

# Knowledge and Opinions About Abortion Law Among Mexican Youth

**CONTEXT:** Mexican states' abortion laws vary, but in all states and the Federal District, induced abortions are legal in some circumstances. Public knowledge and opinions about abortion laws affect access to safe services.

**METHODS:** Survey data from a nationally representative sample of 907 men and women aged 15–24 in 2000 were analyzed to explore knowledge and opinion about abortion laws. Logistic regression was used to identify factors associated with participants' knowing that abortions are sometimes legal in their state and with participants' attitudes toward abortion.

**RESULTS:** Fifty-four percent of participants did not know the legal status of abortion in their state. Of these, 82% believed that abortion is never legal, and the rest did not know or thought that it is always legal. The odds of having correct information were reduced for respondents with low levels of education, those living in certain regions outside Mexico City and rural residents (odds ratios, 0.3–0.7); they were elevated among those with liberal attitudes toward emergency contraceptive pills (2.2). Some 70–83% of participants supported legal abortions when pregnancies result from rape or endanger a woman's life or health. Only 11–22% supported legal abortions for single women or minors, those with economic constraints and women who experience contraceptive failure. Low education and conservative attitudes toward emergency contraceptive pills were associated with conservative attitudes toward abortion. Knowing that abortion is sometimes legal did not affect opinion about it.

**CONCLUSIONS:** Understanding young people's knowledge and opinions about abortion may help in designing programs to reduce the problem of unsafe abortion in Mexico.

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In Latin America and the Caribbean, more than 95% of induced abortions are performed illegally, often in unsafe conditions.\*<sup>1</sup> Unsafe abortions occur at a higher rate in this region than in any other region in the world: Each year, 30 of every 1,000 women of reproductive age in Latin America and the Caribbean have an unsafe abortion, compared with 27 per 1,000 in Africa, 11 per 1,000 in Asia (excluding Japan) and five per 1,000 in Europe. Complications from unsafe abortion lead to about one-fifth of all maternal deaths.<sup>2</sup>

Even when safe, legal abortion services are available, women who lack accurate information about the relevant laws may seek unsafe abortions because they do not know they are eligible for the service or do not know the legal requirements for obtaining an abortion.<sup>3</sup> Research in several countries has found that public knowledge about abortion law is often minimal and that subgroups of the population have tremendously varying levels of information.<sup>4</sup>

Public opinion can also directly affect access to safe abortion services. In communities where the prevalent attitude toward abortion is conservative, medical providers may be unwilling to perform abortions, and spouses or other fam-

ily members may forbid a woman to seek an abortion if they hold strong negative opinions about the practice.<sup>5</sup> Conservative opinion may also influence women's own views. Women seeking induced abortion may feel guilty about doing so and consider themselves deserving of punishment. These feelings may lead them to seek clandestine, unsafe services rather than legal, safe ones. If complications result, women may delay seeking assistance.

In this article, we use data from a nationally representative sample of young people in Mexico, where every state's law permits abortion in some circumstances, to study two largely neglected factors in the problem of unsafe abortion that have important implications for abortion services: public knowledge of abortion laws and public opinion about abortion.

## WHY FOCUS ON YOUTH?

Worldwide, especially in urban areas, unmarried youth make up a large proportion of women seeking induced abortion,<sup>6</sup> because of their high risk of unwanted pregnancy. Lack of access to contraceptives, lack of knowledge about how contraceptives work, lack of an appropriate mix of contraceptive methods, fears about contraceptive side effects, low motivation to use methods and contraceptive failure are among the factors that increase young women's risk of

\*The World Health Organization defines unsafe abortion as "a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both" (source: reference 2).

unwanted pregnancy.<sup>7</sup> Although 69% of cohabiting Mexican women of reproductive age practice family planning, levels of unmet need for contraception are high among those in the younger age-groups—27% among teenagers and 21% among those in their early 20s, compared with 12% overall.<sup>8</sup> Young women are also vulnerable to coerced sex and rape. One study found that half of all women reporting sexual violence in Mexico City were younger than 20.<sup>9</sup>

Young women often desire to postpone childbearing because they wish to continue education or pursue employment opportunities, they lack financial resources or they are in unstable relationships. Thus, they may be more likely than older women to choose abortion if they have an unplanned or unwanted pregnancy.

Researchers from The Alan Guttmacher Institute have estimated that 533,000 induced abortions occur each year in Mexico.\* This total translates to 25.1 abortions per 1,000 women aged 15–49 and a ratio of 17.1 abortions per 100 live births.<sup>10</sup> It is estimated that more than 40% of women seeking abortions in Mexico are younger than 24. Eleven percent of induced abortions occur among women younger than 20, 57% among women aged 20–29 and 33% among women 30 and older.<sup>11</sup>

Young adults' knowledge and opinions about abortion law are likely to influence their use of abortion services, yet not much is known about these factors. It is important to look at young people separately from older people because their knowledge and attitudes are likely to be different from those of older age-groups. Young people's sources of information are different from older people's. While they often have more limited access to information and smaller social networks than older people,<sup>12</sup> some young people, particularly urban youth, have access to good sources of information—such as the Internet, other media and schools—that may make them better informed than older people. Traditional conservative institutions, such as the Roman Catholic Church, may have less influence on young people's opinions than on older people's. According to national data, Mexican 15–24-year-olds are less likely to report practicing religion than are people aged 25–65, and among the religious, youth are less likely than older people to attend services more than once a week.<sup>13</sup> Furthermore, in a national survey of Mexican 15–29-year-olds, more than three-quarters said that their religious beliefs did not influence their attitudes toward sexuality.<sup>14</sup>

