RESEARCH ARTICLE

KNOWLEDGE AND PRACTICE OF POST-ABORTION CARE BY MIDWIVES IN SELECTED PRIMARY HEALTH CARE FACILITIES IN ASHANTI REGION, GHANA

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Abstract
In Ghana, abortion-related mortality is considered a major public health issue that needs to be addressed. Midwives have been trained to safely and effectively provide post-abortion care in the country, yet the expected decline in maternal deaths from abortion complications especially in the rural settings is yet to be realized. Primary Healthcare (PHC) facility is the first point of contact for the rural populace, yet there is minimal evidence on the capacity of midwives serving there to provide post-abortion care. This study assessed the knowledge and practice of post abortion care among midwives in selected primary healthcare (PHC) facilities in Ashanti region of Ghana. A cross sectional descriptive survey design was utilized for the study, and a multi-staged sampling technique was used to select 16 PHCs comprising both government (11) and private (5) owned, from which 112 participants were recruited. A pre-tested structured, self-developed questionnaire was employed to obtain information from the study participants. Obtained data were analyzed using SPSS version 21. A total of 109 questionnaires were accurately completed out of 112 administered, giving a response rate of 97.3%. The midwives' knowledge of post abortion care (PAC) was mainly in the areas of PAC as treatment for abortion complications 49(36%), while knowledge on the other PAC components was low. Only 63(58%) of the respondents had training on PAC, which was basically on the use of Manual Vacuum Aspiration (MVA) to complete incomplete abortion 52(41%). Among the 70(64%) respondents who indicated that their PHC facilities provide PAC services, only 72(66%) of them actually carried out post abortion care. Reasons advanced by the other 39(36%) who never carried out PAC were lack of; confidence 30(815), skills 27(73%), and knowledge 20(54%). The study recommended the training of midwives serving in PHCs in all components of post-abortion care as a feasible strategy for decentralizing PAC services and reaching out to the neglected rural populace. This aspect of reproductive health need to be re-emphasized in midwifery training curricula, buttress with regular mandatory continuing professional development in the area to improve skills.

Keywords: *Post abortion care, knowledge, practice, midwives, Primary Healthcare facility.*

1. Introduction

Globally, about 830 women die from pregnancy and childbirth-related complications every day, and abortion accounts for 8% of these maternal mortality cases[34]. Although abortion rates in the developed world have declined significantly since the 1990s, women living in developing countries, particularly sub-Saharan Africa and worst still the rural settings, experience the greatest risk of death as well as short- and long-term morbidity[46]. Despite the central role that unsafe abortion plays in maternal mortality, few countries have recognized it as a public health problem and incorporated strategies to address it in their safe motherhood programs. Whether women receive prompt care for complications due to unsafe abortion depends upon a variety of individual, socio-economic, and facility factors, including distance between women's homes and the closest facility with providers trained and equipped to provide emergency care and availability and quality of care. In some developing countries, substandard post abortion services have been reported by patients seeking post abortion care (PAC)[37]. They indicate that such substandard services are displeasing and, thus, deter them from seeking subsequent post abortion care in such facilities [38.] Post abortion care (PAC) refers to an emergency approach for reducing morbidity and mortality from incomplete, unsafe abortion and resulting complications and for improving women's sexual and reproductive health and lives[35].

In Ghana, abortion is the leading cause of maternal mortality, accounting for about 11% of maternal deaths[21, 9]. Abortion in Ghana is relatively liberal, compared to other Sub-Saharan countries[9, 49]. The abortion law of 1985 (PNDC Law 102), for instance, prohibits the act but states three main conditions under which an abortion can be done[21]. Abortion is allowed when pregnancy results from rape or defilement of a female idiot (who is an imbecile, mad, or under 18 years of age and cannot take decisions for herself) or from incest [21]. It is also allowed when the continuance of a pregnancy would involve substantive risk to the life of the pregnant woman or injury to her physical or mental health. Abortion is finally acceptable under Ghana's abortion law when there is a substantial risk that the child, if born, may suffer from or later develop a serious physical abnormality or disease[28, 12].

The profession of Midwifery has a globally understood common scope of practice, but this scope of practice continues to evolve. The International Confederation of Midwives (ICM) also encourages midwives to acquire the necessary knowledge and skills to perform additional clinical procedures across the continuum of perinatal and reproductive health care to meet the particular needs of the woman and families and communities in which they practice[24]. The ICM position statement on Midwives provision of abortion- related services[33], states that "a woman who seeks or requires abortion-related services is entitled to be provided with such services by midwives".

Manual Vacuum Aspiration (MVA) for post-abortion care is particularly suited for low resource- settings because it does not requires activity or an operating theatre[39] PAC may include one or more of the following services; community and service provider partnership for prevention of unwanted pregnancies and unsafe abortions, together with mobilization of resources and ensuring services reflect and meet community expectations and needs; counseling to identify and respond to women's emotional and physical health needs and other concerns; treatment of incomplete and unsafe abortions, including the use of manual vacuum aspirator (MVA) to treat incomplete

abortion and administration of antibiotics for infection, uterotonics to control bleeding; contraceptive and family planning services to help women prevent an unwanted pregnancy or practice birth spacing; and linkage to reproductive and other health services provided on-site or via referrals[44, 11]. Figure 1 shows the components of post abortion care.

