

ORIGINAL RESEARCH ARTICLE

Attitudes, experiences, and training on comprehensive abortion care: A nationwide survey of trainee physicians in Ghana

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Emma R. Lawrence¹, Sarah G. Bell¹, Adu Appiah-Kubi^{*2}, Tom O. Konney³, Augustine Tawiah³, Jody Lori⁴ and Sarah D. Compton¹

University of Michigan, Department of Obstetrics and Gynecology¹; University of Health and Allied Sciences, Department of Obstetrics and Gynecology²; Komfo Anokye Teaching Hospital, Department of Obstetrics and Gynecology³; University of Michigan, School of Nursing⁴

*For Correspondence: Email: aappiah@uhas.edu.gh; Phone: 00233207363173

Abstract

This cross-sectional study assessed attitudes and experiences with abortion care among physician trainees in Ghana. Participants were 27 Obstetrics/Gynecology (OBGYN) residents and 138 house officers. An electronic survey evaluated attitudes, training, clinical experience, and technical skills with abortion care. The majority of participants believe that women should have access to safe abortion. However, only 51.6% of OBGYN residents and 40.9% of house officers want to currently perform abortions as a trainee, primarily due to religious or ethical beliefs. Among house officers, increased likelihood of performing abortions in their future practice is associated with greater exposure to abortion training, (OR 1.40, $p=0.032$), fewer years practicing medicine (OR 0.26, $p=0.010$), and believing abortion laws should be liberalized (OR 3.62, $p=0.03$). Overall, we demonstrate that only two-thirds of physician trainees in Ghana are likely to perform abortion care after completing training, and greater exposure to abortion training is associated with an increased likelihood of performing abortions. (*Afr J Reprod Health* 2022; 26[9]: 21-30).

Keywords: Comprehensive abortion care, Ghana, abortion training

Résumé

Cette étude transversale a évalué les attitudes et les expériences en matière de soins d'avortement chez les médecins stagiaires au Ghana. Les participants étaient 27 résidents en obstétrique/gynécologie (OBGYN) et 138 agents internes. Une enquête électronique a évalué les attitudes, la formation, l'expérience clinique et les compétences techniques en matière de soins d'avortement. La majorité des participants pensent que les femmes devraient avoir accès à un avortement sécurisé. Cependant, seuls 51,6 % des résidents OBGYN et 40,9 % des agents internes souhaitent actuellement pratiquer des avortements en tant que stagiaires, principalement en raison de croyances religieuses ou éthiques. Parmi les internes, la probabilité accrue de pratiquer des avortements dans leur pratique future est associée à une plus grande exposition à la formation à l'avortement (OR 1,40, $p = 0,032$), à moins d'années de pratique de la médecine (OR 0,26, $p = 0,010$) et à croire que les lois sur l'avortement devraient être libéralisées (OR 3,62, $p=0,03$). Dans l'ensemble, nous démontrons que seuls les deux tiers des médecins stagiaires au Ghana sont susceptibles de pratiquer des soins d'avortement après avoir terminé leur formation, et une plus grande exposition à la formation à l'avortement est associée à une probabilité accrue de pratiquer des avortements. (*Afr J Reprod Health* 2022; 26[9]: 21-30).

Mots-clés: Soins complets d'avortement, Ghana, formation à l'avortement

Introduction

Globally, unsafe abortion is a significant contributor to maternal morbidity and mortality^{1,2}. Incidence and complications of unsafe abortion are more common in low- and middle-income countries (LMICs), where 21.2 million unsafe abortions are performed every year³. More than 99% of abortion-related maternal mortalities occur in LMICs, with the highest rates in sub-Saharan African^{4,5}, where 14% of all maternal deaths are attributed to unsafe

abortions^{2,5}. Barriers to accessing comprehensive abortion care include restrictive laws, limited availability of abortion services and trained providers, high cost, and associated stigma^{6,7}. In Ghana, unsafe abortion continues to be a leading cause of maternal morbidity and mortality⁸.