Our research, based on data from a nationally representative sample of 15–24-year-olds in urban and rural areas of Mexico, sought answers to the following questions: Do young people know that abortions are legal in some circumstances in Mexico? What factors are associated with young people's knowing about abortion laws? What are

current opinions about abortion in this age-group? What factors are associated with conservative and liberal opinions about abortion? Finally, is knowledge of abortion law associated with opinions about abortion?

## ABORTION IN MEXICO

Abortions are legal in Mexico under some circumstances in all 31 states and the Federal District; however, the law varies by state. Throughout the country, women are legally entitled to abortion in cases of pregnancies resulting from rape. In 27 states and the Federal District, abortion is legal if the pregnancy endangers the woman's life. In nine states and the Federal District, abortion is legal if the woman's health is in serious danger.<sup>15</sup>

An exploratory study based on a convenience sample of 134 women with complications of induced abortion at a hospital in Mexico City found that poverty was a key factor leading women to seek unsafe abortion.<sup>16</sup> Another exploratory study, among 156 women who had undergone induced abortions in Oaxaca, Mexico City and Acapulco, found that key reasons women mentioned for seeking induced abortions were that they became pregnant at a young age, their partner pressured them to do so, they had economic constraints and they already had too many children.<sup>17</sup>

The three types of providers who most commonly perform abortions in Mexico are doctors, nurses and untrained people, including traditional providers and women themselves. Wealthy women are most likely to obtain services from doctors or other trained practitioners, while poor women and those living in rural areas are most likely to obtain services from untrained providers.<sup>18</sup> The study in Oaxaca, Mexico City and Acapulco found that wealthy women, better-educated women and older women were most likely to seek induced abortions from trained providers because they could pay for the service, while poor women and women with low levels of education most often sought abortions from untrained providers. The study also showed that women who sought abortions from untrained providers were more likely to suffer complications than were women who sought abortions from trained personnel.<sup>19</sup>

Untrained providers and women who induce their own abortions use a variety of methods to terminate pregnancy. These include infliction of voluntary trauma (punches, falls); oral or vaginal administration of natural products (teas, infusions, vegetables, seeds), manufactured products (beer, wine, soapy substances, bleach) or pharmaceutical products (quinine, laxatives, estrogen); and insertion of physical objects (catheter, sharp objects) into the uterus.<sup>20</sup>

Common medical complications from unsafe abortion include pelvic infection, hemorrhage, shock, cervical laceration, uterine perforation, and damage to the bladder and intestines.<sup>21</sup> In Mexico, complications from unsafe abortion are the fourth leading cause of maternal mortality.<sup>22</sup> Unsafe abortion is also an important cause of morbidity: Each year, an estimated five of every 1,000 Mexican women aged 15–44 are hospitalized for complications from an induced abortion.<sup>23</sup> Data from public-sector hospitals across

\*The number could be as low as 297,000 or as high as 746,000, depending on the assumptions made about the proportion of women who are likely to be hospitalized for complications. Since abortions are legally restricted in Mexico under most circumstances, information about the practice is limited. Estimates of abortion incidence rely on indirect techniques that take into account information on women hospitalized for abortion complications and then adjust for the lack of representativeness.

Mexico indicate that in 1998, abortion (both spontaneous and induced) was the third most common reason for hospitalization among women.<sup>24</sup>

Although abortion is legal under some circumstances in every state, bureaucratic, legal and medical barriers make it difficult for Mexican women to obtain legal abortions. For example, women seeking legal abortions in the case of rape in Mexico City face highly burdensome administrative procedures.<sup>25</sup> They must visit two government agencies and one of three authorized hospitals to obtain the required documentation, have a pregnancy test and submit a letter requesting an abortion. When a pregnancy threatens a woman's health, physicians in Mexico City are required to obtain a second opinion before authorizing an abortion; if this process causes a substantial delay, the abortion may be performed at a point in the pregnancy when it is considerably less safe.<sup>26</sup>

Provider attitudes and knowledge also affect the provision of legal abortion services. Providers holding conservative attitudes toward abortion have been known to refuse women services and to treat women they suspect of having had induced abortions poorly.<sup>27</sup> A study conducted in public hospitals found that although most obstetrics and gynecology residents agreed that abortion should be legal under some circumstances, only 5% said they would perform abortions themselves.<sup>28</sup> Lack of correct information about abortion laws among medical professionals may further affect services. Several studies have found low levels of information about abortion laws among medical professionals, with many believing that abortions are always illegal.<sup>29</sup>

Adding to these barriers, powerful political and religious groups in Mexico create obstacles to abortion services by working to limit access to the procedure and campaigning against efforts to liberalize abortion laws. Three of the most important of these groups are Pro-Vida (the Mexican pro-life movement), the Roman Catholic Church and the National Action Party (PAN). Conservative PAN lawmakers in Baja California, Chihuahua and Guanajuato have proposed legislation aimed at limiting the circumstances in which abortions are legally available.<sup>30</sup>