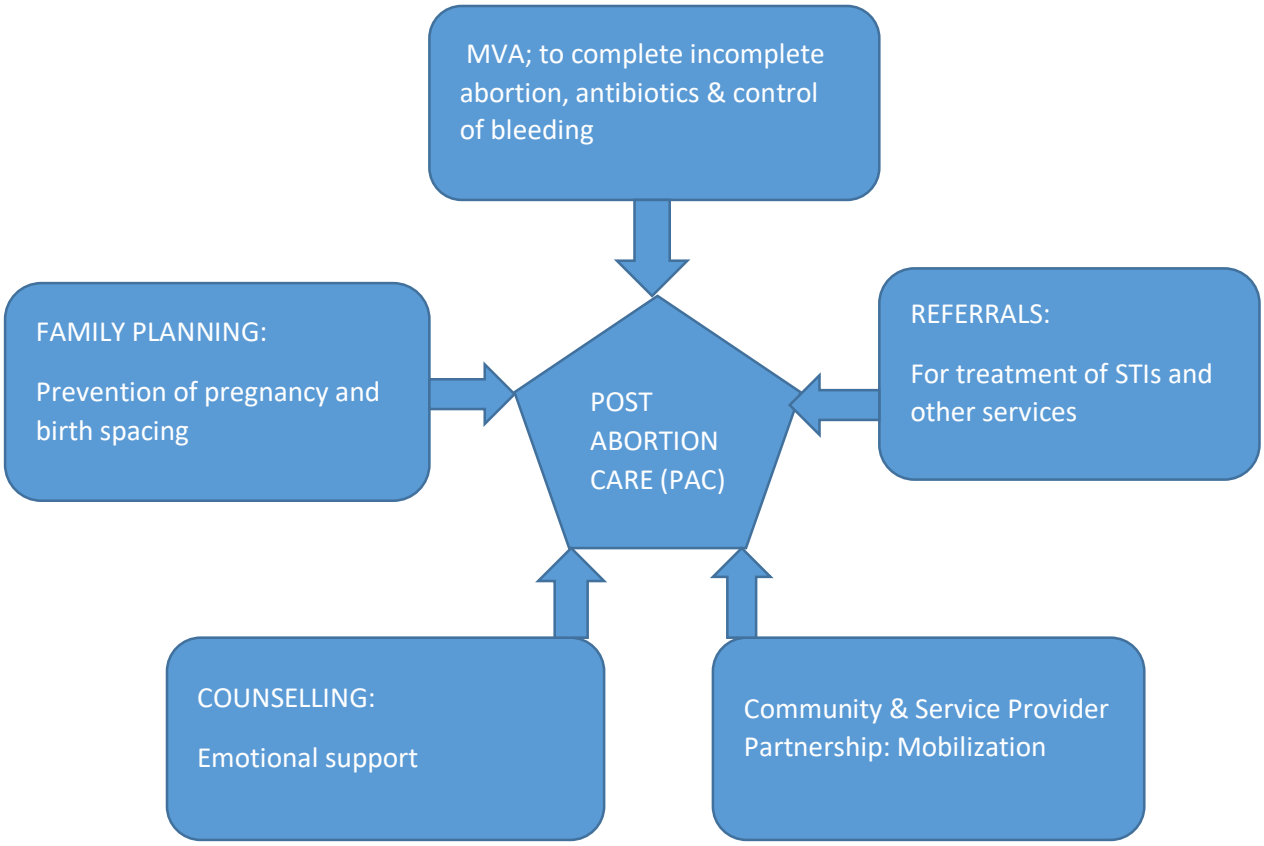

Figure 1: Components of PAC

PAC provided by midwives is recognized as an efficient and cost- effective way to reduce maternal morbidity and mortality, particularly in developing countries[18, 50]. To curb the negative effects of unsafe abortions (which include rupture of the uterus, sepsis, anaemia, and death) in Ghana, the government introduced a comprehensive reproductive health strategy that focuses on maternal morbidity and mortality connected with unsafe abortion[50]. Manual Vacuum Aspiration was, for instance, introduced in the curriculum for midwifery education in the country. However, apart from the social, religious, policy, and legal restrictions on abortion, lack of knowledge and skills by the midwives continue to serve as barriers to having access to comprehensive abortion care, thereby, forcing women to opt for unsafe abortion[19]. Training and equipping community-based midwives can ensure appropriate service availability and accessibility without compromising safety,

especially where doctors are few and not readily available[50].

