Ghana abortion care—a model for others: analysis of the 2017 Ghana Maternal Health Survey

Dhanalakshmi Thiyagarajan, MD, MPH; Kwaku Asah-Opoku, MBChB, MPH; Sarah Compton, PhD, MPH

BACKGROUND: About 5% to 13% of maternal mortality is directly related to unsafe abortion care. Despite the cultural stigmatization of abortions, Ghana has progressive abortion laws, healthcare guidelines, and clinical outcomes.

OBJECTIVE: Our study's primary aim was to characterize abortion outcomes in Ghana. Our secondary aims included investigating factors that led to abortion complications and the treatment of these complications.

STUDY DESIGN: We used data from the 2017 Ghana Maternal Health Survey. We examined questions that focused on the reasons for abortion, methods used for abortion, healthcare setting for abortion, and health issues after abortion. We performed descriptive and inferential statistics, including cross tabulation with chi-square analysis and logistic regression models.

RESULTS: Between 2012 and 2017, 1,425 women reported and completed the abortion-related questions. For those who obtained an abortion for health reasons, 69% had a surgical-based as opposed to herbal or medication-based abortion ($P<.001$), 94% had a medical facility—based as opposed to non-medical facility—based abortion ($P<.001$), and 21% had health problems related to the abortion within 1 month ($P=.035$). Women's reasons for undergoing an abortion did not affect the treatment rates after complications. There was no difference in the occurrence of an abortion-related complication or receipt of treatment for this complication within 1 month after the abortion among those who underwent medical facility—based and those who underwent nonmedical facility based abortion. Those with tertiary-level education or those who knew abortions were legal were more likely to have a surgical and medical facility—based abortion.

CONCLUSION: Although Ghana has room to improve the safety and accessibility of abortion services, our analysis suggests abortions in Ghana, regardless of reason given for seeking the service or method of abortion, seem to be safe. Translating Ghana's approach to abortion could minimize unsafe abortions globally.

Key words: abortion guidelines, abortion laws, low- and middle-income countries, maternal mortality, public health, unsafe abortions, unsafe terminations

Introduction

Worldwide, 61% of unintended pregnancies end in abortion, which translates to about 73 million abortions per year.[1] Abortion care is accessed throughout the world even where restrictions exist.[1] About 45% of abortions are classified as unsafe worldwide, and 5% to 13% of maternal mortality is directly related to unsafe abortion care.[2] Sustainable Development Goal 3.1 of the World Health Organization is aimed at reducing the global maternal mortality rate to under 70 per 100,000 live births in every country.[3] However, instead of improving access to safe abortion, many countries are enacting new abortion restrictions.[1–3] Reducing unsafe abortions is an obvious way to decrease maternal mortality and morbidity.

In the upper middle-income West African country of Ghana, with a population of about 33.5 million people, abortion is permitted for pregnancies that are the consequence of rape, incest, or the "defilement of a female idiot," those that pose a danger to the life or health of a woman, and those with a risk for fetal anomaly.[4,5] The Ghana Health Service has taken steps to improve access to safe abortion services in the country.[6] However, as with many places, abortion remains taboo, and many women seek services outside the formal healthcare system to avoid negative interactions with unsupportive healthcare providers.[5,7] Despite the social and health risks women face, safe and unsafe abortion is accessed in Ghana because of financial, familial, and personal burden of pregnancy and raising a child.[5] Overall in Ghana, 43% of unintended pregnancies or 44 pregnancies per 1000 women aged 15 to 49 years end in abortion.[6]

The Ghana Health Service provides the majority of health services to its

From the Department of Obstetrics and Gynecology, Michigan Medicine, Ann Arbor, MI (Thiyagarajan and Compton); Department of Obstetrics and Gynecology, University of Ghana, Accra, Ghana (Asah-Opoku)

The authors report no conflict of interest.

This study was funded by the University of Michigan - Global Reach: Partnership Development Grant.

Data from the 2017 Ghana Maternal Health Survey were used.

Cite this article as: Thiyagarajan D, Asah-Opoku K, Compton S. Ghana abortion care—a model for others: analysis of the 2017 Ghana Maternal Health Survey. Am J Obstet Gynecol Glob Rep 2024;XX:x.ex–x.ex.