Ghana offers a unique focus of study due to well-established Obstetrics/Gynecology (OBGYN) residency training programs and Family Planning and Reproductive Health fellowship training programs⁹⁻¹¹. With the goal to address high rates of

maternal mortality, Ghanaian physicians collaborated with the Royal College of OBGYN, the American College of OBGYN and funding from the Carnegie Corporation to initiate a postgraduate OBGYN residency training program in 1989. Since that time, 245 doctors have graduated from the OBGYN residency training program in Ghana, of which 240 stayed in Ghana to practice⁹. In 2008, the International Family Planning Fellowship Program was established in Ghana at two teaching hospitals: the Komfo Anokye Teaching Hospital and the Korle Bu Teaching Hospital. The fellowship objective is to train fellows in advanced abortion and family planning skills and to generate leaders in reproductive health research and policy. The fellowship is now renamed the “Reproductive Medicine and Family Planning Fellowship Program,” with certification from the Ghana College of Physicians and Surgeons and funding provided by the Ministry of Health^{10,11}.

Compared to other sub-Saharan African countries, Ghanaian laws regarding pregnancy termination are relatively liberal^{12,13}. Although abortion is a criminal offense, the law allows for legal termination in the settings of rape, defilement, or incest; if the pregnancy could risk the life of the mother or injure her physical or mental health; or if the delivery of the neonate would result in suffering or serious physical abnormality or disease¹². In Ghana, available abortion care includes medication abortion, surgical abortion with manual vacuum aspiration, dilation and curettage, or dilation and extraction, and postabortion care¹⁴. Most public hospitals, some private hospitals and clinics, and reproductive health non-profit organizations offer safe and relatively affordable abortion services^{15–17}. All tertiary care teaching hospitals in Ghana provide abortion care, along with 20–52% of district hospitals and polyclinics, and 8–14% of lower-level facilities¹⁸. Abortion care can legally be provided by doctors, who perform the majority of abortions, as well as physicians assistants and midwives who have received training in comprehensive abortion care in the first trimester^{14,19}.

Currently in Ghana, OBGYN residents and house officers receive abortion training. In addition to specialized family planning units, abortion care is also integrated into the routine infrastructure of OBGYN departments, with “on call” physicians managing scheduled abortion care as well as emergent complications. Residents and house

officers have varying ethical and moral beliefs surrounding pregnancy termination and varied skill levels for providing abortion care. The literature demonstrates that personal religious and moral beliefs impact a providers’ decision to perform abortion care.²⁰ In addition, willingness to provide abortions may depend on concerns about workplace stigma and personal safety²¹, and exposure to adequate training²⁰. As provider reluctance is one reason women seek abortion services outside the health system, this study assesses the attitudes, perspectives, and experiences with comprehensive abortion care among physician trainees in Ghana.

Methods

This is a cross-sectional study using a survey design to assess attitudes, perspectives, and experiences with comprehensive abortion care among physician trainees in Ghana. Ethical approval was granted by the Komfo Anokye Teaching Hospital institutional review board (KATH IRB/AP/57/20) and the University of Michigan institutional review board (HUM00175044).

Participants are defined as house officers and OBGYN residents currently being trained at one of the five teaching hospitals (Korle Bu, Komfo Anokye, Cape Coast, Tamale, Ho) in Ghana. At the time of survey administration, all OBGYN residents in Ghana and most house officers in Ghana were training at one of these hospitals. House officers are physicians who have completed medical school and are undergoing a two-year required general medical training, which includes six months of dedicated OBGYN training. Residents have completed their two years as house officers and are engaging in a three- to five-year residency in the specialized field of OBGYN.

An electronic survey was generated using REDCap, a secure electronic tool, and distributed using WhatsApp, an online platform commonly used for group-based communication in Ghana. WhatsApp groups for OBGYN residency and house officer training programs at the five major teaching hospitals in Ghana were targeted. Surveys were distributed in November 2020, with two weeks for survey completion and reminders sent after one week. Entry into a lottery to win two prizes of 500 Ghana cedis (\$85 USD) each was offered as an incentive for participation. Electronic informed consent was obtained.

Survey questions were organized into four sections. The first section focused on demographics. The second section focused on attitudes and beliefs, including nine statements about the location, financing, use, and access to abortion services (agree, disagree, not sure). The current law in Ghana was stated verbatim; participants were asked whether they felt the law was clear and their attitudes toward its level of restriction. Participants were asked their current and future desired involvement in providing abortion services on 5-point Likert scales (very likely to very unlikely). Those who did not desire to perform comprehensive abortion services were asked to select reasons why. The third section focused on training and clinical experience with vacuum aspiration, medication abortion, and post-abortion care. The fourth section focused on technical skills and asked participants if they ever counseled patients on abortion and if they performed first and second trimester surgical and medication abortions. Those who performed a skill ranked their comfort level on a scale from 1 (lowest comfort) to 10 (highest comfort) performing, supervising, and managing complications of each skill.

