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CLINICAL ARTICLE

Obstetrics

A global study on the abortion views and knowledge of trainee obstetrician-gynecologists

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Abstract

Objective: To assess the knowledge and views of trainee obstetrician-gynecologists (ObGyn) on abortion.

Methods: A cross-sectional study of trainee ObGyn was conducted by the World Association of Trainees in Obstetrics and Gynecology. A study-specific questionnaire designed using Google Forms® was utilized for the study. The questionnaire was distributed electronically to study participants, to gather information on their sociodemographic characteristics, opinions, knowledge, and training on abortion. Collected data were analyzed using the IBM SPSS, version 25.

Results: Most (140, 74.8%) trainee ObGyn reported that abortion was legal in their countries and most (171, 91.4%) supported the legalization of abortion. Eleven (5.9%) trainees who did not support the legalization of abortion cited religious concerns as their most common reason (5/11, 45.5%). Nearly three-quarters (133, 71.1%) of the trainees would perform an abortion on request. Most of the trainees reported that abortion education was included in the medical school curricula (131, 70.1%) and the ObGyn residency training programs (155, 82.9%) in their countries. Notwithstanding, 36.4% (68) either did not know or did not correctly know the legal status of abortion in their countries.

Conclusion: There is some disparity between ObGyn trainees' knowledge of safe abortion and their awareness of the legality of the same in their countries. There is a need for all countries to include abortion education in the curricula of medical schools and all ObGyn residency programs should offer abortion training to all residents. There is a need for increased advocacy for the legalization of abortion in countries where abortion remains criminalized.

KEYWORDS
abortion, education, human rights, misoprostol, termination of pregnancy, trainees

1 | INTRODUCTION

Globally, approximately 73.3 million induced abortions occur each year, representing 61% of all unintended pregnancies and 29% of all pregnancies.[1,2] This corresponds to a current global abortion rate of 39 abortions per 1000 women aged 15–49 years, up from the rate of 28 per 1000 women aged 15–49 years in 2008.[1,3] Approximately 45% of these abortions are unsafe.[2] Unsafe abortion

remains a significant public health problem. It is a leading cause of maternal mortality, accounting for 13% of maternal deaths globally, with 68000 related deaths annually.[3–5] Low-income countries are disproportionately more affected than developed countries. More than 97% of unsafe abortions and 99.8% of unsafe abortion-related deaths take place in developing countries, where 220 women die for every 100000 unsafe abortions, compared with 30 deaths per 100000 unsafe abortions in developed countries.[2,3,5] Seven million women in the developing world are treated for complications of unsafe abortion every year.[6]

The lack of access to safe abortion care poses significant risks to the physical, mental, social, financial, and overall health and well-being of women. Even though there is a globally increasing trend towards liberalization of abortion laws, some 753 million women, representing 40% of reproductive-age women worldwide, still live in countries with restrictive abortion laws.[7] Unintended pregnancy and unsafe abortion rates are generally higher in countries where abortion is restricted than in countries where it is broadly legal/liberal. In 2015–2019, the unintended pregnancy rate in countries with restrictive abortion laws was 73 per 1000 women, with a safe abortion rate of 25.2%. Comparatively, in countries with broadly legal/liberal abortion laws, the unintended pregnancy and safe abortion rates were, respectively, 58 per 1000 women and 87.4%.[1,8] Unsafe abortion rates also differentiate with the income status of countries, with reported safe abortion rates of 82.2%, 67.1%, and 21.8%, in high-, upper-middle-, and low-income countries, respectively.[8]

The major causes of the high incidence of unsafe abortions, especially in low-resource and low-income countries, include the shortage of healthcare facilities, the shortage of trained providers, and provider resistance/refusal to provide abortion care services for cultural, social, and religious reasons.[9,10] The willingness of providers to provide abortion care is influenced by their knowledge, experiences, and opinions on abortion. Therefore, this study sought to explore the knowledge, perspectives, and training of trainee obstetrician-gynecologists (ObGyn) on abortion, globally. Understanding these is critical to averting the highly preventable deaths from unsafe abortion, given that trainees play a significant role in providing access to safe abortion services. Identifying and tackling any gaps in knowledge and training can contribute significantly to achieving the Sustainable Development Goal (SDG) 3 target of reducing the global maternal mortality ratio from 216 to less than 70 per 100000 live births by 2030.[11]

