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Erin Files Dumas Date

# The impact of liberalized abortion policies in select sub-Saharan African countries: A synthesis of the literature and proposals for future directions

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Bachelor of Arts
The University of Tampa
2010

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An abstract of
A special studies project submitted to the
Faculty of the Rollins School of Public Health of Emory University
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# Abstract


The impact of liberalized abortion policies in select sub-Saharan African countries: A synthesis of the literature and proposals for future directions

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**Background:** Unsafe abortion is known to be a contributing factor to maternal mortality and morbidity in sub-Saharan Africa. Yet, reproductive health laws and policies surrounding provision of safe abortion are generally restrictive. Between 1996 and 2013, ten sub-Saharan African countries liberalized their abortion policies to comply with one or more of the conditions for safe abortion set forth by the African Union's Maputo Protocol: when there is risk to the mental or physical health of the woman, when there is risk to the life of the woman or the fetus, in cases of rape, and in cases of incest. To understand the public health impact of abortion policy liberalization, a comprehensive study of the published literature was undertaken. **Methods:** All relevant published literature from the PubMed research portal was reviewed on these ten countries from the time period spanning 1997-2015. This published literature was reviewed both by country and by theme to determine any apparent impacts that the liberalized abortion policies had on safe abortion service provision. **Results**: Ethiopia, which expanded conditions for abortion provision beyond those of the Maputo Protocol to include all pregnancies in females under age 18, was the only country where providers were documented as successfully performing safe abortions as a result of a liberalized policy. **Recommendations:** Advocates in sub-Saharan African countries that may liberalize their abortion policies in upcoming years should utilize this body of literature to demonstrate to their policy makers that conditions for safe abortion should be expanded to beyond those of the Maputo Protocol.

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# Contents

# Tables and Figures

# Chapter 1: Introduction

## A. Abortion in sub-Saharan Africa

Sub-Saharan Africa[1] has in recent decades seen substantial shifts in national laws relating to abortion. On December 8, 2015, Sierra Leone's parliament became the latest in the region to pass new legislation that could legalize induced abortion within the first 12 weeks of pregnancy.[2] The arguments presented to parliament cited maternal mortality from unsafe abortion as a principle argument for the decriminalization of abortion procedures[2], as well as the need for compliance with *Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa* (widely known as the Maputo Protocol).[3]

Unsafe abortion is believed to cause approximately 13% of maternal deaths globally, estimated at 47,000 deaths per year.[4] While measurement of abortion incidence around the world remains extraordinarily difficult[5], death from unsafe abortion is concentrated in countries where abortion laws are highly restrictive.[4] That is, where women face the greatest barriers to accessing abortion services, they are most likely to die from them.

While the recent decision in Sierra Leone is a direct answer to the high rates of maternal mortality from unsafe abortion in that country, proponents of reproductive health and rights will need to wait to see the impact of the legal change on the lives of women, as the elimination of unsafe abortions will not occur with a pen stroke. The legal barriers are perhaps the tip of the proverbial iceberg that includes lack of availability, accessibility, affordability, and quality of services—not to mention the socio-cultural and stigma-related challenges of accessing safe abortion.[6]

Yet, with the seemingly overwhelming number of obstacles that lie between maternal death from unsafe abortion and access to safe abortion services in sub-Saharan Africa, there is also a comprehensive body of published literature that demonstrates why Sierra Leone is moving in the right direction, and that liberalization of abortion must be present in order to begin tackling the additional barriers that women face in seeking safe abortions. To understand the potential impacts of liberalized abortion law on maternal health, and to understand components that a law must have in order to make it effective, Sierra Leone is advised to review what works—and what doesn't—from its neighbors that have enacted abortion law reform in recent decades.

