

REVIEW ARTICLE

Gynecology

Gaps in available published data on abortion in Uganda and the missed opportunity to inform policy and practice

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Abstract

Globally, 25% of pregnancies end up in induced abortion, the majority of which are unsafe. Abortion is safe when conducted according to WHO recommendations. The objective of the present study was to identify gaps in the data published on abortion and make recommendations to the Ministry of Health, Uganda. The search strategy included PubMed, Google Scholar articles (from October 2020 to May 2021) on unsafe abortion in Uganda, reviewed data from the Association of Obstetricians and Gynecologists of Uganda (AOGU) members' baseline survey (2019), Health Management Information System (HMIS) summary data (2015–2016 to 2019–2020), and the Uganda Demographic and Health Survey (DHS) report (2011, 2016). From the 200 articles and national health surveys identified, 37 articles and two national representative surveys met our criteria: prevalence, factors, estimating cost of induced abortion, and complications associated with safe and unsafe abortion in both low- and high-income countries. There are many unsafe abortions in restrictive environments. Abortion is one of the leading causes of maternal and morbidity. Physicians favor dilatation and curettage over manual vacuum aspiration and medical methods for the evacuation of retained products. Several gaps still exist in the published articles, HMIS data, and DHS data, leading to missed opportunities for data to inform policy and practice.

KEYWORDS

consequences, costs of abortion, gaps in policy, gaps in practices, induced abortion, magnitude, narrative review, Uganda

1 | INTRODUCTION

Globally, between 2010 and 2014, 25% of pregnancies ended in induced abortion.¹ The broader the legal grounds for abortion, the fewer deaths from unsafe abortions.^{2–4} Abortion is one of the safest medical procedures.² Mortality from unsafe abortion disproportionately affects women in Africa: while the continent accounts for 29% of all unsafe abortions, it has 62% of unsafe abortion-related deaths.⁴ Unintended pregnancies account for over 50% of pregnancies that occur in Uganda,⁵ and 25% end in abortion annually.⁵ In

2013, approximately 314 300 abortions occurred among women aged 15–49,⁶ translating to 14% of all pregnancies or a rate of 39 per 1000 women, down from 51 per 1000 in 2003.⁷ In 2011, 41.7% of births among adolescents were mistimed or unwanted.⁷ Such adolescents may pursue abortion due to fear of potential consequences or because of the circumstances around the pregnancy, such as gender-based violence, lack of partner support, denial of responsibility for the pregnancy, and lack of finances.^{8,9} Abortion is legally restricted in Uganda, increasing the likelihood that adolescents will pursue unsafe abortions. Fear of imprisonment and abortion stigma

drive the practice underground.^{10–12} Concerns about cost and privacy, and the perception that services are inappropriate for them, deter adolescents from seeking care from health facilities. In 2013, 50% of all pregnancies in adolescent girls in Uganda were unintended, and one-third of these pregnancies ended in abortion.¹³ The aim of the present review was to analyze the gaps in data that are needed to inform policy and practice on abortion care.

2 | METHODS

The data were collected through a systematic search of PubMed and Google Scholar between October 2020 and May 2021 to identify research articles describing prevalence, factors, estimated cost of induced abortion, and complications associated with unsafe abortion in both low- and high-income countries. Similar data were from reviews of WHO global reports on unsafe abortion, as well as data from a baseline survey of the Association of Obstetricians and Gynecologists of Uganda (AOGU) members, carried out under the International Federation of Gynecology and Obstetrics (FIGO)-funded Advocacy for Prevention of Maternal Morbidity and Mortality (APMM) project. Data from the Uganda Health Management Information Systems (HMIS) and Demographic Health Survey (DHS) of 2011 and 2016 were reviewed to identify gaps in abortion data collected and the implications it has on the situation of abortion in Uganda. The study did not require any ethical approval as it did not involve human participants.

