

Pathways to care among women hospitalized with severe abortion complications in Bangui, Central African Republic, a conflict-affected urban setting: Qualitative Results of the AMoCo (Abortion-related Morbidity and Mortality in Conflict-affected and Fragile Settings) Study

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Abstract

Background: The Central African Republic (CAR), a fragile and conflict-affected setting, has one of the highest maternal mortality ratios in the world. Complications of unsafe abortion, while preventable, are one of the major contributors. Legal abortion is authorized in limited circumstances before eight weeks but in practice, is unavailable. This study explored the experiences of patients hospitalized with severe postabortion complications at a Ministry of Health (MoH) maternity hospital supported by Médecins sans Frontières to understand women's challenges accessing appropriate care.

Methods: We interviewed 18 purposively selected girls and women following medical treatment for near-miss or potentially life-threatening abortion complications. In-depth interviews were conducted to understand women's challenges accessing appropriate care. Data were analysed thematically to identify patterns in decisions, care-seeking trajectories, and factors that may have delayed seeking and receiving postabortion care.

Results: About two-thirds of participants reported that they had induced the abortion, either on their own or with assistance, before seeking postabortion care. Participants faced multiple barriers accessing abortion which led them to choose ineffective and harmful abortion methods, notably a lack of reliable information and access to safe abortion care services, compounded by individual, interpersonal and socio-economic constraints. When experiencing postabortion complications, the decision to seek care was delayed by limited knowledge and attempts at maintaining secrecy surrounding the abortion. Participants, including those not reporting induced abortion, described complex nonlinear care-seeking pathways, including attempts to self-manage symptoms and consulting closer health care facilities that weren't able to handle the complications due to lack of capacity. Postabortion complications were associated with taxing and potentially long-term physical, psychological, social and financial consequences, which often negatively impacted women, families and communities.

Conclusions: Our findings highlight the urgent need for MoH and partners to implement strategies improving timely access to high-quality postabortion care, such as informing communities about danger signs of abortion complications, treatment locations, improving referral systems, and reducing financial barriers. Training informal and lower-level medical staff in the recognition and treatment of abortion complications and about respectful non-judgmental communication with patients would also be of benefit. Furthermore, creating a more supportive environment for the provision of postabortion and safe abortion care and information should be prioritized, including the decentralisation of care to primary care facilities.

Keywords

Abortion; postabortion complications; Abortion pathways; MSF; postabortion care, near-miss morbidity, Central African Republic

Background

The most fragile and conflict-affected nations account for an estimated 61% of all maternal deaths worldwide (Nordenstedt & Rosling, 2016; World Health Organization, 2023). The risks of maternal morbidity and mortality are heightened where insecurity, displacement, poverty, social structures and health systems fail (Jawad et al., 2021; Murray et al., 2002; Tazinya et al., 2023); general health services as well as essential sexual and reproductive health (SRH) services are often weakened or disrupted, limiting care provided and resulting in poor health outcomes (Calvert et al., 2018; N. S. Singh et al., 2018). Increased rates of unsafe abortion, and the antecedent, unintended pregnancy, have been linked to factors such as low levels of modern contraceptive use, gender inequality, high rates of sexual violence and legal or other restrictions on abortion, all issues which are often exacerbated in locations of conflict and chronic fragility (McGinn & Casey, 2016; Starrs et al., 2018; Tazinya et al., 2023).

Unsafe abortion, a procedure for terminating an unwanted pregnancy performed either without the required expertise, or in an environment without the minimum medical standards, or both (World Health Organization, 2022a), is one of the five leading causes of pregnancy-related morbidity and mortality (Graham et al., 2016; Koblinsky et al., 2016; Say et al., 2014). When not lethal, complications from unsafe abortions can have severe mental and physical health implications (Gerdtts et al., 2022; Roth et al., 2018; Say et al., 2014; S. Singh & Maddow-Zimet, 2016). When complications arise, whether from an unsafe abortion or a complicated miscarriage, it is imperative that high quality and timely postabortion care is accessible and available or complications like infection or hemorrhage can quickly become life-threatening. These deaths and injuries could almost entirely be prevented by ensuring access to comprehensive abortion care (postabortion care, safe abortion and contraceptive services) (Ganatra et al., 2017; Grimes et al., 2006; World Health Organization, 2022a).

A population of only 4.6 million people, the Central African Republic (CAR) is one of the most fragile countries in the world, with only four countries designated as more at-risk (OECD, 2022). Almost three-quarters (71%) of the population live below the poverty level of the equivalent of US\$1.90 per day (World Bank Group, 2024), most severely affecting women living in a situation of extreme gender inequality. The Central African Republic ranks 159th out of 162 countries that rank indicators of equality for women (Conceição, 2022). Only 16% of women of reproductive age reported using a modern contraceptive method in 2022, resulting in only 37% of the demand for modern contraception in the nation being satisfied and a high total fertility rate of 4.4 children per woman (*SWP Report 2022 / United Nations Population Fund*). At 890 deaths for every 100,000 births, CAR also has one of the highest maternal mortality ratios in the world (World Health Organization, 2023); unsafe abortion is a major contributor to maternal mortality and morbidity in the country with abortion-related complications estimated to be responsible for 24% of all maternal deaths (or 31% of the direct causes of maternal deaths) (Ministère de la Santé, 2010;; Wongo et al., 2023).

Safe induced abortion is authorized by the law only before eight weeks of pregnancy when the woman's health is in danger, in cases of incest or rape (providing there is evidence), fetal impairment, or when a minor is in a "serious distress state" and includes laborious authorization processes for the pregnant person (Edition Speciale Loi N°10.001 Du 06 Janvier 2010 Portant Code Penal Centrafricain, 2010). The abortion itself must be provided by a medical doctor. Unless it fulfills these strict requirements, abortion is punishable by several years of imprisonment and steep fines for both the

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recipient, provider and anyone who assists, **making the law confusing and the service unavailable and inaccessible to most of the population** (Edition Speciale Loi N°10.001 Du 06 Janvier 2010 Portant Code Penal Centrafricain, 2010).

Decades-long internal conflict has resulted in nearly one in four people being displaced from their homes in CAR (Mohamed Robleh et al., 2023). The United Nations High Commissioner for Refugees (UNHCR) estimated that nearly 56% of the country's population needed humanitarian assistance and protection in 2023 (World Bank Group, 2024). The research presented in this paper took place in a major maternity center in the city's capital where nearly 20% of the population now lives. In 2019, health workers at this hospital attended to over 10,000 deliveries and assisted over 2,600 women seeking postabortion care (PAC), primarily for complications of unsafe abortions (MSF - OCB, 2019). Between 2014 and 2017, abortion-related complications caused over 33% of maternal deaths in the facility (Médecins sans Frontières, 2019).