## Data and Methods

The data used in this analysis were collected through a household survey carried out by the Population Council's regional office for Latin America and the Caribbean, in collaboration with Investigación de Mercado y Asesoría, a Mexican market research firm, in September and October 2000. The intent of the survey was to gather information about the public's knowledge of and opinions about abortion and emergency contraception. In all, 3,000 participants aged 15–65 were interviewed in their homes by experienced and trained interviewers using structured questionnaires; our analyses are based on the 907 participants between the ages of 15 and 24. Participants belonged to a random probability sample chosen to represent the urban-rural distribution of Mexico and the distribution of the population in six geographic regions. Because the sample was selected to be rep-

resentative at the regional level and not the state level, municipalities were selected for inclusion in the sample from within regions and not from within states. By chance, no municipalities were randomly selected for inclusion in the sample from the following seven states: Baja California Sur, Campeche, Chihuahua, Colima, Durango, Morelos and Quintana Roo. The overall response rate was 98%.<sup>31</sup>

The analysis of knowledge of the legal status of abortion aimed to assess which social and demographic characteristics were associated with participants' knowing that abortions are sometimes legal in their state. We assessed the correctness of participants' information on the basis of their answer to the question "Does the current law on abortion in your state permit abortion under all circumstances, only under certain circumstances or never?" Those answering that abortion is legal only under certain circumstances were classified as having correct information, while those giving either of the other answers (along with respondents who answered that they did not know) were classified as having incorrect information. Participants who did not respond to the question were excluded from the analysis. One important limitation of this measure is that it does not determine whether a participant knew the specific circumstances under which abortion is legal. It reflects only whether a participant had a general understanding of the legal status of abortion in his or her state. We used logistic regression to assess the characteristics associated with knowledge that abortion is sometimes legal.

To analyze abortion opinion, we used summary statistics to compare the opinions of study participants about the legality of abortion under nine circumstances. Participants were asked whether they totally agreed, somewhat agreed, somewhat disagreed or totally disagreed that abortion should be legal in each circumstance. We classified those who agreed or somewhat agreed with abortion's being legal in a given circumstance as having a liberal opinion about the circumstance, and those who disagreed or somewhat disagreed as having a conservative opinion.

To explore abortion opinion more generally (rather than only with regard to specific circumstances), we also developed a summary measure that categorized participants as conservative, moderate or liberal. Only participants who responded to questions about all nine circumstances were included in the summary measure analysis.

Participants were considered to have conservative views if they did not support abortion in either situation under which abortion is legally available in all or almost all Mexican states: when the pregnancy resulted from rape or would endanger a woman's life. Any person opposed to either or both of these reasons has opinions that are more conservative than the current abortion laws in Mexico.

We categorized participants as having a liberal opinion about abortion if they supported it in at least six of the nine circumstances. The six circumstances had to include rape and life endangerment so that participants could not be classified as both conservative and liberal. Participants who were neither conservative nor liberal were classified as moderates.

**TABLE 1. Percentage distribution of respondents to survey on knowledge and opinions about emergency contraception and abortion, by selected characteristics, Mexico, 2000**

Characteristic	% (N=907)	Characteristic	% (N=907)
<b>Sex</b>		<b>Attendance at religious services</b>	
Male	47	≥once a week	41
Female	53	<once a week	59
<b>Age</b>		<b>Religious identification</b>	
15–17	33	Catholic	73
18–24	67	Other	8
		Not religious	19
<b>Marital status</b>		<b>Registered to vote</b>	
Never-married	77	Yes	54
Consensual union	5	No	14
Married	17	Not eligible	33
Divorced/separated	1		
<b>Parity</b>		<b>Political party identification</b>	
0	78	PAN†	28
1	14	Other	21
≥2	7	None	16
Missing	1	Not eligible to vote	33
		Missing	3
<b>Education</b>		<b>Knows someone who has had an abortion</b>	
≤complete elementary	13	Yes	20
Some/complete middle school	27	No	79
Some/complete technical high school	5		
Some/complete preparatory high school	32	<b>Knows someone who has used emergency contraceptive pills</b>	
>high school	23	Yes	8
		No	92
<b>Is employed</b>		Missing	1
Yes	87	<b>Prior knowledge about emergency contraceptive pills</b>	
No	13	Yes	37
		No	63
<b>Region</b>		<b>Knows the legal status of abortion</b>	
Pacific North	8	Yes	46
North Central Gulf	14	No	54
Bajío	16		
Central	19	<b>Attitude toward emergency contraceptive pills</b>	
Mexico City	20	Liberal	91
Southeast	22	Conservative	9
<b>Residence</b>			
Urban	76		
Rural	24		
<b>Total</b>	<b>100</b>	<b>Total</b>	<b>100</b>

†PAN is the National Action Party.

We carried out two logistic regression analyses to derive estimates for odds ratios, 95% confidence intervals and p-values. The first analysis compared participants having conservative opinions with those holding moderate opinions. The second compared liberals with moderates. One of the primary research questions was whether there is an association between having information on the legal status of abortion and one’s opinion about abortion. The variable

\*This variable was divided into four categories: PAN, other party, no party identification and not eligible to vote.