Corresponding author: Kwaku Asah-Opoku, MBChB, MPH. kasahopoku@yahoo.com

2666-5778/$36.00

http://dx.doi.org/10.1016/j.xagr.2024.100419

AJOG Global Reports at a Glance

Why was this study conducted?

This study aimed to characterize abortion outcomes in Ghana by using the 2017 Ghana Maternal Health Survey.

Key findings

For those who obtained an abortion for health reasons, 69% had a surgical abortion as opposed to a herbal or medication-based abortion ($P<.001$), 94% had a medical facility–based as opposed to nonmedical facility–based abortion ($P<.001$), and 21% had health problems related to the abortion within 1 month ($P=.035$). Women's reasons for abortion did not affect treatment rates after complications. There was no difference in the occurrence of an abortion-related complication or receipt of treatment among medical facility–based vs non-medical facility–based abortions.

What does this add to what is known?

Despite the cultural stigmatization of abortions, Ghana has progressive abortion laws, healthcare guidelines, and clinical outcomes. Although Ghana can improve, our analysis suggests that abortions in Ghana seem to be safe. Translating Ghana's approach to abortion could minimize unsafe abortions globally.

population through health posts, health centers and clinics, district hospitals, regional hospitals, and tertiary hospitals.[8] More than half of the population is covered under the National Health Insurance Scheme, which includes abortion care, and 15% of the population is covered under private health insurance schemes.[8–10] In 2006, the Ghana Health Service and Ministry of Health developed guidelines for safe abortion services, including how to provide comprehensive abortion care and post-abortion care, and worked to expand the number of healthcare professionals who can perform abortions, thereby allowing trained nurses and midwives to provide comprehensive and post-abortion care.[6]

However, abortion is one of the top causes of maternal mortality in Ghana and accounts for about 14% of the deaths.[11] There has been dramatic progress in reducing the overall maternal mortality from 580 per 100,000 births in the 2007 Ghana Maternal Health Survey to 310 per 100,000 births in the 2017 Ghana Maternal Health Survey.[12,13] In addition, although abortion-related complications were a leading cause of admission to emergency gynecology wards for many years, more recently, there has been a marked reduction in the rate of admission for complications from unsafe abortions.[7,14]

Despite the cultural stigmatization of abortions, Ghana has progressive abortion laws, healthcare guidelines, and clinical outcomes. The primary aim of this study was to characterize abortion outcomes in Ghana. Our secondary aims included investigating reasons for abortion complications and treatment of these complications.

Material and methods

We used data from the 2017 Ghana Maternal Health Survey.[13] The woman's questionnaire focused on self-identified women aged 15 to 49 years old. There were a variety of questions about participant background, previous pregnancies, including abortions and miscarriages, family planning habits, pregnancy and postpartum care, relationship and sexual experiences, healthcare access, and disability care. Based on the protocol, 25,304 women aged 15 to 49 years were eligible to be interviewed across the country. A total of 25,062 (99%) completed the woman's questionnaire. After downloading the 2017 Ghana Maternal Health Survey data set from the Demographic and Health Surveys website, we performed a retrospective, cross-sectional analysis of the data focused on abortion care.[13]

We examined the following questions: "What was the main reason you decided to have this abortion?"; "What was the (only/final) thing you did to end this pregnancy"; "Where did you go to get this (only/final step) done?"; "In the first one month after the abortion, did you have any health problems because of the abortion?"; "Did you get any treatment for the health problems you had because of the abortion?"

The following responses to the questions were recoded as detailed. The responses to "What was the main reason you decided to have this abortion?" were recoded as being related to health, financial, social, or family. The following response was recoded as health: "Health-related reasons." "No money to care for baby" was recoded as financial. The following responses were recoded as being for social reasons: "Not ready/too young/wanted to delay child-bearing," "Wanted to space child," "Wanted to continue in school," and "Other life circumstances." The following responses were recoded as family reasons: "Partner did not want child," "Other partner-related circumstances," and "Shame/afraid of parents/parents insisted." Those who listed other reasons were excluded.

"What was the (only/final) thing you did to end this pregnancy?" was recoded as herbal, medication, and surgical. "Non-medical methods" was captured as herbal. The following responses were recoded as medication: "Misoprostol/Cytotec tablets," "Mifepristone and misoprostol/Medabon tablets," "Tablets (exact kind unknown)," and "Oxytocin/IV." The responses "D&C/D&E," "Vacuum aspiration," "Saline instillation," Catheter," and "Other injection" were recoded as surgical.