Even though, as a country, Ghana has been increasing efforts to improve access to post-abortion care, the services have remained underfunded with low visibility and poor quality. As such, they remain inaccessible to most women[30]. Meanwhile, a healthcare facility, be it large or small, can demonstrate successful performance only when it satisfies the factors of quality and satisfaction that a patient expects[26]. The repeated high incidence of abortion complications and resulting hospitalizations especially from the rural settings, highlights the need to adequately train providers to treat complications resulting from abortions, whether these abortions are spontaneous or induced, as recommended by study on a critical review of the literature on the abortion care in Ghana[45]. A comprehensive PAC service has been considered central in mitigating the adverse health impact of unsafe abortions in regions with restrictive abortion laws[2]. The primary level healthcare being the closest and most accessible to the communities and rural populace, assessing the knowledge and practice of post-abortion care by midwives in selected primary healthcare facilities in Ashanti region of Ghana, as well as the challenges in the provision of PAC becomes necessary. The study also sought to determine the relationship between years of service and knowledge of midwives regarding PAC. An understanding of this issue is an important step towards the implementation of interventions to improve access to PAC in the rural settings in Ghana, a prerequisite to the reduction of maternal mortality from abortion and its complications.

2. Methods

2.1 Study setting

The Ashanti Region is centrally located in the middle belt of Ghana. It lies between longitudes 0.15W and 2.25W, and latitudes 5.50N and 7.46N. The region shares boundaries with six of the sixteen political regions, Bono, Bono East and Ahafo Regions in the north, Eastern region in the east, Central region in the south and Western region in the South west (**Figure 2).** The political administration of the region is through the local government system. Under this administration system, the region is divided into 30 districts made up of 1 Metropolitan, 7 Municipal and 22 Ordinary districts[7]. In terms of population, however, it is the most populated region with a population of 4,780,380 according to the 2011 census, accounting for 19.4% of Ghana's total population. The largest city and regional capital of Ashanti is Kumasi. The major occupations of the inhabitants of the Ashanti region are farmers, traders and sales workers.

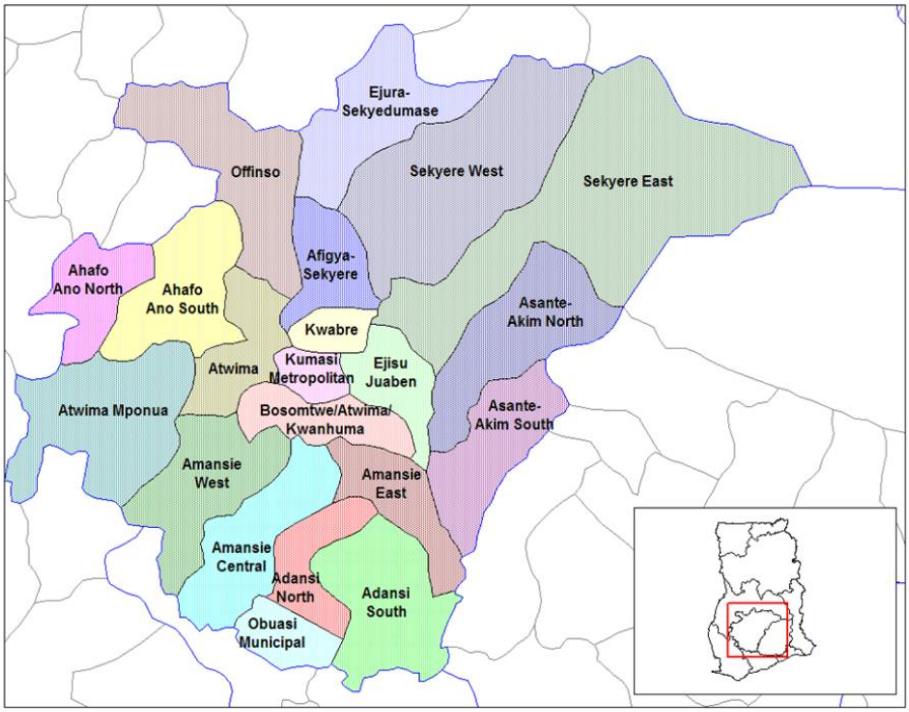

Figure 2: Map of Ghana showing Ashanti Region
Source: Google Map retrieved 4/08/2019

Healthcare in the Ashanti Region is provided largely by the government of Ghana. The Ashanti Region has 530 health facilities and 1,631 registered midwives. Kumasi, is the Ashanti Region's capital city, has the highest number of health facilities in Ashanti Region at 38 percent and Kumasi has a teaching hospital (Komfo Anokye Teaching Hospital), Health facilities by ownership consist of 170 health facilities owned by the government; 71 health facilities owned missions; 281 health facilities owned by private institutions; and 8 owned by quasi-government[8]. In Ghana, abortion complications are a large contributor to maternal morbidity and mortality. According to the Ghana Medical Association, abortion is the leading cause of maternal mortality, accounting for 15–30% of maternal deaths and in Kumasi, pregnancy related complications recorded 201,397 [9, 14]. Further, for every woman who dies from an unsafe abortion, it is estimated that 15 suffer short and long-term morbidities[20].

