Abortion Provision Among Practicing Obstetrician–Gynecologists

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OBJECTIVE: To estimate prevalence and correlates of abortion provision among practicing obstetrician–gynecologists (ob-gyns) in the United States.

METHODS: We conducted a national probability sample mail survey of 1,800 practicing ob-gyns. Key variables included whether respondents ever encountered patients seeking abortions in their practice and whether they provided abortion services. Correlates of providing abortion included physician demographic characteristics, religious affiliation, religiosity, and the religious affiliation of the facility in which a physician primarily practices.

RESULTS: Among practicing ob-gyns, 97% encountered patients seeking abortions, whereas 14% performed them. Female physicians were more likely to provide abortions than were male (18.6% compared with 10.6%, adjusted odds ratio 2.54, 95% confidence interval 1.57–4.08), as were those in the youngest age group, those in the Northeast or West, those in highly urban postal codes, and those who identify as being Jewish. Catholics, Evangelical Protestants, non-Evangelical Protestants, and physicians with high religious motivation were less likely to provide abortions.

CONCLUSION: The proportion of U.S. ob-gyns who provide abortions may be lower than estimated in previous research. Access to abortion remains limited by the willingness of physicians to provide abortion services, particularly in rural communities and in the South and Midwest.

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LEVEL OF EVIDENCE: II

The demand for abortion services in the United States is high. Approximately half of all pregnancies in the United States are unintended, and approximately half of unintended pregnancies end in abortion.[1] Abortion is one of the most common outpatient surgical procedures for women of reproductive age,[2] yet many women have trouble accessing abortion services, and access has become more limited over the past few decades.[1,3] A recent study found that although the abortion rate among U.S. women increased slightly from 2005 to 2008, 87% of U.S. counties in which 35% of reproductive-aged women live still did not have a single abortion provider.[4] One cause of limited access is a decline over the past three decades in the number of providers who perform abortion,[5] a trend that could become more pronounced over time as the average age of abortion providers increases and these providers retire.[6]

One potential explanation for this decline is that the number of obstetrics–gynecology residency programs that included abortion training decreased steadily over the two decades before 1996. At that time, the American Council on Graduate Medical Education began requiring abortion training as part of accredited obstetrics–gynecology residency programs.[6] Despite the 1996 change in residency training rules, the number of newly trained obstetrician–gynecologists (ob-gyns) willing to perform abortions remains low. A 2008 survey of all ob-gyns board-certified between 1998 and 2001 found that only 22% provided abortions, indicating that factors other than training influence whether a physician provides abortions.[7]

Religious objections to abortion, both personal and institutional, also might partially explain the low

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percentage of abortion providers. Previous studies indicate that physicians who object to abortion for religious or other moral reasons tend to be less willing to provide abortion services.[7,8] Ob-gyns who are more religious are less willing to provide several methods of family planning to patients, including oral contraceptive pills, intrauterine devices, and tubal ligations.[9] In addition, religious directives applied when a Catholic hospital merges with a previously non-Catholic hospital usually result in a decrease in provision of abortion and other family planning services in that community.[10]

This study uses data from a large nationally representative sample of practicing ob-gyns to estimate the proportion of ob-gyns practicing in the United States who encounter patients seeking abortions, as well as the proportion who provide abortion services. The study also estimates the extent to which providing abortion is associated with a physician's demographic and religious characteristics, and the religious affiliation of the facility in which the physician works.