2 | MATERIALS AND METHODS

2.1 | Study design and study population

This cross-sectional survey of ObGyn trainees globally was conducted by the World Association of Trainees in ObGyn (WATOG). WATOG is an international body of all ObGyn trainees and early career ObGyns, who are within 10 years of the start of their residency training, in 85 countries, across six regions of the world, including Africa, Asia, Europe, North America, South America, and Oceania. The study was conducted over 17 months, from October 2021 to March 2023.

2.2 | Study instrument

A study-specific 33-item web-based questionnaire, designed with Google Forms®, was used for this study. The questionnaire was designed by the second author in consultation with three experts in abortion care. It collected information on the sociodemographic characteristics of the study participants, their perceptions, and knowledge of abortion. The questionnaire was electronically disseminated via email and social media platforms, including WhatsApp and Telegram, to study participants in all WATOG member countries and regions, by WATOG Executive Officers, Regional and National Representatives. To ascertain the reliability and validity of the study questionnaire, the questionnaire was pretested on some WATOG members prior to final and wide distribution. Participation in the study was voluntary; no incentive was offered to study participants.

2.3 | Operational definitions

The following operational definitions were used in this study:

Abortion: Termination of an intrauterine pregnancy before the age of fetal viability, which varies from 20 to 28 weeks depending on the geographical region.[12]

Unsafe abortion: Any procedure for terminating an unwanted pregnancy that is performed either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both.[13]

Safe abortion: Termination of an unwanted pregnancy using a method recommended by WHO, appropriate to the pregnancy duration and by someone with the necessary skills.[2]

2.4 | Data analysis

Collected data were analyzed using the IBM Statistical Package for the Social Sciences (SPSS) Statistics for Windows, version 25 (IBM Corp., Armonk, NY, USA), and presented as frequencies and percentages in tables.

2.5 | Ethics

The survey questionnaire was completely anonymized with no respondent-identifying information. All respondents consented to participate in the study before completing the questionnaire and submitting the survey responses. Being a completely anonymized online survey, with no patient-related data, ethics clearance was not sought for this study.

TABLE 1 Countries of the trainee obstetrician-gynecologists by region and legality of abortion.

Country	Region	Abortion law
Albania	Europe	Liberal/broadly legal
Argentina	South America	Restrictive[a]
Armenia	Asia	Liberal/broadly legal
Australia	Oceania	Liberal/broadly legal
Austria	Europe	Liberal/broadly legal
Belgium	Europe	Liberal/broadly legal
Bolivia	South America	Restrictive[a]
Brazil	South America	Restrictive[a]
Burkina Faso	Africa	Restrictive[a]
Chile	South America	Restrictive[a]
Colombia	South America	Restrictive[a]
Croatia	Europe	Liberal/broadly legal
Democratic Republic of Congo	Africa	Restrictive[a]
Dominican Republic	North America	Prohibitive[b]
Ecuador	South America	Restrictive[a]
Egypt	Africa	Prohibitive[b]
Estonia	Europe	Liberal/broadly legal
Ghana	Africa	Restrictive[a]
Guatemala	North America	Restrictive[a]
Honduras	North America	Prohibitive[b]
India	Asia	Liberal/broadly legal
Iraq	Asia	Prohibitive[b]
Japan	Asia	Liberal/broadly legal
Kenya	Africa	Restrictive[a]
Latvia	Europe	Liberal/broadly legal
Malawi	Africa	Restrictive[a]
Mexico	North America	Restrictive[a]
Nepal	Asia	Liberal/broadly legal
Netherlands	Europe	Liberal/broadly legal
Nicaragua	North America	Prohibitive[b]
Nigeria	Africa	Restrictive[a]
Pakistan	Asia	Restrictive[a]
Paraguay	South America	Restrictive[a]
Peru	South America	Restrictive[a]
Portugal	Europe	Liberal/broadly legal
Rwanda	Africa	Liberal/broadly legal
Serbia	Europe	Liberal/broadly legal
Singapore	Asia	Liberal/broadly legal
Slovenia	Europe	Liberal/broadly legal
South Africa	Africa	Liberal/broadly legal
Sudan	Africa	Restrictive[a]
Turkey	Asia	Liberal/broadly legal
Uruguay	South America	Liberal/broadly legal
USA	North America	Liberal/broadly legal
Venezuela	South America	Restrictive[a]
Zambia	Africa	Liberal/broadly legal
Zimbabwe	Africa	Restrictive[a]

