

Full Length Research Paper

Midwifery students' willingness to provide manual vacuum aspiration in Ghana

Sarah Rominski^{1*}, Emmanuel Nakua², Peter Ageyi-Baffour², Mawuli Gyakobo³
and Jody R. Lori⁴

¹Global REACH, University of Michigan Medical School, Ann Arbor, MI, 5124b Medical Sciences Building 1, 1301 Catherine St. Ann Arbor, MI 48109, United States.

²School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

³Medical School, University of Ghana, Accra, Ghana.

⁴University of Michigan School of Nursing, Ann Arbor, MI, United States.

Accepted 19 January, 2021

Abortion remains one of the leading causes of maternal mortality in the developing world. Midwives are more likely to provide services to more than half of the world's population residing in rural areas than other healthcare providers. When properly trained, midwives are able to safely provide manual vacuum aspiration (MVA). As part of a larger study, final-year midwifery students took part in a computer-based survey and were asked about the training and education they received related to MVA. 93 students completed the survey questions related to MVA. 60.2% reported that they are either "very likely" or "likely" to provide this service once they graduate. Only 5 students indicated they had an opportunity to practice the skill during their training. The most common reason for answering "definitely will not" provide MVA was religious beliefs. In Ghana, midwifery students are being taught manual vacuum aspiration, although they are not being given adequate opportunity for supervised experiences. This raises the issue of how well prepared they are to provide this service following graduation. To address the continuing problem of unsafe abortion, midwifery training colleges in Ghana should establish a mechanism to expose students to additional simulation and clinical experiences.

Key words: Midwifery, Ghana, Africa, abortion, maternal health.

INTRODUCTION

The second leading cause of maternal mortality in Ghana is unsafe abortion (World Health Statistics, 2006) and for every death, 15 women are left with a lifelong disability (Eades et al., 1993). Although, abortion is legal under many circumstances in Ghana including: when pregnancy is the result of rape or incest; when the pregnancy risks the life, the physical or mental health of the woman, or where there is the threat that the child will be physically or mentally incapacitated (Morhee and Morhee, 2006), the provision of safe abortion is not

always guaranteed (Hord and Wolf, 2004). Despite the relatively liberal abortion law, as many as two thirds of Ghanaian women who seek abortions secure them from untrained and unregulated providers, outside the formal health system (Ahiadeke, 2001). Abortion in Ghana is highly stigmatized and is widely thought to be illegal (Aniteye and Mayhew, 2011). Although, the abortion law has been in effect since 1985, it is only since 2003 that the country's reproductive health service policy began to cover abortion services (Baiden et al., 2006). Confusion around the legality of elective abortion exists, even among midwifery tutors (Voetagbe et al., 2010; Lithur, 2004). Previous studies have indicated that midwifery tutors are not fully aware of the circumstances under which abortion is legal in Ghana. Legal concerns were

*Corresponding author. E-mail: sarahrom@umich.edu. Tel: (734) 764-6108.

the most highly cited reason given for tutors' unwillingness to teach complete abortion care to students (Baiden et al., 2006).

The World Health Organization calculates that 3.7 million unsafe abortions are performed in Africa each year (World Health Organization, 1993). Regionally, unsafe abortion causes an estimated 13% of maternal deaths in West Africa (Hill et al., 2009; Hill et al., 2009). In a study at Korle Bu Teaching Hospital in the capital city of Accra, 30% of women who underwent an induced abortion had complications that required hospital admission while less than 10% experiencing a spontaneous abortion required hospitalization (Srofenyoh and Lasse, 2003). As part of the Ghana reproductive health strategic plan (Ghana Ministry of Health, 2006-2010) to increase access to safe abortion in Ghana, manual vacuum aspiration (MVA) was added to the national curriculum used by the 14 Ghanaian midwifery training colleges.