"Where did you go to get this (only/final step) done?" was recoded as in a medical facility or not. The following responses were recoded as in a medical facility: "Healthcare personnel," "Pharmacist/chemical seller," "Health facility public," "Health facility private," and "Pharmacy/chemist/drug-store." The responses "Relative or friend," "Other," "Nobody," and "Home" were recoded as nonmedical facility. Participants who

TABLE 1
Type of abortion based on reason for abortion

Reason for abortion	Herbal, n (%)	Medication, n (%)	Surgical, n (%)	Total, n (%)
Health	10 (9.1)	24 (21.6)	77 (69.4)	111 (8.2)
Financial	87 (19.2)	213 (47.2)	153 (33.8)	453 (33.4)
Social	99 (18.5)	261 (48.8)	175 (32.7)	535 (39.4)
Family	35 (13.5)	139 (53.7)	85 (32.8)	259 (19.1)
Total	231 (17.0)	637 (46.9)	490 (36.1)	1358

Thiyagarajan. Ghana Abortion Care Outcomes. Am J Obstet Gynecol Glob Rep 2024.

responded "Other" to either the main reason or the last step were dropped from further analysis.

The data were analyzed using Stata v.16 (College Station, TX). We performed descriptive and inferential statistics including cross tabulations with chi-square analyses. A *P* value <.05 was deemed statistically significant. A series of logistic regression models were evaluated using a dichotomous surgical abortion variable, a dichotomous medical facility-based abortion, and a dichotomous reporting variable of a health problem in the 6 months after abortion as the outcomes. The results are presented as odds ratios and marginal effects.

Results

Between 2012 and 2017, 1425 (5.7%) of the 25,062 women who answered the questionnaire reported an abortion and completed the abortion-related questions. As seen in Table 1, for those who obtained an abortion for health reasons, 77 (69%) had a surgical abortion as opposed to a herbal (9.1%) or medication-based abortion (21.6%) (*P*<.001).

Table 2 demonstrates that of those who obtained an abortion for health reason, 118 (94%) had a medical facility−based as opposed to nonmedical facility−based abortion (5.6%) (*P*<.001). In addition, 71.6% of those who sought abortion for financial reasons, 74.0% of those for social reasons, and 77.0% of those for family reasons underwent an abortion within the healthcare system.

Although most women who reported having an abortion reported no health problems in the first month after abortion, this differed by reasons for the abortion. About 21% of those who obtained an abortion for health reasons had health problems related to the abortion within 1 month after the abortion, whereas about 15% of those who had an abortion for financial reasons, 11% of those whose abortion was for social reasons, and 15% of those whose abortion was for family reasons reported health problems in the first month after abortion (*P*=.035) as shown in Table 3.

When asked if they sought treatment for an abortion-related complication, the women's reasons for receiving an abortion did not affect the treatment rates after complications (*P*=.352). The incidence of an abortion-related complication within 1 month after the abortion was not different between those who underwent a medical facility−based vs nonmedical facility−based abortion (*P*=.892). In addition, there was no difference in medical facility−based and nonmedical facility−based abortions in terms of treatment received for a complication within 1 month after the abortion (*P*=.342).

In the logistic regression with a dichotomous surgical abortion as the outcome variable, those who reported having an abortion for health reasons were 25.7% more likely to have a surgical abortion (marginal effect [ME], 0.257), those who had higher than senior high school level of education were 14.5% more likely to have a surgical abortion (ME, 0.145), and those who knew that abortion was legal in Ghana were 14.6% more likely to have a surgical abortion (ME, 0.146) when

TABLE 2
Location of abortion based on reason for abortion

Reason for abortion	Nonmedical facility, n (%)	Medical facility, n (%)	Total, n (%)
Health	7 (5.6)	118 (94.4)	125 (9.1)
Financial	128 (28.4)	322 (71.5)	450 (33.8)
Social	139(26.0)	396 (74.0)	535 (39.0)
Family	60 (23.0)	201 (77.0)	261 (19.0)
Total	334 (24.4)	1037 (75.6)	1371

Thiyagarajan. Ghana Abortion Care Outcomes. Am J Obstet Gynecol Glob Rep 2024.

