

Improving Post Abortion Care (PAC) Delivery in Sub-Saharan Africa: A Literature Review

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Abstract

Sub-Saharan Africa (SSA) contributes 29% of the global unsafe abortions with 62% of abortion-related deaths. This is due to restrictive abortion laws, low quality post abortion care (PAC) and inadequate access to effective modern contraception. The overall objective was to review current literature on PAC in SSA and make recommendations for improvement especially in Cameroon. A literature review was conducted on PAC in SSA published during 2000-2018. The following databases were searched: MEDLINE, POPLINE, COCHRANE Library, African Index Medicus and GOOGLE Scholar. Thirty articles were reviewed from 16 countries ranging from observational studies to systematic reviews with meta-analysis. Major outcomes: 1) Manual vacuum aspiration (MVA) and misoprostol are equally safe and effective. 2) There is comparable effectiveness between physicians and trained mid-level cadres in PAC management. 3) PAC contraception uptake was increased when offered immediately before patient leaves the facility. 4) Gaps to PAC service use include inadequate access, low quality care and less adolescent-friendly environment. Task shifting of PAC to trained mid-level staff, decentralization of medical PAC using misoprostol, offering post abortion counselling and contraception to clients before leaving the health facility, encouraging linkage and provider-community partnership in PAC and reinforcement of advocacy for less restrictive abortion laws in Cameroon are recommended.

Keywords

Post Abortion Care (PAC), Misoprostol, Contraception, Midlevel Cadres, Sub-Saharan Africa

1. Introduction

Abortion is the termination of pregnancy before the age of viability of the fetus. Abortion can be classified as either spontaneous or induced, early or late and safe or unsafe [1] [2]. World Health Organization (WHO) defines unsafe abortion as a procedure for termination of a pregnancy done either by an individual lacking the necessary training or in an environment not conforming to minimal medical standards or both [3].

Abortion is a major public health problem especially in developing countries, resulting in severe complications including maternal death [3]. Globally, it is estimated that one in every five pregnancies ends up in an abortion [4]. According to WHO, about 56 million abortions occur worldwide each year, with over 25 million (45%) of them being unsafe [4] [5]. In a 2017 United Nations database report, countries with more restrictive abortion laws had about four times higher unsafe abortion rates and maternal mortality ratios (MMR) [6]. Over 13% of maternal deaths in the world are attributed to unsafe abortions and its complications such as bleeding, pelvic infection or abscess, genital trauma, secondary infertility and death [7] [8]. Worldwide, an estimated 7 million complications result from unsafe abortions [5]. This alarming figure is maintained by the very high proportion of unintended pregnancies in these developing countries.

Sub-Saharan Africa (SSA) is the most hit region as far as unsafe abortion related maternal morbidity and mortality are concerned [3]. While it is estimated that 30 women die for every 100,000 unsafe abortions in developed countries, over 520 women die for every 100,000 unsafe abortions carried out in SSA [3] [7]. Likewise, while the African region sees 29% of all unsafe abortions, it contributes 62% of the total unsafe abortion-related maternal deaths [3] [5]. WHO estimates that 30% - 40% of maternal deaths in SSA are due to induced unsafe abortion [3] [9]. This is partly due to the restrictive abortion laws in most countries of SSA and equally the low modern contraceptive use [10]. Of the 214 million women having unmet needs for family planning, 24.2% are from Africa [5]

The Sustainable Development Goals (SDG) 3.1 states that “the global maternal mortality ratio should be reduced to less than 70 per 100,000 live births” [10] [11]. Post abortion care (PAC) through manual vacuum aspiration (MVA) of retained products of conception is one of the seven signal functions of basic emergency obstetric and newborn care (BEmONC) and this constitutes one of the global strategies for the fight against unsafe abortion-related maternal mortality [12].

Post abortion care (PAC) directed at women with incomplete abortion is a package of five activities as shown in **Figure 1**, which include: 1) the emergency

management of complications related to abortions; 2) offer counselling on the patients' needs and family planning; 3) the provision of modern contraception; 4) linkage to other reproductive health care services such as screening for sexually transmissible infections and gynecological cancers; and 5) to facilitate her social reinsertion and prevent future unsafe abortion cases via provider-community partnership [13].