3 | RESULTS

In Uganda, the constitution and Penal Code conflict with each other, leading to ambiguous interpretations and a lack of awareness of the fact that abortion is legal to protect the health and life of women.¹⁴ The national estimate of abortion incidence in Uganda in 2003 reported an annual abortion rate of 54 abortions per 1000 women of reproductive age, or one abortion for every 19 women, a rate far higher than the average rate for eastern Africa (36 abortions per 1000 women).¹² Adolescents account for 18% of cases of post-abortion complications receiving treatment in health facilities in Uganda.¹² However, they make up to 25% of the reproductive age population, making them under-represented in their use of post-abortion care (PAC) services compared to all other women aged under 35 years.¹⁵ Their abortion rate of 29.8 per 1000 girls aged 15–19 years is higher than that for all women who are sexually active, raising the adolescent abortion rate to 62.9 per 1000 women.¹² Using only the number of women who have had sex in the last 12 months in the denominator, adolescent girls have the highest abortion rate of any age group, at 81.6 per 1000 girls aged 15–19 years.¹⁵

Abortion is a major cause of maternal morbidity. Annually, 7 million women were estimated to have been admitted to hospital as a result of complications resulting from unsafe abortion.¹⁶ In a

systematic review of data on the type and severity of complications of abortions, based on 70 studies from 28 countries where access to abortion is limited, it was estimated that at least 9% of abortion-related admissions to hospital had near-miss events and approximately 1.5% ended in death.¹⁷ In 2008, the Ugandan Ministry of Health estimated that abortion-related causes accounted for 26% of all maternal mortality,¹⁸ a proportion higher than the WHO's estimate for eastern Africa (18%).¹⁹

For every maternal death caused by abortion, more women suffer injuries, some severe and permanent, from unsafe procedures. From the 2003 national abortion incidence study,¹² 15 out of every 1000 Ugandan women of reproductive age were treated for abortion complications that year. Such treatment required hospital care, blood transfusions, and antibiotics in a country with limited healthcare funding and insufficient medical personnel. Women using the least safe methods of abortion had the highest levels of complications: an estimated 68%–75% of poor rural women who had had an abortion experienced a complication, compared with 17% of non-poor urban women.¹² Many women delay seeking care for post-abortion complications because they fear that they will receive judgmental or abusive treatment from healthcare providers. While mid-level providers, such as nurses and midwives, are legally permitted to provide PAC, the majority lack proper training.²⁰

3.1 | The financial cost of abortion

Abortion morbidity exerts a big financial burden on the healthcare system. However, there are limited data on the financial burden on the healthcare system attributable to abortion. Using available data from other low-income countries with a high incidence of abortion, this cost is likely to be significant. For instance, the total cost of abortion in low-income countries is in the range of US\$375–US\$838 million, with an average of around US\$500 million.²¹

This total estimated cost of abortion in low-income countries and the management of abortion complications is considerably more expensive in sub-Saharan Africa than in Latin America.²² In addition, US\$400 million are lost from countries due to lower productivity caused by abortion-related maternal mortality and morbidity, and out-of-pocket expenses to the women and their families may amount to a further US\$600 million.²³ Even in Uganda, abortion causes a significant financial burden to the healthcare system. In Uganda in 2003, an abortion was estimated to cost a woman US\$25–US\$88 if performed by a doctor, US\$14–US\$31 if performed by a nurse or midwife, US\$12–US\$34 if performed by a traditional healer, and US\$4–US\$14 if the woman self-induced.^{23,24} The cost to the healthcare system of treating complications from unsafe abortion was, on average, nearly US\$130 per patient in 2009.²⁵ In total, PAC is estimated to cost nearly US\$14 million annually in Uganda. Two-thirds of this amount, or US\$9.5 million, is spent on non-medical costs—for example, overhead expenditure and infrastructure—and the

remaining third (US\$4.4 million) is spent on drugs, supplies, labor, hospitalization, and outpatient fees. The remaining significant proportion is spent treating more serious complications, such as sepsis, shock, lacerations, and perforations.⁴ In Uganda, the annual national cost of abortion is US\$30 million,²⁵ which excludes the societal costs of induced abortion. While one report put this cost at US\$14 million,⁷ the costs could still be higher, because the study in 2013 by the Guttmacher Institute only included direct hospital costs for the management of induced abortion and its associated complications.⁵

3.2 | The management of abortion

The knowledge about safe methods and costs of abortion have a marked influence on quality of care and vice versa. In the management of abortions in Uganda, it was found that physicians favor surgical methods, such as dilation and curettage, over vacuum aspiration and medical abortion.^{15,18,19} Informal providers in urban areas mainly use hormonal drugs or rubber catheters, and many providers in rural areas, as well as women who induce their own abortions, are believed to use herbs and sharp objects.^{7,8,10,15,18,19}

Abortion is a major cause of maternal mortality. In a study conducted in three referral hospitals in Kampala, Uganda, unsafe abortion was a leading cause of maternal morbidity and mortality in the country, accounting for 21% of maternal deaths from abortion-related complications, which were more than half of admissions.²² A 2007 study¹⁰ conducted in 553 health facilities found that abortion complications were directly responsible for 11% of maternal deaths. Later estimates found a lower estimate of 8%.¹² In another study,¹⁹ the annual incidence of induced abortion was estimated to be 297 000 with 85 000 complications associated with unsafe abortion. The rate of unsafe abortion was found to be relatively high in the most urban region, with the central region leading, and lower in the more rural and less developed eastern and western regions.^{15,19} In 2013, an estimated 128 682 women were treated for abortion complications and an estimated 314 304 induced abortions slightly up from 110 000 and 294 000 in 2003, respectively.