Abortion care is a critical component of sexual and reproductive health and rights (SRHR) which can significantly reduce maternal mortality and morbidity. Abortion care has been included in the list of essential services in globally recognized guidance on life-saving SRH care for humanitarian crises (A. M. Foster et al., 2017). Nevertheless, data on the extent of the need for safe abortion and postabortion care (PAC) in humanitarian or fragile settings remains limited (McGinn & Casey, 2016; N. S. Singh et al., 2018). This research focuses on women hospitalized for abortion-related near miss and potentially life-threatening complications. A near-miss event is a woman who nearly died but survived a complication that occurred during any type of abortion, spontaneous or induced, or within 42 days from the end of pregnancy, including severe life-threatening conditions with organ failure. A potentially life-threatening complication (PLTC) is a slightly less severe complication including severe hemorrhage, severe systemic infection, and uterine and intra-abdominal perforation, without organ failure. Unlike maternal deaths, severe complications can be examined in detail, with women who survived these severe complications sharing their experiences, allowing for a larger sample and enabling a better understanding of individual pathways to care. (Pasquier et al., 2023; Qureshi, Mehrtash, Kouanda, Griffin, Filippi, Govule, Thwin, Bello, Gadama, Msusa, Idi, Goufodji, Kim, Wolomby-Molondo, Mugerwa, Bique, Adanu, Fawole, Madjadoum, Gülmezoglu, Ganatra, & Tunçalp, 2021). This paper presents results of a study conducted in the Central African Republic (CAR) to describe the pathways to postabortion care among 18 women and girls hospitalized with severe near miss or potentially life-threatening abortion complications.

Methodology

Design

The present research is a component of the multi-site, mixed methods AMoCo (Abortion-related Morbidity and Mortality in Conflict-affected and Fragile Settings) study, which has been described at ClinicalTrials.gov (Ref: NCT04331847) and in previously published articles (A. M. Moore et al., 2023; Pasquier, 2020; Pasquier et al., 2023). This qualitative study was conducted among female patients hospitalized with severe abortion complications in an urban referral hospital in CAR during a 3-month period (November 2019-January 2020). Semi-structured in-depth interviews were conducted to explore participants' decision-making processes and experiences preceding and following admission,

including their pathways seeking abortion and postabortion care (PAC) to understand the factors that resulted in their hospitalisation.

Setting

The study hospital is a Ministry of Health (MoH) facility providing Comprehensive Emergency Obstetric and Newborn Care. It is a busy referral maternity hospital in Bangui, the capital city of CAR, and serves an urban catchment population of about 345,000 people, in addition to over 160,000 internally displaced persons relocated to Bangui. Between 2014 and 2023 Médecins sans Frontières (MSF) assisted the Government in the provision of free comprehensive sexual and reproductive (SRH) health care at the hospital and supporting its 60-bed maternity and 11 bed gynecological wards, where female patients with abortion-related complications are admitted.

Participants

Eighteen study participants included in the prospective record review component of the AMoCo study were purposively recruited for in-depth interviews among the 276 patients who sought care for either a near miss or potentially life-threatening abortion complications at the study hospital between November 2019 and January 2020 (Pasquier, 2020). These patients had been hospitalized overnight with abortion complications classified as near-miss (organ dysfunction of one or more of the following: cardiovascular, respiratory, renal, coagulation, hepatic, neurological or uterine dysfunction) or as potentially life-threatening (severe hemorrhage, severe systemic infection, or suspected uterine and intra-abdominal perforation) or (Qureshi, Mehrtash, Kouanda, Griffin, Filippi, Govule, Thwin, Bello, Gadama, Msusa, Idi, Goufodji, Kim, Wolomby-Molondo, Mugerwa, Bique, Adanu, Fawole, Madjadoum, Gülmezoglu, Ganatra, & Tunçalp, 2021). Initially, recruitment prioritization was given solely to women with near miss complications; women and girls with potentially life-threatening complications were deemed eligible later to complete the desired number of interviews. Patients who met the clinical criteria were assessed for eligibility by the study nurse or study coordinator with the help of their health care provider during the medical record review component of the study (Pasquier, 2020). Patients with other diagnoses (such as molar or ectopic pregnancies), milder complications, or those who did not consent or were unable to give consent, as well as patients for whom participation was considered potentially harmful to their well-being by their health care provider were excluded.

Data collection

Among the 32 women and girls with near miss complications (Pasquier et al., 2023) who were included in the medical records review component, fourteen consented to take part in face-to-face in-depth interviews conducted at the hospital, either before or just after discharge, to ensure they were medically recovered. To reach saturation on our topical areas of interest an additional four women with potentially life-threatening complications were also selected and consented to participate. The interviews, which lasted nearly an hour, were conducted in Sango, by one of two female interviewers, who were supervised and trained in interviewing techniques and the informed consent process by the study's qualitative co-investigators.

Interview guides explored the following themes: pathways to care (decision-making, social environment, formal and informal costs of care-seeking, exposure to violence, care and information-seeking from pregnancy awareness to treatment at the study hospital); perceptions and opinions

about abortion, including barriers to decision-making and attitudes and involvement of partners; and factors influencing where care was received including barriers and enablers about abortion decision-making, perceived and experienced satisfaction with her care and factors that contributed to her life-threatening condition. All interviews were audio-recorded, translated, and transcribed from Sango into French and English.

Ethical considerations

Ethical approval for the study was granted by the Médecins sans Frontières (MSF) Ethics Review Board, the Comité Scientifique Chargé de la Validation des Protocoles d'Etude et des Résultats de Recherche en Santé, CAR, and the Guttmacher Institute Review Board.

All participants provided oral informed consent to participate in interviews and be audio recorded. The study staff received training on Good Clinical Practice (GCP), confidentiality rules, and all signed certificates of confidentiality. Hospital clinicians and data collectors attended an adapted version of the Abortion Values Clarification for Action and Transformation (VCAT) workshops developed by Ipas (Turner et al., 2018) to introduce the study and objectives. Referrals to medical, psychological and social support services for participants were implemented when needed, and individual and group psychological support was also put in place for study staff. All written or recorded research data were de-identified and stored in secured rooms or SharePoint (for electronic data) with encrypted access available only to the study team.

Data analysis

All transcripts were analysed independently by two researchers with social science backgrounds and experience in qualitative research, one using English translations (TF), with the Dedoose software Version 7.0.23 and the other using French translations (PL), with Atlas.TI software Version 9.1.6.0. Transcripts were read several times to ensure familiarity with the data. After coding all transcripts, the two analysts discussed and outlined their main findings to reconcile and adapt the two perspectives. Data were analysed for common themes using applied thematic analysis (Guest et al., 2014) to allow for the identification of implicit and explicit themes. Quotes were selected to substantiate the findings.

Data analysis focused on two key topics, hewing closely to the interview guide: factors influencing the pathway to induced abortions (among women reporting induced abortion) and factors influencing the pathways to, and delays reaching, adequate postabortion care. To guide the analysis, factors influencing pathways to safe or unsafe abortion care were conceptualized using components from the "trajectory of women's abortion-related care" framework (Coast et al., 2018). Delays that may have affected seeking and receiving adequate postabortion care following the onset of symptoms and potentially caused increased morbidity were explored using an adaptation of the "Three Delays Model" (A. M. Moore et al., 2023; Thaddeus & Maine, 1994); this analysis focuses on the first two delays from the model (the first delay, the decision to seek care and the second delay, from the decision to seek care to arriving at a place that could provide adequate care for her complication (i.e., the study site) as the delays most reported by participants.

Results

Demographic characteristics of participants, their reproductive health and abortions

The 18 study participants ranged in age from 13 to 36 and included two teenage girls, one aged 13 and one 14. Most participants reported having attended at least some primary school, although only two women had attended any school after secondary school. Few (n=4) were formally employed, most were either engaged in informal income-generating activities (n=6) or had no work (n=5); three respondents were in school. About two-thirds of the participants reported being in a committed relationship and living with a partner; only two had never been previously pregnant and so most had children (**Table 1**).