TABLE 3
Health problems related to the abortion based on reason for abortion

Reason for abortion	Health problems in 1st month after abortion, n (%)	No health problems in 1st month after abortion, n (%)	Total, n (%)
Health	26 (20.8)	99 (79.2)	125 (9.1)
Financial	68 (14.9)	388 (85.1)	456 (33.0)
Social	61(11.3)	478 (88.7)	539 (39.0)
Family	40 (15.3)	222 (84.7)	262 (19.0)
Total	195 (14.1)	1187 (86.0)	1381

Thiyagarajan. Ghana Abortion Care Outcomes. Am J Obstet Gynecol Glob Rep 2024.

TABLE 4
Logistic regression models with outcomes of surgical abortion, medical facility–based abortion, and reporting a health problem in the 6 months after abortion

	Model 1: surgical abortion outcome		Model 2: medical facility–based abortion outcome		Model 3: health problem in the 1st month after abortion outcome	
Reason for abortion	Odds ratio (95% CI)	Marginal effects	Odds ratio (95% CI)	Marginal effects	Odds ratio (95% CI)	Marginal effects
Abortion for health reason	1.220[a] (0.776–1.663)	0.257	1.641[a] (0.851–2.430)	0.286	0.765[a] (0.263–1.267)	0.090
Education						
None	Ref	Ref	Ref	Ref	Ref	Ref
Primary	−0.006 (−0.472 to 0.461)		0.172 (−0.303 to 0.648)		−0.030 (−0.709 to 0.650)	
Junior high school	0.107 (−0.305 to 0.518)		0.469[a] (0.042–0.897)	0.092	0.148 (−0.436 to 0.731)	
Senior high school	0.412 (−0.053 to 0.877)		0.778[a] (0.281–1.276)	0.144	0.439 (−0.194 to 1.071)	
Tertiary	0.665[a] (0.082–1.25)	0.145	1.576[a] (0.755–2.340)	0.239	−0.286 (−1.148 to 0.576)	
Know abortion is legal in Ghana	0.691[a] (0.332–1.051)	0.146	0.490[a] (0.000–0.980)	0.085	0.301 (−0.154 to 0.756)	
Age						
15–19	−0.684[a] (−1.280 to −0.088)	−0.140	−0.324 (−0.889 to 0.240)		0.073 (−0.695 to 0.840)	
20–24	−0.409[a] (−0.720 to −0.097)	−0.088	−0.394[a] (−0.744 to −0.044)	−0.069	0.607[a] (0.174–1.040)	0.073
25–29	Ref	Ref	Ref	Ref	Ref	Ref
30–34	−0.116 (−0.505 to 0.273)		−0.157 (−0.612 to 0.299)		0.284 (−0.285 to 0.852)	
35–39	0.256 (−0.230 to 0.741)		−0.018 (−0.608 to 0.572)		−0.144 (−0.905 to 0.616)	
≥40	0.583 (−0.013 to 1.178)		0.152 (−0.596 to 0.900)		−0.490 (−1.539 to 0.559)	
Number of living children						
0	−0.001 (−0.407 to 0.404)		−0.066 (−0.499 to 0.368)		0.399 (−0.156 to 0.954)	
1	−0.055 (−0.437 to 0.327)		0.256 (−0.159 to 0.671)		0.188 (−0.357 to 0.723)	
2	Ref	Ref	Ref	Ref	Ref	Ref
≥3	0.105 (−0.293 to 0.503)		0.212 (−0.243 to 0.667)		0.263 (−0.327 to 0.854)	
Being in a relationship	0.136 (−0.129 to 0.401)		0.226 (−0.062 to 0.513)		0.030 (−0.328 to 0.380)	

[a] Indicates a *P* value of <.050.

Thiyagarajan. Ghana Abortion Care Outcomes. Am J Obstet Gynecol Glob Rep 2024.

controlling for age, number of living children, and being in a relationship.

Similarly, in the logistic regression with medical facility−based abortion as the outcome variable, those who had an abortion for health reasons were 28.6% more likely to have a medical facility−based abortion (ME, 0.286), those who had higher levels of education (junior high school, senior high school, tertiary) were 9.2%, 14.4%, and 23.9% more likely to have a medical facility−based abortion (ME, 0.092, 0.144, and 0.239, respectively), and those who knew abortion was legal in Ghana were 8.5% more likely to have a medical facility-based abortion (ME, 0.085) when controlling for age, number of living children, and being in a relationship.