†The variable measuring opinion about emergency contraceptive pills was based on a survey question asking participants how much they agreed or disagreed with the statement “Emergency contraceptive pills are a good option to prevent an unwanted pregnancy in a case where a person has had an unprotected sexual relation.” Participants responding that they agreed or somewhat agreed were classified as having liberal attitudes toward emergency contraceptive pills, while those responding that they disagreed or somewhat disagreed were classified as having conservative attitudes.

measuring information on the legal status of abortion was therefore forced into both final opinion models, regardless of its significance level.

The independent variables considered in the analyses were the participant’s age, sex, marital status, parity, level of education, region, residence, religious group identification, frequency of attendance at religious services, occupation, voting registration status and political party identification;\* whether the participant knew someone who had had an abortion, knew someone who had used emergency contraceptive pills and knew about emergency contraceptive pills; and the participant’s opinion about emergency contraceptive pills.† Although no independent variable directly measured socioeconomic status, we considered level of education a good proxy measurement. This measure, however, has limitations in capturing socioeconomic status: Since schooling is available to the public at little or no cost in Mexico, two students whose parents are from completely different socioeconomic subgroups might attain the same level of education.

The impact of each independent variable on the three outcomes was investigated in a univariate analysis. All independent variables significant in the univariate models at the .20 level or lower were included in multivariate analyses. Stepwise selection was used to select variables significant at the .05 level or lower. Next, we tested for evidence of confounding and effect modification. No factors were effect modifiers. In both opinion models, at least one variable confounded the main effects and was included in the final model. All models were considered to have good fit on the basis of the Hosmer-Lemeshow test, Pearson chi-square test and deviance statistic.<sup>32</sup>

**RESULTS**

**Descriptive Statistics**

Fifty-three percent of the study participants were female, and 33% were younger than 18 (Table 1). Most were unmarried, had no children, had more than a middle school education, worked and lived in urban areas. Only four in 10 attended religious services once a week or more, but three-quarters identified themselves as Catholics. About half were registered to vote, and a similar proportion identified themselves as members of a political party.

Only 8% of participants knew someone who had used emergency contraceptive pills, and 20% knew someone who had had an abortion. Roughly one-third had heard about emergency contraceptive pills, and nine in 10 expressed liberal views toward the method after it was described.

**Abortion Knowledge**

When asked if their state law permits abortions under some, all or no circumstances, 54% did not know that abortions are sometimes legal. Of those with incorrect information, 82% believed that abortions were never legal, 4% believed that abortions were always legal and 14% said that they did not know (not shown).

The proportion of participants who knew that abortions

were sometimes legal in their state varied by region, and the differences were statistically significant. This proportion was 65% in Mexico City, 53% in the Pacific North and the Southeast, and only 30–37% in the Central, North Central Gulf and Bajío regions (not shown).

Table 2 shows results of univariate and multivariate analyses of factors associated with knowing that abortions are sometimes legal in one's state. In the multivariate model, participants with no education beyond high school (except those who had attended a technical high school) had lower odds of having accurate information than those with at least some college (odds ratios, 0.4–0.7). The model detected strong regional differences as well: Residents of the Central, North Central Gulf and Bajío regions all had lower odds of knowing that abortions are sometimes legal in their states than those living in Mexico City (0.3–0.4). Respondents living in rural areas had reduced odds of knowing the legal status of abortion (0.6), while those with liberal attitudes toward emergency contraceptive pills had elevated odds (2.2).

### Abortion Opinions

All of the states from which study participants were selected permit abortion when a pregnancy results from rape, and 84% do when a pregnancy poses a risk to a woman's life (Table 3, page 210). A woman can obtain a legal abortion in 36% of states if a pregnancy is dangerous to her health, and in 36% if the fetus has severe birth defects. Only one state allows abortion for economic reasons.

The great majority of participants (70–83%) agreed that women should have access to legal abortion when a pregnancy is the result of a rape, when the woman's life is at risk or when her health is in danger (Table 3). When an infant would have birth defects, half of the population surveyed agreed that women should have access to legal abortion. Support for legal abortion was lower (11–22%) in the remaining circumstances: for economic reasons, if the woman is single or is a minor, if the pregnancy occurred because of contraceptive failure and on request.

Comparable proportions of respondents in all regions (73–85%) supported legal abortion when a woman's health is at risk, but there was great regional variation in support for abortion in each of the other circumstances. For example, support in cases of pregnancy due to rape ranged from only 58% in the North Central Gulf to 80% in Mexico City. Only 75% of respondents in the North Central Gulf supported access to legal abortion when the life of the woman is at risk, compared with 95% of those in the Pacific North.

Of the 875 study participants included in the summary opinion analysis, 36% were categorized as conservative, 49% as moderate and 15% as liberal.

