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CLINICAL ARTICLE

Obstetrician–gynecologists' knowledge of and attitudes toward medical abortion in Guatemala

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A R T I C L E I N F O

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A B S T R A C T

Objective: To characterize the legal and clinical knowledge of Guatemalan obstetrician–gynecologists (OB/GYNs) regarding medical abortion and to determine factors associated with approval of its use for specific indications. *Methods:* A trained interviewer administered a multiple-choice survey to 172 private-practice OB/GYNs across Guatemala. Univariate, bivariate, and multivariate analyses characterized medical abortion opinion and knowledge, and logistic regression identified influential factors. *Results:* 73% of OB/GYNs knew that abortion is legally permitted when the woman's life is at risk. Although 92% knew that misoprostol can be used to induce abortion, only 35% knew the WHO-recommended dosage. Only 25% knew of mifepristone. Compared with older OB/GYNs, those under 40 years of age were 7 times more likely, and 40–49 year olds were twice as likely to approve of medical abortion for fetal death and severe eclampsia with fetal death, respectively. *Conclusion:* Current indications for abortion under Guatemalan law, as well as OB/GYN practices and beliefs regarding medical abortion, are hindering women's access to safe medical abortion and, therefore, potential reductions in maternal morbidity and mortality. Future research should aim to identify whether and why Guatemalan OB/GYNs are unfamiliar with these drugs, prefer to use other methods, or are completely against abortion.

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1. Introduction

Maternal health-related Millennium Development Goals for 2015 are far from being met in most low-income countries. Despite recent decreases [1], unacceptably high maternal mortality rates persist in many such countries [2]. As a major contributor to maternal morbidity and mortality, unsafe abortion continues be a public health problem. Estimates reveal that, each year, approximately 4 million unsafe abortions are performed in Latin America, which has the highest abortion incidence worldwide (29 per 1000 women aged 14–44 years) [3].

In Guatemala, abortion incidence is 24 per 1000 women of reproductive age, with rates as high as 30 per 1000 in some areas [4]. In total, 65 000 abortions are induced each year, most of which involve poor, rural, and/or indigenous women. Unproven and unsafe traditional methods used to induce abortion such as intra-amniotic agents are highly questionable owing to the number of associated complications [4,5]. Unsurprisingly, unsafe abortion has been the 4th leading cause of maternal death in Guatemala for the past 10 years [6].

This situation is caused, in part, by the definition of abortion as a crime against the person under Guatemalan law, with imprisonment prescribed for both professionals performing an abortion and women who self-induce or agree to receive an illegal abortion [7]. Abortion is legally indicated only when the woman's life is at risk; therefore, therapeutic abortion is not penalized when it has been determined that the pregnancy was endangering the woman's life. Nonetheless, women rarely agree to undergo legal termination of pregnancy at public hospitals because, among other reasons, "abortion" has negative connotations among Guatemalans. There is also resistance from health professionals for a variety of cultural, social, and religious reasons. Some Central American obstetrician–gynecologists (OB/GYNs) are against the provision of contraceptives because they regard them as abortifacients, whereas others refuse to perform therapeutic abortions even when medically indicated.

Studies carried out by the World Health Organization (WHO) to identify alternative therapeutic options suggested in 1997 that antiprogestins be used in gynecologic and obstetric practice, including medical abortion provision [5,8]. Consequently, medical induction regimes have become increasingly popular and implemented in many countries [9,10]. In 2005, the US Food and Drug Administration incorporated the combined mifepristone/misoprostol regime into its Model List of Essential Medicines for priority diseases and conditions [11].

Worldwide, OB/GYNs have experienced a degree of success in promoting sexual and reproductive rights. International federations of OB/GYN specialists [12–14] have increased the awareness of unsafe abortion and promoted the development of strategic country-level

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plans to decrease its prevalence, alongside efforts to increase access to safe abortion and family planning [12,15]. However, a lack of effective interventions such as the introduction of mifepristone and misoprostol in modern obstetric practice is still a reality in Guatemala, where mifepristone is unavailable and unregistered. Misoprostol (distributed in Guatemala as Cytotec by Pfizer, New York, NY, USA) is registered for gastric indications and is used off-label in obstetrics, including induction of labor at term and medical abortion.

As a professional group and as individuals, OB/GYNs are in a unique position to support and advocate for the implementation of scientific and technologic advances that can improve women's health. However, few studies in Central America have explored their opinions on medical abortion provision for specific indications. To fill that gap, the present cross-sectional study aimed to characterize the knowledge of OB/GYNs regarding legal and clinical indications for medical abortion, as well as their attitudes toward medical abortion methods and indications.