One respondent described her pregnancy as a result of hormonal contraceptive failure, the remaining women interviewed either used no contraception or used methods with low efficacy rates, such as withdrawal during intercourse, natural family planning, or inconsistent condom use, prior to becoming pregnant. Reasons for never having used modern contraceptives or inconsistent use of them included misconceptions about the efficacy of lactational amenorrhea and concerns about contraceptive side effects, partner's objection to its use, the high perceived cost of accessing or purchasing contraceptives (although available for free at the study hospital by appointment) and not having the transport fare or the time to collect them. Several participants described trying multiple contraceptive methods over their reproductive lives and needing to start and stop due to excessive bleeding, stock-outs, or having no time to return for refills. Even when available, adherence could nonetheless be compromised by lack of food, because the contraceptive tablets (one participant said), increased her appetite.

"I should have gone [back for a refill], but I had the problem of money, I postponed several times [until] I got the transport money, [this is why] I went late... [But] I didn't follow the instructions, because as soon as I took the pill, I was very hungry; and if I didn't have anything to eat, I didn't take [it]" (Age 29 years, near-miss complications)

Among the 18 participants, 11 reported that they had tried to induce the abortion, either on their own or with assistance, using multiple methods. Among the seven women not reporting having induced their abortions, two stated that they had a miscarriage of undefined cause, while the five others attributed their pregnancy losses to accidental abortions caused by a drug treatment, physical exertion, or an illness they believed could have resulted in a miscarriage (Table 1). Of note, two of these latter participants who did not report induced abortion in the qualitative study had previously reported induced abortion in the quantitative component of this study (Pasquier et al., 2023). According to data confirmed from medical records, ten participants were in their first trimester of pregnancy, five in their second trimester and the gestational age was missing for the remaining three.

Methods used to induce abortion

According to our analysis, all but one of the induced abortion methods reported were unsafe as per WHO standards (Table 2). WHO defines safe abortion as an abortion carried out with a method recommended by WHO, appropriate to the pregnancy duration, and by someone with the necessary skills. Recommended management options include medical management, with mifepristone and misoprostol or misoprostol alone where mifepristone is not available, or surgical management using manual or electric vacuum aspiration (MVA or EVA) or dilatation and evacuation (D&E) depending on gestational age (World Health Organization, 2022). Some women in the study described "curettage," using clamps, curettes or scissors, at times combined with dilatation and injections, and performed

by members of the community who may or may not have been healthcare professionals, either at a private clinic, at the home of the provider, or at the home of the participant.

[When] I found out that I was pregnant. I had informed my husband ... He told me that he was going to explain to someone, his friend, who works at the hospital to do the curettage because he was not ready to keep the pregnancy. And he took me to his friend's [home]. He did the curettage, but it didn't work, the person hadn't removed the residue properly. (Age 29 years, Near-Miss complications)

Some “traditional” mixtures were drunk alone, in combination with, or followed by a mix of pharmacy-bought drugs. In the most invasive instances, the method involved inserting a root and holding it in the uterus over time or using the root or sharp object to open the cervix or puncture the products of conception.

I was upset, and I had drunk the traditional medicine. Before that someone had shown me to stick a piece of iron into the vagina... It was a piece of iron like that [she shows the size to interviewer]. The person said that it allows to dilate the cervix, I pushed it into the vagina but there was no effect...The person told me to uproot the roots of the cassava plant and boil the roots with natron [a homemade traditional salt that can be drunk or inserted vaginally] and drink [it]. I had drunk a large quantity, and I had also taken a quantity in a jar and introduced it through the anus... After drinking that I didn't feel well. I had stomach aches and dizziness, my stomach was also stirring, I could no longer get up, ... the pains were intense. (Age 32 years, Potentially Life-Threatening complications)

If a method did not work, another one was chosen, based on its availability and ease of access, until the desired outcome was achieved, as described in **Table 2**. People's choices and trajectories to care were not linear, and they often described a range of increasingly desperate options and multiple attempts to complete the abortion for days or even weeks as their morbidity symptoms worsened. In most cases, these methods and sometimes the delays to care-seeking contributed to the severity of participants' abortion complications.

The First Delay: Factors influencing and delaying abortion decision-making

Decisions about how and whether to have an abortion in this complex environment affected the severity of the morbidity and the timing of care-seeking for most women and girls. Seeking advice, or deciding who to seek advice from, was a major factor in these trajectories. The quality of the relationships, possible exposure to increased violence, and financial concerns all played a role. Some participants chose to have an induced abortion because they were not ready to care for a child, many had traumatic experiences with previous relationships or pregnancies or simply felt they needed to prioritize the children they already had due to their economic situations.

I experienced a lot of difficulties in my life which made me decide to free myself from this pregnancy to allow me to [be healthy] and to realize my activities... I did this abortion to be on my feet, to carry out my activities and to meet my needs... I live alone in a rented house, I pay for the house, I don't live together with my partner. If I keep the pregnancy and he abandons me, how will I [live]?... With the pregnancy, I could not work anymore, I will be blocked, what will become of me? That's why I prefer abortion...the man responsible for this pregnancy, we live well, there is no problem between us; but I am not ready to make a child. The abortion is

my decision. I thought about what he [former abusive partner] did to me, that's why I decided to end this pregnancy... I didn't want the pregnancy. (Age 26 years, Near-Miss complications)

Relationships and exposure to violence influence abortion agency and decision-making

For nearly half of the girls and women in this study, relationships played a central role in their decisions about maintaining the pregnancy or having an abortion. One young woman described being raped by a relative in the house of family members where she worked and subsequently being given "medicines" by a female relative in that household to end the pregnancy. Three other women described violent experiences - physical, verbal, or both - with their partners that occurred prior to and escalated during their pregnancies making them feel hesitant about carrying these pregnancies to term. Two women described their partners' infidelity, and subsequent economic and relationship issues, as being among the most important determinants in choosing to have an abortion.

When I got pregnant, [my partner's] abuse got worse... He often drinks a lot of alcohol and when he comes home, he often says bad things about me, hurtful things...Because I had suffered a lot with the first pregnancy on my own... I told myself that it would be the same, so I decided to have an abortion. (Age 24 years, Near-Miss complications)

In many cases, decisions to terminate the pregnancy were requested (or insisted upon) by the partners in a forceful or coercive manner. Ultimately almost one-third (n=5) of the women and girls in this study were deserted by their partners either after hearing about the pregnancy or the abortion complications. Sometimes, the abortion was compelled by a partner's desertion after he learned of the pregnancy.

When I told him about the pregnancy, he didn't answer. One day, I told him that I didn't feel comfortable, and he started to yell at me, that he is not the one who is responsible for the pregnancy...When my partner told me this, I was troubled in my thoughts; I asked myself questions wondering what I will become if I keep the pregnancy. Will I be able to take charge of the pregnancy? I can't do it alone; that's why I bought some medicines [to induce the abortion] ... [Since then] my partner has fled. (Age 15 years, Near-Miss complications)

Six women described the process of deciding with their partners to try to seek out abortions and identified their partners as supportive. In a few instances, decisions were made together and partners suggested means and methods for abortions, gathered information and money to pay for the abortions and subsequent care.