The maternal mortality rates (MMR) of Cameroon, which stands at 782 maternal deaths per 100,000 live births is one of the highest in SSA and has been rising over the past two decades [14] [15]. One of the main reasons is explained by the low modern contraceptive prevalence rate (CPR) of 19.3%, the high unintended pregnancy rate of 40%, high unsafe abortions and the insufficient care for these women [15] [16]. Abortions account for about 30% of total maternal deaths in the country [9] [17] [18]. In a country like Cameroon, where all previous measures implemented over the decades have not succeeded in reversing the MMR, ignoring a determinant factor such as contraception, can only render the fight impossible to win.

Cameroon is a country where abortion laws are restrictive, allowed only in cases of rape and to save mothers life [19]. This has led to an increase in unsafe abortions and thus maternal morbidity and mortality [5] [20]. The main strategy to fight maternal deaths is to offer comprehensive abortion care where possible. It entails providing safe abortion, where country laws permit and quality post abortion care (PAC). The WHO recommends that quality PAC be offered in all the health facilities (HF) in the country and by all trained health cadres [1].

In order to understand how PAC is practiced in Cameroon, and how these services can be improved so as to help curb the rising abortion-related maternal deaths, we conducted this literature review of successful approaches of PAC in other sub-Saharan African countries with similar contexts. Our goal was to draw lessons from these countries and make evidence-informed recommendations in order to improve the uptake and quality of PAC services offered in Cameroon.

2. Methods

Search methods

On the 24th May 2018, we searched for published articles on post abortion care

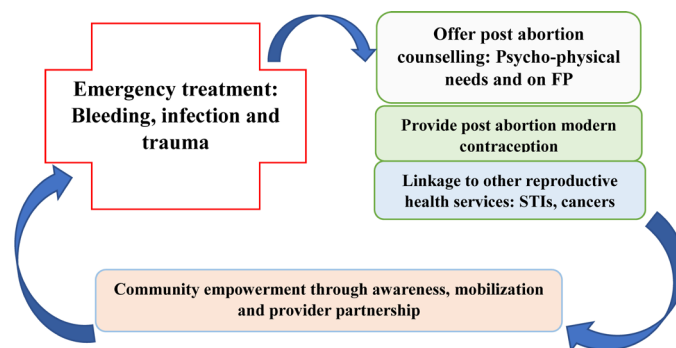


Figure 1. The five core components of the post abortion care (PAC) model.

services offered in SSA in the following databases; Cochrane (CENTRAL), POPLINE, African Index Medicus (AIM), GOOGLE SCHOLAR and MEDLINE using diverse and relevant Medical sub headings (MeSH) and search terms concerning our topic of interest, such as; “Post abortion care” AND “Sub Saharan Africa”, “Abortion care” AND “Africa”.

Selection criteria

All articles which met with the following criteria: 1) Published in English language only, 2) Published between the years 2000 and 2018, 3) Both experimental and non-experimental studies, 4) All articles addressing at least a component of post abortion care either in a specific country, or in a sub-region or in the entire SSA region; were included in the study.

Data collection and analysis

For each selected article, we screened the abstracts for eligibility, noted the study design and extracted the results and lessons learned from the study.

Ethical considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Institute of Tropical Medicine (ITM), Antwerp in Belgium.

3. Results

Information from each selected article was entered into a summary table of four sections: study selected, study design, country and outcomes. After excluding irrelevant articles and duplicates, we found a total of 30 articles which met with the inclusion criteria, as shown in **Figure 2**. The number of articles retrieved from each of the databases was as follows: MEDLINE (11), POPLINE (09), GOOGLE SCHOLAR (06), COCHRANE CENTRAL (02) and African Index Medicus (02). These studies were conducted in a total of 16 SSA countries representing all the four sub-regions as follows: 3 from Cameroon (Central Africa), 4 from Southern Africa, 10 from East Africa and 13 from West Africa as shown in **Table 1**.

According to their strengths of evidences, we retrieved a systematic review with meta-analysis on septic abortion. There were three systematic reviews, on the timing of PAC-IUD insertion, the safety and effectiveness of abortion care by midlevel cadres and doctors, and PAC in 14 countries in east and southern Africa. We equally found one literature review on the role of midlevel staff in PAC. There were two randomized controlled trials (RCTs); one in Burkina Faso on the safety and effectiveness of misoprostol versus MVA in PAC, while the other verified differences between PAC misoprostol use by midwives and doctors in Kenya. We had 6 quasi-experimental (before and after intervention) impact evaluations. The majority (56.7%) were however observational studies on the burden of unsafe abortion and practices of PAC. Detailed results are displayed in **Table 1**.