MATERIALS AND METHODS

From October 2008 to January 2009, we mailed a self-administered confidential survey to a stratified random sample of 1,800 ob-gyns aged 65 years or younger currently practicing in the United States. We obtained our sample from the American Medical Association Physician Masterfile, a database intended to include all practicing physicians in the United States. To adequately represent minority religious perspectives, we used validated surname lists to create four strata as follows. We sampled 180 physicians with typical South Asian surnames, 225 physicians with typical Arabic surnames, 180 physicians with typical Jewish surnames, and 1,215 other physicians (from all those whose surnames were not on one of these ethnic lists).[11–13] Within each stratum, names were randomly selected by arranging them in random order, then systemically drawing from a random start point. Because this analysis was part of a larger survey designed to examine beliefs and practices of ob-gyns regarding a range of sexual and reproductive health topics, the overall and stratum-specific sample sizes were calculated so that a 60% response rate would yield the desired margins of error on the primary analyses at the 95% level of confidence.[14] The overall sample size was calculated to yield a 3% margin of error, and the sample sizes of the four strata were designed based on previous survey experience with the intention to yield at least 100 respondents in each group for a maximum 10% margin of error.[14] Physicians received up to three separate mailings of the questionnaire; the first included $20, and the third offered an additional $30 for participating. Physicians also received an advance letter and a postcard reminder after the first questionnaire mailing. The University of Chicago Biological Sciences Institutional Review Board approved this survey. The requirement of written informed consent was waived by the Institutional Review Board, as is typical with self-administered confidential surveys.

We asked physicians two questions regarding abortion: 1) in your practice, do you ever encounter patients seeking an abortion? (yes or no); and 2) do you provide abortion services? (yes or no). The survey included demographic variables such as age, gender, race, ethnicity, and whether a provider was born in the United States or immigrated. We used respondents' mailing addresses to identify their geographic region (Northeast, South, Midwest, or West) and to classify their location as urban or rural. The U.S. Census Bureau, using information from the 2000 census, constructed a variable for each postal code that reflects the percentage of the population living in that postal code that is "urban," defined as living in either an urban area (with a population density of 1,000 or more people per square mile), or an urban cluster (population density of 500 or more people per square mile). Using these data and physicians' postal codes, we classified physicians as urban (postal code population more than 90% urban) or rural (90% or less urban).

Participants' religious affiliations were classified by self-report (not inferred by surname) as none, Hindu, Muslim, Catholic (includes Roman Catholic and Eastern Orthodox), Jewish, Evangelical Protestant, non-Evangelical Protestant, and other. Religiosity was measured using responses to the question, "how important would you say your religion is in your own life?" Possible responses were "not very important in my life" (categorized as low), "fairly important in my life" (categorized as medium), and "very important in my life" or "the most important thing in my life" (categorized as high).

We used χ^2 tests for univariable analyses and logistic regression for multivariable analyses. We performed all analyses using the survey design-adjusted commands in Stata 11.0. We adjusted analyses using probability weights to account for oversampling of physicians likely to be of Hindu, Jewish, or Muslim descent (survey design weights). We also adjusted for differential response rates among physicians from each of the four different strata and among foreign compared with U.S. medical school

graduates (poststratification adjustment weights). Weights were calculated as the inverse probability of a person with the respondent's characteristics being in the final data set. The final weight for each respondent was a product of the survey design weight and the poststratification adjustment weight. Using these adjustments, we produced estimates for all currently practicing ob-gyns in the United States. We considered analyses significant at $P<.05$.

Of the 1,800 physicians sampled, 40 were ineligible because they either had retired or had an invalid address. The overall response rate was 66%, or 1,154 physicians. Of these, 10 did not answer the question regarding whether they provide abortions. A further 113 were missing information on at least one demographic or religious characteristic, leaving a sample size of 1,031 physicians for multivariable analyses. The 113 physicians deleted from the multivariable sample did not differ significantly from the 1,031 physicians included in the multivariable sample in terms of whether they provided abortions ($P=.41$).