STATA (Version 16.0 StataCorp. 2019) was used for analysis. Proportions were calculated for categorical variables and means were calculated for continuous variables. Using chi-square and Fisher's exact analysis and t-tests where appropriate, demographics, attitudes, training, and experience variables were compared across clinical positions (OBGYN resident versus house officer). An Abortion Training Scale was created by summing nine training exposure variables, with one point given for each response of "yes," for a total range of 0-9 points. The reported likelihood of performing comprehensive abortion care was selected as the primary outcome for the final regression. Response options of "very likely" and "somewhat likely" were collapsed to "likely" and other response options were collapsed to "not likely." Given significant heterogeneity between responses of OBGYN residents and house officers and the small number of resident responses, the decision was made to include only house officers in the regression. Bivariate analysis was used to evaluate predictors of the reported likelihood of performing comprehensive abortion care. A final regression model was used to evaluate predictors of the likelihood of performing comprehensive abortion

care, adjusted for variables that were statistically significant in the bivariate analysis and variables that authors felt were relevant. This list of included variables was determined by the authors' pre-analysis hypotheses, which was based on the literature and local experience in Ghana. Authors hypothesized that willingness to provide abortion care would be positively associated with level of experience and training (abortion training scale, number of abortions performed, years in practice), personal experience with reproductive healthcare (female gender, personal experience with abortion, seen someone die of unsafe abortion), and attitudes toward abortion (belief law should be liberalized, belief women don't have safe access to abortion care), and negatively associated with personal conservative background and religious beliefs (religiosity, Christian religion, rural birthplace, older age). The STATA margins command was used to evaluate marginal effects of significant variables. For all analyses, a p value of 0.05 was considered statistically significant and all tests were two-tailed.

Results

Of 849 OBGYN residents and house officers who received the survey electronically, 224 surveys were submitted (26.4% response rate). Surveys were excluded if less than half of the questions were completed, leaving 174 surveys for analysis. The final study participants were 27 residents (15.5%), 138 house officers (79.3%), and nine participants (5.2%) who did not indicate their clinical position.

The majority of participants were female and from an urban area, with a mean age of 27.8 years (Table 1). Compared with house officers, residents were older and more likely to be from a rural area, married, and have children. All five major teaching hospitals in Ghana were represented. Participants had been practicing medicine for a mean of two years (range 0-15 years), with 56% having seen someone die from unsafe abortion and 34.9% having a personal experience with abortion. Compared with house officers, residents had significantly more years in practice and were more likely to have seen someone die from unsafe abortion.

The majority of participants believe that abortion care should be part of the role of both government and private hospitals (Supplementary Table 1).