[a]Legal exemptions exist to save the woman's life/preserve physical/mental health.

[b]No legal exemptions.

3 | RESULTS

In total, 187 ObGyn trainees and young specialists participated in the study. The study participants were drawn from 47 countries, constituting 55.3% of all WATOG member countries, across six regions of the world, including Africa (12), Asia (8), Europe (10), North America (6), South America (10), and Oceania (1). Abortion laws are broadly legal/liberal, with no legal restrictions before 6–28 weeks in 22 (46.8%) of the 47 countries, and restrictive in 20 (42.6%) countries, with legal exemptions to save the life of the woman/preserve physical/mental health[1,14] (Table 1). In 5 (10.6%) countries, abortion is completely prohibited, with no legal exemptions.[1,14]

3.1 | Sociodemographic characteristics of the ObGyn trainees

Most of the trainees were females (138, 73.8%), single (84, 44.9%), and in their fourth decade of life (109, 58.3%). More than one-third (66, 35.3%) had recently completed their ObGyn residency training and mostly worked in public (127, 67.9%), tertiary hospitals (149, 79.7%). These sociodemographic characteristics are shown in Table 2.

3.2 | ObGyn trainees' knowledge of abortion laws and practices in their countries

Most of the trainees (140, 74.8%) reported that abortion was legal in their countries, with 60.4% (113) of them reporting broadly legal/liberal abortion laws and 14.4% (27) restrictive laws (Table 3). In total, 68 (36.3%) trainees either did not know (7, 3.7%) or did not correctly know (61, 32.6%) the legal status of abortion in their countries. This included one-quarter (29/113, 25.7%) of those who reported broadly legal/liberal abortion laws, who incorrectly described the following countries with restrictive abortion laws as having broadly legal/liberal laws: Argentina (3), Burkina Faso (1), Colombia (9), Ghana (1), Kenya (9), Mexico (3), Nigeria (1), Pakistan (1), and Zimbabwe (1). Of the 40 (21.4%) trainees who reported that the abortion laws in their countries were prohibitive, only 12/40 (30%) were correct (Dominican Republic—7, Egypt—1, Honduras—1, and Nicaragua—3). Iraq (1), Turkey (1), and the USA (2), with prohibitive and liberal abortion laws, respectively, were wrongly reported as having restrictive

TABLE 2 Sociodemographic characteristics of the trainee obstetrician-gynecologists.

Characteristics	Frequency ($n = 187$)	%
Age (years)		
20–30	70	37.4
31–40	109	58.3
>40	8	4.3
Sex		
Male	49	26.2
Female	138	73.8
Marital status		
Single	84	44.9
Married	78	41.7
Cohabiting	24	12.8
Divorced	1	0.5
Year of training		
1–3	63	33.7
4–6	55	29.4
≥7	3	1.6
Completed residency	66	35.3
Type of hospital		
Public	127	67.9
Private	23	12.3
Both	37	19.8
Level of hospital		
Tertiary	149	79.7
Secondary	35	18.7
Others	3	1.6

abortion laws by more than one-tenth (4/27, 14.8%) of those who reported restrictive abortion laws in their countries. In countries with restrictive abortion laws, abortion was legally permitted in cases of pregnancy resulting from sexual assault/rape (13/27, 48.1%), life-threatening maternal medical conditions (11/27, 40.7%), and lethal congenital anomalies (10/27, 37.0%) (Table 3).