Although PAC is an essential emergency service, the capacity of primary-level and referral-level health facilities to provide basic and comprehensive PAC, respectively, is low.¹⁵ An analysis of data from 10 low-income countries¹⁶ showed that less than 10% of primary-level facilities in seven countries had the capability to provide basic PAC and less than 40% of referral level facilities in eight countries could provide comprehensive PAC. Facility-based data on abortion, especially in legally restrictive settings such as Uganda, do not reflect the true toll of abortion-related morbidity and mortality in the population.^{6,14-16} Because of legally restrictive laws, many women may avoid seeking care for complications, impeding timely recognition and treatment, and hindering accurate collection of data.¹⁴ This also affects the healthcare provider's ability to report abortion-related morbidity and mortality because of the fear of stigma and legal retaliation.^{15,16} At the global level, unsafe abortion is a glaring case of inequity and

social injustice.^{4,6,17,21,23} Unsafe abortions occur overwhelmingly in low-income regions, where countries have highly restrictive abortion laws.^{23,24} Even where abortion is broadly legal, the inadequate provision of affordable services can limit access to safe services.¹⁶⁻¹⁸

3.3 | Gaps in the published literature

A key obstacle to advocacy efforts to promote legal and policy reforms that ensure women's and girls' access to comprehensive abortion care is the lack of relevant and timely evidence,²⁶ which necessitates the use of robust methodologies to collect data on abortion that is accurate, complete, and representative.²⁷ These data are necessary for advocacy to inform policy and practice. In the demographic and health surveys of 2011²⁸ and 2016,²⁹ two different definitions of maternal death were used. In 2011,²⁸ the definition included deaths due to accident or violence, while in 2016,²⁹ deaths due to accident or violence were excluded from the definition of maternal mortality. This could have contributed to the reduction of the actual number of maternal deaths that occurred in the period before the 2016 DHS was conducted.

Given the nature of the questions asked about the deaths of adult sisters, both methods actually measure pregnancy-related deaths rather than maternal deaths, and neither method is effective at detecting early pregnancy-related deaths, because they are based on knowledge of the pregnancy status of the dead sister, something that may not be known by the responding sibling, especially for deaths in early pregnancies.^{27,28} Likewise, the only question on abortion in the DHS documents^{28,29} is phrased as: In the past 5 years, did the respondent suffer from a miscarriage, stillbirth, or neonatal death? Thus, there is a missed opportunity to collect data on the causes of abortion, management, or complications, yet these data are critical for informing policy and practice.^{26,27}

As noted above, not even the periodical surveys on maternal health can collect accurate, quality, generalizable, or representative data on the incidence, causes, or consequences of abortion, and neither can it be used for regional comparisons. All currently available methods of measuring maternal mortality tend to underestimate maternal deaths in early pregnancy, giving a false actual maternal mortality ratio especially the contribution of abortion complications to maternal mortality, as those deaths due to complications of abortion that are often missed. Causes of maternal death are not clearly investigated during surveys, which makes it difficult to plan interventions (to address mortality at national, regional, and district levels) or to make local or regional (in-country and international) comparisons. Such data are critical for planning, informing trends, and developing policy and evaluating effectiveness of policy interventions.²⁷⁻²⁹

In the HMIS database for the final years 2015–2016 to 2019–2020, abortions were classified as due to either gender-based violence or other causes. The number of women of reproductive age (15–49 years) who had an abortion was reported, but the reporting was not according to specific causes and types of abortion. The

outcomes of treatment or management of abortion is not documented in the HMIS database. Similarly, there is no information on whether access was available to post-abortion counseling and family planning, yet these are critical components of PAC. The methods of managing abortion, either surgical or medical, are not documented in the HMIS database. Therefore, this makes it difficult to know if management is/was carried out in guidance with WHO recommendations,^{2,3} and reflects the poor quality of abortion care.