Table 1: Demographic and workplace characteristics

Characteristic	All Participants (n=174)	OBGYN Residents (n=27)	House Officers (n=138)	p value ¹
Gender				0.279
Male	78 (45.9)	15 (55.6)	61 (44.2)	
Female	92 (54.1)	12 (44.4)	77 (55.8)	
Age, years ²	27.8 (23-45)	34.4 (27-45)	26.3 (23-38)	<.001
Location of hometown				0.016 ³
Urban	132 (78.0)	16 (61.5)	113 (82.5)	
Rural	36 (2.14)	10 (38.5)	24 (17.5)	
Relationship status				<0.001 ³
Married	37 (21.8)	20 (74.1)	13 (9.4)	
Single	133 (78.2)	7 (25.9)	125 (90.5)	
Family status				<0.001 ³
Children	141 (82.9)	10 (37.0)	9 (6.5)	
No children	29 (17.1)	17 (63.0)	129 (93.5)	
Religion				0.153
Christian	103 (84.4)	16 (88.9)	86 (85.1)	
Muslim	17 (14.8)	2 (11.1)	14 (13.9)	
Not religions	1 (0.8)	0 (0.0)	1 (1.0)	
Other	1 (0.8)	0 (0.0)	0 (0.0)	
Frequency of participation in religious activity				0.161
Less than once time per year	4 (2.7)	0 (0.0)	3 (2.5)	
At least one time per year	10 (6.9)	2 (8.7)	7 (5.9)	
At least one time per month	24 (16.4)	7 (30.4)	16 (16.0)	
One time per month	8 (5.5)	2 (8.7)	6 (7.6)	
More than one time per week	54 (37.0)	9 (39.1)	44 (37.0)	
Daily	46 (31.5)	3 (13.0)	43 (36.1)	
Hospital affiliation of training program				<.001
Korle Bu Teaching Hospital	30 (17.2)	16 (59.3)	14 (10.1)	
Komfo Anokye Teaching Hospital	75 (56.0)	6 (22.2)	65 (47.1)	
Cape Coast Teaching Hospital	6 (3.4)	4 (14.8)	2 (1.4)	
Tamale Teaching Hospital	33 (19.0)	0 (0.0)	33 (23.9)	
Ho Teaching Hospital	6 (3.4)	0 (0.0)	5 (3.6)	
Other	19 (10.9)	1 (3.7)	18 (13.0)	
Number of years practicing as a doctor²	2.0 (0-15)	7.8 (2-15)	0.67 (0-8)	<.001
Seen someone die from unsafe abortion				<0.001 ³
Yes	82 (55.8)	21 (91.3)	58 (48.3)	
No	65 (44.2)	2 (8.7)	62 (51.7)	
Personal experience (self, family, friend) with abortion				0.114
Yes	51 (34.9)	11 (47.8)	37 (30.8)	
No	95 (65.1)	12 (52.2)	83 (69.2)	

Data presented as n (%) unless otherwise noted

¹Comparison between OBGYNs and house officers

²Mean (range)

³Significant at p<0.05.

Regarding payment for abortion care, 20.6% believe the Ghana National Health Insurance Scheme, 45.4% believe private insurance, and 68.9% believe the patient should pay. The vast majority think unsafe abortion is a problem in Ghana, and only one-third agree that women in Ghana are able to get safe abortion services when they need them. Regarding perspectives on the current Ghanaian abortion law, 76% think the law is clear, half agree with the law without any changes, and one-third

think the law should be changed to have fewer restrictions. Attitudes and beliefs are similar between OBGYN residents and house officers, other than a higher proportion of OBGYN residents believing that women are able to access safe abortion services.

Regarding the current desired level of involvement in providing abortion services as a trainee, 42.7% wanted to provide counseling and perform abortions and 54.3% wanted to provide