2. Materials and methods

All private-practice OB/GYNs belonging to the Guatemalan Society of Gynecologists and Obstetricians (AGOG) were identified using the official AGOG membership list and sent an in-person invitation describing the study and its objective. Once in an AGOG practitioner's clinic, the interviewer also took the opportunity to invite non-AGOG colleagues to participate. All participants provided written informed consent. Participation in the study was voluntary and anonymous because only an identification number was assigned to each questionnaire. The research protocol was evaluated and approved by a private local Research Ethics Committee.

Knowledge of medical abortion was evaluated using a specially developed multiple-choice questionnaire comprising 3 sections: sociodemographics; medical abortion approval and knowledge (based on WHO guidelines [5,16,17]); and legal status. The questionnaire was piloted and underwent minor editing prior to fieldwork. An interviewer previously trained in the content and format of the study questionnaire visited participants in their clinics and remained present in case of doubts or questions while they filled out the questionnaire, which took an average of 20 minutes to complete. Two separate databases were used to avoid errors in consistency and range during data entry.

Univariate, bivariate, multivariate, and logistic regression analyses were carried out using Epi Info (Centers for Disease Control and Prevention, Atlanta, GA, USA) and LogXact version 6.2 (Cytel, Cambridge, MA, USA). Two sets of variables were created: response variables to characterize OB/GYN knowledge and attitudes regarding medical abortion (knowledge of legal status and clinical indications for medical abortion with misoprostol and mifepristone, as well as dosage); and explanatory variables that could potentially influence those responses (age, sex, marital status, number of children, years of medical practice, place of work, position at work, and clinical department). Variables were assigned a value of "0" or "1," and statistical associations between independent and dependent variables were determined. In the first stage, χ^2 tests identified statistically acceptable dependent variables ($P \leq 0.25$) that were associated with each independent variable. In the second stage, a logistic regression model (response = constant + selected explanatory variables) was applied to the variables revealed to have had a positive association in the first stage of the analysis.

3. Results

Of the 242 OB/GYNs invited to participate, 172 (71.1%) were interviewed between February 1 and August 31, 2010. Seventy questionnaires (28.9%) were not completed. Of these, 30 were classified as "total refusal at first contact with OB/GYNs" and the rest remained incomplete after more than 2 unsuccessful attempts at contact. All OB/GYNs who gave a reason for refusing to participate cited the study's topic.

Overall, 81 (47.1%) respondents were older than 50 years of age, 52 (30.2%) were 40–49 years, and 39 (22.7%) were under 40 years (Table 1). Most interviewees (141 [82.0%]) were male and most were married (140 [81.4%]); 81 (47.1%) had 3 or more children, 104 (60.5%) had more than 20 years of experience practicing medicine, and 104 (60.5%) worked exclusively in the private sector. Only 27 (15.7%) were heads of an obstetric or gynecologic department or hospital ward, and 41 (23.8%) were in charge of outpatient services.

Overall, 159 (92.4%) respondents knew about misoprostol but only 1 in 4 knew about mifepristone. 52 (30.2%) said that oxytocin, products with levonorgestrel, and high-dose oral contraceptives could be used for pregnancy termination. Despite high knowledge of misoprostol for therapeutic pregnancy termination, dosage knowledge varied. Only 60 (34.9%) knew the WHO-recommended regimen of up to 3 doses of 800 μg of vaginal misoprostol administered every 6–12 hours for terminating pregnancies under 12 weeks of gestation, and 37 (21.5%) knew the regimen of up to 3 doses of 800 μg of sublingual misoprostol administered every 3–4 hours for terminating pregnancies of less than 9 weeks.

For therapeutic abortion within the first 7 weeks of gestation, only 48 (27.9%) respondents approved of the use of misoprostol or any prostaglandin alone, and 68 (39.5%) approved of the use of a combined regimen of mifepristone and misoprostol. However, 118 (68.6%) of interviewees said they would use mifepristone and misoprostol for legal therapeutic abortion if public and private health services offered them.

Regarding knowledge of legal indications for abortion, 125 (72.7%) interviewees knew that abortion to save a woman's life was legal in Guatemala, and 99 (57.6%) knew that performing an abortion when a woman's health was at risk was not legal (Table 2). Forty-two (24.4%) OB/GYNs incorrectly thought that abortion for genetic malformation was legal in Guatemala, 107 (62.2%) knew that it was not legal, and 23 (13.4%) did not know. No association was found between knowledge of these indications—or lack thereof—and explanatory variables.