The public health discourse surrounding abortion law in sub-Saharan Africa is largely reflective of the discordance between restrictive laws and the reality of contemporary maternal death and morbidity from abortion sought outside the legal sphere.[6,7,8,9] Abortion laws that originated from colonial powers are restrictive because they criminalize the act of terminating a pregnancy, and if there are conditions or exceptions for when abortion is permitted, they are generally identified as exceptions against prosecution within the parameters of the law. [10]

Abortion law in the Democratic Republic of Congo (DRC) provides a typical example of this application. The DRC Penal Code, inherited from Belgian colonial rule and before the country's

independence, penalizes women who receive and providers who administer induced abortions.[11] The Penal Code includes explicit restrictions on the use of both contraception and abortion; articles 165 and 166, which fall under Section One of Infractions Against the Order of Families, state: "Whoever, by food, drink, medicine, violence or by any other means, procures the abortion of a woman, will be punished with imprisonment of five to fifteen years" (Article 165) and "The woman who voluntarily procures her own abortion shall be punished with imprisonment of five to ten years" (Article 166).[11] However, under DRC's General Principles of Criminal Legislation, abortion may be performed to save the life of a woman.[12,13,14] While the DRC Penal code has been amended as recently as 2004, these articles are still present in the text.[11]

Yet, regardless of the strict parameters surrounding abortion in countries such as DRC (Angola, Central African Republic, Congo-Brazzaville, Ivory Coast, Gabon, Guinea-Bissau, Madagascar, Malawi, Mali, South Sudan, Tanzania, and Uganda all have similarly inherited colonial laws[10]), abortion incidence is significant on the African continent: an estimated 6.4 million induced abortions took place in Africa in 2008[4], equal to approximately 29 abortions per 1,000 women aged 15–44.[15] Only 3% of these induced abortions would be considered safe by the World Health Organization, meaning that the remaining 97% "were performed by an individual without the necessary skills, or in an environment that does not conform to the minimum medical standards, or both." [15] Case-fatality ratios have been estimated at up to 709 deaths per 100,000 unsafe abortions[6] and hospitalizations attributed to unsafe abortion per 1000 women aged 15-44 range from 3.2 in Ethiopia to 13.4 in Kenya.[16]

Despite these best estimates on abortion mortality and morbidity in sub-Saharan Africa, deaths from unsafe abortion—and the incidence of unsafe abortion in general—remain extremely challenging to quantify due to weak national-level statistics[17] and likely underestimate their contribution to overall health burden.[5] The very nature of clandestine procedures (and unwillingness of women to report on them) makes them difficult to count in the absence of robust reporting systems that characterize much of the developing world, including sub-Saharan Africa.[8]

The reality of unsafe abortion in sub-Saharan Africa has, however, contributed to regional policy development. The African Union took a rights-based approach towards the liberalization of abortion policy through the adoption of The African Charter on Human and People's Rights on the Rights of Women in Africa (known largely as the Maputo Protocol) in in Maputo, Mozambique, in 2003.[18] Article 14 (2)(c) of the Maputo Protocol states that "States Parties shall take all appropriate measures to…protect the reproductive rights of women by authorizing medical abortion in cases of sexual assault, rape, incest, and where the continued pregnancy endangers the mental and physical health of the mother or the life of the mother or the fetus."[18]

While 36 of the 54 African Union member states have ratified the Maputo Protocol,[19] the protocol has not been operationalized in many countries.[10] The aforementioned penal code in DRC, for example, remains in place despite DRC's ratification of the protocol.

Despite the fact mortality and morbidity from unsafe abortion in sub-Saharan Africa is a

significant—if underestimated—public health problem, that women are seeking and procuring clandestine abortions despite laws that forbid them to do so, and that the African Union has pushed forward an agenda to liberalize abortion policies on the continent, there has been relatively minimal research conducted on the public health impact of recently liberalized abortion policies. As such, it is not clear how or if the policies have allowed more women to access safe procedures, and subsequently, which legal factors may diminish death and morbidity from clandestine procedures.