RESULTS

After adjusting for survey design, 97.0% (95% confidence interval [CI] 95.9%–98.1%) of all practicing ob-gyns in the United States younger than 65 encountered patients seeking abortions; 14.4% (95% CI 12.2–16.5) provided abortions themselves (Table 1). Table 2 displays univariable and multivariable correlates of abortion provision. Female physicians were more likely than males to provide abortions (18.6% compared with 10.6%, adjusted odds ratio [OR] 2.54, 95% CI 1.57–4.08). Age cohort is also predictive of whether a physician provided abortions. The youngest ob-gyns, those aged 35 or younger, were the most likely to perform abortions (22%.0), and physicians from the oldest age group surveyed (56–65 years) were the next most likely to be abortion providers (15.4%, OR 0.84, 95% CI 0.38–1.85); those in the age range of 36–45 years were the least likely to provide abortions (12.0%, OR 0.40, 95% CI 0.19–0.84). Although 34.7% of ob–gyns who responded to this survey are located in the South, only 8.2% of southern ob–gyns provide abortions. Physicians located in the Northeast were more likely to be abortion providers than those located in either the South (OR 0.37, 95% CI 0.21–0.66) or the Midwest (OR 0.40, 95% CI 0.21–0.74). Finally, ob-gyns whose postal code was more than 90% urban were more likely than those with postal codes 90% urban or less to perform abortions (OR 3.20, 95% CI 1.68–6.07).

Compared with physicians reporting no religious affiliation, Jewish physicians were more likely to be

Table 1. Obstetrician–Gynecologist Survey Respondents Who Answered Abortion Question (n=1,144) by Response

Variable	Provide Abortions (n=194)*	Do Not Provide Abortions (n=950)*
Sex		
Female	106 (60.7)	426 (44.6)
Male	88 (39.3)	524 (55.4)
Age (y)		
26–35	24 (13.5)	81 (8.0)
36–45	57 (29.6)	337 (36.2)
46–55	60 (32.9)	310 (33.7)
56–65	53 (24.0)	222 (22.1)
Race or ethnicity		
White, non-Hispanic	132 (72.5)	636 (71.9)
African American, non-Hispanic	8 (7.0)	59 (7.8)
Hispanic or Latino	6 (4.2)	57 (7.7)
Asian	42 (16.1)	160 (11.5)
Other	4 (0.1)	17 (1.1)
Geographic region		
Northeast	82 (37.9)	201 (18.6)
South	33 (19.7)	339 (37.3)
Midwest	26 (13.7)	223 (24.0)
West	53 (28.7)	185 (20.2)
Urban or rural postal code		
90% or less urban	18 (11.6)	245 (28.0)
More than 90% urban	171 (88.4)	669 (72.0)
Immigration history		
Born in the United States	137 (77.9)	673 (79.8)
Immigrated to United States at any age	56 (22.1)	266 (20.2)
Religious affiliation		
No religion	33 (22.2)	85 (10.4)
Hindu	21 (3.7)	70 (2.5)
Jewish	68 (26.5)	90 (6.7)
Muslim	7 (2.1)	47 (1.2)
Roman Catholic or Eastern Orthodox	23 (16.8)	238 (28.7)
Evangelical Protestant	1 (0.8)	89 (11.5)
Non-Evangelical Protestant	31 (22.9)	268 (34.5)
Other religion	8 (5.0)	39 (3.7)
Religious motivation		
High	54 (25.7)	485 (51.7)
Medium	65 (30.0)	254 (26.6)
Low	75 (44.4)	194 (21.7)
Works in religious facility		
Nonreligious facility	164 (86.2)	715 (76.2)
Other religious facility	16 (7.5)	85 (9.5)
Catholic facility	10 (6.3)	136 (14.4)

Data are n (%).

* n does not equal 1,144 for all variables because of item nonresponse. Columns do not all sum to 100% because of rounding. Percentages are adjusted for survey sampling design and response rates to produce population estimates for all currently practicing obstetrician–gynecologists in the United States.