Table 1
Sociodemographic characteristics of participating obstetrician–gynecologists (n = 172).

Characteristic	No. (%)
Age, y	
<40	39 (22.7)
40–49	52 (30.2)
≥50	81 (47.1)
Sex	
Female	31 (18.0)
Male	141 (82.0)
Marital status	
Married	140 (81.4)
Single or living in union	21 (12.2)
Other (divorced, widow/widower)	11 (6.4)
Living children	
0	21 (12.2)
1–2	70 (40.7)
≥3	81 (47.1)
Years of medical practice	
>40	9 (5.2)
30–39	44 (25.6)
20–29	51 (29.7)
10–19	55 (32.0)
3–9	13 (7.6)
Type of practice	
Private only	104 (60.5)
Public and private	68 (39.5)
Department/position	
Head of department/service	27 (15.7)
Outpatient services	41 (23.8)
Private sector only	104 (60.5)

Table 2
Obstetrician–gynecologists' knowledge of legally permitted reasons for medical abortion.[a]

Reason	No. of respondents	Knowledge		
		Legal	Not legal	Do not know
Woman's life at risk [b]	172	125 (72.7)	29 (16.9)	18 (10.5)
Woman's health at risk	172	48 (27.9)	99 (57.6)	25 (14.5)
Pregnant from rape	172	12 (7.0)	141 (82.0)	19 (11.0)
Genetic and fetal malformations	172	42 (24.4)	107 (62.2)	23 (13.4)
Socioeconomic difficulties	172	–	170 (98.8)	2 (1.2)
Unmarried woman	170	–	169 (99.4)	1 (0.6)
Woman under the age of 18 years	172	–	169 (98.3)	3 (1.7)

[a] Values are given as number (percentage) unless otherwise indicated.
[b] The only reason for which abortion is legally permitted under Guatemalan law.

The vast majority (141 [82.0%]) of interviewees knew that, under Guatemalan law, women are not allowed to terminate a pregnancy resulting from rape. In the multivariate analysis, this was most evident among OB/GYNs aged 40–49 years, who were 8 times more likely to say that abortion for rape was not legal than were OB/GYNs in other age groups (95% confidence interval [CI], 1.27 to ∞). By contrast, respondents with fewer than 10 years of medical practice experience were 14.3 times more likely to say that abortion for rape was legal than were respondents with more than 10 years of professional practice (95% CI, 2.17–108.33). Interviewees who worked exclusively in the private sector were 5.9 times more likely to say that it was legal to provide an abortion to a woman who had been raped than were those who also worked for public institutions (95% CI, 1.01–68.92). Almost all OB/GYNs knew that induced abortion for socioeconomic difficulties (170 [98.8%]), being a single mother (169/170 [99.4%]), and being a woman under 18 (169 [98.3%]) is not permitted under Guatemalan law.

Table 3 presents absolute indications for the induction of abortion to protect a woman's life and health in obstetric practice. When asked about the provision of medical abortion in specific situations, OB/GYNs expressed a variety of attitudes to show their approval or disapproval of medical abortion for uterine evacuation. In cases of missed abortion and fetal death before 20 weeks of gestation, 152 (88.4%) and 151 (87.8%) OB/GYNs, respectively, approved of using misoprostol and mifepristone for medical abortion. This decreased to 111 (64.5%) when indicated for multiple genetic abnormalities incompatible with life and 109 (63.4%) for anencephalic fetus at less than 20 weeks of gestation.

When presented with a situation of severe eclampsia and fetal death before 20 weeks of gestation, only 71 (41.3%) of respondents approved of medical abortion (Table 3). Multivariate analysis identified a statistically significant association between age of respondent and use of medical abortion for women with severe eclampsia and fetal death before 20 weeks gestation: OB/GYNs aged 40–49 years were 2 times more likely to approve of medical abortion compared with those aged 49 years and older (95% CI, 1.04–4.45) (Table 4).

An age-related association was observed for approval of administering mifepristone and misoprostol for fetal death prior to 20 weeks of gestation. For this indication, OB/GYNs under 39 years of age were 6.7 times more likely to approve of medical abortion than were those in other age groups (95% CI, 1.14–51.81).

Respondents with fewer than 10 years of professional practice were 3 times more likely than respondents with more than 10 years of experience to disapprove of uterine evacuation of an anencephalic fetus (95% CI, 1.25–12.69). Similarly, respondents with 3 or more living children were 2 times more likely to disapprove of medically aborting an anencephalic fetus than were respondents with no children (95% CI, 1.01–4.26).