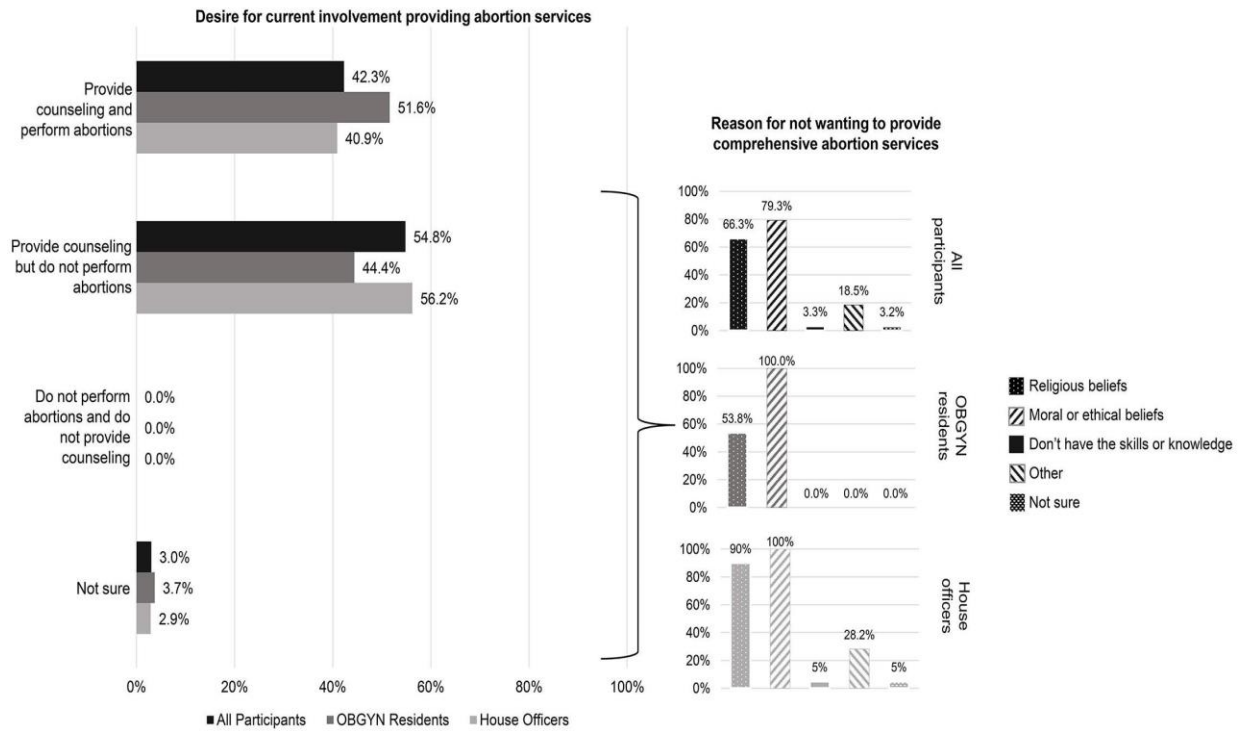


Figure 1: Current desired level of involvement in providing abortion services as a trainee

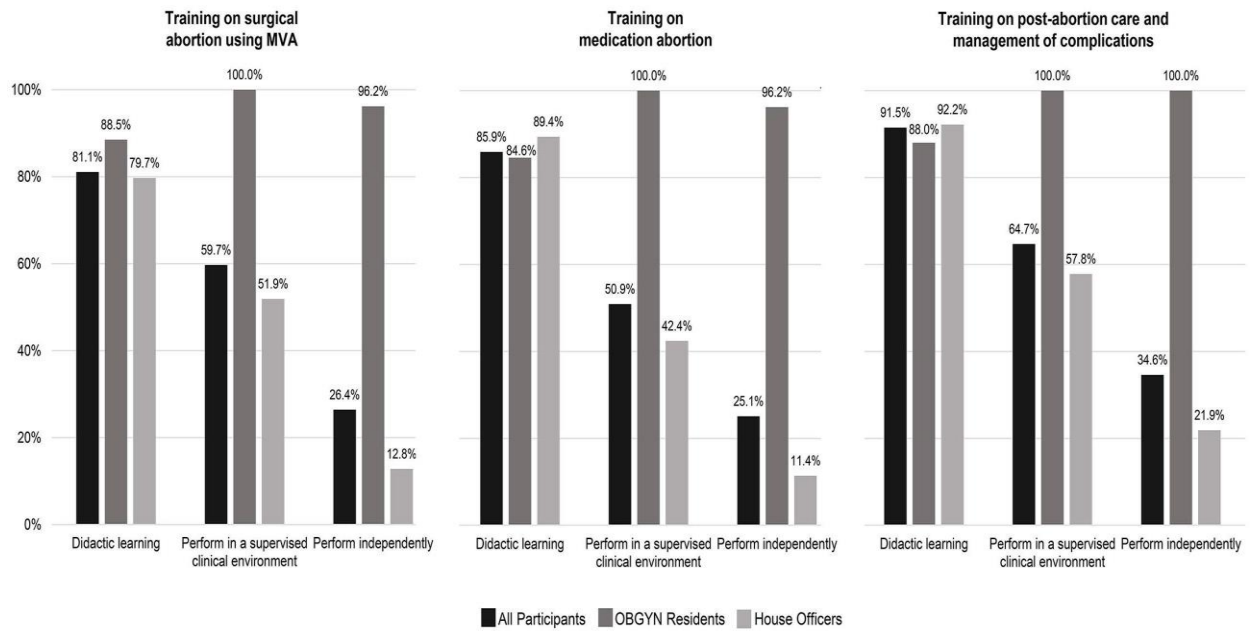


Figure 2: Training on manual vacuum aspiration, medication abortion, and post-abortion care

counseling only (Figure 1). After completing training, 64.8% felt very likely or somewhat likely that they would provide comprehensive abortion care in their independent medical practice. Of the 58 participants who were not likely, the majority cited

religious or moral/ethical beliefs, while very few cited the lack of skills or knowledge.