In our last sets of analyses, we examined associations between respondents' characteristics and their attitudes toward abortion. Results of multivariate analysis reveal that the odds of being conservative rather than moderate rose as educational attainment declined (Table 4, page 211); however, when compared with participants with the most schooling, only those with a middle school education or less were

**TABLE 2. Odds ratios (and 95% confidence intervals) from univariate and multivariate analyses of the association between selected characteristics and the likelihood of having information that abortion is legal in one's state**

Characteristic	Univariate		Multivariate	
	Odds ratio	p-value	Odds ratio	p-value
<b>Education</b>		<0.0001		0.0003
≤complete elementary	0.33 (0.21–0.53)		0.48 (0.29–0.81)	
Some/complete middle school	0.34 (0.23–0.50)		0.41 (0.27–0.61)	
Some/complete technical high school	0.40 (0.20–0.80)		0.50 (0.24–1.03)	
Some/complete preparatory high school	0.64 (0.45–0.92)		0.65 (0.45–0.95)	
>high school (ref)	1.00		1.00	
<b>Region</b>		<0.0001		<0.0001
Pacific North	0.61 (0.35–1.05)		0.69 (0.39–1.22)	
North Central Gulf	0.30 (0.19–0.47)		0.31 (0.19–0.51)	
Bajío	0.31 (0.20–0.49)		0.37 (0.23–0.60)	
Central	0.23 (0.15–0.36)		0.26 (0.16–0.41)	
Mexico City (ref)	1.00		1.00	
Southeast	0.61 (0.40–0.92)		0.75 (0.48–1.16)	
<b>Residence</b>		<0.0001		0.0029
Urban (ref)	1.00		1.00	
Rural	0.46 (0.33–0.63)		0.57 (0.39–0.83)	
<b>Attitude toward emergency contraceptive pills</b>		0.0030		0.0062
Liberal	2.08 (1.26–3.43)		2.16 (1.28–3.67)	
Conservative (ref)	1.00		1.00	
<b>Age</b>		0.1899		na
15–17	0.83 (0.63–1.10)		na	
18–24 (ref)	1.00		na	
<b>Prior knowledge about emergency contraceptive pills</b>		0.0046		na
Yes	1.48 (1.13–1.94)		na	
No (ref)	1.00		na	
<b>Attendance at religious services</b>		0.0086		na
≥once a week	0.70 (0.54–0.91)		na	
<once a week (ref)	1.00		na	
<b>Knows someone who has had an abortion</b>		0.0463		na
Yes	1.39 (1.01–1.92)		na	
No (ref)	1.00		na	
		0.1411		na
<b>Sex</b>				na
Male (ref)	1.00		na	
Female	1.22 (0.94–1.58)		na	
<b>Knows someone who has used emergency contraceptive pills</b>		0.1626		na
Yes	1.41 (0.87–2.29)		na	
No (ref)	1.00		na	

Notes: All p-values are from the likelihood ratio test. ref=reference group. na=not applicable, because variable was not included in the model.

significantly more likely to be conservative than moderate (odds ratios, 2.0–2.9). Rural residence also was associated with conservative views toward abortion (1.6). By contrast, the odds of holding conservative views were lower among residents of the Central region than among those living in Mexico City (0.5), and were reduced among those with liberal attitudes toward emergency contraceptive pills (0.4).

We also examined factors associated with having liberal rather than moderate opinions about abortion (Table 5, page 212). In the multivariate analysis, participants living in any region outside Mexico City, except the North Central Gulf,

**TABLE 3. Percentage of states allowing abortion in various circumstances, and percentage of respondents supporting legal abortion in each circumstance, by region**

Circumstance	States allowing abortion (N=25)†	Respondents supporting legal abortion						
		All regions (N=907)	Pacific North (N=75)	North Central Gulf (N=131)	Bajío (N=148)	Central (N=168)	Mexico City (N=182)	Southeast (N=203)
Pregnancy is the result of a rape***	100	70	76	58	65	79	80	64
Woman's life is at risk*	84	83	95	75	82	86	84	81
Woman's health is in danger	36	77	85	73	73	77	76	78
Fetus has birth defects***	36	50	63	43	42	48	61	46
Economic reasons***	4	19	11	21	11	21	30	14
Woman is single**	0	13	10	9	8	10	21	13
Woman is a minor*	0	22	15	21	14	22	27	26
Pregnancy resulted from contraceptive failure*	0	11	10	13	5	10	17	10
On request**	0	20	14	18	13	24	28	20

\*p<.05. \*\*p<.01. \*\*\*p<.001. †Excludes the six states not represented in the sample; includes the Federal District. Note: p-values are from chi-square test on the variable region as a whole.

had reduced odds of being liberal (odds ratios, 0.2–0.5). People who knew someone who had used emergency contraceptive pills had higher odds of being liberal than people who did not (2.2). Accurate knowledge of abortion laws did not significantly affect attitudes toward abortion.

**DISCUSSION**

More than half of participants did not know the legal status of abortion in their state; of these, most believed that abortions were never legal. Education was one of the most important factors associated with participants' knowing that abortions are legal in their states under certain circumstances: Both participants' level of education and the type of school they had attended were associated with their familiarity with abortion law.