The main lessons learned from this review included: 1) Factors limiting the utilization of PAC services include; inadequate knowledge, high cost, less

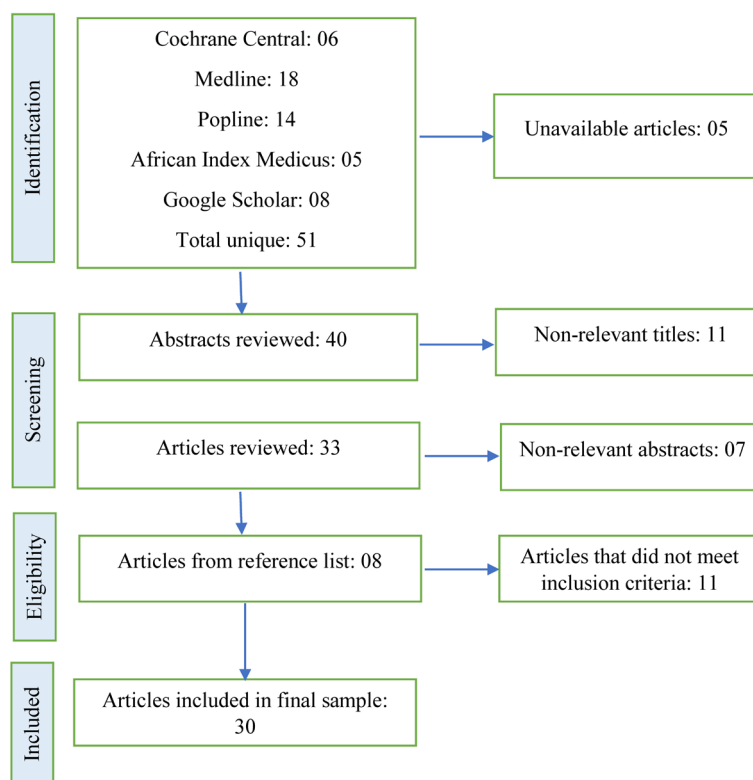


Figure 2. Results of search.

Table 1. Major results of the review of literature on PAC in SSA from 2000-2018. Arranged in order of decreasing strength of evidence and then chronologically.

First Author	Country of study	Study type and aim	Study outcomes
Udoh, 2016.	Nigeria	Systematic review + Metanalysis: Septic abortion	No evidence that one antibiotic was better than another in treatment.
Aanties, 2018.	14 countries from Africa.	Systematic review of PAC	Gaps of PAC services: Quality, access to rural women, knowledge, teenagers.
Barnard, 2015.	South Africa + 3 others	Systematic review: PAC and level of HCP	Safety and effectiveness in PAC methods were the same for MWs and MDs.
Okusanya, 2014.	Nigeria	Systematic review: RCT on PAC-IUD	Moderate evidence supports the safety of immediate PAC-IUD insertion.
Berer, 2009.	Mozambique, Uganda, Kenya, South Africa.	Literature review: role of trained mid-level staff in PAC	Authorize qualified trained mid-level staff to offer first trimester abortion/PAC using misoprostol and MVA.
Makenzius, 2017.	Kenya	RCT: MWs and MD on misoprostol use.	Equal treatment outcomes (effectiveness and safety) in 2 groups.
Dao, 2007.	Burkina Faso	RCT: misoprostol versus MVA in PAC.	Equal safety and effectiveness of misoprostol and MVA PAC.
Benson, 2018.	3 Asian and 5 African countries (Zambia, Nigeria, South Africa, Ghana, Ethiopia)	Program evaluation by IPAS on quality training in FP	Uptake of modern FP (73%). Highest when delivered at the time of PAC.
Benson, 2017.	5 Asian and 5 African countries (Zambia, Nigeria, Sierra Leone, Ghana, Uganda)	Program evaluation IPAS quality training and lifting cost to FP	Uptake of modern FP (77%). Choices: OCP, condom, injectable. Adolescents less likely to leave HF with an FP method.