2.2 **Study design and population:** Cross-sectional descriptive design was utilized for this study, using a pre-tested structured questionnaire to elicit responses from registered midwives serving in selected primary health centres in Ashanti Region of Kumasi, Ghana between 1 August and 30 October, 2019.

2.3 Sample size and sampling technique: A list of registered primary healthcare facilities in the region was obtained from the State Ministry of Health. Sample selection was carried out using the multistage sampling technique involving stratified random sampling to group primary healthcare facilities by districts and sub-districts from where a total of 16 primary healthcare facilities comprising 5 private (faith-based inclusive) and 11 government owned were selected by simple random sampling. Convenience sampling was employed to

further recruit the participants from the health facilities for the study. This was based on the observation that not many registered midwives served at the primary healthcare facilities. A total of 112 midwives were selected. Government owned Primary health centers constituted 94 while private including the mission owned primary health centres constituted 18. Out of which only 109 copies of questionnaire were correctly completed.

2.4 Data collection tool: The pre-tested structured questionnaire used to solicit responses from the study participants was developed after extensive review of the published and grey literature regarding knowledge and practices of health care providers about PAC, including the Ghana Nursing and Midwifery Council's (GNMC) PAC curriculum and the IPAS Manual of Women Centered Comprehensive Abortion Care, 2013 [55, 52]. The tool comprised four sections: Section A: Socio-demographic and facility information; Section B: 5 questions on knowledge; Section C: 10 questions on practice, based on the 5 elements of PAC and section D: 8 questions on challenges.

2.5 Content validity of the tool

The questionnaire was prepared by the research team in English and it was reviewed for content validity by the researchers, the analyst and a regional IPAS Technical Advisor. The pre-testing of the questionnaire was done on 20 midwives serving in a secondary facility to check the overall appropriateness, congruence of the content with the objectives of the study, clarity, language, and the time required to complete the questionnaire by the individual participant[53]. The pre-tested sample was independent of the final sample and was excluded from the final analysis. No major modifications were made to the tool.

2.6 Data collection & analysis

A self-administered questionnaire was given to the participants. The members of the research team were present while the participants filled out the questionnaire to ensure the integrity of the data. Furthermore, the researchers clarified directions but did not influence how the participants answered the items. Data entry was done concurrently with data collection. All data were double entered, using Epi Data version 3.1; errors were corrected before exporting the data to Statistical Package of Social Sciences (SPSS) version 21 for analysis. Descriptive analysis was performed for all the variables. Frequencies and percentages have been reported for categorical variables and mean and standard deviations for continuous variables. Inferential analysis performed to establish Statistical relationships between variables were explored using Fisher's exact test and a p-value of < 0.05 at a 95% confidence interval was considered significant for all statistical comparisons.

2.7 Ethical Considerations

The study was approved by the Ethics Review Committee of the Garden City University College and Ethical Clearance for the study obtained from the GHS. Written consent obtained from all the PHC facilities under study and voluntary informed consent was obtained from the participants. The participants were free to withdraw anytime during the study.

3. Results

Out of 112 participants sampled for the study, 109 questionnaires were correctly completed giving a response rate of 97.3%. Majority were within the age range of 21-30 years 65(60%), 74(68%) were midwives, 16(15%) nurse midwives while 19(17%) were

community midwives and 60(55%) were married. 92(84%) served in government owned PHC while 17(16%) served in private owned including faith-based. For years of service, majority 72(66%) only practiced for 1-5 years. **(Table 1)**

Table 1: Socio- demographic characteristics of Respondents (N=109)

Variable	Category	Frequency	Percentage
Sex			
	Female	109	100
Age			
	21-30	65	60
	31-40	36	33
	41 above	8	7
	N	**109**	
Marital Status			
	Married	60	55
	Single	39	36
	Divorced	5	5
	Widow	5	5
Facility	**N** Government PHC Private PHC **N**	**109** 92 17 **109**	 84 16
Professional Qualification			
	Nurse Midwife	16	15
	Community Midwife	19	17
	Midwife	74	68
	N	**109**	
Religion			
	Christianity	79	72
	Islam	20	18
	others	10	9
Years in service	**N** 1-5years 6-10years 11-15years 16-20years **N**	**109** 72 22 7 8 **109**	 66 20 6 7

Table 2 shows the knowledge of midwives regarding PAC and PAC components. Most of the respondents 108 (99%) heard of post abortion care and their main source of information was the midwifery training school 47(42%). Their knowledge of post abortion care was mainly in the areas of PAC as treatment for abortion complications 49(36%), use of Manual Vacuum Aspiration (MVA) and Misoprostol for incomplete abortion 34(25%), Control of bleeding from unsafe abortion and antibiotic coverage 30(22%). Knowledge on the other PAC components was low; treatment and referral for STIs 7(5%), Emotional support/FP counselling for the patient/client 12(9%), as well as Community awareness and mobilization 4(3%). Only 63(58%) of the respondents had training on PAC, which was basically on the use of MVA for incomplete abortion 52(41%), Control of bleeding from unsafe abortion and antibiotic coverage 42(33%), treatment and referrals for STIs 13(10%) components.