Region of residence was another important factor. The regional differences in knowledge about abortion laws cannot be explained by differences in urbanization and education, because the adjusted model controlled for these factors. Thus, other factors must be responsible for these disparities. One explanation might be that low levels of knowledge reflect the presence of barriers to information, such as activities by conservative groups. Another explanation might be that the media have devoted more attention to abortion in some regions than in others. Controversies over legal abortion—such as the Paulina case in Baja California, in which a teenager who became pregnant as a result of rape was denied access to legal abortion<sup>33</sup>—may have led to extensive coverage of abortion and thus raised public awareness of abortion laws.

Urban residence and liberal opinion toward emergency contraceptive pills were also associated with participants' knowing that abortions are sometimes legal in their state. Urban dwellers in all regions are likely to have better access to information sources than rural dwellers. Those with liberal attitudes toward emergency contraception may in general be more informed than others about reproductive health issues and may seek out information about issues such as abortion laws. Interestingly, while liberal opinion about emergency contraceptive pills was associated with

participants' having information that abortions are sometimes legal in their state, knowledge of emergency contraception was not. This finding may reflect that the variable on knowledge of emergency contraception measured only whether participants had heard of the method and not the quality of the information they had about it.

Knowledge about abortion laws is important because it has implications for access to legal abortion services. Even if laws become more liberal, further research should be conducted to find the best avenues to reach groups that are particularly at risk of having unsafe abortions because they lack information about the legal status of abortion.

The young people surveyed expressed much support for abortion's being legal in the case of a pregnancy due to rape, when a woman's life is at risk and when a woman's health is in danger. But less than a quarter of the study population thought abortions should be legally available in cases when a pregnancy occurs because of contraceptive failure, when a woman is single, when she has economic constraints or when she is a minor. These findings suggest that young people are most supportive of legal abortion when the perceived reason for it is a factor outside the woman's control. They further suggest that in this population, contraceptive failure is considered to be within a woman's control and therefore similar to a social factor.

Factors associated with young people's having conservative rather than moderate views are low education levels, rural residence, living outside the Central region and a conservative attitude toward emergency contraceptive pills. In contrast to findings in the United States,<sup>34</sup> identification with the Roman Catholic Church and high frequency of attendance at religious services were not important factors associated with conservative opinions toward abortion. One explanation for this difference may be that a higher proportion of the population in Mexico than in the United States is Catholic, and regular church attendance is more common in Mexico. As a result, Roman Catholics and frequent churchgoers may reflect a larger group with more diverse beliefs in Mexico than in the United States. Consistent with findings in other settings,<sup>35</sup> there were no im-

portant age or sex differences associated with conservative opinions. Identification with conservative political parties was also not associated with conservative views.

Compared with participants in Mexico City, those in all other regions except the North Central Gulf were less likely to be liberal than moderate. Education and residence, which were important in distinguishing conservatives from moderates, were not important in distinguishing liberals from moderates. Knowing someone who had used emergency contraceptive pills, however, was important in distinguishing moderates from liberals. This finding suggests that the differences between moderates and liberals may have more to do with factors such as social networks and communication between individuals (which vary greatly on the individual level) than with broad social and demographic characteristics.

Our data do not support the hypothesis that knowledge about abortion laws is associated with young people's being more liberal toward abortion. Participants who knew that abortion was sometimes legal in their state were not more likely than those without this knowledge to be either more conservative or more liberal once other factors were controlled for. Nevertheless, information about other facts regarding abortion—such as mortality due to complications from unsafe abortion, the relatively low health risks of safe and legal abortions, or the reasons women seek abortions—may influence opinion. Future research should investigate other possible relationships between knowledge and opinion, and the direction of those relationships.

### Study Limitations

This study has several limitations that should be recognized. First, because the data were collected at only one point in time, we cannot ascertain whether the explanatory variables cause the outcomes. It is possible that the relationships work in the reverse direction or that the outcomes are caused by unmeasured intermediate variables.

In addition, the variables we used to assess information and opinion about abortion laws have limitations. The analysis of information on abortion laws is based on participants' awareness that abortions are sometimes legal in their state; this measure does not capture the accuracy of participants' knowledge of abortion laws. In fact, a person might have had accurate knowledge about this general point but inaccurate knowledge about the specific circumstances in which abortions are permitted.

Opinions about abortion were analyzed by dividing participants somewhat arbitrarily into three groups. While the opinion measure likely captures differences between the extremes of opinion, it is less able to capture fine distinctions between individuals in the middle.

Finally, the study was limited by the information collected in the survey. Unmeasured independent factors may have important impacts on the outcomes that could not be captured in the models. Specifically, interpersonal relationships, social support and psychological factors are likely to be important influences on both attitudes and knowledge that

**TABLE 4. Odds ratios (and 95% confidence intervals) from univariate and multivariate analyses of the association between selected characteristics and the likelihood of having conservative, rather than moderate, opinions about abortion**