Continued

Chukwumalu, 2017.	Puntland-Somalia	Impact Evaluation: SCI created 4 PAC facilities	Increased utilization of services. counselling (98%), accepted FP (88%).
Mugore, 2016.	Togo	Program evaluation: Quality HCPs training	Increased PAC counselling from 31% to 91% and FP uptake from 37% to 60%.
Maxwell, 2015.	Ghana	Retrospective cohort: Provider and FP uptake	Women receive an FP method more if PAC is done by MWs compared to MDs.
Tumasang, 2014.	Cameroon	Ambidirectional: MVA distribution evaluation	MVA and misoprostol are seldom available in HF even in the cities.
Solo, 2003.	Kenya	Cross sectional pre and post intervention FP	Most effective strategy: Offer PAC-FP in the gynecological ward by ward staff.
Hagos, 2018.	Ethiopia	Cross sectional: Uptake of PAC-FP predictors	FP uptake: 70.9%. Associations: Husbands opposition, delays in and type of HF, knowledge of pregnancy risk.
Kemfang, 2015.	Cameroon	Cross sectional: Abortion burden	Induced abortion 26.3%, complications (20%), severe bleeding (70%).
Rominskia, 2015.	Ghana	Cross sectional study of PAC	LARCs are better for adolescents and single women to prevent recurrences.
Nkwabong, 2014.	Cameroon	Cross sectional on clandestine abortions	Incomplete abortion (16%), anemia (25%), infection (18%), death (2.1%).
Evens, 2014.	Kenya	Cross sectional descriptive study	49% youths not using FP due to fear of side effects and lack of knowledge.
Esber, 2014.	Tanzania	Cross sectional. Partner approval FP	Strong association between partner approval and contraception use in PAC.
Paul, 2014.	Uganda	Qualitative: HCPs on PAC task-sharing	Scale-up task sharing and in-service training of cadres (PAC + misoprostol).
Gerdts, 2012.	Ethiopia	Cross sectional. Abortion complications	Severe complications associated with being married and care from low HF.
Kalu, 2012.	Nigeria	Cross sectional: hospital PAC review	41% admissions, 11.5% deaths, 7.1% teenagers, 25% single, poor linkage.
Basinga, 2012.	Rwanda	National survey on PAC	Induced abortion rate: 25/1000.
Prata, 2011.	Ethiopia	Cross sectional: PAC-FP predictors	LARCs uptake associated to secondary education, 25 - 29 years and multiparity.
Adinma, 2010.	Nigeria	Cross sectional: HCPs PAC practices	35.5% used an MVA for PAC. 88% offered PAC counselling.
Rabiu, 2009.	Nigeria	Cross sectional: Unsafe abortion complications	Complications: incomplete abortion, anemia, infection, case fatality rate: 9%.
Thiam, 2006.	Senegal	Impact evaluation (provider training, free MVA kits in 23 districts, 50% total population from 2003-2005)	Availability of trained HCPs of PAC in health centers: From 39% to 100%. Women seeking PAC services doubled. PAC counselling: 36% to 82%. Uptake of contraception: 15% to 56%.
Krakowiak, 2011.	Ghana	Community FP awareness survey	1/3 fear side effects of FP methods. Train HCPs on FP counselling.
Singh, 2006.	Nigeria, Uganda, Kenya, Burkina, Egypt, South Africa, Ghana+	National estimates of abortion-related hospital admissions	Highest rates in certain African countries: 15‰ per year. The introduction of misoprostol in safe abortion/PAC will help reduce this rate.

Abbreviations: MWs: Midwives, HCPs: Health Care Providers, MDs: Medical Doctors, IUD: Intrauterine device, RCT: Randomized Controlled Trial, MVA: Manual Vacuum Aspiration, HF: Health Facility, OCP: Oral Contraceptive Pill, LARCs: Long Acting Reversible Contraceptives.

adolescent-friendly services and fear of side effects of modern FP [21]. 2) Abortion still represents a high burden in most countries of SSA [18] [22] [23]. 3) Hemorrhage, sepsis and maternal death are the major post abortion complications [8] [18] [24]. 4) Misoprostol and MVA have comparable efficiency and safety in PAC, especially in the first trimester [25]. 5) Trained mid-level health cadres and physicians produce comparable results in the use of misoprostol and MVA in uncomplicated abortion care [26] [27]. 6) There is increase uptake of modern contraception if PAC counselling and FP are available and offered immediately in the same room where emergency PAC was carried out before patient leaves the ward [28] [29]. 7) The training of HCPs on quality PAC, husband authorization and constant availability of FP method mix improves significantly the uptake of modern contraception, especially LARCs [28] [30] [31] [32].