Table 2. Likelihood Among U.S. Obstetrician–Gynecologists of Providing Abortion by Physician Characteristics

Variable	Bivariate Analyses		Multivariate Analyses Odds Ratio (95% Confidence Interval)
	%	P (χ^2)	
Sex			
Male	10.6	<.001	Reference
Female	18.6		2.54 (1.57–4.08)*
Age (y)			
26–35	22.0	.116	Reference
36–45	12.0		0.40 (0.19–0.84)*
46–55	14.1		0.57 (0.27–1.18)
56–65	15.4		0.84 (0.38–1.85)
Race or ethnicity			
White, non-Hispanic	14.6	.266	Reference
African American, non-Hispanic	12.5		2.18 (0.86–5.53)
Hispanic or Latino	8.4		0.91 (0.31–2.69)
Asian	19.2		1.25 (0.51–3.07)
Other	10.8		0.60 (0.14–2.56)
Geographic region			
Northeast	25.5	<.001	Reference
South	8.2		0.37 (0.21–0.66)*
Midwest	8.8		0.40 (0.21–0.74)*
West	19.3		0.91 (0.52–1.59)
Urban or rural postal code			
90% or less urban	6.5	<.001	Reference
More than 90% urban	17.0		3.20 (1.68–6.07)*
Immigration history			
Born in the United States	15.5	.596	Reference
Immigrated to United States at any age	14.1		1.06 (0.51–2.18)
Religious affiliation			
No religion	26.5	<.001	Reference
Hindu	20.0		0.70 (0.24–2.06)
Jewish	40.2		3.27 (1.54–6.93)*
Muslim	15.6		0.35 (0.09–1.41)
Roman Catholic or Eastern Orthodox	9.0		0.41 (0.19–0.91)*
Evangelical Protestant	1.2		0.08 (0.01–0.73)*
Non-Evangelical Protestant	10.1		0.46 (0.23–0.94)*
Other religion	18.7		0.50 (0.16–1.60)
Religious motivation			
High	7.8	<.001	Reference
Medium	16.1		2.04 (1.16–3.61)*
Low	25.9		2.72 (1.46–5.08)*
Works in a religious facility			
Non-religious facility	15.9	.019	Reference
Other religious facility	11.7		0.88 (0.41–1.90)
Catholic facility	6.8		0.32 (0.16–0.68)*

Table presents survey design-adjusted percentages followed by odds ratios with 95% confidence intervals from logistic regression analyses that include all variables in the table.
n counts for analyses vary from 1,118 to 1,144 because of partial nonresponse.
* P<.05.

abortion providers (OR 3.27, 95% CI 1.54–6.93), whereas self-identified Evangelical Protestants (OR 0.08, 95% CI 0.01–0.73), non-Evangelical Protestants (OR 0.46, 95% CI 0.23–0.94), and Catholics (OR 0.41, 95% CI 0.19–0.91) were less likely to provide abortions. Physicians with medium (OR 2.04, 95% CI 1.16–3.61) or low (OR 2.72, 95% CI 1.46–5.08) religiosity were more likely than those with high religiosity to perform abortions. Working primarily in a Catholic facility is associated with a decreased likelihood of performing abortions, even after adjusting for the practitioner's own religious characteristics (OR 0.32, 95% CI 0.16–0.68), but those who work in facilities affiliated with a religious denomination other

than Roman Catholic were no more or less likely to perform abortions than those who work in facilities without a religious affiliation (OR 0.88, 95% CI 0.41–1.90).

DISCUSSION

The decline in the number of abortion providers appears to have slowed in recent years;[4] however, our study estimates that the proportion of U.S. ob-gyns who provide abortions, 14%, is lower than was previously estimated. Steinauer et al[7] found that 22% of ob-gyns board-certified between 1998 and 2001 provided abortion services. Our lower estimate may represent a true decline in the proportion of ob-gyns providing abortion, or may reflect the different sampling and survey techniques: Steinauer et al[7] surveyed a younger group of physicians to capture those trained after the implementation of abortion training, whereas our study surveyed the full spectrum of practicing ob-gyns aged 65 years and younger. We found that female ob-gyns and the youngest group were the most likely to provide abortions, indicating that the ranks of abortion providers might be replenished by newly trained graduates.