He's preparing his file to go to military training...It's better to abort this pregnancy, if he's not there, he [won't] be comfortable as long as we haven't removed this. For the moment, he doesn't have the money to give for my small business so that I can take charge of this pregnancy. How are we going to do it?... It was [he] who went to see [the health worker at the hospital], he said that he wants to have the abortion with me because he is not ready for the moment, so he wants us to do the curettage. ... [When] I went to see him, he told me that my partner had already given him the money. (Age 19 years, near-miss complications)

Some women decided on their own to seek an abortion feeling confident in their decisions but not always knowing how best to implement them.

The impact and uncertainty of economic vulnerability

Experiencing or anticipating precarity and economic vulnerability was often a main or additional consideration in the decision to terminate a pregnancy. The costs of living for some families, which in many cases already included young children, were commonly borne by a sole provider, most often women themselves who were frequently caring for children and parents. In some cases, these concerns were also put forward by partners who felt the economic pressures of being absent partners, loss of work or a desire for more opportunity for themselves or their partners as considerations for either stopping or delaying another birth.

My partner also doesn't need this pregnancy because our living conditions are not favorable at the moment, (...) it's all this that led us to have this abortion. It's in relation to the children's living conditions, how we can pay for the children's schooling and even the rent ... the cost of our health, the food, all that, he's the only one who [provides for us], so he's not going to be able to get by.... I wanted to work first before having any more children, and that's what led me to decide to terminate the pregnancy. (Age 28, Potentially life-threatening complications)

There is no one supporting me, I'm alone taking care of my children and if [I keep the pregnancy] how am I going to manage? ... If I'm tired, who's going to help me? ... If I [keep] on having children, it's going to be [really bad] for me ... I have four bastard children with two fathers. I'm the only one responsible for these children, so I can't keep on increasing my load. (Age 27 years, Near-miss complications)

Induced abortions were usually obtained at high cost, often negotiated, for several thousand CFA Francs, excluding transport. The range of amounts paid (if any) for abortions was wide, ranging from 1,000-27,000 Central African Francs (CFA), equivalent to US\$2-46 (XE Personal, 2024) with a median of approximately US\$8 in CFA at the time of the study.

I explained to a friend of mine... and she directed me to him [the person who did the abortion]. We went to his house; when we explained the problem, he asked for money, we talked for a long time and in the end, I gave him 18,000 CFA [~US\$ 30]. Before [the abortion], he told me that my cervix is too thick, I had to buy some medicine... All the expenses that I had made are in the amount of 27,000 CFA Francs [~USD 45]. (Age 21 years, Near-miss complications)

Pregnancy confirmation and the search for reliable information about abortion

Most participants had been pregnant before and as such felt and recognized their pregnancy symptoms themselves, mainly through menstrual cycle delays and feeling faint, nauseous or fatigued. Only two participants reported using pregnancy tests or an ultrasound at a health center to confirm their pregnancies

Knowledge about safe abortion methods in this restrictive environment was limited. Among the 14 women who told interviewers they had induced their abortions, when asked about their knowledge of abortion methods, most discussed the process of "curettage", which meant different types of

instrumental uterine evacuation or dilatation involving the insertion of an instrument or other invasive objects, from roots to scissors. Many also used traditional methods, described as mixtures of plants, roots, leaves, and other substances, that could be drunk or inserted vaginally or, in one case, anally. Several participants reported knowing of women in their social circles who had induced abortion using versions of these methods. Only one woman had any knowledge of abortion with medication, describing it as, “the medical method of putting pills under the tongue.”

When faced with their unintended pregnancy, participants reporting induced abortion stated that they sought information on methods available in their community mostly through informal sources, including word of mouth, informal discussions with family members (usually female), friends, colleagues, or acquaintances believed to have had similar experiences or be knowledgeable in the matter. In fewer cases, information, usually about biomedical sources, was provided by their partners.

Methods selected were conveniently accessible locally, as simple as plants and roots collected or purchased locally, medications or toxins from a neighborhood dispensary, private clinic or informal or unauthorized and likely untrained abortion provider, all of which may have been unsafe, unhygienic and uncertified. Most respondents tried multiple methods (**Table 2**), and some went to unauthorized private providers.

For many participants, accessibility and perceived effectiveness seemed to drive where they went for their abortion, most often functioning in an ecosystem that lacked reliable information. When opting for an abortion method, the factors that could affect safety of the abortion, such as expertise of the provider or the type of setting, were rarely mentioned except in a few instances where the woman described her fear at being “treated” in a home (rather than a clinic or hospital) or by a known non-health care worker. Few participants thought of traditional methods as either ineffective or potentially lethal or poisonous because they either knew or had heard of someone who had a successful abortion in this way. None of the respondents expressed feeling they had a choice of abortion methods or providers.

I heard my friends talk about this person that he knows about doing abortions. As it happened, I went directly to the hospital to see him, I did not use traditional medicines or ask the elderly women in the neighborhood to show me certain things, nor did I do anything else; it was at the “hospital” [author’s emphasis added] that I did the thing. (Age 24 years, Near-miss complications)

The Second Delay: Factors that influence reaching adequate postabortion care

Upon the onset of abortion complication symptoms, the time taken before the decision to seek care in the study hospital, ranged from one to 21 days. Despite experiencing acute symptoms, women initially thought that their conditions were not severe enough to necessitate medical care, and therefore decided to wait, often fearing that their abortion attempts would be discovered by family or community members. Some explained that they believed (or were told) pain and bleeding were common following an induced abortion and that they believed they had to bear it until the process was complete.

I had often heard that after doing the curettage the woman felt comfortable. But for me it was something else, the pain I felt, I thought that sometime after the fetus will come out I will feel comfortable..there was no solution until I came here. (Age 21 years, Near-Miss complications)

Others failed to anticipate the danger of the methods used and their potential consequences. In some cases, participants had been advised to wait for the process to be “completed” by the persons who had performed the abortion, who sometimes had prescribed or recommended drugs or other forms of treatment to manage the pain and the symptoms.

They said that if I noticed the bleeding, I had to take the paracetamol that they gave me to calm the pain of the bleeding ... I thought that the bleeding would stop at some point. (Age 26, Near-Miss complications)

Seeking assistance, support, information, or self-care on one's own

Most women expressed delays for care-seeking commonly associated with the second delay to care, reaching adequate postabortion care. The disclosure of induced abortion to trusted females, such as an older sister, mother or aunt, but also a neighbor, employer, landlady, or a close friend, often enabled participants to receive information about how to seek better postabortion care but this disclosure was often late and reserved for the closest confidantes. Disclosure led to better information and advice about where to seek care and the fact that **services** were free at the study hospital. Finally, disclosure also helped people recruit transport, mostly by motorcycle, since none of the women and girls interviewed were well enough to travel to the hospital unaccompanied.

When I fell into this state, I didn't think of [the maternity hospital], given my [financial] means and [because] what happened to me was in the [my] neighborhood. I didn't think of going to the hospital, but it was my sister who came to direct me to [the maternity hospital]”. (Age 30 years, Near-Miss complications)

It was thanks to my neighbor who came to my house one evening to visit me ... she asked me if I did not know that [the maternity hospital] treats for free? ... I told her that I had no idea ...The next day she came to my house, she cleaned me up and took a motorcycle to bring me here. (Age 21 years, Near-Miss complications)

Many participants reported trying to avoid hospitalization by managing their pain and symptoms at home, either with pharmacy-bought self-prescribed medication, including painkillers and antibiotics, traditional methods such as “hot water massage”, douches, enemas, or “traditional mixtures” of herbs or plants, with one participant reported using “Coca-Cola mixed with a tin of tomato” to control her heavy bleeding.