In Uganda, the constitution and Penal Code are in conflict with each other, leading to ambiguous interpretations.¹⁴ This is coupled with widespread lack of awareness of the fact that abortion is legal in certain situations, such as in order to protect the health and life of women.³⁰ The law is not very clear about the definition of when the life of a mother is in danger.³⁰ It is possible that this contributes to the annual abortion rate being as high as 54 abortions per 1000 women of reproductive age,¹² which is far higher than the average rate for countries in east Africa. It is unclear whether the increasing decriminalization of abortion, as noted in many countries,^{21,29} has had any influence on the incidence or burden of abortion and abortion morbidity.

There are limited data on the measures used at the community level to address the underlying factors and root causes of abortion, and to what extent these have been successful. Most of the available data on abortion are from health-facility-based studies. The common complications associated with unsafe abortion are hemorrhage shock and sepsis, which may require hospital care, fluid therapy, blood transfusions and antibiotics, all of which are scarce resources in a country with limited healthcare funding and insufficient medical personnel. It is estimated that 68%–75% of poor rural women who had an abortion experienced complications, compared with 17% of non-poor urban women who went to a doctor.²¹ Although PAC is an essential emergency service, the capacity of primary-level and referral-level health facilities to provide basic and comprehensive PAC, respectively, is low.²¹ Similarly, data are lacking on what measures could be instituted to build capacity of the healthcare system to address the abortion burden. An analysis of data from 10 low-income countries with divergent abortion legal, morbidity, and mortality contexts showed that less than 10% of primary-level facilities in seven countries had the capability of providing basic PAC and less than 40% of referral-level facilities in eight countries could provide comprehensive PAC. This finding is not different from studies conducted in Uganda where PAC is available in only 14%–35% of health facilities.¹⁵

Currently, how much medical abortion, especially self-managed abortion, contributes to the total abortion burden is undocumented, though anecdotal reports suggest an increasing use of abortion self-management using misoprostol. In the management of abortions in Uganda, it was found that physicians favor surgical methods, such as dilation and curettage, over vacuum aspiration and medical management of abortion. This could be explained by a lack of knowledge of modern methods of management of retained products of conception or induction of abortion,²¹ but significantly adds to the cost and morbidity of abortion. Where there is a severe shortage of health

workers, and where health workers multitask to perform day-to-day duty assignments, many women are not offered PAC and hence end up developing complications. At the same time, family planning and other service components in PAC are not offered in a timely manner.^{15,18,19} This shortage in staffing levels still exists in Uganda, which leads to unnecessary delays in offering PAC.

4 | DISCUSSION

The present study presents a narrative review of the literature on abortion in Uganda, with the aim of identifying, describing, summarizing, and discussing what has previously been published and identifying gaps in information that would inform policy and practice. Data on abortion come from three main sources: official statistics; surveys of women; and scientific studies.^{26,27} However, official statistics may not capture all abortions due to reporting requirements in different countries, whether reporting is mandated in the public and/or private sector, and non-compliance of providers.^{26,27} Even then, as in the DHS, the opportunity is missed where only one question on abortion is asked, and even the answer to the question may be inaccurately answered.^{28,29} Stigma may also impact official statistics by causing individuals to seek abortions outside of the formal health sector, so that data may be unavailable or incomplete in the routinely collected data such as the HMIS register.^{26,27} The indirect methods may include a health facility survey questionnaire, health professional surveys, and prospective abortion morbidity surveys, especially the Abortion Incidence Complications Method to improve the accuracy and quality of data.^{26,27}

There is a gap in the literature regarding the contextual factors that could explain the persistent regional disparity in abortion rates in Uganda. Whereas the overall reported incidence of abortion rates has decreased over time, the rates are higher in the northern region when compared to other regions. Despite an observed decreased national abortion rate of 39 abortions per 1000 women aged 15 ± 49 years, down from 51 abortions in 2003, the regional variation in abortion rates is very large,^{15,19} from as high as an estimated 77 per 1000 women aged 15 ± 49 years in the Kampala region, to as low as 18 per 1000 women in the western region. During the same period, the overall pregnancy rate also declined from 326 to 288; however, the proportion of pregnancies that were unintended increased slightly, from 49% to 52%.^{19,20}