Finally, in a logistic regression model with reporting health problems in the first month after abortion as the outcome variable and controlling for medical facility−based care, age, number of living children, education, being in a relationship, and knowing that abortion was legal, those who underwent an abortion for a health reason were 9% more likely to report a health problem in the first month after abortion (ME, 0.090). Table 4 contains the detailed results.

Discussion

Principal findings

For those who obtained an abortion for health reasons, surgical-based abortions as opposed to herbal or medication-based abortions and medical facility-based abortions as opposed to nonmedical facility−based abortions were preferred. In addition, those who obtained an abortion for health reasons were more likely to have had health problems related to the abortion within 1 month. Women's reasons for receiving an abortion did not affect treatment rates after complications. There was no difference in medical facility−based vs nonmedical facility−based abortions in terms of the occurrence of an abortion-related complication or receipt of treatment for this complication within 1 month after the abortion. Those with a tertiary level of education or who knew abortions were legal were more likely to have a surgical and medical facility−based abortion.

Results

In this analysis of the 2017 Ghana Maternal Health Survey, women who reported having an abortion for health reasons were most likely to have a surgical abortion, to use a medical facility for their abortion, and to report a complication up to 1 month after abortion. This could be attributed to the patient already having health concerns that could have been worsened by their pregnancy or being at a later gestational age of their pregnancy.

In addition, those who had a higher level of education or who knew that abortions were legally available in Ghana were more likely to have a surgical abortion and medical facility−based abortion. This is consistent with findings from previous work.[15−18] This could be because people with higher levels of education are more likely to live in urban areas where there is access to medical facilities or they are aware that abortion is available legally in health facilities and covered by the national health insurance scheme.

Interestingly, we found no differences in abortion-related complications within 1 month after the abortion among those abortions that happened within a medical facility vs those that occurred in a nonmedical facility−based situation. Furthermore, treatment rates after complications within 1 month after the abortion did not differ based on any factor. This is demonstrated in several studies in which patients who received an illegal or unsafe abortion have received care for complications from abortion.[16,17,19−23]

Clinical implications

Most people, despite the reason for abortion, used a medical facility for their abortion care. Patients must feel safe seeking help if they have a postabortion complication to prevent serious or fatal associated outcomes. This study also highlights the importance of societal education around safe abortion care, preventing maternal morbidity and mortality, and progressive abortion laws, because those who likely had this knowledge pursued the legal abortion options of medical facility−based management.

Research implications

Future studies could include qualitative data collection with semi-structured interviews or focus group discussions to understand the decision-making behind obtaining an abortion and how participants completed the abortion and received postabortion care. In addition, country-level data monitoring maternal mortality and morbidity rates could be analyzed to further understand abortion complication reasons in Ghana.

Strengths and limitations

These results are limited by the data set protocol.[13] Although a stratified sample frame was used to capture the broad data of the Ghanaian population, there is always sampling error associated with this. In addition, field workers administered the questionnaires and therefore participants may not have felt comfortable and/or been honest in answering the relevant questions. Finally, those who were deceased because of abortion complications were not included in this data set.[13]

Conclusion

Ghana has taken steps to improve the safety and accessibility of abortion services by broadly interpreting the abortion law, providing abortion care within the public Ghana Health Service, and developing guidelines to improve abortion services. Although Ghana has room to improve the safety and accessibility of abortion services by further legalizing abortion for all reasons, by developing a culture of acceptance and increasing knowledge about the legalization of abortion and its access, our analysis suggests that most abortions are done safely. Overall, it would be beneficial to analyze and develop a program based on Ghana's abortion-care structure to minimize unsafe abortions globally. ■

CRediT authorship contribution statement

Dhanalakshmi Thiyagarajan: Writing – original draft, Methodology. **Kwaku Asah-Opoku:** Writing – review & editing, Supervision. **Sarah Compton:** Writing – review & editing, Supervision, Methodology, Formal analysis.

REFERENCES

1. Unintended pregnancy and abortion worldwide. Guttmacher Institute. 2020. Available at: https://www.guttmacher.org/fact-sheet/induced-abortion-worldwide. Accessed February 18, 2024.

2. SWP report. United Nations Population Fund. 2022. Available at: https://www.unfpa.org/swp2022. Accessed February 18, 2024.