Table 2: Knowledge of midwives regarding PAC and components (N=109)

Variable	Category	Frequency	Percent
Heard of Post Abortion Care (PAC)			
	yes	108	99
	No	1	1
Source of information about PAC			
	Midwifery Training college	47	42*
	Research Literature/ Journal	11	10*
	Colleagues	27	24*
	Place of work	19	17*
	Media	9	8*
What is Post Abortion			
	Treatment of abortion complication	49	36*
	Manual Vacuum Aspiration (MVA) and Misoprostol incomplete abortion	34	25*
	Control of bleeding from unsafe abortion and antibiotic coverage	30	22*
	Treatment / Referral for STIs	7	5*
	Emotional support/FP counselling for the patient/client	12	9*
	Community awareness and mobilization	4	3*
Have you had any form of training on PAC			
	yes	63	58
	No	46	42

which component of PAC were you trained on			
	MVA to complete incomplete abortion	52	41*
	Control of bleeding and antibiotics	42	33*
	Treatment / Referral for STIs	13	10*
	Emotional support &FP counseling	11	9*
	Community awareness and mobilization	8	6*

Responses not mutually exclusive.

Table 3 shows the practices related to PAC. Most respondents 70(64%) indicated that their PHC facilities provide PAC services and only 72(66%) of the respondents indicated that they actually carried out post abortion care. Reasons advanced by the other 39(36%) who never carried out PAC were not confident 30(815), not skilled 27(73%), and lack of knowledge 20(54%). Among the respondents who carry out PAC services, 37(51%) do not use PAC guidelines and 51 (71%) do not collaborate with other healthcare professionals in providing PAC services. During PAC counseling with clients, 79(72%) respondents indicated involving client husbands, 3(3%) involve mother in-laws, 21(19%) involve no one, while 6(6%) involve others. When eliciting information from the clients, 3(3%) force them to share, 35(32%) don't bother if clients don't want to share, 63(58%) try to dig out information from clients using various ways, while 8(7%) asked family and friends. For clients suffering from gender-based violence, 60(55%) respondents provide support or refer to the available support services, 34(31%) encourage the client to discuss with family, 22(20%) invite the husband for counseling, 11(10%) inform the community leader, and 8(7%) respondents do nothing about it being personal

Table 3: Practices related to PAC

Variable	Category	Frequency	Percent
Does your healthcare facility provide PAC service?			
	Yes	70	64
	No	39	36
have you ever carried out PAC?			
	Yes	72	66
	No	37	34
what are your reasons?			

	Not skilled	27	73*
	Not confident	30	81*
	lack of adequate Knowledge	20	54* responses not mutually exclusive*
Do you use PAC guidelines?			
	Yes	35	49
	No	37	51
Do you collaborate with other healthcare professionals in providing PAC services?			
	Yes	21	29
	No	51	71
Who do you involve in PAC counseling with your client?			
	Husband	79	72
	Mother in-law	3	3
	No one	21	19
	Others	6	6
Which approach do you apply when collecting information fROm your client?			
	Force her to share	3	3
	it's okay if she doesn't want to share	35	32
	Try to dig out in different ways	63	58
	Ask family or friend	8	7
How do you intervene for women suffering from gender based violence?			
	Provide support or refer to available support services	60	55*responses not mutually exclusive*
	Encourage her to discuss with family	34	31*
	Call her husband and counsel him	22	20*
	Inform the community leader	11	10*
	Do nothing as if it is personal	8	7*

On strategies to promote PAC services, figure 3 shows that most of the respondents 50(46%) used words of mouth, 33(30%) respondents promoted PAC through home visits, 13(12%) through women groups, while very few respondents used community mobilization 8(7%) and media/banner/ signposts/fliers 5(55%) respectively, to promote PAC services in their PHC facilities.