Although, historically provided by physicians, it has been shown, when trained properly, midwives can successfully and safely perform MVA (Hill et al., 2009; Ghana Ministry of Health, 2006-2010). Midwives, and other mid-level providers, have been shown to successfully provide this service in settings as diverse as Mozambique and South Africa, as well as other developed and developing countries (Berer, 2009). This training includes not only didactic content but also simulation-based training and practical supervision to fully prepare students to provide this service once they have graduated.

In Ghana, as in many African countries, there are few physicians in the rural areas where the majority of the population lives (Sibuyi, 2004). By training midwives to safely perform MVA, the government is building capacity in the cadre of providers who most often work in rural areas (World Health Organization, 2005). Midwifery tutors have indicated they are, for the most part, willing to teach these skills to their students (Baiden et al., 2006). Although, currently written into the national midwifery curriculum, no systematic review of the implementation has been undertaken. The aim of this research study was to examine whether third-year midwifery students about to graduate: 1) received education in MVA; 2) had an opportunity to practice MVA skills; and 3) plan to include MVA services as part of their practice following graduation.

METHODS

This quantitative study was part of a larger 60 question, computerized survey to examine the willingness of final year midwifery students to locate to rural areas after graduation. Five structured questions regarding MVA education and willingness to provide abortion services following graduation were included in the larger survey. These questions included: have you received training

in manual vacuum aspiration (MVA)? Have you had the opportunity to practice manual vacuum aspiration in the simulation lab? Have you had the opportunity to be supervised performing MVA in the clinical area? How likely are you to provide complete abortion care services after graduation? And, what is the reason? The first three questions were all yes / no answers. The fourth question was a 6 point Likert scale with answers ranging from very likely to unlikely. The final question included the answers; personal preference; it is against the law; religious beliefs; stigma associated with providing abortion care; rather not say.

The survey and all associated study procedures were reviewed and given approval by the ethical review boards at the Kwame Nkrumah University of Science and Technology, the University of Ghana, the Ghana Health Service and the University of Michigan.

Study site

This study was performed at the two largest midwifery training colleges in Ghana, the Kumasi Midwifery School and the Korle Bu Midwifery School. These schools were chosen because of the large numbers of students in their programs. The study was conducted within the context of a larger initiative, the Ghana-Michigan collaborative health alliance for reshaping training, education and research (CHARTER), sponsored by the Bill and Melinda Gates Foundation. The overall goal of this two-year learning grant was to design an evidence-based roadmap for academic-government collaborative interventions to strengthen the training and deployment of human resources for health in Ghana (CHARTER, 2008).

The Kumasi Midwifery School began its diploma midwifery training program in 2003 with 20 students. Since that time, enrollment has steadily increased until reaching its current level of approximately 150 students per class. For the most recent years, there have been up to 700 applicants (approximately 300 qualified applicants) for the 150 openings per year. The Korle Bu Midwifery School also began accepting students in 2003, with class sizes of approximately 70 students. There are currently 400 students enrolled in the Korle Bu Midwifery School 3 year program. Both schools are located in urban areas; Korle Bu School is in the capital, and largest Ghanaian city of Accra, and Kumasi School is located in the second largest city, Kumasi, in the country.

Data collection

A convenience sample of 93 final year midwifery students at the two largest public midwifery training colleges participated in the survey. Two hundred ninety eight students were invited to participate, giving a 31.2% response rate. Twenty six students from Korle Bu and 66 from KNUST participated in the study. Students were recruited by fliers posted in their respective schools. Additionally, class leaders announced the opportunity to participate in the study to fellow students. Sign-in sheets were compared with class lists provided by the school's administration to determine response rates. Prior to data collection, informed consent and confidentiality statements were obtained from participants.

Students completed the computerized survey in a lab using password protected computers on each of the respective campuses. Students were given as much time as needed to complete the entire survey. Most participants completed the full survey in approximately 30 min. Participants were given an incentive of GHC 10 (approximately 7 USD) upon completion. Survey data were collected using Sawtooth Software (Sawtooth Company, Seattle, WA) and imported to PASW version 19 (PAWS company, Chicago, IL).