Proponents of public health, human rights, and law have, however, tracked changes in abortion policy in sub-Saharan Africa, recognizing an overall trend towards liberalization since the end of the colonial period.[8, 14, 16, 20, 21, 22, 23, 24] Decriminalization of abortion in South Africa (which should be understood as a different legal frame than liberalization) now permits induced abortion on request for any reason up to 12 weeks gestation. Conditions under which safe abortion is legal in South Africa and Cape Verde are the least restrictive in sub-Saharan Africa. As such, death from unsafe abortion has declined, but still occurs.[25]

The following comprehensive review of published literature on abortion in sub-Saharan Africa is presented in this paper as synthesis of lessons learned in countries that have liberalized their abortion laws or policies between 1996 and 2013. It aims to provide guidance to countries that are seeking to liberalize access to abortion in their respective settings.

# Chapter 2: Methods

## B. Who changed their abortion law?

To first understand the scope of abortion-related literature available in sub-Saharan Africa, a comprehensive search was undertaken on PubMed on July 1, 2015. For each sub-Saharan African country (n= 50), country name + abortion was entered into the PubMed search feature, producing the following search details: **("abortion, induced"[MeSH Terms] OR ("abortion"[All Fields] AND "induced"[All Fields]) OR "induced abortion"[All Fields] OR "abortion"[All Fields]) AND ("Country name"[MeSH Terms] OR "Country Name"[All Fields]).** For countries with overlapping names e.g. “Niger” and “Nigeria”, the NOT configuration was added **(e.g. OR “Niger” NOT “Nigeria”).**

These search terms identified 2641 publications, of which approximately one-third were immediately identified as not applicable to the subject matter of induced abortion. Common non-applicable literature pieces included those that discussed abortion in sheep and/or cattle and those literature pieces that examined spontaneous abortion due to medical conditions.

To further understand which literature would be relevant to those countries that experienced liberalization in abortion law or policy between 1996 and 2013, it was necessary to determine which of the 50 sub-Saharan African countries fell into this category and pinpoint the exact change in law or policy that took place.

Abortion laws and policies appear in various legal documents depending upon the county in which they exist. Common legal texts in which abortion specifications can be identified in sub-Saharan Africa include penal codes, constitutions, reproductive health laws, decrees of application or implementation guidelines.

The 2014 United Nations Publication *Abortion Policies and Reproductive Health around the World*[13] identified the following 18 sub-Saharan African countries as having liberalized the grounds on which abortion is permitted between 1996 and 2013. This document was used to guide all further research for this report; the eighteen countries listed in the document are presented in Table 1 with the specifications of their legal change.

| **Table 1: Changes in Abortion Grounds According to United Nations (2014)** | |
|---|---|
| **Country** | **Grounds for Abortion that were Liberalized between 1996 and 2013, Per United Nations 2014 Report** |
| Benin | In cases of rape or incest; To preserve a woman's mental health; To preserve a woman's physical health; In case of fetal impairment |
| Burkina Faso | In cases of rape or incest; To preserve a woman's mental health; In case of fetal impairment |
| Burundi | To preserve a woman's mental health |
| Cameroon | To preserve a woman's mental health |
| Cape Verde | On request |
| Chad | To preserve a woman's physical health |
| Eritrea | In cases of rape or incest |
| Ethiopia | In cases of rape or incest; To preserve a woman's mental health; In case of fetal impairment |
| Equatorial Guinea | To preserve a woman's mental health; To preserve a woman's physical health |
| Kenya | To preserve a woman's mental health; To preserve a woman’s physical health |
| Mali | In cases of rape or incest |
| Mozambique | To preserve a woman's mental health; To preserve a woman's physical health |
| Niger | To preserve a woman's mental health; To preserve a woman's physical health; In case of fetal impairment |
| Nigeria | To preserve a woman's mental health, To preserve a woman's physical health |
| Rwanda | To preserve a woman's mental health |
| Swaziland | In cases of rape of incest; To preserve a woman's mental health, To preserve a woman's physical health; In case of of fetal impairment |
| Togo | In cases of rape or incest; To preserve a woman's physical health |
| Uganda | In cases of rape or incest; In case of fetal impairment |