Most (120/140, 85.7%) of the trainees who reported that abortion was legal in their countries volunteered that women of all age groups could access safe abortion, but minors required parental/guardian consent in more than one-half (78/140, 55.7%) of cases (Table 3). More than one-quarter (21/78, 26.9%) of the trainees in countries where minors need parental/guardian consent to access safe abortion were from nine of the 11 sub-Saharan African (SSA) countries in the study, representing 38.2% (21/55) of all the study participants from SSA.

Medical abortion with misoprostol and mifepristone was the most common method of abortion, as reported by an overwhelming majority (136/140, 97.1%) of the trainees whose countries legally permitted abortion. Most of the trainees (142, 75.9%) volunteered that misoprostol and mifepristone could only be obtained on medical prescription in their countries, as shown in Table 3.

3.3 | Perception and attitudes of ObGyn trainees on abortion

Most (171, 91.4%) of the trainees supported the legalization of abortion. Of these, 145 (77.5%) agreed that abortion should be made liberal without any restrictions, while 26 (13.9%) were of the opinion that abortion should be legalized, but with restrictions. Those who believed abortion should be restricted agreed that it should be allowed in situations of pregnancy resulting from sexual assault/rape (13/26, 50%), medical conditions that threaten the life of the woman (10/26, 38.5%), and fetal anomalies (9/26, 34.6%). Some 11 (5.9%) trainees did not support the legalization of abortion (liberal or restricted) and cited religious concerns as their most common reason (5/11, 45.5%). Eight (72.7%) of these 11 trainees would also not provide an abortion if requested, despite residing in countries where abortion is legal (namely Armenia—1, Australia—1, Democratic Republic of Congo—1, India—1, Kenya—1, Nigeria—1, and Turkey—2). Most (133, 71.1%) of the trainees would provide an abortion if requested (Table 4).

More ObGyn trainees from countries where abortion is legal supported the legalization of abortion compared with those from countries where abortion is prohibited (158/171, 92.4% vs 13/16, 81.2%). Conversely, more trainees from countries where abortion is not legal did not support the legalization of abortion (3/16, 18.8% vs 8/171, 4.7%). Five (2.9%) of the trainees from countries where abortion is legal neither agreed nor disagreed with the legalization of abortion.

3.4 | Training of ObGyn trainees on abortion and safe abortion

Most of the ObGyn trainees reported that module(s) on abortion/safe abortion were included in both the medical school curricula (131, 70.1%) and the residency training programs (155, 82.9%) in their countries. However, 12.3% (19/155) of the latter, from Brazil (1), Burkina Faso (1), Colombia (1), Dominican Republic (1), India (1), Iraq (1), Kenya (2), Mexico (2), Nicaragua (1), Paraguay (1), Peru (1), Portugal (1), Rwanda (1), Turkey (1), and the USA (1), reported that not all the residency training programs in their countries offer training on abortion/safe abortion. Nearly two-thirds (118, 63.1%) of the trainees reported that it was mandatory for ObGyn trainees and specialists in their countries to have training on abortion/safe abortion care. Almost the same number of respondents (119, 63.6%) volunteered that ObGyn trainees in their countries were required to have completed at least 10 abortion procedures before the completion of their residency training, as in Table 5.

4 | DISCUSSION

Globally, there has been an increasing trend towards the liberalization of abortion laws, with more than 60 countries liberalizing their

TABLE 3 Trainee obstetrician-gynecologists' knowledge of termination of pregnancy (TOP) and abortion laws and practices in their countries.