Most participants were first exposed to training on abortion care during medical school and first performed abortion care as a house officer

Table 2: Clinical experience and comfort level with abortion skills

Skill	All Participants (n=174)	OBGYN Residents (n=27)	House Officers (n=138)	p value ¹
Ever counsel patients about abortion				<0.001 ²
No	49 (34.0)	0	49 (40.8)	
Yes	95 (66.0)	24 (100)	71 (59.2)	
Comfort counseling on options for abortion	7.6±1.9	8.1±1.4	7.4±2.0	0.124
Comfort counseling on complications of abortion	8.4±1.6	8.5±1.3	8.4±1.7	0.703
Comfort counseling on recovery after abortion	7.9±1.7	8.3±1.6	7.7±1.8	0.212
Ever perform <u>first trimester surgical</u> abortion				<0.001 ²
No	92 (65.2)	3 (13.0)	89 (75.4)	
Yes	49 (34.7)	20 (87.0)	29 (24.6)	
Comfort performing first trimester surgical abortion	7.4±2.1	8.4±1.6	6.8±2.2	0.007 ²
Comfort teaching/supervising first trimester surgical abortion	7.0±2.6	8.5±1.2	6.0±2.8	<0.001 ²
Comfort managing complications of first trimester surgical abortion	7.6±1.7	8.5±.92	7.1±1.9	0.056
Ever perform <u>first trimester medication</u> abortion				<0.001 ²
No	79 (55.2)	2 (8.3)	77 (64.7)	
Yes	64 (44.8)	22 (91.7)	42 (35.3)	
Comfort performing first trimester medication abortion	7.2±1.9	7.9±1.4	6.9±2.0	0.034 ²
Comfort teaching/supervising first trimester medication abortion	6.7±2.5	8.2±1.4	6.0±2.7	0.001 ²
Comfort managing complications of first trimester medication abortion	7.0±2.1	8.3±1.4	6.4±2.0	<0.001 ²
Ever perform <u>second trimester surgical</u> abortion				0.003 ²
No	119 (83.8)	14 (60.9)	105 (88.2)	
Yes	23 (16.2)	9 (39.1)	14 (11.8)	
Comfort performing second trimester surgical abortion	6.2±2.2	6.9±1.6	5.8±2.4	<0.001 ²
Comfort teaching/supervising second trimester surgical abortion	5.9±2.4	6.6±1.7	5.5±2.7	0.309
Comfort managing complications of second trimester surgical abortion	6.7±2.3	7.0±1.8	6.4±2.6	0.568
Ever perform <u>second trimester medication</u> abortion				<0.001 ²
No	106 (74.1)	7 (30.4)	99 (82.5)	
Yes	37 (25.9)	16 (69.6)	21 (17.5)	
Comfort performing second trimester medication abortion	7.6±1.8	8.1±1.7	7.2±1.7	0.119
Comfort teaching/supervising second trimester medication abortion	7.3±2.1	8.1±1.6	6.6±2.2	0.025 ²
Comfort managing complications of second trimester medication abortion	7.4±1.9	8.4±1.1	6.5±2.1	0.002 ²
Ever manage <u>incomplete</u> abortion				0.001 ²
No	43 (30.1)	0 (0.0)	43 (35.8)	
Yes	100 (69.9)	23 (100)	77 (64.2)	
Comfort level managing incomplete abortion with medication	7.2±2.5	9.0±.92	6.7±2.6	<0.001 ²
Comfort level managing incomplete abortion with surgery	7.5±2.2	9.0±1.0	7.2±2.2	<0.001 ²
Comfort level teaching/supervising management of incomplete abortion	6.7±2.8	9.0±1.0	6.0±2.8	<0.001 ²

Data presented as n (%) or mean ± standard deviation

¹Comparison between residents and house officers

²Significant at p<0.05

(Supplementary Table 2). As expected, OBGYN residents had much greater surgical abortion experience than house officers. All residents had performed first trimester surgical abortions, while 59% of house officers had never performed one and another 40% had performed only 1-10.

Figure 2 describes training on manual vacuum aspiration, medication abortion, and post-abortion care. For each skill, didactic learning was more common compared with experience

performing skills in a supervised clinical environment and performing skills independently. House officers and residents reported similar exposure to didactic learning; however, OBGYN residents were more likely to have received hands-on supervised training in each skill. As expected, OBGYN residents were also more likely to perform each skill independently. The Abortion Training Scale had a mean score of 5.2 (standard deviation 2.4, range 0-9).