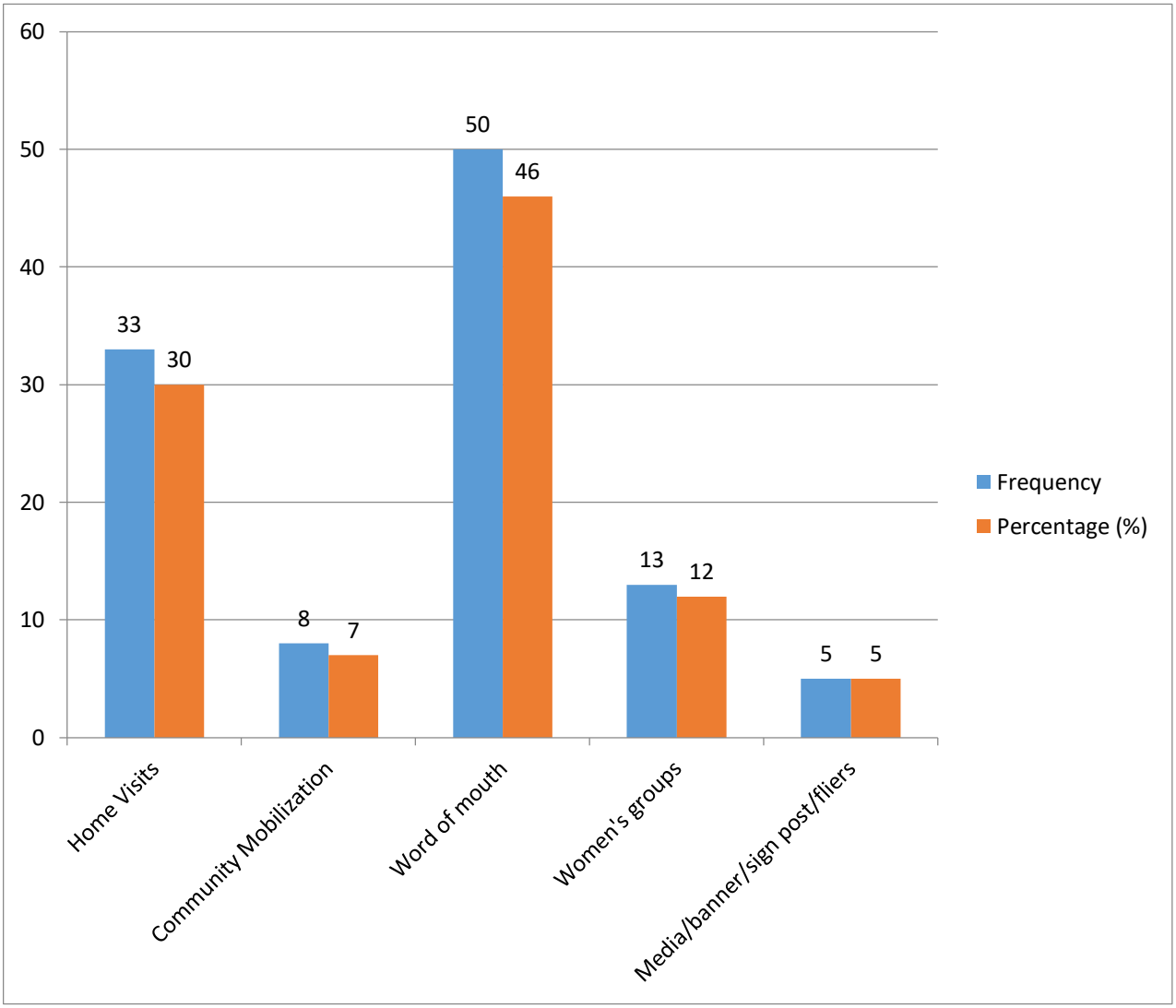

Figure 3: Strategies used in promoting Pac services

As shown in figure 4, challenges in the provision of PAC services were; lack of resources for MVA 33%, lack of skills (28%), stigma associated with PAC (17%), religious opposition (16%), and lack of referral linkages (6%).