Characteristics	Frequency ($n=187$)	%
Is any form of TOP legally permitted in your country?		
Yes	157	84.0
No	25	13.4
Not sure	5	2.7
If Yes, what are the indications for legal TOP in your country? ($n=157$)[a]		
Intrauterine fetal death	157	100.00
Fatal congenital anomalies	153	97.5
Maternal mental/psychiatric illness	152	96.8
Pregnancy resulting from sexual assault/rape	130	82.8
Any congenital anomaly	95	60.5
Is partner permission required for TOP in your country? ($n=157$)		
Yes	34	21.7
No	123	78.3
Legal status of abortion in your country		
Broadly legal/liberal	113	60.4
Prohibited with no legal exemptions	40	21.4
Restricted with some legal exemptions	27	14.4
Not sure	7	3.7
If Restricted, what are the legal exemptions? ($n=27$)[a]		
Pregnancy following sexual assault/rape	13	48.1
Life-threatening maternal medical condition	11	40.7
Lethal fetal anomaly	10	37.0
Can women of all ages access abortion in your country? ($n=140$)		
Yes, minors do not require parent's or guardian's permission	42	30.0
Yes, but minors require parent's or guardian's permission	78	55.7
No, only adult women can access abortion	8	5.7
I do not know	12	8.6
Most common abortion method in your country ($n=140$)[a]		
Medical abortion	136	97.1
Surgical abortion (manual vacuum aspiration & dilatation and curettage)	98	70.0
Drugs for medical TOP/abortion in your country ($n=157$)[a]		
Misoprostol	157	100.0
Mifepristone	109	69.4
Are medications for TOP/abortion available over the counter in your country?		
Yes	45	24.1
No	142	75.9

[a]Multiple responses by respondents, hence $n \neq 157, 27, 140$.

abortion laws over the past 30 years.[7] Of the 47 countries in the study, abortion is legal in nearly 90% (without legal restrictions in 46.8% and legally restricted in 42.6%). Despite this positive trend, barriers to accessing safe abortion still exist, including provider refusal/opposition to providing abortion services on account of moral and religious beliefs among others.[10] Six percent of the ObGyn trainees in the study did not support the legalization of abortion for predominantly religious concerns. More than 70% of them would also not provide abortion services, despite residing in countries where abortion is legal.

Another barrier limiting eligible women from accessing safe abortion services even in countries where abortion is legal, is the limited knowledge of ObGyns, especially the younger and less experienced ones, of the abortion laws and legal requirements for abortion in their countries.[9,15,16] Of the ObGyn trainees who reported prohibitive abortion laws in their countries in the study, 70% did not know that abortion was legal in their countries, and not prohibitive, as they had reported. They would potentially deny eligible women safe abortion services even though the law permits the same. More so, 26% of the trainees who reported broadly legal/liberal abortion laws actually came from countries with restrictive abortion laws, while 15% of those residing in countries with prohibitive and liberal abortion laws wrongly reported that the abortion laws in their countries were restrictive. These are despite the fact that 70% and more than 80% of the trainees, respectively, reported that module(s) on abortion/safe abortion were included in the medical school and residency training curricula in their countries.

The disparity between trainees' knowledge of safe abortion and their awareness of the legality of the same may not be unconnected with the fact that some of the trainees resided in countries like Mexico and the USA, where abortion laws vary from one state to another.[17,18] In Mexico, for instance, abortion is decriminalized in 10 of 32 states.[17] In the USA, following the Supreme Court overturning *Roe v. Wade* in June 2022, as of January 2023, near-total bans on abortion exist in 12 US states, with abortion care unavailable in two states, even though there is officially no

TABLE 4 Perception and attitudes of trainee obstetrician-gynecologists on abortion.

Characteristic	Frequency ($n=187$)	%
Do you support legalization of abortion?		
Yes, without any restrictions	145	77.5
Yes, but it should be restricted	26	13.9
No at all, I do not	11	5.9
Not sure	5	2.7
If Yes but restricted, what conditions do you think should justify abortion? ($n=26$)[a]		
Pregnancy resulting from sexual assault/rape	13	50.0
Life-threatening maternal conditions	10	38.5
Fetal anomalies	9	34.6
If Not at all, why? ($n=11$)[a]		
Religious concerns	5	45.5
I think it is murder/I am pro-life	4	36.4
Protection of maternal/fetal rights	3	27.3
Risk of abuse/indiscriminate use	1	9.1
Have you ever been requested by a patient to provide abortion?		
Yes	134	71.7
No	45	24.1
Prefer not to say	8	4.3
Would you provide abortion if requested?		
Yes	133	71.1
Yes, but depending on the circumstance/indication	44	23.5
No, not all	10	5.3

[a]Multiple responses by some respondents, hence $n>26$ and 11.