Seeking additional assistance from private, unauthorized or lower-level facilities prior to reaching the health facility that could provide adequate postabortion care frequently caused delays. We considered the timing of these delays to be from the time of the decision to seek care to arriving at a place that could provide adequate care for a complication, in this case the study site. Upon experiencing severe symptoms, participants reporting induced abortion stated that they tried, and often failed, to contact the person who gave them the abortion for a follow-up visit. As symptoms worsened, they sought care locally, visiting other clinics or dispensaries, sometimes repeatedly, before arriving at the study site, the maternity hospital that was ultimately able to manage their complications. Health structures where postabortion care was sought ranged from primary health care structures (clinics, primary health centers or dispensaries) to other, larger hospitals (not the recruitment site) which offered, usually at a cost, pain management medication and other medical treatments (**Figure 1**). In most cases, these other health structures did not have the skilled workforce, equipment and supplies to adequately manage the severity of acute abortion complications further delaying treatment and increasing costs.

At some locations women were sold items that continued to delay receiving the care they needed; some women were turned away without information about where they needed to go.

In the dispensary there was no working material, no blood bag for the transfusion, nor the serum to comfort me ... she [referred me] to a big hospital of the capital. She called the motorcycle cab driver to take me there... As soon as we arrived, I was taken to the delivery room...[when] the midwife saw the blood, she told me that it was better [to do a vaginal examination] to see what the cause of the bleeding was... she saw that my cervix was still closed, she [said] it is better that I am taken to [the maternity hospital], where there are materials to detect what could be the origin [of the bleeding]. (Age 35 years, Near-Miss complications)

Women reported stigmatizing comments and judgmental attitudes by individuals at the health structures consulted before arriving at the study hospital. These attitudes, in some cases, diminished desires for further care-seeking. Comments received ranged from admonishments for having undergone an unsafe procedure and risking one's life, to verbal abuse, blame, and accusations of lying to participants not reporting induced abortion, causing additional distress.

The [health worker] told me that in the near future, I must not repeat these things or I will die... it was I who wanted the suffering, if I did not want the pregnancy, I [should have taken] contraceptives...[They said that] I must ask God for forgiveness, I must not repeat it and if I recover my health, I must return to God and beg him, because I have already killed a person. Even if my husband was acting badly towards me, it is [what men do]... even if he had another woman... That's what the person told me, and I told her that I understood her advice. (Age 32 years, Potentially Life-Threatening complications)

[The midwife from the local health center], said some bad things to me...Afterwards, she gave me the injection and told me to get out and leave ... I was angry and crying when I left the health center to go home. (Age 24 years, Near-Miss complications)

Participants who were aware of free maternal health services at the study hospital reached appropriate care sooner. After disclosing their symptoms to someone, several respondents became aware that it was a site providing free quality care, because either they or someone they knew had been admitted there for birth or postabortion care in the past.

I remembered that once the daughter of my sister-in-law was confronted with the same situation and that she was brought here [the maternity hospital], she told me that they do their work well and everything is free of charge ... which is why I came here and indeed, they treated me well. (Age 21 years, Near-Miss complications)

Family and financial obligations and the fear of discovery

Whether the abortion was induced or not, decisions about when to seek care were often hindered by financial or family constraints, such as not having funds for transport or services, not having childcare, or completing the preparations of family events so that the husband could agree to pay for a consultation at the health facility.

Before there were too many obstacles... I [have responsibilities], I am in charge of my children, they have to eat, and I was stuck there, it was difficult. (Age 21 years, Near-Miss complications)

I wanted to wait until the Christmas holidays were over first and because people [who provide care] are celebrating...[My husband] told me: if I finished preparing for our Christmas and New Year's celebrations, he will give me money so I can go to the hospital. (Age 32 years, Near-Miss complications)

Delays were also caused by stigma, fear, shame and secrecy surrounding the abortion. Some delays in seeking care were influenced by perceived stigma surrounding induced abortion. Several participants stated that they delayed seeking care to avoid revealing their abortion to their families and/or their partners. They cited fear of judgement and condemnation, but also not wanting to cause worry or alarm, which at times resulted in anguish and isolation.

I thought that the pain would subside at some point so that my family would be unaware of what I had done...I had been afraid of my family, since I had hidden everything, I had done from them. My thought was that if I come to the hospital and they find out about this, they will threaten me, so I didn't want to come to the hospital... As things became complicated, I was afraid, because my family [could] not accept that I had done the abortion; I had not told anyone about my situation, I was very withdrawn, and I isolated myself in my house. (Age 21 years, Near-Miss complications)

I didn't know things were going to get to this [point]; I didn't [tell] my mom ... nobody knew. I hadn't told anyone about my condition so they [wouldn't] worry about getting money and stuff. I had kept the situation under control at my level so people wouldn't know what I had done." (Age 24 years, Near-Miss complications)

The final step: Getting to the hospital

When experiencing debilitating symptoms, including not being able to stand or walk, the presence, assistance, and at times, the financial contribution of a trusted person was a source of comfort and support. That individual was instrumental both in deciding to seek care as well as in reaching care in a timely manner.

Even in the case of acute and incapacitating symptoms, participants sent or referred to the study hospital had to secure their own transport either because ambulances were not available, or they were denied their use because they were reserved for women in labor:

As I had no money...they gave me the [referral] paper to [come] here. They said that if [it was] childbirth, I [could have] taken advantage of the ambulance, but as it was not, they had to look for a motorcycle quickly to bring me here. (Age 32, Potentially Life-Threatening complications)

Finding transport in certain neighborhoods, late at night or on weekends, was challenging. Due to the insecurity in Bangui, some women were concerned about insecurity on the way to the study hospital.

If there was a means of travel, a safe way to get the patients to the hospital, it would [have] help[ed] me earlier. ... Ambulances should be available in the health centers, such as the maternity ward. ... Now, to take me to [the maternity hospital],

there is no ambulance, the accompanying person had to go out to the main road to look for another motorcycle. ... Since there is this lack plus the insecurity in the area, I was obliged to wait until it was daylight before leaving home to go out to the side of the road to look for the motorcycle ... The worst was the weekend, a Sunday in our country, this day it is difficult to find the means of transport like cab and motorcycle cab; they circulate little. This caused more delays in my treatment, so I lost a lot of blood that day and almost died. (Age 35, Near-Miss complications)

All but one participant reported having arrived at the study hospital by moto-taxi. Procuring money to pay for expenses could take several days and could involve having to contract loans or sell household and/or personal belongings.

The [burden of finding] money was on my husband... He had to [get into] debt to take care of me ... [it took him] three days [to] find money. (Age 26, Near-Miss complications, 1 child).

It's the problem of money ... It was my father who [went] to get this money. He only [took] two days to find this money ... He took one of these animals to go and sell so that he could find the money. (Age 21, Near-Miss complications)

As it was not always known that the study hospital provided free care, some participants also stated that they sought additional money to receive medical services, since it is customary in other health facilities to pay a fee before being examined, and to have to pay for medical supplies.