Characteristic	Univariate		Multivariate	
	Odds ratio	p-value	Odds ratio	p-value
<b>Knows the legal status of abortion</b>		0.0006		0.1100
Yes	0.60 (0.44–0.80)		0.73 (0.52–1.01)	
No (ref)	1.00		1.00	
<b>Education</b>		<0.0001		0.0092
≤complete elementary	4.00 (2.38–6.72)		2.88 (1.59–5.21)	
Some/complete middle school	2.46 (1.58–3.83)		2.03 (1.24–3.33)	
Some/complete technical high school	2.37 (1.11–5.05)		1.98 (0.89–4.38)	
Some/complete preparatory high school	1.67 (1.09–2.58)		1.56 (0.99–2.45)	
>high school (ref)	1.00		1.00	
<b>Residence</b>		<0.0001		0.0140
Urban (ref)	1.00		1.00	
Rural	2.22 (1.59–3.10)		1.62 (1.10–2.38)	
<b>Region</b>		0.0014		0.0004
Pacific North	0.74 (0.39–1.39)		0.63 (0.32–1.24)	
North Central Gulf	1.87 (1.11–3.15)		1.62 (0.93–2.81)	
Bajío	1.27 (0.78–2.09)		0.93 (0.55–1.59)	
Central	0.71 (0.43–1.17)		0.49 (0.28–0.84)	
Mexico City (ref)	1.00		1.00	
Southeast	1.44 (0.90–2.29)		1.13 (0.69–1.87)	
<b>Attitude toward emergency contraceptive pills</b>		0.0034		0.0009
Liberal	0.48 (0.29–0.79)		0.41 (0.24–0.71)	
Conservative (ref)	1.00		1.00	
<b>Prior knowledge about emergency contraceptive pills</b>		0.0020		0.1400
Yes	0.61 (0.45–0.84)		0.74 (0.52–1.06)	
No (ref)	1.00		1.00	
<b>Parity</b>		0.0206		
0 (ref)	1.00		na	
1	1.44 (0.94–2.20)		na	
≥2	2.02 (1.13–3.60)		na	
<b>Sex</b>		0.0326		
Male (ref)	1.00		na	
Female	1.38 (1.03–1.85)		na	
<b>Marital status</b>		0.0473		
Never-married (ref)	1.00		na	
Consensual union	1.22 (0.62–2.40)		na	
Married	1.67 (1.14–2.45)		na	
Divorced/separated	0.51 (0.10–2.54)		na	
<b>Attendance at religious services</b>		0.0512		
≥once a week	1.34 (1.00–1.80)		na	
<once a week (ref)	1.00		na	
<b>Religious identification</b>		0.1660		
Catholic (ref)	1.00		na	
Other	1.36 (0.82–2.27)		na	
Not religious	0.77 (0.52–1.15)		na	

Notes: All p-values are from the likelihood ratio test. ref=reference group. na=not applicable, because variable was not included in the model.

can explain more of the variation on the individual level, but the survey included no questions about these factors.

### Conclusion

This study is one of the first to examine knowledge and opinions about abortion law among Mexican youth. These topics are important because they may help determine whether

**TABLE 5. Odds ratios (and 95% confidence intervals) from univariate and multivariate analyses of the association between selected characteristics and the likelihood of having liberal, rather than moderate, opinions about abortion**

Characteristic	Univariate		Multivariate	
	Odds ratio	p-value	Odds ratio	p-value
<b>Knows the legal status of abortion</b>		0.8960		0.1300
Yes	0.97 (0.66–1.44)		0.72 (0.47–1.10)	
No (ref)	1.00		1.00	
<b>Region</b>		<0.0001		0.0002
Pacific North	0.26 (0.11–0.63)		0.29 (0.12–0.69)	
North Central Gulf	0.63 (0.33–1.18)		0.61 (0.31–1.12)	
Bajío	0.25 (0.12–0.51)		0.23 (0.11–0.49)	
Central	0.35 (0.19–0.62)		0.33 (0.18–0.62)	
Mexico City (ref)	1.00		1.00	
Southeast	0.49 (0.28–0.86)		0.53 (0.30–0.93)	
<b>Knows someone who has used emergency contraceptive pills</b>		0.0028		0.0230
Yes	2.51 (1.40–4.51)		2.18 (1.15–4.13)	
No (ref)	1.00		1.00	
<b>Knows someone who has had an abortion</b>		0.0138		0.1700
Yes	1.75 (1.13–2.71)		1.49 (0.93–2.39)	
No (ref)	1.00		1.00	
<b>Age</b>		0.0445		
15–17	0.64 (0.41–1.00)		na	
18–24 (ref)	1.00		na	
<b>Prior knowledge about emergency contraceptive pills</b>		0.0777		
Yes	1.42 (0.96–2.10)		na	
No (ref)	1.00		na	
<b>Sex</b>		0.1770		
Male (ref)	1.00		na	
Female	1.31 (0.89–1.93)		na	
<b>Attendance at religious services</b>		0.1092		
≥once a week	0.72 (0.48–1.08)		na	
<once a week (ref)	1.00		na	
<b>Religious identification</b>		0.1072		
Catholic (ref)	1.00		na	
Other	0.50 (0.19–1.32)		na	
Not religious	1.35 (0.85–2.14)		na	
<b>Registered to vote</b>		0.1241		
Yes (ref)	1.00		na	
No	0.92 (0.51–1.67)		na	
Not eligible	0.63 (0.40–0.99)		na	
<b>Political party identification</b>		0.0534		
PAN (ref)†	1.00		na	
Other	1.20 (0.71–2.01)		na	
None	0.67 (0.36–1.25)		na	
Not eligible to vote	0.61 (0.37–1.02)		na	
<b>Attitude toward emergency contraceptive pills</b>		0.1768		
Liberal	1.87 (0.71–4.93)		na	
Conservative (ref)	1.00		na	