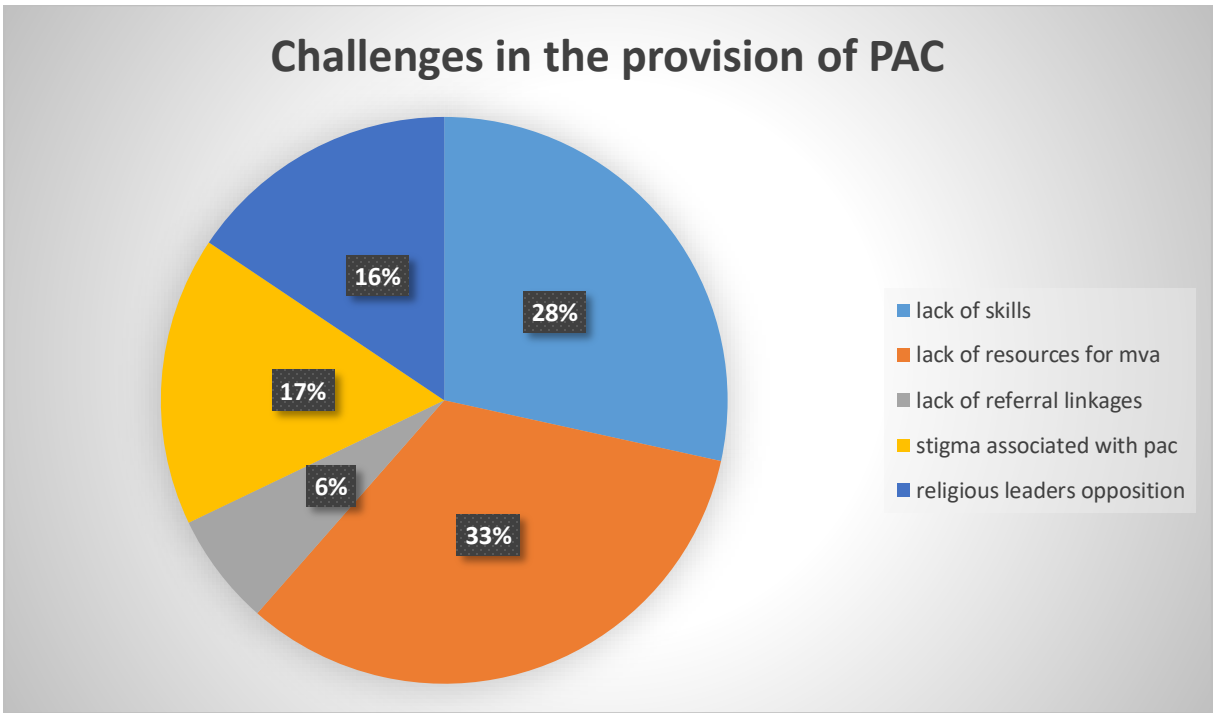

Figure 4: Challenges in the provision of PAC services

In determining the relationship between years of service and knowledge of midwives regarding PAC, Fisher's exact conducted on all the variable classified under the knowledge of midwives regarding PAC and the years of service gave p-values greater than the significant level (0.05), which indicate that the knowledge of midwives regarding PAC does not depend on the number of years spent in service in primary healthcare facilities in Ashanti Region which is in line with the small values of the Cramer's V values in **table 4.**

Table 4: Fisher's exact test on the knowledge of midwifes regarding PAC and years in service

variable	Value	Cramer's V	P-value
Heard of Post Abortion Care (PAC) and years in service	5.822	0.069	1
What is Post Abortion and years in service	17.704	0.270	0.262
Form of training on PAC and years in service	7.782	0.213	0.07
which component of PAC where you trained on and years in service	15.726	0.213	0.114

4. Discussion

This study was conducted among midwives in selected PHCs in Ashanti region of Ghana to access their knowledge and practice of post-abortion care. Availability of knowledgeable and skilled midwives as well as availability of resources at the PHC facilities to provide high quality PAC is essential to the reduction of morbidity and mortality resulting from unsafe abortion in the rural communities. This study shows that all the respondents were trained midwives either serving at a government owned PHC or

private owned including faith-based primary health facilities. Majority 47 (42%) of them gained knowledge of PAC at the midwifery training colleges as students. At each of the facility studied, at least one midwife was available to perform PAC services. A randomized controlled study conducted in South Africa and Vietnam by Clark et al., 2010, demonstrated that MVA abortions performed by trained midwives are as safe and effective as those performed by physicians. In line with this, a study in Ghana by Ansari et al., 2015, to asses if trained midwives deliver post abortion care noted that PAC provided by midwives is recognized as an efficient and cost effective way to reduce maternal morbidity and mortality particularly in developing countries. However in our study, the knowledge and skills of most of the providers were insufficient to deliver quality PAC, as the study revealed low knowledge in the aspects of treatment/referral for STIs 7(5%),emotional support/FP counseling for clients 12(9%) and community awareness and mobilization 4(3%) components of PAC. This documented gap in provider knowledge and skills are consistent with the result of studies by Zainullah et al., 2014; Tesfaye& Oljira, 2013, which found that midwives graduating from institutions of health sciences had limited capacity to provide MVA. A study of the quality of PAC services in Ethiopia reported similar findings[3]. Knowledge about community awareness and mobilization was the lowest scoring area and this calls for concern since this component is crucial for strengthening linkages between the people living in the community, the midwives, and the service providers, as this can help save women from the complications of induced abortion. These linkages can help overcome obstacles for obtaining adequate contraceptives and family planning services[44, 36]. A similar finding was reported in a Nigerian study, which highlighted that concealed abortion practices at the community level make safe abortion services and contraception inaccessible to women, hence, endangering women's lives during emergencies[36].

A significant number of respondents 46(42%) had no formal training on PAC which is a clear evidence of the low knowledge on the various components of PAC. Evidence from other studies confirms that training is significantly associated with midwives' PAC knowledge and skills [57, 23, 43]. This suggests that strengthening training on PAC has the potential to raise low knowledge and skills levels. More so, training packages should be revised accordingly, as findings from this study shows that majority of the respondents 52(41%) and 42(33%) only had training on MVA for incomplete abortion and control of bleeding and antibiotics respectively. Other studies agrees with this finding regarding low knowledge of components of PAC especially family planning and counseling and community awareness and mobilization[57, 23, 43]. In determining the relationship between years of service and knowledge of midwives regarding PAC, Fisher's exact test conducted on all the variable classified under the knowledge of midwives regarding PAC and the years of service gave p-values greater that the significant level (0.05), which indicate that the knowledge of midwives regarding PAC does not depend on the number of years spent in service in primary healthcare facilities.