Table 1. Select demographics.

n = 92			
Age	Mean	22.34 (SD = 1.38)	
Gender	Female 100%		
		Frequency	Percent
School	Korle Bu	26	28.3
	Kumasi	66	71.7
What type of job would you like in 10 years?	Practicing general midwifery	44	47.3
	Administrative	23	24.7
	Public health	14	15.1
	Teaching 4.3% (4)		
	Nursing 2.2% (2)		
	Other/do not know 5.4% (5)		

Table 2. Students reporting likelihood of providing MVA services following graduation.

How likely are you to provide MVA?	Frequency	Percent
Very likely	31	33.3
Somewhat likely	25	26.9
Neither likely nor unlikely	6	6.5
Somewhat unlikely	6	6.5
Very unlikely	7	7.5
Definitely will not	11	11.8

Data analysis

Data were analyzed using PASW, version 19 (PASW company, Chicago, IL). Descriptive statistics were computed for all demographic questions (Table 1) as well as the questions of interest.

Frequency statistics were produced to examine which choices were most frequently indicated. Participants were asked whether they had received classroom teaching in MVA, whether they had an opportunity to practice MVA in a simulation-based environment and whether they had been given an opportunity to participate in supervised clinical experiences. Students were then asked, on a five point Likert scale, how likely they were to provide MVA once they graduated. Those who answered 'very likely' or 'very unlikely' to provide MVA were then asked why. Responses included: "personal preference", "against the law", "religious beliefs" and "stigma". Cross tabs were calculated to examine the reasons students were very likely or very unlikely to provide MVA.

RESULTS

Ninety-three of the 298 (31.2% response rate) third year midwifery students responded to the survey. Seventy-six percent (n = 71) of students completing the survey answered yes to the following question: Have you received training in manual vacuum aspiration (MVA)? However, only 5.4% (n = 5) answered that they had practiced MVA in a simulation lab (2 from Korle Bu and 3

from KNUST) and only 11.8% answered they had been given the opportunity to be supervised performing this procedure in a clinical setting (3 from Korle Bu, 8 from KNUST) (Table 2).

When asked how likely they were to provide MVA after graduation, 60.2% indicated they were very likely (n = 31) or somewhat likely (n = 25) to provide MVA services. Only 11.8% (n = 11) answered they definitely would not perform MVA after graduation (Table 3).

Those students responding "definitely would not" perform MVA were then asked the reason for their response. Of the eleven midwifery students who identified they "definitely will not" provide MVA services following graduation, the most common reason was religious beliefs (9 of the 11). Two of the eleven (20%) chose personal preference as the reason they would not provide MVA services. One participant chose "it is against the law" and none chose "stigma" as the reason they would not provide MVA services. Of the 31 who answered they are "very likely" to perform MVA, 17 said it was because of personal preference.

DISCUSSION

In our sample, only one student selected the response,

Table 3. MVA experience during educational program.

Trained in MVA	Yes 76.3 % (71)
	No 21.5 % (20)
Practice MVA	Yes 5.4 % (5)
	No 87.1 % (81)
Supervised practice	Yes 11.8 % (11)
	No 80.6 % (75)

abortion is against the law, as the reason she would not provide MVA services following graduation. Although, we did not expressly ask the students their understanding of the laws governing abortion in Ghana, the belief that abortion is against the law is not a hindrance for this sample of students. Considering other research has shown midwives and other healthcare providers were not aware of the legality of many circumstances to provide abortion, this is a positive finding (Voetagbe et al., 2010; Lithur, 2004).

The majority of students in our study indicated they were either very likely or likely to provide abortion services. This could indicate a shift in the future workforce becoming more open to providing this previously much stigmatized (Baiden, 2009) and illegal procedure. Although rarely prosecuted, prior to 1985, abortion was illegal in Ghana both for anyone obtaining an abortion and anyone providing abortion services (Lithur, 2004).