There was also the problem of money...to consult a caregiver, to make the general assessment and to buy prescribed medicines.... If we had had the idea that [at the maternity hospital] they do free care, we would have had to look only for the money of the transport and come so early, but in our thought, it was similar to what happens in the clinics. ... As soon as you get there, you have to pay before you can be seen. That's why we were worried about money and how we would get there, how we would get the treatment. That's how we delayed until this point. (Age 26, Potentially Life-Threatening complications, 3 children)

Discussion

The present study describes the pathways to induced abortion and postabortion care of 18 women and girls hospitalized with life-threatening abortion complications as described in other contexts (Banerjee & Andersen, 2012; Coast et al., 2018; Coast & Murray, 2016; Lokubal et al., 2021; Ouedraogo et al., 2020; Schwandt et al., 2013; Swanson et al., 2019) but rarely in extremely fragile or humanitarian settings (Arnott et al., 2017; Burtscher et al., 2020; A. M. Foster et al., 2016; Napier-Raman et al., 2024; Nara et al., 2019; Tousaw et al., 2017; Varelis et al., 2024). The corresponding prospective medical record review conducted at the same time in the same hospital (Pasquier et al., 2023) showed the significant burden of similar abortion complications during the study period, accounting for almost 20% of all pregnancy-related admissions. Additionally over 50% of the hospital's abortion complications were classified as severe (near-miss or potentially life-threatening), more than five times higher than the percentage reported in a WHO multi-country study on abortion carried out in African referral hospitals in stable contexts (Qureshi, Mehrtash, Kouanda, Griffin, Filippi, Govule, Thwin, Bello, Gadama, Msusa, Idi, Goufodji, Kim, Wolomy-Molondo, Mugerwa, Bique, Adanu, Fawole, Madjadoum, Gülmezoglu, Ganatra, & Tuncalp, 2021).

As demonstrated in previous research, the decision-making processes and pathways utilized in induced abortion and postabortion care are complex, numerous, dynamic and non-linear (Coast et al., 2018); however, for women in this study, they were also nearly lethal. In Coast et al.'s framework on abortion trajectories, authors used a structural framing to more closely define the barriers to abortion as barriers that can be personal abortion-specific experiences and beliefs or structural and institutional (Coast et al., 2018). The pathways to care in this setting, where abortion is highly restricted, can be similarly classified, with both personal and structural barriers resulting in multiple delays. These barriers can be seen as the antecedents to the subsequent delays described in this research.

The restrictive legal environment for abortion in the country makes discussing and sharing accurate evidence-based information on abortion circumspect and likely resulted in further delays to care-seeking and reaching care, the first and second delays (A. M. Moore et al., 2023a; Shellenberg et al., 2011; Thaddeus & Maine, 1994; Varelis et al., 2024), as is the case for many countries in the region (Dias Amaral & Sakellariou, 2021; Hamui et al., 2023; Hinson et al., 2022). In a recent scoping review on abortion in humanitarian settings, restrictive laws, stigma, and lack of funding were reported as the main barriers to safe abortion (Dias Amaral & Sakellariou, 2021), all factors influencing the trajectories of women in this study. The same authors also noted facilitators that might improve access to safe abortion and postabortion care in humanitarian settings, as humanitarian action and community engagement (Dias Amaral & Sakellariou, 2021), neither strategy or actor was mentioned or known to participants in CAR who live in a protracted humanitarian emergency with limited civil society engagement.

The induced abortion methods reported were nearly all unsafe and widely diverse, consisting of traditional and/or surgical procedures involving the insertion of sharp objects into the uterus or ingesting toxic or herbal substances. While research that centers abortion experiences amongst African women in fragile or conflict-affected settings is rare, the reliance on traditional methods has been found in settings among refugees in countries as diverse as Nigeria, Kenya, and Uganda, although none of these studies addressed the subsequent morbidity of the procedures as was done in this study (Jayaweera et al., 2025; Marlow et al., 2022; Napier-Raman et al., 2024; Nara et al., 2019).

Among participants interviewed in this study, there was little to no knowledge of safe abortion methods, either in health facilities or with medication on one's own. With limited research on knowledge, attitudes and practices about abortion in CAR and fragile settings globally (Erhardt-Ohren & Lewinger, 2020), it is impossible to know if the lack of reliable information on safer methods of abortion persists throughout the country, but it does seem likely. Addressing social barriers, like stigma and silence surrounding abortion that perpetuate unreliable information, as well as financial barriers, as was found in the fragile context in Nigeria are equally important in this context (A. M. Moore et al., 2023b).

The health consequences of unsafe abortion or even complicated miscarriage still face extra scrutiny and contribute to the stigmatization of all abortion care (Shellenberg et al., 2011), driving women and girls to make unsafe choices with incomplete information because they disclosed information about their abortions and their pregnancies to no one or few trusted confidants. Across Africa, many citizens rely on telecommunications or digital health for SRH information (McCoy & Packel, 2020), but a lack of infrastructure and chronic conflict has impeded progress in telecommunications and media in CAR;

most Central Africans access information from the radio, only 34% have mobile phone subscriptions and only 11% have internet access (Central Intelligence Agency, 2024). Participants in this study would have greatly benefited from knowing about access to safer abortion options, either facility-based or self-managed with medications (Gerdtts et al., 2022; Jayaweera et al., 2021; World Health Organization, 2022b).

When describing pathways to postabortion care, women reported a lack of knowledge about where and how to access safe and legal postabortion care services until their morbidity was severe. Instead, nearly all of the women in this study tried repeated efforts to care for themselves or returned to local practitioners which delayed timely access to reliable services and contributed to their morbidity, as is often reported in other restrictive or quasi-legal contexts for abortion (Adde et al., 2021; Coast et al., 2018; Coast & Murray, 2016; D. G. Foster et al., 2008; Hamui et al., 2023; Nara et al., 2019; Oni et al., 2023; Thaddeus & Maine, 1994).

Experiences of the health consequences detailed in this study described fears about disruptions to women's ability to work, their capacity to care for themselves and their families, and further exacerbated financial fragility. Seeking induced abortions from unauthorized neighborhood or traditional providers and treating those symptoms was more expensive than the resources needed to provide a safe abortion to the individual within the health system, if they had known where to seek this safer care (Coast & Murray, 2016; B. Moore et al., 2021). Financial impacts were extensive and, in several cases, women described the loss of earnings and savings used to cover the cost of abortion, transport, medication and postabortion care outside the study hospital as well as debts or loans contracted by the household, family, or friends, which needed repaying. As found elsewhere in humanitarian and legally restrictive settings, loss of revenue from missing work or not pursuing income generating activities often added to delays in care-seeking and decision-making (Hinson et al., 2022; Kaufman et al., 2020). In nearly every case, whatever was paid was considered expensive, with uncertainty, repeated visits, transportation, and childcare, only adding to the burden. As of 2018, the minimum wage for formal sector work (applying to only 4 of the 18 people in our study) in the Central African Republic (CAR) was 35,000 CFA francs per month (*WageIndicator.Org*, 2024), approximately US\$59 (XE Personal, 2024). Most participants spent at least a half week's wages, if they were formally employed, and some spent up to three weeks wages seeking care and treatment for their abortions.