4. Discussion

Worldwide, countries are classified into six categories according to the degree of restriction of their abortion laws [10]. Articles reviewed represented all these categories as follows: Category 1, where abortion is prohibited was represented by Senegal [33]. Category 2, where abortion is legal only to save the woman's life was represented by Nigeria, Somalia, Tanzania and Uganda [21] [22] [30] [31] [34] [35]. Category 3, where abortion is legal only to save the woman's life and preserve her physical health was represented by Burkina Faso, Cameroon (including case of rape), Ethiopia, Kenya, Rwanda and Togo [8] [25] [26] [36] [37] [38]. Category 4, where abortion is authorized to save the woman's life and preserve her physical and mental health was represented by Ghana, Mozambique and Sierra Leone [21] [28] [30] [39]. Category 5, where abortion is authorized to save the woman's life, preserves her physical and mental health and on economic grounds was represented by Zambia [21] [30]. Finally, category 6 where there are no restrictions to safe abortion upon request represented by South Africa [21] [28] [40].

Countries with restrictive abortion laws, such as Cameroon and Nigeria have highest unsafe abortion burden [41]. Hospital studies in Nigeria reported a specific mortality rate due to abortions of 11.5%, with case fatality rates as high as 9% [22] [42]. Similar in Cameroon, unsafe abortions contributed to 24.2% of MMR as well as a high case fatality rate of 2.1% [9] [18].

Training of HCPs is known to improve the uptake of PAC services. According to an IPAS evaluation study in five SSA countries showed that the factors associated with increased uptake of PAC contraception were; young maternal age, availability of commodities, training of HCPs and cost [21] [28] [41] [43]. From our study, we found that the main complications of unsafe abortion were similar in SSA countries. These include; incomplete abortion, severe bleeding and infection [8] [18] [22] [23] [24]. Similarly, PAC-FP uptake was boosted by the availability of a separate evacuation room and immediate provision of method mix contraception prior to discharged from the HF [21] [29] [44] [45]. This is a rare

practice in Cameroon, where often the two services are separate.

To fight against these complications of unsafe abortion, task shifting is crucial in low resource settings as SSA. Well trained mid-level health cadres in SSA were found to have comparable acceptability, safety and effectiveness to physicians in the management of incomplete first trimester abortions [26] [27] [40]. They were found to use equally either misoprostol or MVA in treatment and this is in line with the WHO recommendations [46]. This task shifting will relieve physicians, reduce delay to HF and PAC and thus reduce complications and cost [47]. However, in Cameroon, midlevel cadres are hardly authorized to manage emergency PAC.

The use of Misoprostol or MVA in the management of first trimester incomplete abortion and in medical abortion, had similar safety and effectiveness outcomes [25] [26] [48]. As seen above, these two methods can be handled easily by all trained health personnel. Availing these two commodities is thus of utmost importance in all HF and to all trained HCPs in order to meet the needs of patients irrespective of their means and geographical location in the country [33] [49] [50] [51] [52]. In Cameroon, misoprostol is seldom available to practitioners at all levels of care.

The strengths of our study reside in a detailed review of literature on PAC from five databases. The study designs varied from observational through randomized controlled trials to systematic reviews, representing 18 countries from all the four sub-regions of SSA. Mindful of the similarity in context of SSA, successful PAC service models from other SSA countries could be generalized in Cameroon. However, the main limitation is selection bias, since we retained mostly articles from countries with successful approaches of PAC services. Equally, we did not include studies published in other languages such as French, since we had enough articles in English. Finally, we did not explore in detail, the community component of PAC in this study.

5. Conclusion

In conclusion, abortion remains a major health problem in Cameroon and in SSA countries where safe abortion is authorized only under restrictive conditions leading to severe maternal complications. Though the practice of quality accessible PAC has been well codified by WHO and FIGO, these norms are diversely and seldom applied in SSA countries especially Cameroon. Though efforts have been made to improve the quality and access to PAC in Cameroon, much still has to be done. Conscious of the fact that the legalization of abortion might need a long time to change, advocacy towards less restrictive abortion laws in the country must be intensified. We recommend to the Society of Gynecologists and Obstetricians of Cameroon (SOGOC) and the Ministry of Health to improve access to quality PAC by task shifting to trained mid-level cadres and ensure regular supply of PAC commodities in the country.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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