4. Discussion

The present study quantitatively analyzed OB/GYNs' knowledge of medical abortion methods, and clinical and non-clinical indications and opinions regarding the use of medical abortion when presented with absolute obstetric indications. Future research should delve into these issues: for example, whether Guatemalan OB/GYNs are unfamiliar with these drugs, prefer to use other methods of uterine evacuation, or are completely against abortion for such indications (whether for legal, moral, or cultural reasons).

The main limitations of the study were that sociodemographic information could not be collected from physicians who refused to participate and that the unavailability of mifepristone could potentially have skewed the knowledge question results. Additionally, some of the health exception questions pertained to termination of pregnancies before 20 weeks, whereas the WHO guidelines used to evaluate dosage knowledge pertained to termination of earlier pregnancies. It is possible that respondents would have approved of medical abortion for health exceptions for later pregnancies because it is the preferred method [18], or of surgical abortion overall. However, because medical abortion is used much less frequently than surgical abortion in Guatemala [4], an exploratory study about providers'

Table 3
Obstetrician–gynecologists' attitudes regarding health exceptions for medical abortion.[a]

Health exception	No. of respondents	Attitude	
		Approve	Disapprove
Anembryonic pregnancy or missed abortion	172	152 (88.4)	20 (11.6)
Fetal death prior to 20 weeks gestation	172	151 (87.8)	21 (12.2)
Multiple genetic and fetal malformations incompatible with extrauterine life	172	111 (64.5)	61 (35.5)
Anencephalic fetus less than 20 weeks of gestation	172	109 (63.4)	63 (36.6)
Severe eclampsia and fetal death before 20 weeks of gestation	172	71 (41.3)	101 (58.7)

[a] Values are given as number (percentage) unless otherwise indicated.

Table 4
Obstetrician–gynecologists' characteristics significantly associated with approval of medical abortion for health exceptions.[a]

Characteristic	Severe eclampsia and fetal death before 20 weeks of gestation	Fetal death before 20 weeks of gestation	Anencephalic fetus before 20 weeks of gestation
Age, y			
<39	–	6.7 (1.14–51.81)	–
40–49	2.0 (1.04–4.45)	–	–
≥49 [b]	–	–	–
Living children			
≥3	2.2 (1.18–4.22)	–	2.6 (1.12–4.71)
1–2	2.3 (1.18–4.65)	–	
0 [b]	–	–	–

[a] Values are given as odds ratio (95% confidence interval).
[b] Reference value for multivariate analysis.

familiarity with and attitudes toward the most common medical abortion methods was justified.

An important finding was that many non-medical reasons for abortion considered acceptable under other countries' legal systems (e.g. socioeconomic difficulties, being unmarried, or being under the age of 18 years [18]) were opposed by almost all OB/GYNs interviewed. This is consistent with the findings of a Nicaraguan study [19] showing that OB/GYNs disapproved of performing abortion for the above reasons but in contrast to an opinion survey of high-profile clinicians in Mexico City, who approved of such indications being legal [20].

The present findings revealed that OB/GYNs with fewer years of professional experience had limited knowledge of certain legal and medical aspects of medical abortion. However, younger respondents were more open to providing medical abortion for important clinical indications compared with the oldest respondents, perhaps representing a change in thinking or training.

A worrying finding was that many OB/GYNs still disapproved of medical abortion even when presented with absolute clinical indications such as anembryonic pregnancy or fetal death; these are unequivocal indications for therapeutic abortion. An even larger proportion of OB/GYNs disapproved of using medicines to terminate a pregnancy with a live fetus, even when incompatible with extrauterine life.

Furthermore, most OB/GYNs knew that abortion is legally permitted when the mother's life is at risk—which is the only legal indication for abortion under Guatemalan law—and many thought a woman's health risk was also a legal indication. For those reasons, it is of concern that twice as many OB/GYNs disapproved of medical abortion for women with severe eclampsia and carrying a dead fetus than disapproved of terminating a pregnancy because of fetal death.

Finally, the study revealed that here was low knowledge regarding mifepristone and of correct dosages of mifepristone and misoprostol, even though the majority of interviewees said that they would use them for abortion if they were legal and available. Additionally, infrequent use of misoprostol when medically indicated was observed, despite its availability, as well as persistence in using ineffective products for inducing abortion. A qualitative study involving 2 Central American countries revealed that, of the drugs used for medical abortion, mifepristone was the least known among medical staff, whereas prostaglandins were mentioned most frequently [21]—a finding confirmed by the present study.