The difference in the published literature on what methods are used to procure abortion, when rural and urban areas are compared, may be explained by the differences in knowledge of the individuals who assist with or provide the abortion.¹⁸ Surgical methods markedly increase both the cost of abortion and the risk of abortion complications.^{14–19} In all cases of abortion, women should have access to quality services for the management of complications arising from abortion, including post-abortion counseling, health education, and family planning services, which should be offered promptly to help avoid repeat abortions.^{2,3} In Uganda, where there is a severe shortage of health workers, and where health workers

multitask to perform day-to-day duties, many women carry out self-induced abortions and may not access PAC. Hence, they end up developing complications without knowing the potential risks associated with an unsafe abortion (i.e., abortion with the help of unskilled providers or providers who use non-recommended methods, or self-induced abortion using unsafe methods or unhygienic environments).^{10,12,18,19} Although there is strong evidence on the public health rationale of emergency treatment, family planning, and other service components in PAC, these services are not offered in a timely manner, and delays to access care markedly increase the risk of abortion complications.^{19–21,23}

Abortion complications are considerably more expensive to treat in sub-Saharan Africa than in Latin America, which could be due to a lack of basic infrastructure in place.²¹ Furthermore, if the millions of other women with serious complications who receive no treatment from the health system were able to do so, an additional US\$375 million or more would probably be put to use. Other post-abortion costs associated with long-term morbidities, mainly infertility and chronic reproductive tract infections, may cost many additional billions of dollars annually since they are not followed up and documented in their attempts to seek healthcare services.²¹ The losses to the economies of low-income countries from lower productivity caused by abortion-related maternal mortality and morbidity may be more than US\$400 million.³¹ Out-of-pocket expenses to the women and their families may amount to a further US\$600 million and can be catastrophic for poor individuals and their families.³¹ From a survey of 1338 women who received PAC at 27 health facilities,³² Ugandan women spent, on average, 59 600 shillings (US\$23) for the abortion procedure and other treatment expenses received before arrival at a health facility. During health care after an induced abortion, the financial cost incurred by women is proportional to the duration of hospital stay, which is also proportional to the severity of the abortion complications and how these are managed.³² For instance, women who spent at least one night in a health facility had more than twice the odds of experiencing some economic deterioration when compared with women who did not have an overnight stay.³² The Indeed, delay to access care and the severity of complications are both important, as women who spent one or more nights were more likely to experience the loss of economic assets (such as their home, farm, or livestock) compared to women who did not spend a night at a facility.³²

While scientific research by individuals or institutions could be an alternative source of data, the usefulness as a data source is limited by several factors, including the effect of regulatory bodies that give approval for research on abortion (especially in legally restrictive contexts), researcher and participant stigma, the lack of diversity of research methods (qualitative and quantitative), the failure of researchers to ask the right questions, and a poor publication rate of the research findings. Even data from technical projects could be useful for mutual learning, but few projects emphasize critical inquiry, critical reflections, or mutual learning within the project reports. These factors affect whether data are

available and, if available, the degree to which they may be complete, accurate, representative, or useful in making comparisons (estimates of burden at local or regional levels) is questionable. Legal status and stigma influence the quality of research data in a country.

Up-to-date data are needed on the burden of abortion (incidence and prevalence) and complications, the cost of abortion (both direct and indirect costs), the drivers or root causes of abortion, as well as the preventive and mitigating measures (primary, secondary, and tertiary). However, there are gaps in the quality and completeness of the available data on the abortion burden. Similarly, data are needed on what services, what human resources skills, what data and information systems (safety, accuracy, comparativeness), how much it costs, and how to get value for money for existing services on abortion care. Considering that access to care is a critical factor in the quality of abortion care, there is a need to assess and address disparities in access to care as well as how stigma can be addressed or mitigated.

5 | CONCLUSION

To address the data gaps, and the ability of data to inform policy and practice, there is an urgent need for investing in robust data collection systems for abortions. Data on abortions from surveys, routinely collected data, and research would contribute significantly to the available data on abortion. The strategy of data triangulation and using multiple estimation methodologies—qualitative, quantitative, direct, and indirect—to enhance confidence in the final estimates is recommended.

AUTHOR CONTRIBUTIONS

WI developed the research protocol, led the research process, and developed the initial manuscript and is accountable for all aspects of the work. He wrote the initial research protocol and manuscript, supported its refining, and the research design. He reviewed the initial draft, edited the manuscript, and approved the final draft. DK reviewed the initial research protocol and manuscript, supported its refining and the research design, reviewed the articles in the narrative review, reviewed the initial draft, edited the manuscript, and approved the final draft. KSP reviewed the manuscript and final draft to ensure that critical intellectual aspects were not missed, contributed to the analysis and approval process for the final draft. He is accountable should any questions arise out of this research. NJP edited and proofread the manuscript and developed the final draft that was later approved for publication. He made meaning of the data and ensured that the data presented are accurate and meaningful.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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