Table 3: Adjusted logistic regression: Predictors of likelihood to provide abortion services in independent practice, among 138 house officers

Variable	Odds Ratio	95% Confidence Interval	p value	Marginal effect
Religiosity	0.83	0.37-1.88	0.67	
Abortion training scale	1.40	1.03-1.92	0.03 ¹	.059
Number of 1st trimester abortions performed	1.30	0.38-4.49	0.68	
Years in practice	0.26	0.09-0.72	0.01 ¹	-.238
Belief law should be liberalized	3.62	1.11-11.78	0.03 ¹	.224
Seen someone die of unsafe abortion	1.47	0.53- 4.06	0.46	
Personal experience with abortion	1.42	0.44-4.57	0.56	
Female gender (versus male)	0.77	0.26-2.23	0.63	
Age	0.95	0.75-1.19	0.64	
Rural birthplace (versus urban)	2.97	0.61-14.44	0.18	
Christian religion	0.33	0.06-1.69	0.18	
Belief women have safe access to abortion care	2.32	0.78-6.89	0.13	

¹Significant at $p < 0.05$

Of all participants, 66.0% had experience counseling a patient about abortion, 34.7% had performed first trimester surgical abortions, 44.8% had performed first trimester medication abortions, and 69.9% had managed an incomplete abortion (Table 2). Management of second trimester abortion is a more advanced skill; 16.2% had performed second trimester surgical abortion and 25.9% had performed second trimester medication abortion. Among participants who had performed each skill, comfort levels were highest on counseling patients about abortion and lowest on performing a second trimester surgical abortion. Compared with house officers, OBGYN residents were more likely to have performed each skill and had a higher comfort level performing most skills.

In an adjusted logistic regression analysis, significant predictors of the likelihood of performing comprehensive abortion care once training is complete were higher scores on the Abortion Training Scale ($p=0.032$, marginal effect 0.059), fewer years practicing medicine ($p=0.010$, marginal effect -0.238), and believing the abortion law should be liberalized ($p=0.032$, marginal effect 0.224) (Table 3). For each step up the abortion training scale, participants were about 6% more likely to report they would provide services once their training was complete (marginal effect 0.059). Participants who believe the abortion law should be liberalized were 22% more likely to report they would provide abortion services in the future (marginal effect 0.224).

Discussion

We demonstrate that the vast majority of OBGYN physician trainees in Ghana believe that women should have access to abortion and agree that unsafe abortion is a problem. While the majority do desire some involvement in abortion care, only 52% of OBGYN residents and 41% of house officers want to perform abortions. Our study builds upon a 2003 study conducted at a single teaching institution in Ghana²². Among the 80% of physicians who supported the establishment of safe abortion units, 45% would provide abortion services, 36% would provide counseling only, and 19% wanted no role in abortion care. After nearly 20 years and the establishment of multiple family planning fellowships in Ghana, we demonstrate a small increase in the proportion of providers who desire to perform abortion services. This highlights the complexity of the provision of abortion care and the durability of religious and ethical objections to abortion provision over time. Our findings are consistent with a study of midwife trainees in Ghana that demonstrated that 70.2% of trainees were very or somewhat likely to provide comprehensive abortion services once they graduated from midwifery school²⁰ and a study of Ethiopian midwife students that found that 56% of trainees were likely to provide abortion care²³. A similar study of South African medical students demonstrated that only 25% were likely to provide abortion services²⁴; this difference is likely

explained by providers specializing in women's healthcare, like midwives and OBGYNs, being more likely to provide abortion care than general trainees.