TABLE 5 Abortion/safe abortion training of trainee obstetrician-gynecologists (ObGyn).

Characteristic	Frequency ($n=187$)	%
Does the basic medical education curriculum in your country include a module(s) on abortion/safe abortion?		
Yes	131	70.1
No	56	29.9
Does the ObGyn residency training program in your country include a module(s) on abortion/safe abortion?		
Yes	155	82.9
No	32	17.1
What is the estimated number of abortion procedures trainees are expected to perform before completing the ObGyn residency training program in your country?		
<10	28	15.0
10–50	53	28.3
50–100	34	18.2
>100	32	17.1
Nil	40	21.4
In your country, can trainees opt not to perform abortion procedures for personal reasons/convictions? ($n=147$)		
Yes	121	82.3
No, it is compulsory	26	17.7
Is it mandatory for ObGyn trainees and specialists to undergo training on abortion/safe abortion care in your country?		
Yes	118	63.1
No	69	36.9

ban. In four other states, abortion is prohibited beyond specific gestational ages.[18] With such differentials in abortion laws between states in the same country, formal training on abortion may not exist in all residency training programs, as reported by 10% of our study respondents.

Steinauer et al.[19] reported that only 64% of the ObGyn residency programs in the USA offered routine and dedicated abortion training to residents, while 31% offered optional training. Given the significant roles that ObGyn resident doctors play (both as trainees and would-be specialists) in providing access to safe abortion, every resident should be trained on the knowledge, skills, and legal requirements for abortion. This is especially so as shortage of trained providers remains a barrier to safe abortion access globally.[10] Recognizing this challenge, the American College of Obstetricians and Gynecologists (ACOG) recommends that abortion education should be included in the curricula of all medical schools and all ObGyn residency programs should offer abortion training to residents.[20]

More than a half of the ObGyn trainees from countries where abortion is legalized, and almost 40% of those from SSA, reported that minors required parental/guardian consent to access safe abortion in their countries. The unmet need for contraception among adolescents in SSA is high, resulting in a high rate of unwanted pregnancy, with an adolescent pregnancy rate of 19.3% and a maternal mortality ratio secondary to unsafe abortion that is 950 times (520 per 100 000 live births) higher than in the USA (0.6 per 100 000 live births).[4,21] It has been argued that parental involvement laws reduce both abortion rates and the possible negative consequences and complications of abortion for minors.[22] However, such laws do not guarantee that all minors would negotiate abortion decisions with

their parents. In fact, many minors may be afraid, ashamed, or simply unwilling to inform their parents, and may go ahead to clandestinely procure the abortion, in which case, the risk of an unsafe abortion and its attendant complications is high.

The limitations of this study include its descriptive design and convenience sampling method, which predisposes to selection bias. The small sample size limits the generalization of the study findings. These notwithstanding, the study provides a useful insight on the views and knowledge of ObGyn trainees on abortion globally. The study also provides important data upon which targeted interventions can be planned and larger scale studies to further explore the subject can be conducted in the future.

5 | CONCLUSION

There is a disparity between ObGyn trainees' knowledge of safe abortion and their awareness of the legality of the same in respective countries. Even though most of the trainees support the legalization of abortion, abortion laws remain restrictive in many countries. There is a need for all countries to include abortion education in the curricula of medical schools and all ObGyn residency programs should offer abortion training to all residents. Local, regional, and international ObGyn organizations, women's societies, women's rights groups, healthcare practitioners, and all relevant stakeholders should sustain advocacies for the decriminalization of abortion in countries and states where abortion remains prohibited, and the liberalization of abortion in countries where the laws are currently restrictive.

AUTHOR CONTRIBUTIONS

ARN created the survey. EGT contributed mainly to the preparation of the manuscript. AEU critically revised the manuscript. All authors are responsible for the final content and read and approved the final manuscript.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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