3. The 17 goals. United Nations, Department of Economic and Social Affairs, Sustainable Development. Available at: https://sdgs.un.org/goals. Accessed January 20, 2024.

4. World Bank open data. World Bank Open Data. Available at: https://data.worldbank.org. Accessed February 19, 2024.

5. Klc TR, Ames S, Zollinger B, et al. Abortion in rural Ghana: cultural norms, knowledge and attitudes. Afr J Reprod Health 2020;24:51–8.

6. Incidence of abortion and provision of abortion-related services in Ghana. Guttmacher Institute. 2020. Available at: https://www.guttmacher.org/fact-sheet/incidence-abortion-and-provision-abortion-related-services-ghana. Accessed February 19, 2024.

7. Rominski SD, Lori JR. Abortion care in Ghana: a critical review of the literature. Afr J Reprod Health 2014;18:17–35.

8. Ghana - Country Commercial Guide. International Trade Administration. 2022. Available at: https://www.trade.gov/country-commercial-guides/ghana-healthcare. Accessed February 20, 2024.

9. Ghana Health Service. Your Health, Our Concern. Available at: https://ghs.gov.gh/. Accessed February 18, 2024.

10. National Health Insurance Authority. Available at: https://www.nhis.gov.gh/default. Accessed February 20, 2024.

11. Asamoah BO, Moussa KM, Stafström M, Musinguzi G. Distribution of causes of maternal mortality among different socio-demographic groups in Ghana; a descriptive study. BMC Public Health 2011;11:159. https://doi.org/10.1186/1471-2458-11-159.

12. Ghana maternal health survey 2007. The DHS Program. 2009. Available at: https://dhsprogram.com/publications/publication-fr227-other-final-reports.cfm. Accessed February 19, 2024.

13. Ghana Maternal Health Survey 2017. The DHS Program. 2018. Available at: https://www.dhsprogram.com/pubs/pdf/FR340/FR340.pdf. Accessed February 18, 2024.

14. Compton SD, Ogu K, Dassah ET. Abortion-related admissions to the Komfo Anokye Teaching Hospital in Kumasi, Ghana; a 4-year review. Reprod Med Gynecol Obstet 2023;8:122. https://doi.org/10.24966/RMGO-2574/100122.

15. Oliveras E, Ahiadeke C, Adanu RM, Hill AG. Clinic-based surveillance of adverse pregnancy outcomes to identify induced abortions in Accra. Ghana. Stud Fam Plann 2008;39:133–40.

16. Adanu RMK, Ntumy MN, Tweneboah E. Profile of women with abortion complications in Ghana. Trop Doct 2005;35:139–42. https://doi.org/10.1258/0049475054620725.

17. Adanu RM, Tweneboah E. Reasons, fears, and emotions behind induced abortions in Accra, Ghana. Res Rev 2004;20:1–9. https://doi.org/10.4314/rrias.v20i2.22910.

18. Sundaram A, Juarez F, Bankole A, Singh S. Factors associated with abortion-seeking and obtaining a safe abortion in Ghana. Stud Fam Plann 2012;43:273–86. https://doi.org/10.1111/j.1728-4465.2012.00326.x.

19. Lassey AT. Complications of induced abortions and their preventions in Ghana. East Afr Med J 1995;72:774–7.

20. Srofenyoh EK, Lassey AT. Abortion care in a teaching hospital in Ghana. Int J Gynaecol Obstet 2003;82:77–8. https://doi.org/10.1016/s0020-7292(03)00033-x.

21. Konney TO, Danso KA, Odoi AT, Opare-Addo HS, Morhe ESK. Attitude of women with abortion-related complications toward provision of safe abortion services in Ghana. J Womens Health (Larchmt) 2009;18:1863–6. https://doi.org/10.1089/jwh.2008.1190.

22. Schwandt HM, Creanga AA, Danso KA, Adanu RMK, Agbenyega T, Hindin MJ. A comparison of women with induced abortion, spontaneous abortion and ectopic pregnancy in Ghana. Contraception 2011;84:87–93. https://doi.org/10.1016/j.contraception.2010.10.011.

23. Aniteye P, Mayhew S. Attitudes and experiences of women admitted to hospital with abortion complications in Ghana. Afr J Reprod Health 2011;15:47–55.