In order to identify both the nature and the scope of the legal change that took place in each of the 18 countries, online searches were conducted to identify the old and new law, policy, penal code and/or decrees of application/implementation guidelines. A variety of sources were used to identify the existing legal documents, including the Center for Reproductive Rights (www.reproductiverights.org and www.worldabortionlaws.com) the United Nation's High Commissioner for Human Right's RefWorld database (www.refworld.org), the African Child Policy Forum (www.africanchildforum.org), World International Property Organization (www.wipo.int), The Verification Research, Training and Information Centre (www.vertic.org) and national government websites. All identified documents were cross-referenced with the United Nationals World Population Policies Database, which was the source of the *UN Abortion Policies and Reproductive Health around the World* Publication.

Discrepancies were identified throughout this process. While several of the 18 aforementioned countries did in fact experience change surrounding abortion laws or policies between the years of 1996 and 2013, six countries (Cameroon, Cape Verde, Equatorial Guinea, Mozambique, Nigeria, Uganda) did not appear to enact national legislation on abortion. Rather, they signed, ratified, and/or deposited the *Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa* (Maputo Protocol), and by doing so, the United Nations Publication classified them as having liberalized legal grounds for abortion. The countries in which this particular discrepancy is relevant are noted in bottom panel of Table 2.

**Table 2: Specifications of Abortion Laws and Policies, Pre and Post Liberalization**

| **Country** | **Nature of Law pre- change** | **Nature of Law post- change** |
|---|---|---|
| Benin | **Penal Code**; Decree of May 6, 1877, Article 317[26] | **Law;** Number 04 of March 3, 2003: Article 17[26] |
| Burkina Faso | **Penal Code** of Burkina Faso, 1984[27] | **Penal Code** of 1996 and reiterated in **Law;** Number 049 of Year 2005[28] |
| Burundi | Decree-Law Number 16 of the 1981 **Reform of the Penal Code,** Article 357[29] | Law Number 01 of 22 April 2009; **Revision of Penal Code**[30] |
| Chad | **Penal Code** of 1967; Title 8, Chapter 8, Section 3[31] | **Law** on the Promotion of Reproductive Health, Number 006 of 2002, Article 14[31] |
| Eritrea | **Penal Code** of 1957 (Ethiopian Penal Code)[32] | Transitional **Penal Code of 1991**; Article 534[33] |
| Ethiopia | **Penal Code** of 1957[34] | **Penal Code** of 2005[35] |
| Kenya | **Penal Code** of 2009[36] | **Constitution** of Kenya, 2010[37] |
| Mali | **Penal Code** of 1961; Article 176[24] | **Law** on Reproductive Health of June 24, 2002[24] |
| Niger | **Penal Code** of 15 July 1961; Laws 61-27, article 295[38] | **Law** of 24 May 2006[39] |
| Nigeria | **Penal Code** of 1959; Law Number 18[24] | ***"Rex v. Bourne" Court Case*** British Court Case Rex v. Bourne, by 2013 |