Previous studies have noted that abortion is a source of stigma in Ghana, despite being widely used and provided by unlicensed and often unsafe providers (Baiden, 2009). None of the students in our sample indicated they would not perform MVA due to stigma.

Although, the majority of the participants in our study received didactic content on MVA, the indication that so few had an opportunity to practice, either in a simulation lab or with tutor supervision, is of concern. Although, willingness to perform the procedure is one step in assuring Ghanaian women have access to safe abortion services, having well-trained providers is also important. Students who have an opportunity to practice technical skills taught in didactic content are more likely to complete the skill safely (Alinier et al., 2006) and feel comfortable to practice the procedure once they are out of school. The lack of clinical opportunities for midwifery students during their course of study is concerning. Those students who answered they were not likely to practice MVA once they have graduated may be unwilling to do so due to the low level of competency developed during their training.

Adequate clinical sites for students are a continuing challenge in Ghana and elsewhere. Practice in simulation

and with clients is critical for students to integrate knowledge and skills. Until additional clinical sites can be identified for midwifery students to obtain MVA competencies, additional simulation exercises can be incorporated into the curriculum. Clinical simulation provides the opportunity for trainees to practice and master clinical skills before having to perform them in applied practice. Simulation also provides an excellent platform for assessing competencies. Simulation based training.

Given Ghana's extremely high abortion-related mortality rate, producing skilled midwives capable of providing complete abortion care, including MVA and family planning counseling, is of utmost importance. To address the need for post-abortion care in more rural areas, Ghana's 1996 National Reproductive Health Policy and Standards states post-abortion care can be provided by midwives in primary and secondary health care facilities (Baird et al., 2000). This signals a commitment from the highest levels of government to combat this source of maternal mortality.

Providing complete abortion care services, which includes treatment of post-abortion complications and family planning services, in rural communities where the majority of Ghanaian women live, is the only way to effectively combat the high proportion of maternal mortality due to unsafe abortion. It is heartening that so many of the current midwifery students are receiving didactic education in MVA. Including this content in the national curriculum is certainly a step in the right direction to combat the enormous burden of unsafe abortions.

Willingness among students is not enough to affect change. Midwifery students must be well prepared and confident in their ability to perform all technical skills. Although, an analysis of student skill was beyond the scope of this study, the fact that so few reported having an opportunity to practice MVA, either by the use of simulation or during supervised practice, should be assessed by the educational programs.

Conclusion

This study represents an initial step towards understanding the state of MVA training in Ghana's midwifery training colleges. Further work is needed to objectively evaluate the quality of MVA training the students are receiving. Follow-up with graduates who received the new MVA curriculum content to examine if they are providing the service would be of value. Additionally, after increasing clinical and simulation practice opportunities, evaluating midwives inclusion of MVA services in their practice would provide useful information.

Although, the new MVA curriculum content has been incorporated into the midwifery programs at these two

training colleges, simulation and practical application has not been provided to date. The majority of midwifery students in our sample stated they were willing to provide MVA service; however, provision of safe abortion is not guaranteed if trainees are not given an opportunity to attain clinical competence to fully prepare them for practice.

Limitations

All participants of this study were students at one of two midwifery training colleges in Ghana. Both schools are located in urban areas and may represent a selection bias. It is plausible that those students in the urban areas are more willing to provide abortion services than their rural counterparts.

We do not know whether the students will in fact provide abortion services once they are in practice. The students surveyed, although nearing graduation, are not yet practicing midwives. It is possible their opinions towards providing abortion services may change once they are employed.

Additionally, this computer-based, quantitative study could have benefited from a qualitative component where students had an opportunity to discuss their training in MVA. Qualitative research allows for the exploration of events as experienced by individuals in their natural context and often contributes to a broader understanding. The study provides an opportunity to discuss with students, their experiences with MVA education and training, and how this is related to their stated intention to practice MVA after graduation or not would lead to a deeper understanding of the issues.

