women who were single and those who were separated or divorced were more likely to report difficulty getting time off work than were women who were married (ORs, 2.5 and 2.9, with $p < .01$ and $p < .05$, respectively). Women who had a middle school education were less likely to report this difficulty than were women with a high school education (OR, 0.4; $p < .01$).

The only characteristic associated with reporting partner or other family member opposition to the abortion was marital status. Women who were separated or divorced were more likely to report partner or other family member opposition than were women who were married (OR, 3.5; $p < .05$).

Table 3 shows the results of the multivariable ordinal logistic regression model for the total number of obstacles. Education and marital status were both significant. Women with a primary level of education or lower were more likely to report a higher number of obstacles than were women with a high school education (OR, 2.1; $p < .05$). Women who were single and those who were separated or divorced had an increased odds of reporting a higher number of obstacles than did women who were married (ORs, 2.1 and 3.4, with $p < .01$ and $p < .01$, respectively). The Brant test statistic for this model was not significant, indicating that assuming proportional ORs in this model was acceptable.

Discussion

We found that education, marital status, and place of residence were associated with women's reports of obstacles to abortion care. Unmarried women and women with primary education or less had a higher risk for two or more obstacles and for reporting more obstacles overall on the summary measure, suggesting that these groups face a greater number of obstacles to care and that these obstacles occur in multiple domains, for example, geographic and psychosocial domains.

Out-of-state residents, by contrast, had a higher risk for just one obstacle: Difficulty arranging transportation. This finding should be interpreted with caution, however; out-of-state residents who were successful in obtaining abortions in Mexico City may be a particularly determined group of women, and this may be a reason they did not report more obstacles. It could be that other out-of-state residents *do* experience more obstacles to care, and some may never even reach a provider as a result. More research on the experience of out-of-state residents seeking abortions in Mexico City is needed, including studies that recruit women from community settings rather than health facilities. We did not assess the perceived severity of the obstacles, so we are unable to compare whether this obstacle may have been more severe for out-of-state residents, who may have needed to

Table 1
Sociodemographic Characteristics of Participants, Abortion Patient Survey, Mexico City, 2009 ($n = 398$)

Characteristic	
Age, mean (SD)	25.5 (6.0)
Education, n (%)	
Primary or lower	42 (11)
Middle school	116 (29)
High school	152 (38)
University or higher	88 (22)
Marital status, n (%)	
Single	210 (53)
Married or in consensual union	168 (42)
Separated or divorced	20 (5)
Current place of residence, n (%)	
Mexico City	282 (71)
Outside of Mexico City	116 (29)
Parity, n (%)	
0	171 (43)
1	99 (25)
≥2	128 (32)
Site of care, n (%)	
General hospital	133 (33)
Maternity hospital	131 (33)
Primary health center	134 (34)

Table 2
Multiple Logistic Regression Results for Self-Reported Obstacles to Obtaining Abortion Care, by Sociodemographic Characteristics, Abortion Patient Survey, Mexico City, 2009

	Odds Ratios (95% CI) Difficulty Getting an Appointment at the Care Site (n = 398)	Odds Ratios (95% CI) Difficulty Finding a Way to Get to the Hospital or Clinic (n = 398)	Odds Ratios (95% CI) Difficulty Getting Time Off From Work for Appointment(s) (n = 398)	Odds Ratios (95% CI) Partner or Other Family Member Was Opposed to the Abortion (n = 398)
Age (in yrs)	1.0 (0.9–1.0)	1.0 (1.0–1.1)	1.0 (1.0–1.1)	1.0 (0.9–1.0)
Education				
Primary or lower	**4.1 (1.8–9.5)**[**]	**3.1 (1.2–7.5)**[*]	0.5 (0.2–1.2)	1.6 (0.7–3.8)
Middle school	1.0 (0.5–2.1)	1.1 (0.5–2.4)	**0.4 (0.2–0.8)**[**]	1.3 (0.7–2.4)
High school (referent)	1.00	1.00	1.00	1.00
University or higher	1.2 (0.5–2.5)	1.1 (0.5–2.4)	0.6 (0.4–1.2)	0.8 (0.4–1.6)
Marital status				
Single	0.9 (0.5–1.6)	**2.8 (1.4–5.5)**[**]	**2.5 (1.4–4.3)**[**]	1.5 (0.8–2.7)
Married/consensual union (referent)	1.00	1.00	1.00	1.00
Separated/divorced	0.3 (0.0–2.3)	**3.7 (1.1–12.4)**[*]	**2.9 (1.0–8.3)**[*]	**3.5 (1.3–9.6)**[*]
Current residence				
Mexico City (referent)	1.00	1.00	1.00	1.00
Outside of Mexico City	1.1 (0.6–2.0)	**2.8 (1.5–5.2)**[**]	0.9 (0.5–1.6)	1.0 (0.6–1.8)
Site of care				
General hospital (referent)	1.00	1.00	1.00	1.00
Maternity hospital	1.2 (0.6–2.5)	0.5 (0.2–1.0)	1.0 (0.6–1.8)	0.7 (0.4–1.3)
Primary health center	1.0 (0.5–2.0)	1.2 (0.6–2.3)	0.8 (0.4–1.4)	0.9 (0.5–1.6)

Note: Bolded numbers are significant at the $p < .05$ level.
Abbreviation: CI, confidence interval.
[*] $p < .05$.
[**] $p < .01$.

arrange transportation across multiple legs of a long trip and also arrange for an overnight stay in Mexico City to arrive on time, compared with others.