This study underscores the urgent need to provide accessible, high-quality, and respectful postabortion care. In conflict-affected contexts such as CAR, challenges related to access and health system capacity are likely exacerbated, impeding the timely and effective management of abortion complications (Dias Amaral & Sakellariou, 2021; S. Singh & Maddow-Zimet, 2016). The training of healthcare providers, especially at lower (primary and community) -levels should be prioritized both to increase their capacity and to encourage effective referral systems (Arnott et al., 2017; A. M. Foster et al., 2016; 2023b; Tousaw et al., 2017; Tran et al., 2021). Effective communication with empathy and non-judgment should be an essential element of this training since stigmatizing attitudes among medical personnel, in the private and public sector, can delay or deter care-seeking. Such training could be an opportunity to educate health care personnel on national abortion policies and discuss attitudes and values about abortion (Turner et al., 2018), which may help to reduce reports of stigmatization and abuse from some health providers.

There is a need for political commitment, engagement, and actions to decentralize comprehensive abortion care in the public and private sectors generating standards of care that improve both service quality and a functioning referral system. NGOs supporting primary health care services in humanitarian settings could incorporate safe abortion services with minimal additional resources and act as a primary source of more evidence-based and reliable information on self-managed abortion (Duroch & Schulte-Hillen, 2014; Kumar et al., n.d.; World Health Organization, 2022a). Knowledge about self-managed medication abortion (Gerdtts et al., 2022), which has been shown to be safely self-manageable in the first 12 weeks of gestation (World Health Organization, 2022a), and even further in pregnancy (Gerdtts et al., 2018) when accompanied by accurate information and access to a trained health worker when needed could have greatly improved these “self-managed” experiences.

This study has been conducted in an under-studied fragile country in an insecure urban setting on a challenging stigmatized topic of abortion, as such, it provides in-depth and unexplored information on SRH, abortion and care-seeking behaviors in this conflict-affected community. The study also has several limitations. The capacity, knowledge, certification and authenticity of self-reported activities or other abortion providers could not be verified. If respondents reported doing something on their own, we have described this as self-administered. If respondents reported that they were given advice or treatment by a non-medically trained person or in someone’s home, this language has also been used. When an “abortion provider” was not well-described or has been described as a health worker, they have been considered a “possible” health worker since their background, training, qualifications or scopes of practice could not be verified. Every attempt was made to ensure those interviewed were well enough to be interviewed, including proper informed consent procedures and waiting through their hospitalization. Yet some women who had experienced such a traumatic event seemed tired and weak, which may have had an impact on the quality of some interviews and depth of responses. The transcription, coding and analysis was done across multiple languages (Sango, English, French), thus quotes have been translated and back-translated multiple times to ensure accuracy. Finally, as previously noted, while the sample size is small and not generalizable to other communities or countries in part due to the complexity and security concerns of conducting research in this conflict prone city, the content, location and voice of the respondents is unique.

Conclusions

Our study findings indicate that in this conflict-affected setting, women have complex trajectories and face multiple barriers to access safe abortion and postabortion care. These barriers often led to dangerous practices in inducing abortion and important delays in accessing postabortion care leading to very severe complications. There is evidence that the direct and community-based provision of reliable information about abortion to pregnant people may be effective in reducing unsafe abortion (Stifani et al., 2018, 2022) and abortion stigma (Chekol et al., 2022; Shellenberg et al., 2011). Hence, community sensitization and education initiatives could be developed and implemented to address the deficits in information about access and availability of PAC services. Educational messages should share information on risks of unsafe abortion, postabortion danger signs and symptoms to emphasize the importance of timely access to care and reduce abortion-related morbidity. Having a space to discuss abortion may also encourage disclosure to trusted sources for support and mitigate increased psychological distress and social isolation associated with secrecy and non-disclosure (Hanschmidt et al., 2016; Sorhaingo & Lavelanet, 2022). Broadly opening and diversifying the discourse on abortion

may address the barriers identified in this research as well as open avenues for enhanced access to safe abortion-related knowledge and services (Sambaiga et al., 2019).

Creating a more informed and supportive environment for safe abortion care is critical to reduce the burden of unsafe abortion and the risks of abortion complications, since deaths and illnesses from unsafe abortion care have been shown to be more common in countries with restrictive abortion laws (Hinson et al., 2022; Otobo et al., 2022; Pasquier et al., 2023). CAR has yet to implement the Maputo Protocol which was signed but not ratified in 2008 ("Edition Speciale Loi N°10.001 Du 06 Janvier 2010 Portant Code Penal Centrafricain," 2010) but could result in advances in sexual and reproductive health and rights for Central Africans as has been the case since the expanded implementation of the Maputo Protocol in the Democratic Republic of Congo (Hefez et al., 2024). Although discussions are ongoing at official levels to incorporate its principles into expanded access to safe abortion care, there are currently insufficient policies to guide and supervise safe abortion interventions and regulations. This deficit is particularly evident when it comes to the training and regulatory policies required to inform the practices of the private and informal sector providers who use the most invasive and dangerous abortion methods, as seen in this study.

Our study findings show the physical and mental distress severe abortion-related complications had on women, girls and their families. Women in our study saw no pathways to access safe abortion care and instead chose meandering and increasingly dangerous unsafe abortion methods and trajectories. Even a simple and widespread service such as postabortion care was a challenge to access and navigate delaying appropriate care when it could have been provided simply and safely. These findings highlight the urgent need for MoH and partners to implement strategies improving timely access to high-quality postabortion care, improving referral systems, and reducing financial barriers. Training informal and lower-level medical staff in the recognition and treatment of abortion complications and about respectful non-judgmental communication with patients would also be of benefit. In this context, humanitarian actors, through advocacy and practice, can also play a role in ensuring that women and girls in fragile settings like this one have access to the information, resources, and support they need to make informed choices about their reproductive health.

Table 1: Participants' demographic and abortion characteristics, N=18

Age	n (%)
<18	2 (11.1%)
18-24	4 (22.2%)
25-30	6 (33.3%)
30+	6 (33.3%)
Self-reported Induced Abortion?	
Yes	11 (61.1%)
No [‡]	7 (38.9%)
Severity of the abortion complications*	
Near-miss [†]	14 (77.8%)
Potentially life-threatening [‡]	4 (22.2%)
Relationship Status	
Cohabiting/marriage	12 (66.7%)
Uncommitted relationship	4 (22.2%)
Not in a relationship	2 (11.1%)
Occupation	
Formal employment	4 (22.2%)
Self-employed/Informal employment	6 (33.3%)
School/Occupational training	3 (16.7%)
None	5 (27.8%)
Number of previous live births	
0	4 (22.2%)
1-2	8 (44.4%)
3-7	6 (33.3%)

*Abortion complication classifications are based on data collected prospectively from medical records for the quantitative component of the study (Qureshi, Mehrtash, Kouanda, Griffin, Filippi, Govule, Thwin, Bello, Gadama, Msusa, Idi, Goufodji, Kim, Wolomby-Molondo, Mugerwa, Bique, Adanu, Fawole, Madjadoum, Gülmezoglu, Ganatra, & Tunçalp, 2021)

[†] WHO Maternal Near-Miss criteria is organ dysfunction of one or more of the following: cardiovascular, respiratory, renal, coagulation, hepatic, neurological or uterine dysfunction.

[‡] WHO Potentially Life-Threatening complications: severe hemorrhage, severe systemic infection, or suspected uterine perforation.