| | | |
|---|---|---|
| | **Criminal Code** of 1916; (Southern States)[24] | was seen as applicable in the Southern States of Nigeria[24] |
| Rwanda | **Penal Code** of 1977[40] | Organic Law instituting the **Penal Code** of 2012[41] |
| Swaziland | **Common Law**[42] | **Constitution** of Swaziland 2005[43] |
| Togo | **None after 1981 (**after French Penal Code repealed)[24] | **Law** on Reproductive Health; Number 005 of January 10, 2007[44] |
| **Countries where Maputo Protocol was ratified, but national-level legal change did not occur** | | |
| Cameroon | **Penal Code** of Cameroon, 1967, Article 337 and 338[45] | *Unclear; potentially ratification of the Maputo Protocol in 2012[19]* |
| Cape Verde | **Abortion Law** of 31 December 1986[46] | *Unclear; potentially ratification of the Maputo Protocol in 2005[19]* |
| Equatorial Guinea | **Act** regulating abortion; Number 1 of 4 April 1991: Article 16[47] | *Unclear; potentially ratification of the Maputo Protocol in 2009[19]* |
| Mozambique | **Criminal Code** and Ministry of Health **Decree**, 1981[48] | *Unclear; potentially ratification of the Maputo Protocol in 2005[19]* |
| Uganda | **Constitution** of the Republic of Uganda, 1984[49] | *Unclear; potentially ratification of the Maputo Protocol in 2010[19]* |

To further investigate these discrepancies, The Center for Reproductive Rights' publication titled *20 Years of Abortion Law Reform*[24] was reviewed. This document provided a timeline of legal changes in abortion law on the African continent from 1994 to 2012, including references to the relevant legal documents. According to the Center for Reproductive Rights, 1996-2012 saw reform in the following countries: **Burkina Faso, South Africa, Guinea, Chad, Mali, Benin, Ethiopia, Swaziland, Niger, Togo, Kenya, Lesotho, Mauritius, Rwanda and Somalia (N=15).** Given that none of the countries listed in the UN publication conducted legal change in 2013 (see table above), the discrepancy among countries may be attributed to the aforementioned discussion of ratification of the Maputo Protocol, or in the case of Nigeria, the decision to include application of a 1930s British legal case to court decisions in the Southern States of Nigeria between the years of 2006 and 2013.[13]

The discrepancy between the United Nations Publication and the Center for Reproductive Rights publication regarding the country of South Africa merits further discussion. Despite decriminalizing abortion for any reason before 12 weeks gestation in 2006[22], South Africa is not included in the United Nations Publication as having liberalized the grounds on which abortion may be provided. The reason for this omission is unknown. Burkina Faso, the other country that experienced legal change in 1996, is included in the list. However, the nature of the law change in South Africa is an outlier compared to other countries on either the United Nations or Center for Reproductive Rights lists. Abortion conditions in South Africa were expanded from the same indications set forth by the Maputo Protocol to any indications within the first 12 weeks of pregnancy (i.e. decriminalized, not liberalized). While this comparison does not serve to belittle the magnitude of the policy change in South Africa, it does demonstrate that aggregating the literature on South Africa with the other countries would ultimately change the nature of the

research. The comparison of South Africa's change to that of Rwanda risks turning the entire exercise to a case study on South Africa. Using the aforementioned MeSH search terms for South Africa returned 810 results; the next closest number was Ethiopia at 111.

To therefore provide cohesion among the countries for inclusion in the literature review, those countries that overlapped in both documents were ultimately selected for inclusion: **Benin, Burkina Faso, Chad, Ethiopia, Kenya, Mali, Niger, Rwanda, Swaziland and Togo (N=10).**

In October 2015, an identical search was also conducted for all 50 sub-Saharan African Countries on the *Popline Database* (www.popline.org), to ensure that the PubMed search was satisfactorily capturing the vast majority of literature on abortion. The 84-100% overlap per country in search results between the two databases was such that the researcher elected to utilize only PubMed.

## C. Where are the studies? PubMed search

Using "County Name" + "Abortion" for the ten aforementioned countries, the PubMed Search produced the following results. The searches were conducted between 1 September and 30 October 2015. All English, French, Spanish, and Portuguese language results were included. The publication time period was selected as 1 January 1997-1 June 2015, in order to capture all literature that was published after the initiation of legal changes for the selected countries. The numbers of identified publications for each country are presented in Table 3.