As expected, ob-gyns who rated themselves as highly religious or who belonged to religious groups that strongly oppose abortion, including Catholics and Evangelical Protestants, were less likely to provide abortions. Roman Catholic teaching that forbids abortion is well known.[15] In addition to discouraging individual Catholics from performing abortions, Roman Catholic teaching is reflected in directives that govern Catholic hospitals, which probably accounts for the fact that ob-gyns who work primarily in Catholic hospitals are also less likely to perform abortions. Of note, the association between religious characteristics and provision of abortion was not absolute; a few physicians who reported high religious importance still performed abortions. Furthermore, providers of abortion came from every religious affiliation, including some Catholics and Evangelical Protestants. A small proportion of physicians who reported working in Catholic facilities did provide abortions, which may be attributable to incomplete enforcement of Catholic hospital policy or may reflect physicians who work in multiple facilities because the survey question about religious hospital affiliation only asked about a physician's primary place of practice.

This study did not assess whether ob-gyns who do not perform abortions routinely refer their patients seeking abortions to colleagues who do perform them. Consistent referral would facilitate access to abortions for at least some of these patients. In 2010, the Ethics Committee of the American College of Obstetricians and Gynecologists issued a Committee Opinion[16] in which they argued that ob-gyns are obligated to refer their patients for all legal reproductive health services, including abortions. Nonetheless, that article proved controversial, and previous research has shown that substantial minorities of physicians do not believe they are obligated to refer patients for or provide information about how to obtain procedures to which the physician has a religious or moral objection.[17] Furthermore, the fact that so few ob-gyns provide abortions may limit access to abortion, even for patients whose ob-gyns are willing to refer. In the end, patients should know that the majority of physicians give information about how to obtain an abortion and that most refer for abortion, but only one in seven performs abortion. Those who perform abortion tend to be female, less religious, live in urban areas, and live in the Northeast or West.

Because ob-gyns in general and abortion providers in particular are concentrated in urbanized areas, access to abortion might be particularly limited for women in rural areas, especially in the South and the Midwest, where physicians are less likely to perform abortions. It is possible that ob-gyns who have religious or other moral objections to abortion are also more likely to live in rural areas. However, previous surveys indicate that providers living in rural areas are less likely to perform abortions even if they do not personally object to abortion. Such physicians often face opposition from the surrounding community, especially because facilities for surgical abortions are often targeted for protests by antiabortion activists.[18] Recent research indicates that harassment of abortion providers is especially common in the South and in the Midwest.[4]

There are several limitations to this study. First, we surveyed only ob-gyns and thus do not include information on other clinicians such as family physicians, who provide a significant minority of abortions.[19] Second, survey nonrespondents might differ from respondents in terms of abortion provision or other characteristics in ways that would bias the findings we report. Unfortunately, no information for nonrespondents was available for comparison. Third, information regarding religious affiliation, religiosity, and abortion provision is self-reported and thus is subject to measurement error. Although respondents were guaranteed confidentiality and names were removed from responses for analysis, the survey was not anonymous so respondents might have been hesitant to report abortion provision. Fourth, our assessment of abortion provision is categorical in

nature and thus might classify as abortion providers ob-gyns who only rarely perform abortions and perhaps only under specific circumstances such as fetal anomaly. This might yield a skewed perception of how many physicians are actually available to provide broader abortion services. The existing census of abortion providers that surveys facilities rather than individual physicians is a more accurate method for detecting trends in abortion access.[4] Fifth, our questionnaire does not distinguish between types of abortion, such as medical compared with surgical, or those during the first trimester compared with later in the pregnancy. We also make the assumption that "abortion" refers only to viable pregnancies, whereas some might apply the term abortion to procedures such as removing an ectopic pregnancy or an inevitable miscarriage. We also could not assess respondents' interpretations of the question about patients seeking abortion. Sixth, we did not ask respondents the reasons they opted to provide or not provide abortions. Religious and demographic characteristics correlated with abortion provision do not demonstrate causation. Previous studies have found that ob-gyns wishing to provide abortion face complex personal and system factors that affect their decisions.[20] Finally, whether a respondent is located in an area that is primarily urban or rural is determined using the postal code of that physician's preferred mailing address on file with the American Medical Association, which might not reflect the locales where that physician actually provides services. Thus, the availability of abortion services in underserved areas might be better or worse than what is reflected in this study if practitioners receive their mail in one postal code but travel to other areas to perform abortions.