[‡] This includes 2 women who reported self-inducing abortions during the quantitative interviews but did not disclose information in the same way to qualitative interviewers

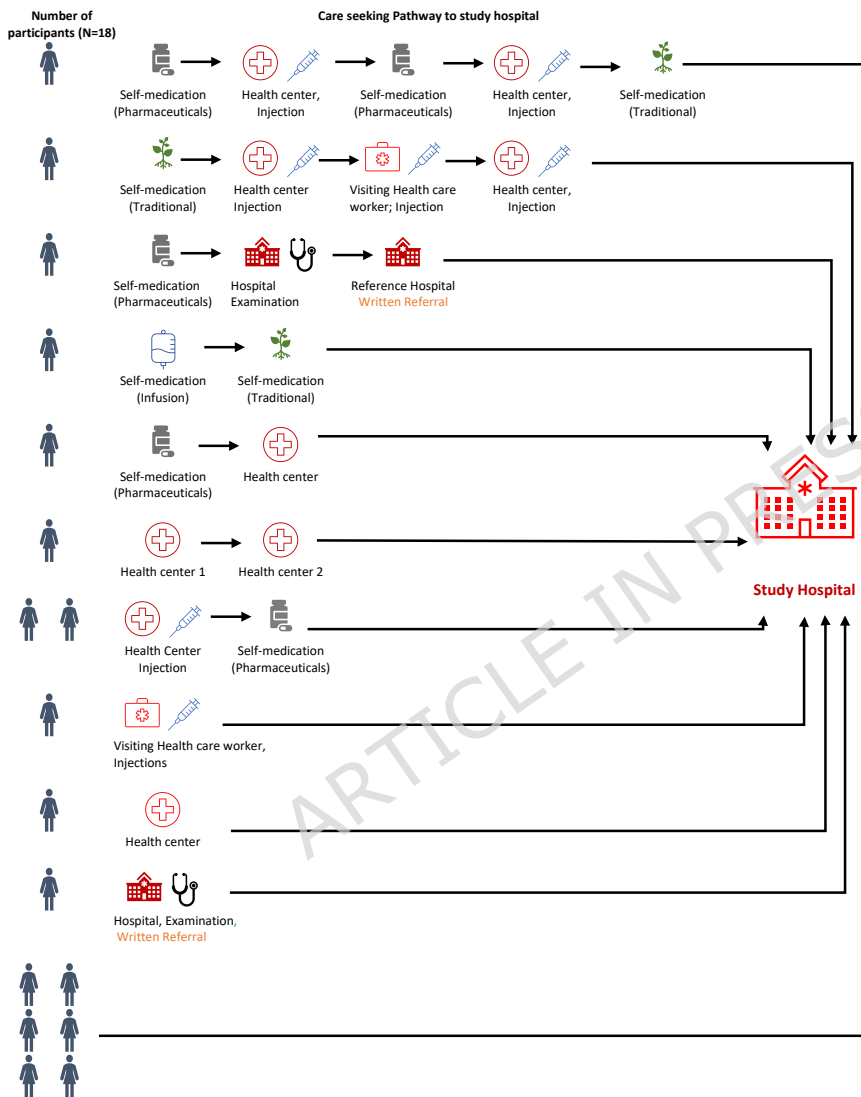
Table 2: Self-reported Methods and Causes of Abortion complications ** (N=18)

Self-reported abortion methods followed by severe morbidity (n=11):
"Curettage" (use of "clamps") with injections and anesthesia administered by a possible health care worker at their home
Unknown medication administered by a family member
"Curettage" (use of scissors) with injections administered by a possible health care worker
"Curettage" and injections administered by a non-medically trained person
Purchased prescribed abortion medications
Self-administration of unknown pharmaceuticals with red "terramycin", honey, boiled <i>natron</i> ‡
Self-administered a traditional mixture of roots (<i>Cabbato ou ngorouboyi</i> in Sango) followed by "Curettage" with injection and dilatation with insertion of cassava root by non-medically trained person
Self-administered a traditional douching with ashes followed by "Curettage" with injections and ibuprofen tablets administered by a non-medically trained person
"Curettage" (use of curette) with injection and medication administered by possible a possible health care worker
"Curettage" (use of curette) with injection and medication administered by health care worker
Cassava roots and leaves boiled in <i>natron</i> ‡ used as vaginal douche followed by self-administered vaginal insertion of a sharp metal rod
Self-reported a different cause of pregnancy loss and severe morbidity (n=7):
None reported
Miscarriage
Miscarriage
Self-administered unknown pharmaceuticals combined with a traditional mixture of plants, honey, and lemon
Self-administered purchased medications and vitamins for a non-gynecological condition followed by prescribed antiparasitic and antimalarial medications for illness. Was given injections for illness by a possible health care worker. Self-administered a boiled traditional mixture of bark, honey, lemon and garlic.
Self-administered amoxicillin combined with physical exertion
Self-administered a traditional mixture of boiled leaves taken orally and inserted vaginally (<i>Ngama-ti-ya</i> in Sango)

‡ World Health Organization recommended abortion methods include medical management, with mifepristone and misoprostol or misoprostol alone where mifepristone is not available, or surgical management using manual or electric vacuum aspiration (MVA or EVA) or dilatation and evacuation (D&E) depending on gestational age.(World Health Organization, 2022b)

** Natron is a traditional homemade salt. It is believed to cause an abortion by many and is either taken orally or inserted vaginally. Contact with vaginal mucosa causes ulceration and bleeding that can make people feel that abortion is occurring.

Figure 1: Participants' pathways to the study hospital for postabortion care, N=18



Notes about this figure:

- Six participants opted to seek care directly at the maternity hospital.
- "Injections" may include oxytocin, antibiotics, painkillers, and other unknown substances.
- "Self-medication pharmaceuticals": Usually bought from pharmacies/shops, could include painkillers, antibiotics, antimalarial drugs, antiparasitic medication, etc.
- "Self-medication traditional methods": Insertion of roots and objects, decoctions of ingredients, usually drunk, may also include a practice called hot water massage which is an enema with hot water.

Declarations**Ethics approval**

Ethical approval for the study was granted by the Médecins sans Frontières (MSF) Ethics Review Board, the Comité Scientifique Chargé de la Validation des Protocoles d'Etude et des Résultats de Recherche en Santé, CAR, and the Guttmacher Institute Review Board.

Consent to participate and consent for publication

Ethics, Consent to Participate, and Consent to Publish declarations: not applicable

Availability of data and materials

Data is available upon reasonable request to the corresponding author's institution.

Competing interests

All authors declare that they have no competing interests.

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Authors' contributions

PL and TF contributed equally to the data analyses, interpretation of the findings, and drafting of the manuscript. TF, EPa, CSH, DL, AMM, OO, MCAG, RN designed the study, reviewed and commented the analysis and provided input on the manuscript. AMM, TF and EPa designed the protocol and tool, obtained IRB approval; and AMM and EPa trained the interviewers. BP, CF, OO, HC, TW, EPo, contributed to the interpretation of the findings. All coauthors critically reviewed the manuscript and provided feedback.

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Abbreviations

AMoCo	Abortion-related Morbidity and Mortality in Conflict-affected and Fragile Settings
CAR	Central African Republic
MSF	Médecins Sans Frontières
NGO	Non-Governmental Organization
SRHR	Sexual, reproductive, health and rights

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