**Table 3: PubMed Search Results by Country**

| A) Country Name | B) Total number of PubMed Results for Publications for "Country Name" + "Abortion" between 1 January 1997 and 1 June 2015 | C) Total number of PubMed Results relating to induced abortion in the country | D) Total number of article to be used in analysis |
|---|---|---|---|
| Benin | 28 | 11 | 7 |
| Burkina Faso | 26 | 18 | 16 |
| Chad | 9 | 4 | 0 |
| Ethiopia | 111 | 43 | 38 |
| Kenya | 94 | 57 | 44 |
| Mali | 13 | 9 | 4 |
| Niger | 11 | 2 | 2 |
| Rwanda | 7 | 5 | 3 |
| Swaziland | 4 | 4 | 2 |
| Togo | 2 | 1 | 1 |
| **Total** | **305** | **187** | **117** |

Following review of the complete version of the literature pieces from each country listed in column A, inclusion in column B required meeting the following criteria: the literature piece must mention induced abortion and/or voluntary interruption of pregnancy and/or deliberate interruption of pregnancy. The most common reasons for non-inclusion in column B were that

the research was limited to spontaneous abortion (miscarriage) or that abortion was discussed in terms of livestock. For inclusion in column C, the article had to contain more than a passing reference to induced/provoked abortion (i.e. a one-line reference in the literature review did not suffice).

# Chapter 3: Results

## D. What do the studies show? Findings by country

The identified publications are grouped below by country, and within each country, they are organized by theme and in chronological order by publication date.

### i. Benin

The literature from Benin is characterized by facility-based studies on unsafe abortion that were conducted prior to the legal change in 2003, as demonstrated in the table below.

**Table 4. Benin, All Publications (n=7)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Prevalence of Induced Abortions and Family Planning in Benin*[50] | Peer-reviewed journal article | Study took place in 1995, using data from 1990-1994; Published 1997 | To to determine prevalence of induced abortion used as family planning in Benin | Review of clinical records from 190 health centers in six departments of Benin | 1.5 abortions took place for every 1000 live births; underreporting was likely |
| *Obstetric Complications of the First Trimester in Western Africa*[51] | Peer-reviewed journal article | Study took place from January-April 1997; Published 1998 | To study obstetric complications affecting women in Benin, Senegal and Ivory Coast during the first trimester of pregnancy | Prospective study of clinical records of 345 women in eight hospital maternity wards (95 women were from two urban hospital maternity wards in Benin) | 44% of women presenting with complications in the Benin hospitals were as a result from unsafe abortion |
| *Complications of Induced Abortion and Miscarriage in Three African Countries: A Hospital-Based Study among WHO Collaborating Centers*[52] | Peer-reviewed journal article | Study took place from July 1993-June 1994; Published 2001 | To describe pregnancy, abortion, and miscarriage outcomes in Benin, Senegal and Cameroon | Prospective study of clinical records of 1,957 women (978 women came from urban maternity wards in Benin) | Of the 670 women presenting with complications from unsafe abortion in Benin, 48% were under the age of 25 and 1.8% died |