Our study revealed that only 70 (64%) of the respondents indicated that their PHC facilities provide PAC services, 72 (66%) actually provide PAC services while the other do not due to lack of knowledge, skills and confidence. This is supported by findings from several other studies [41, 22]. Midwives 37 (51%) who provided PAC services did so without standardized PAC guidelines and 51 (71%) without collaboration with other

healthcare professionals. This gap might be explained by providers' limited skills in the medical treatment of incomplete abortion and lack of stock and equipment. Similar factors have previously been identified as limiting the provision of PAC services in various studies[22, 36]. The position statement of the International Confederation of Midwives (ICM) clearly identifies that education of midwives is pivotal in providing competent PAC services for the safety and wellbeing of women[33]. In Ghana, Manual Vacuum Aspiration (MVA) was, for instance, introduced in the curriculum for midwifery education in the country in 2009, and not all components of PAC is covered in detail which may account for lower knowledge scores within the study sample. There is further evidence that continuing education undertaken by the study participants had not provided comprehensive training about PAC. More than half (54%) reported that they lacked knowledge, skills (74%) and confidence (81%) for providing MVA. A similar finding was reported in the study conducted in Calabar, in which only 18.2% of the providers performed MVA because they lacked competency (WHO,2012). This study also identified a major gap in the aspect of counseling with the clients and who to involve in counselling, as well as approach to getting information from the clients. Studies have shown that midwives complained about not having enough time and skills due to lack of human resources and in-service training, as well as space to provide proper PAC counselling, nor have the resources to follow up discharged PAC patients to see whether family planning advice was properly provided [41]. Lack of a standard referral process can endanger women's lives. Hence, there is a need to establish standards and guidelines on PAC at a national level[41].

Only (60%) of the study participants correctly identified the recommended intervention from WHO to provide frontline support and refer clients to appropriate services when women are subjected to sexual violence or abuse. This implies knowledge and practice gaps about the availability of such resources in the health system and the community[13]. Therefore, standards for referral should address situations like sexual violence and others where specialized services and counseling are needed, for example treatment of sexually transmitted infections[13]. On strategies to promote PAC services, very few respondents used community mobilization 8(7%) to promote PAC services in their PHC facilities. This further confirms the gaps that exist in the linkages between the people living in the community and the service providers. Strengthening this linkage can create awareness in the community regarding PAC services and safe women's lives[36].

Sources of frustration among the midwives in the PHCs in the provision of PAC were mainly derived from lack of resources for MVA (33%) and lack of skills (28%). Other barriers to quality PAC as identified by the study were religious opposition (16%), stigma associated with PAC (16%) and lack of referral linkages (6%). Apart from the issue of the lack of human resources which is challenging to most of the PHCs in low resource settings[27], similar barriers to PAC have been identified in other studies. Barriers of access to MVA instruments[36], poor contraceptive counselling skills and lack of available contraceptives[48,16]. Also barriers to misoprostol use in PAC due to restrictive drug policies, poor access and availability of the drug[40,15]. Misoprostol is effective for the treatment of incomplete abortions [25, 47, 1], and feasible in resource limited settings where surgical treatment is largely unavailable[1]. It is therefore important to develop a strategy for effective implementation for the use of misoprostol in PAC by midwives especially in the rural settings. A recent systematic

review of the status of PAC in Eastern and Southern Africa concluded that social stigma constitute a major barrier to the advances of these services throughout the region [31]. Societies and communities have negative perceptions about abortion. It is generally viewed as criminal and murderous hence women tend to shy away from accessing the services when the need arises. Midwives are not excluded from the negative attitude towards the women in need of PAC service. Furthermore, studies have shown that a complex dynamic underlies midwives' willingness to offer a range of comprehensive abortion care services. Conflicts may exist between professional norms and religious beliefs [32, 4]. Conscientious objection[1,5], grounded on individual religious and moral belief systems[32,5], will constrain some midwives, despite scientific evidence of the health related values of these services to women. Abortion evokes religious, moral, ethical, socio-cultural and medical concerns which mean it is highly stigmatized[29], thus posing a threat to the providers and serving as an overarching impediment for abortion service provision. Findings from our study clearly reveal the complexity of the interface between professional, religious, and legal influences on midwives' knowledge and participation in provision of abortion-related services.

5. Conclusion and recommendations

Decentralizing PAC by training and authorizing the midwives at primary health facilities will improve the proximity of services to clients and reduce the distance a woman with an abortion complication will have to travel before accessing care. Studies have shown that in Ghana, Women who have experienced complications from incomplete abortion are among the most neglected of reproductive healthcare patients. The medical care provided to them is generally poor.

Although the study revealed some level of knowledge on some elements of PAC, the levels of counselling for family planning/ referral and community partnership were still relatively low, with various challenges to effective provision of such services. If the midwife training curriculum is expanded to cover every component of PAC, this will strengthen the knowledge and capacity of midwives in PHCs regarding a more effective skills to fill this gap. More midwives could also be trained on PAC through continuing professional education to scale up the services, including the use of MVA, while making it available in a sustained and context appropriate manner to all PHC service delivery points.

6. Conflicts of Interest

All authors declared that there is no conflict of interest.

7. Funding

The study was not funding.

8. Availability of data and materials

The raw data supporting our findings are available from authors on a reasonable request.

9. Acknowledgement

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