†PAN is the National Action Party. Notes: All p-values are from the likelihood ratio test. ref=reference group. na=not applicable, because variable was not included in the model.

women who wish to terminate a pregnancy and meet legal criteria for doing so obtain safe abortion services or resort to clandestine, unsafe procedures. We identified some important associations, such as strong regional and educational differences in both knowledge and opinion, that should receive attention in future research. In addition, many unanswered questions remain that would be important subjects for future inquiries. For example, how do young peo-

ple’s knowledge and opinions about abortion laws compare with those of other age-groups in Mexico? In addition, how accurate is knowledge about other relevant issues, such as where legal abortions are available, and whether spousal or parental consent is required for legal abortions? Finding answers to these questions may help us to develop strategies to decrease the problem of unsafe abortion among young women in Mexico.

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## RESUMEN

**Contexto:** Aunque la legislación mexicana sobre el aborto varía entre los diferentes Estados, el procedimiento es legal en circunstancias especiales en todos ellos y en el Distrito Federal. El conocimiento sobre el aborto y las opiniones acerca del mismo del público afectan el acceso a los servicios seguros.

**Métodos:** Se analizaron datos recopilados en una muestra nacional de 907 mujeres y hombres, de 15–24 años en 2000, para estudiar el nivel de conocimiento y opiniones acerca de las leyes sobre el aborto. Se utilizaron análisis de regresión logística para identificar los factores relacionados con el conocimiento de los participantes sobre las condiciones de un aborto legal en su Estado y con las actitudes sobre el aborto.

**Resultados:** El 54% de los participantes no sabían que el aborto era legal en su Estado en algunas situaciones. De este grupo con información errada, el 82% creía que el aborto siempre era ilegal, y los demás no tenían información al respecto o pensaba que siempre era legal. Las probabilidades de tener la información correcta eran reducidas entre los participantes con menores niveles de educación, aquellos que vivían en ciertas regiones fuera de la Ciudad de México, y los residentes rurales (razones de momios, 0,3–0,7); las probabilidades eran elevadas entre las personas que tenían una actitud liberal hacia las pastillas de anticoncepción de emergencia (2,2). Un 70–83% de los participantes indicó que apoyaban el aborto legal cuando el embarazo era fruto de una violación o ponía en peligro la vida o la salud de la mujer. Sólo el 11–22% apoyaba el aborto legal para las mujeres solteras o menores de edad, o en caso de mujeres con problemas económicos o cuyo método anticonceptivo había fallado. El nivel educativo bajo y la actitud conservadora hacia

las pastillas de anticoncepción de emergencia estuvieron relacionados con las actitudes conservadoras. Saber que en ciertos casos el aborto es legal no afectó la opinión de los participantes sobre este procedimiento.

**Conclusiones:** Conocer las opiniones y nivel de conocimiento de los jóvenes sobre el aborto puede asistir en el diseño de los programas para reducir el problema del aborto realizado en condiciones inseguras en México.

## RÉSUMÉ

**Contexte:** Au Mexique, la législation relative à l'avortement varie d'état en état. Tous, y compris le District fédéral, admettent toutefois l'IVG dans certaines circonstances. La connaissance et les opinions du public concernant ces lois affectent l'accès à des services d'avortement sans risques.

**Méthodes:** Les données d'enquête en 2000 d'un échantillon nationalement représentatif de 907 hommes et femmes âgés de 15 à 24 ans ont été analysées quant à la connaissance et aux opinions relatives à la législation sur l'IVG. Les facteurs associés à la connaissance qu'avaient les participants de la légalité limitée de l'IVG dans leur état et à leur perception de l'avortement ont été identifiés par régression logistique.

**Résultats:** Cinquante quatre pour cent des participants ignoraient le statut légal de l'avortement dans leur état. Quatre-vingt-deux pour cent d'entre eux pensaient que l'avortement n'était jamais admis par la loi; les autres ne savaient pas ou pensaient qu'il était toujours légal. La probabilité d'information correcte est apparue moindre parmi les répondants aux niveaux d'éducation moins élevés, vivant dans certaines régions extérieures à la ville de Mexico ou résidant en milieu rural (rapports de probabilités de 0,3 à 0,7). Cette même probabilité était élevée parmi les répondants ouverts à la pilule contraceptive d'urgence (2,2). Quelque 70% à 83% des participants étaient favorables à l'avortement légal en cas de grossesse résultant d'un viol ou mettant en danger la vie ou la santé de la femme. Seuls 11% à 22% supportaient l'avortement légal pour les femmes célibataires ou mineures, disposant de ressources économiques limitées ou dont la méthode contraceptive avait échoué. Les faibles niveaux d'éducation et les attitudes conservatrices à l'égard de la pilule contraceptive d'urgence sont apparus associés aux attitudes conservatrices. La connaissance du fait que l'avortement est parfois légal n'affectait en rien les opinions à son égard.

**Conclusions:** La conception de programmes aptes à réduire le problème de l'avortement à haut risque au Mexique pourrait bénéficier de la compréhension des connaissances et des opinions des jeunes à l'égard de l'IVG.

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