| | | | | | |
|---|---|---|---|---|---|
| *Is Fertility Declining in Benin?*[53] | Peer-reviewed journal article | Published 2001 | To analyze reproductive changes in Benin | Analysis of Benin Fertility Study (1982) and Benin DHS Data (1996); 11 qualitative focus group discussions with married women occurred before 2001 (date not specified) | Induced abortion is the only plausible answer for the fertility decline in Benin; differentiating miscarriage from induced abortion in Benin is difficult due to stigma surrounding abortion |
| *Maternal Deaths Audit in Four Benin Referral Hospitals: Quality of Emergency Care Causes and Contributing Factors*[54] | Peer-reviewed journal article | Data from Jan 1, 1994-December 31, 2003 were reviewed; Published 2006 | To study maternal deaths and quality of emergency obstetric care for women in four Benin referral maternity wards | Retrospective review of 247 maternal death records in four referral hospitals | 13% of maternal deaths were the result of unsafe abortion; women who presented for post-abortion care were not given antibiotics in a timely manner and were delayed in receiving treatment |
| *Morbidity and Mortality from Bowel Injury Secondary to Induced Abortion*[55] | Peer-reviewed journal article | Records from January 1992-December 2001 were reviewed; Published 2003 | To study morbidity and mortality due to unsafe abortion | Review of eight patient records among those with intestinal injury from unsafe abortion | The delay in seeking treatment was a major cause of morbidity among these eight women; none died |
| *Introduction of Misoprostol for the Treatment of Incomplete Abortion Beyond 12 Weeks of Pregnancy in Benin*[56] | Peer-reviewed journal article | January 1, 2008-December 31, 2012; Published 2014 | To determine if misoprostol is effective for post-abortion care in women with 12 weeks or more pregnancy gestation | Randomized control trial of 2509 women presenting for post-abortion care in three urban maternity wards | Post-abortion care using misoprostol was effective in 99.1% of pregnancies with twelve weeks or less gestation; effectiveness decreased to 25.7% after twelve weeks |

A 1997 publication from a 5-year retrospective study estimates that 1.5 abortions took place for every 1000 live births, though discussed that underreporting by women was likely taking place.[50] This relatively low abortion ratio is contradicted by a 1998 publication from a retrospective review of facility registries in which complications from induced abortions accounted for 44% of all obstetric complications within the first trimester of pregnancy, demonstrating high morbidity.[51] An additional facility-based study was published in 2001, where 48% of women presenting with complications from unsafe abortion were under the age of 25 and the case-fatality rate was 1.8%.[52] An additional publication in 2001 provided a qualitative anecdote that

evidence to differentiate miscarriage from induced abortion in Benin would be extremely difficult to collect due to the sensitive nature of the abortion in Benin's socio-cultural context.[53]

The socio-cultural context surrounding abortion was highlighted in two publications following the legal change in abortion in Benin. A 2006 retrospective study of maternal death in four Benin hospitals showed that women who presented with self-induced abortions experienced delays in treatment as compared to other women, and that proper treatment using antibiotics was not followed, resulting in death.[54] Women presenting with bowel injury from induced abortion were also delayed in receiving treatment.[55]

Finally, a 2014 publication on the use of misoprostol for medical treatment of incomplete abortion saw effective results in complete pregnancy termination of women with less than twelve weeks gestation in Benin.[56]

**ii. Burkina Faso**

Abortion incidence and abortion-related death has been estimated in Burkina Faso before and after the 1996 legal change using different methods, as demonstrated in the following studies:

**Table 5. Burkina Faso, Abortion Incidence and Abortion-related Mortality (n=8)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Maternal Mortality in Adolescents at the University Hospital of Ouagadougu*[57] | Peer-reviewed journal article | 1995; Published 1999 | To determine the adolescent maternal mortality rate at an urban hospital in Burkina Faso | Retrospective study of all adolescent maternity cases in the year 1995 (n=646) | The adolescent maternal mortality ratio was 4081 per 100,000 live births; 30% of deaths were due to unsafe abortion |
| *Estimating Clandestine Abortion with the Confidants Method--Results from Ouagadougou, Burkina Faso*[58] | Peer-reviewed journal article | July 2001; Published 2006 | To estimate clandestine abortion incidence over the preceding five years | 30 qualitative interviews with men and women of different ages from two urban neighborhoods in the capital city | The annual incidence of clandestine abortion in the city was 40 induced abortions per 1000 women aged 15–49 and 60 per 1000 women aged 15–19 |
| *Health of Women after Severe Obstetric Complications in Burkina Faso: A Longitudinal Study*[59] | Peer-reviewed journal article | November 2004-March, 2006; Published 2007 | To investigate how severe obstetric complications affect health and other outcomes one year following the complication | Hospital-based, prospective, longitudinal cohort study of 337 women with severe obstetric complications whose pregnancies resulted in a live birth, perinatal death, or lost pregnancy | 25% of early pregnancy losses were "certainly or probably" due to induced abortion |