In our study, the primary reasons for not wanting to provide abortion services were religious or moral/ethical beliefs. This important and complex finding highlights that it is providers' personal beliefs, not their self-perceived level of abortion training, that is most connected with their willingness to provide care. Our findings are consistent with studies in Ghana, Zambia, South Africa, and Ethiopia²⁰. The religiosity variable (frequency of religious practice) was not significantly associated with willingness to provide abortion care in the multivariate regression, which is likely a reflection of a highly religious group of participants without much variability in responses. This highlights the important role of conscientious objection to abortion, defined as a healthcare provider's right to refusal to perform abortions because of their moral or religious beliefs²⁵. A study on conscientious objection among providers in northern Ghana showed that 42.5% of physicians and 34.7% of midwives, nurses, and physician assistants self-identified as objectors²⁶. Importantly, conscientious objection includes a stipulation that access to abortion should be maintained through patient education about alternative facilities and prompt referral²⁵. In the context of a resource-limited settings like Ghana, the additional cost and time burden of transportation may be a prohibitive barrier to women seeking abortion care. Further, OBGYNs have more specialized training, including second trimester abortion care and surgical care, which may preclude safe referral to other providers.

In addition to religious and moral beliefs, the literature frequently cites concerns for workplace stigma and personal safety as reasons for not wanting to provide abortion care^{21,27}. Very few participants in our study attributed their likelihood of performing abortions after graduation to a lack of skills or knowledge and reported relatively high comfort levels with first trimester abortion skills. However, it is important to note that objective experience is lacking—particularly among house officers, with the majority having never performed fundamental abortion skills like first trimester medication or surgical abortion. Consistent with studies among midwife trainees in Ghana²⁰ and Ethiopia²³, the likelihood of providing abortion care

in our study was related to more exposure to training.

Interestingly, house officers in their first year of training were more likely to anticipate providing abortion services compared to those in their second year of training. This is an important shift in attitude, because house officers graduate after their second year and typically go into independent practice as medical officers in district hospitals; thus, their attitudes toward abortion care in their final year of training likely reflects their subsequent clinical practice. This may reflect a shift from a more open-minded culture in medical school to a more conservative attitude after experiencing the clinical complexity or workplace stigma associated with abortion care. Similarly, a study among Obstetricians/Gynecologists in the United States demonstrated that younger physicians were more likely to provide abortion²⁸.

This study adds to the literature by exploring perspectives on comprehensive abortion care among a key group of healthcare providers in Ghana. By focusing on physician trainees, we illustrate the attitudes and experiences of physicians who will provide the future of abortion care in Ghana, both at teaching hospitals as Obstetricians/Gynecologists and in district hospitals as Medical Officers. The study has several important limitations. First, it was conducted in a single country, which may limit generalizability to other LMICs. This focus was intentional, given the persistence of unsafe abortion in Ghana despite the presence of well-established OBGYN and Family Planning training programs. Second, participants may have been hesitant to provide honest responses given the sensitive nature of many of the questions. This issue was limited by delivering the survey on an anonymous electronic platform and not collecting any identifying information. Our lower response rate may be a reflection of the controversial topic, along with the electronic nature of survey delivery, with some people in the WhatsApp groups not engaging in the messages regularly. We expect that people who feel most strongly about abortion (both for and against) would be the most likely to respond. Attitudes about abortion were overall positive, with most providers believing that women should have access to safe abortion care. Thus, we anticipate that our sample may be skewed toward those who are willing to provide abortion care and may in fact over-estimate

the willingness in the entire provider population. Further, our sampling strategy included recruitment at Ghana's major teaching hospitals, which reached all OBGYN residents in the country, however, did not reach house officers training in lower-level facilities. Those unsampled house officers working in less urban areas may be less willing to provide abortion care. Although the demographics of Ghanaian physician trainees are not publicly available, the local authors (who train house officers and OBGYN residents in Ghana) feel that the study demographics are representative of the overall trainee population. Finally, conclusions from this study are based on participants' self-reported comfort level with skills and the anticipated likelihood of providing comprehensive abortion care in the future. It is uncertain if comfort level is a true representation of a trainee's objective skill level and if anticipated likelihood of future abortion care actually translates into future decisions to perform abortion care. Additional research is needed to understand the relationship between a trainee's plans to perform abortion care and their actual long-term practice patterns.

Unsafe abortion continues to be a significant health issue globally, especially in developing countries like Ghana. Although the vast majority of physician trainees in Ghana believe that women should have access to abortion care, only two-thirds are likely to provide comprehensive abortion care in their future practice. Greater exposure to abortion training is associated with an increased likelihood of performing abortions. Thus, increasing hands-on training in fundamental abortion skills may increase the likelihood that trainees provide abortion care in their future careers to promote increased access to safe abortion care.

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Conflict of interest

The authors report no conflicts of interest.

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