It is hoped that the data presented will foster technical debate among Central American OB/GYNs, thus contributing to improved obstetric and gynecologic practices. Ensuring women's access to comprehensive sexual and reproductive care, including legally sanctioned medical abortion, is a professional and ethical imperative for OB/GYN specialists. Previous studies have detected an urgent need to acquire new skills to perform medical abortion [22]. Gynecologic practice in Central America must continue to assimilate scientific advances in the field—such as medical abortion to prevent unsafe abortion—if maternal morbidity and mortality are to be impacted.

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Conflict of interest

The author has no conflicts of interest.

References

[1] Hogan MC, Foreman KJ, Naghavi M, Ahn SY, Wang M, Makela SM, et al. Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. Lancet 2010;375(9726):1609–23.
[2] Bill and Melinda Gates Foundation. Mesoamerican health initiative: strategic assessment of maternal, neonatal and reproductive health in Mesoamerica: current situations and trends. Cuernavaca, Mexico: California Institute of Public Health and National Institute of Public Health of Mexico; 2009. p. 12–8.
[3] World Health Organization. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003. 5th Edition. http://whqlibdoc.who.int/publications/2007/9789241596121_eng.pdf Published 2007.
[4] Singh S, Prada E, Kestler E. Induced abortion and unintended pregnancy in Guatemala. Int Fam Plan Perspect 2006;32(3):136–45.
[5] World Health Organization Scientific Group on Medical Methods for Termination of Pregnancy. Medical Methods for Termination of Pregnancy: Report of Scientific Group. WHO Technical Report Series 871. Geneva: WHO; 1997.
[6] Guatemala Ministry of Public Health. Final Report: Baseline Maternal Mortality 2000. Ciudad de Guatemala: MSPAS; 2003.
[7] Guatemala Penal Code Decree No. 17–73, Articles 133 and 137 (1999).
[8] New warning for mifepristone and misoprostol. Lancet 2005;366(9483):344.
[9] Zhou R, Elul B, Winikoff B. Medical abortion in China: results of a fact-finding mission. New York: Population Council; 2002.
[10] Fjerstad M, Sivin I, Lichtenberg ES, Trussell J, Cleland K, Cullins V. Effectiveness of medical abortion with mifepristone and buccal misoprostol through 59 gestational days. Contraception 2009;80(3):282–6.
[11] US Food and Drug Administration. FDA approves mifepristone for the termination of early pregnancy. http://www.accessdata.fda.gov/drugsatfda_docs/nda/2000/20687_mifepristone.cfm Published 2001.
[12] International Federation of Gynecology and Obstetrics. Prevention of Unsafe Abortion. http://www.figo.org/about/working_groups/unsafe_abortion.
[13] FLASOG. Use of Misoprostol in Gynecology and Obstetrics. ftp://ftp.cricyt.edu.ar/pub/canzorena/informacion%20linea%20abortos%20no%20punibles/04.%20Uso%20de%20Misoprostol%20en%20obstetricia%20y%20ginecolog%C3%ADa%20%28FLASGO%29.pdf Published 2005.
[14] FECASOG. Status of the Central American Federation of Societies of Obstetrics and Gynecology. http://www.fecasog.org/jm/index.php?option=com_rokdownloads&view=folder&Itemid=120 Published 2007.
[15] Vernon R. Meeting the family planning needs of postpartum women. Stud Fam Plann 2009;40(3):235–45.
[16] World Health Organization. Frequently Asked Clinical Questions about Medical Abortion. Geneva: WHO; 2006.
[17] Bracken H. Providing Medical Abortion in Low-resource Settings: an Introductory Guidebook. 2nd Edition. New York: Gynuity Health Projects; 2004.
[18] World Health Organization. Safe Abortion: Technical and Policy Guidance for Health Systems. Geneva: WHO; 2003.
[19] McNaughton HL, Blandón MM, Altamirano L. Should therapeutic abortion be legal in Nicaragua: the response of Nicaraguan obstetrician-gynaecologists. Reprod Health Matters 2002;10(19):111–9.
[20] van Dijk MG, Lara D, García SG. Opinions of decision-makers on the liberalization of abortion laws in Mexico. Salud Publica Mex 2007;49(6):394–400.
[21] Espinoza H, Abuabara K, Ellertson C. Physicians' knowledge and opinions about medication abortion in four Latin American and Caribbean region countries. Contraception 2004;70(2):127–33.
[22] Ellertson C, Simonds W, Winikoff B, Springer K, Bagchi D. Providing mifepristone-misoprostol medical abortion: the view from the clinic. J Am Med Womens Assoc 1999;54(2):91–6.