ACKNOWLEDGEMENT

This research was provided in part by the Bill and Melinda Gates Foundation.

REFERENCES

- Ahiadeke C (2001). Incidence of induced abortion in Southern Ghana. *Inter. Fam. Plan. Persp.*, 40: 80-86.
- Alinier G, Hunt B, Gordon R, Harwood C (2006) Effectiveness of intermediate-fidelity simulation training technology in undergraduate nursing education. *J. Adv. Nurs.*, 54(3): 359-369.
- Aniteye P, Mayhew S (2011). Attitudes of women admitted to hospital with abortion complications in Ghana. *Afr. J. Reprod. Health*, 2011, 15(1): 47-55.
- Baiden F (2009). Making safe abortion services accessible in Ghana. *J Women's Health*, 18(12): 1923-1924.
- Baiden F, Amponsa-Achiano K, Oduro AR, Mensah TA, Baiden R, Hodgson A (2006). Unmet need for essential obstetric services in a rural district in northern Ghana: Complications of unsafe abortions remain a major cause of mortality. *Public Health*. 2006 May, 120(5): 421-426.
- Baird TL, Billings DL, Demuyakor B (2000). Community education efforts enhance postabortion care program in Ghana. *Am J. Public Health* 2000 April, 90(4): 631-632
- Berer M (2009). Provision of abortion by mid-level providers: international policy, practice and perspectives. *Bull. World Health Organ.*, 87(1): 58-63.
- Eades CA, Brace C, Osei L, LaGuardia KD (1993). Traditional birth attendants and maternal mortality in Ghana. *Soc. Sci. Med.*, 36(11): 1503-1507.
- Ghana Ministry of Health (2006-2010). Reproductive health strategic plan, 2006-2010.
- Hill ZE, Tawiah-Agyemang C, Kirkwood B (2009). The context of informal abortions in rural Ghana. *J. Women's Health (Larchmt)*. 2009 Dec; 118(12): 2017-22.
- Hord C, Wolf M (2004). Breaking the cycle of unsafe abortion in Africa. *Afr. J. Reprod. Health*, 2004 Apr; 8(1): 29-36.
- Lithur NO (2004). Destigmatising abortion: Expanded community awareness of abortion as a reproductive health issue in Ghana. *Afr. J. Reprod. Health*, 2004; 8(1): 70-74
- Morhee R, Morhee E (2006). Overview of the law and availability of abortion services in Ghana. *Ghana Med. J.*, 40: 80-86.
- Sibuyi MC (2004). Provision of safe abortion services by midwives in Limpopo Province of South Africa. *Afr. J. Reprod. Health*, 2004 Apr; 8(1): 75-78
- Srofenyoh EK, Lassey ET (2003). Abortion care in a teaching hospital in Ghana. *Int. J. Gynaecol. Obstet.* 2003 Jul; 82(1): 77-78.
- The Ghana-Michigan Collaborative Health Alliance for Reshaping Training, Education and Research (CHARTER) (2008). [Http://sitemaker.umich.edu/ghana-michigan-charter/files/charter_summary_document.pdf](http://sitemaker.umich.edu/ghana-michigan-charter/files/charter_summary_document.pdf) Retrieved on November 26, 2010.
- Voetagbe G, Yellu N, Mills J, Mitchell E, Adu-Amankwah A, Jehu-Appiah K, Nyante F (2010). Midwifery tutors' capacity and willingness to teach contraception, post-abortion care, and legal pregnancy termination in Ghana. *Hum. Resour. Health*, 8: 2.
- World Health Organization (1993). *Abortion: a tabulation of available data*. WHO/FHE/MSM/93.13. Geneva: World Health Organization, Division of Family Health.
- World Health Organization (2005). *Service Availability Mapping*. 2006 World Health Statistics 20(2006). WHO: Geneva, Switzerland, pp.24