That women who had primary education or less were more likely to report difficulty getting appointments suggests that some aspect of the appointment-making process is difficult for them. Previous research in other settings has found that patients with low levels of literacy have difficulties using the health care system (Wilson, 2003). It may be worthwhile to review the appointment procedures and to investigate which aspects of the appointment process are perceived as difficult by less-educated women.

Table 3
Multivariable Ordinal Logistic Regression Results for Reporting Higher Number of Obstacles, by Sociodemographic Characteristics, Abortion Patient Survey, Mexico City, 2009

	Odds Ratios (95% CI) (n = 398)
Age (in yrs)	1.0 (1.0–1.0)
Education	
Primary or lower	**2.1 (1.1–4.0)**[*]
Middle school	0.8 (0.5–1.2)
High school (referent)	1.00
University or higher	0.8 (0.5–1.3)
Marital status	
Single	**2.1 (1.4–3.2)**[**]
Married/consensual union (referent)	1.00
Separated/divorced	**3.4 (1.4–8.6)**[**]
Current residence	
Mexico City (referent)	1.00
Outside of Mexico City	1.3 (0.9–2.1)
Site of care	
General hospital (referent)	1.00
Maternity hospital	0.8 (0.5–1.3)
Primary health center	0.9 (0.6–1.5)

Note: Bolded numbers are significant at the $p < .05$ level.
Abbreviation: CI, confidence interval.
[*] $p < .05$.
[**] $p < .01$.

Difficulty arranging transportation was more commonly reported by less-educated and unmarried women, which may indicate that it is more difficult for them to pay for transportation or to find a person willing to drive them. Efforts to identify women with transportation difficulties and link them to available resources could be beneficial. Additionally, the Ministry of Health may wish to consider whether abortions could be provided in fewer visits, so that women are required to travel less.

Unmarried women were more likely than married women to report difficulty getting time off work for appointments. This finding may be related to the types of work unmarried women are engaged in or that they may work full time. Increasing the availability of appointments on weekends and after traditional work hours may address this obstacle. Women who had a middle school education were less likely than women with a high school education to report difficulty getting time off work; women with less education may be less likely to be employed or to work full time, or they may work in informal sectors, and this may be why this obstacle was less commonly reported.

The only group at increased risk of reporting partner or other family member opposition was women who were separated or divorced compared with those who were married. A limitation of the measure is that the question asked whether the woman experienced opposition from partners or other family members combined, so it is not possible to tell exactly who opposed the abortion. This finding should be investigated further to better understand the nature and source of the opposition. Previous research has found that women lacking social support can have greater difficulty coping with their abortions afterward (Major, Richards, Cooper, Cozzarelli, & Zubek, 1998), so it may be beneficial for abortion providers to screen women for lack of social support and other issues, such as experience of violence, to identify those who may benefit from additional counseling or referrals.

The study has several important limitations. First, participation was limited to women who had successfully obtained

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abortions and who chose the public sector for their care. The experiences of women who were unsuccessful in obtaining abortions or who sought care from private providers are not reflected here. More research is needed regarding the obstacles faced by these groups because they may be different, and indeed more severe, than those faced by the women in this sample. The study population was also limited to adult women, so the experiences of minors are also not reflected. Adolescents have been recognized as particularly vulnerable, facing significant obstacles to abortion care (Hord, Benson, Potts, & Billings, 2006). Indigenous women, poor women, and women from disadvantaged states have also been identified as at high risk for unsafe abortion in Mexico (Sousa, Lozano, & Gakidou, 2010). We did not specifically address the experiences of these groups and recommend that future studies explore the obstacles to safe abortion they face compared with others. Furthermore, some important obstacles were not measured on our survey, including the waiting time to get appointments, a factor found to be of high importance to women in a previous study (Wiebe & Sandhu, 2008); prior knowledge of the legal status of abortion; and financial obstacles. Although abortion services are provided free for many women, some women are asked to pay for a portion of their care or to cover the costs of particular laboratory tests and the ultrasound that is required. Assessing perceptions of the economic accessibility of the services in a future study would be valuable. Finally, this research did not assess barriers at the policy or societal levels, and these are topics in need of further study. Nevertheless, these findings can inform policy so that service design, protocols, and procedures are more responsive to individual-level barriers.

This study provides preliminary understanding of the accessibility of legal abortion in Mexico City. Ensuring that abortion services are accessible is fundamental to the success of this policy and to preventing abortion-related mortality. If financial, administrative, or psychosocial barriers remain, women may be unable to take advantage of their right to safely terminate pregnancy or may resort to unsafe care. Although this study was limited to women who had successfully obtained abortions, the findings on group differences may point to those in the community at high risk of experiencing obstacles. Additional research is needed in community settings to determine whether obstacles prevent any women in need from obtaining abortion care.

Acknowledgments

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