REFERENCES

1. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001, Persp Sex Reprod Health 2006;38:90–6.
2. DeFrances C, Podgornik M. 2004 National Hospital Discharge Survey. Advanced data from vital and health statistics of the National Center for Health Statistics. Bethesda (MD): National Center for Health Statistics; 2006.
3. Henshaw SK. Abortion incidence and services in the United States, 1995–1996. Family Plann Perspect 1998;30:263–70.
4. Jones RK, Kooistra K. Abortion incidence and access to services in the United States, 2008. Perspect Sex Reprod Health 2011;43:41–50.
5. Jones RK, Kost K, Singh S, Henshaw SK, Finer LB. Trends in abortion in the United States. Clin Obstet Gynecol 2009;52: 119–29.
6. Eastwood KL, Kacmar JE, Steinauer J, Weitzen S, Boardman LA. Abortion training in United States obstetrics and gynecology residency programs. Obstet Gynecol 2006;108:303–8.
7. Steinauer J, Landy U, Filippone H, Laube D, Darney PD, Jackson RA. Predictors of abortion provision among practicing obstetrician–gynecologists: A national survey. Am J Obstet Gynecol 2008;198:39.e1–6.
8. Aiyer AN, Ruiz G, Steinman A, Ho GY. Influence of physician attitudes on willingness to perform abortion. Obstet Gynecol 1999;93:576–80.
9. Lawrence RE, Rasinski KA, Yoon JD, Curlin FA. Obstetrician–gynecologists' views on contraception and natural family planning: A national survey. Am J Obstet Gynecol 2010;203:1.e1–7.
10. Donovan P. Hospital mergers and reproductive health care. Fam Plann Perpect 1996;28:281–4.
11. Lauderdale DS, Kestenbaum B. Asian American ethnic identification by surname. Pop Res Policy Rev 2000;19:283–300.
12. Lauderdale DS. Birth outcomes for Arabic-named women in California before and after September 11. Demography 2006; 43:185–201.
13. Sheskin IM. A methodology for examining the changing size and spatial distribution of a Jewish population: a Miami case study. Shofar 1998;17:97–114.
14. Lawrence RE, Rasinski KA, Yoon JD, Curlin FA. Obstetrician-gynecologists' beliefs about assisted reproductive technologies. Obstet Gynecol 2010;116:127–35.
15. Pope Paul VI. Humanae Vitae. 1968. Available at: http://www.vatican.va/holy_father/paul_vi/encyclicals/documents/hf_p–vi_enc_25071968_humanae–vitae_en.html. Retrieved January 24, 2011.
16. The limits of conscientious refusal in reproductive medicine. ACOG Committee Opinion No. 385. American College of Obstetricians and Gynecologists. Obstet Gynecol 2007;110: 1203–8.
17. Curlin FA, Lawrence RE, Chin MH, Lantos JD. Religion, conscience, and controversial clinical practices. N Engl J Med 2007;356:593–600.
18. Rosenblatt RA, Mattis R, Hart LG. Abortions in rural Idaho: Physician's attitudes and practices. Am J Public Health 1995; 85:1423–5.
19. O'Connell K, Jones HE, Simon M, Saporta V, Paul M, Lichtenberg ES,et al. First-trimester surgical abortion practices: a survey of National Abortion Federation members. Contraception 2009;79:385–92.
20. Freedman L. Willing and unable: Doctors' constraints in abortion care. Nashville (TN): Vanderbilt University Press; 2010.