| | | | | | |
|---|---|---|---|---|---|
| *Women's sexual health and contraceptive needs after a severe obstetric complication ("near-miss"): a cohort study in Burkina Faso*[60] | Peer-reviewed journal article | December 2004 - March 2005; Published 2010 | To investigate how "near-miss" complications affect health and other outcomes | Hospital-based, prospective, longitudinal cohort study of 1014 pregnant women | One-third of near-misses from unsafe abortion were in women under the age of 20 |
| *Estimating Abortion Incidence in Burkina Faso Using Two Methodologies*[61] | Peer-reviewed journal article | February-July 2009; Published 2011 | To estimate abortion incidence and morbidity | Nationally representative, facility-based Abortion Incidence Complications Method (AICM), and Third-Party Reporting (ATPR) were used to estimate unsafe abortion | AICM method estimated 25 induced abortions per 1000 women age 15-49 in 2008; ATPR method estimated that number to be 18 per 1000 women |
| *Key Determinants of Induced Abortion in Women Seeking Post abortion Care in Hospital Facilities in Ouagadougou, Burkina Faso*[62] | Peer-reviewed journal article | February-September 2012; Published 2014 | To investigate the key characteristics among women seeking post-abortion care | Cross-sectional household survey identified 304 women meeting inclusion criteria | 12% of pregnancy terminations were the result of unsafe abortions; unwanted pregnancy, living with parents, and being divorced or widowed were associated with induced abortion |
| *Unsafe Abortions in Countries That Restrict Legal Abortions. Epidemiologic, Clinical, and Prognostic Aspects at the University Hospital Center Yalgado-Ouedraogo of Ouagadougou*[63] | Peer-reviewed journal article | June 2012-May 2013; Published 2015 | To describe post-abortion care for women who received illegal/unsafe abortions | Cross-sectional study of all women with confirmed unsafe abortions admitted to the maternity ward of a large urban hospital during the study period (n=111) | The abortion to live birth ratio was 1:47, with a mortality rate of 24% among those presenting with complications from unsafe abortion |

| | | | | | |
|---|---|---|---|---|---|
| *Benefits of Meeting Women's Contraceptive Needs in Burkina Faso*[64] | Guttmacher Institute Brief | Published 2014 | To outline potential health and cost benefits from improved contraceptive services in Burkina Faso | Literature review/ summary | Meeting only half of the unmet need for contraception in Burkina Faso could result in 37,000 fewer unsafe abortions each year |

- A 1999 publication reported an annual maternal death rate for adolescents at a hospital in Ouagadougou as 4.1, with 30% of deaths attributable to unsafe abortion.[57]
- A 2006 publication using the confidants method estimated that annually, 40 of every 1000 women of reproductive age living in Ouagadougou had an induced abortion, and that all were completed outside of the legal sphere.[58] Of the abortions that were identified using this methodology, 60% were reported to have resulted in adverse health outcomes and 14% were treated at a hospital.[58]
- 25% of early pregnancy losses from a facility-based study were "certainly or probably" due to induced abortion, according to a 2007 publication.[59] Data from that same study were used in a 2010 publication to show that one-third of near-misses for maternal death from unsafe abortion were in women under the age of 20.[60]
- In 2011, the annual national abortion rate was reported as 25 per 1000 women of reproductive age using Abortion Incidence Complications Method.[61]
- Using data from household surveys in Ouagadougou in 2012, 12% of pregnancy terminations (which included both induced abortions and miscarriages) were estimated to have been the result of unsafe abortions.[62]
- A hospital-based study in Ouagadougou from 2012-2013 demonstrated an abortion to live births ratio of 1:47, with a mortality rate of 24%.[63]
- A 2014 statistical projection of unmet need for contraception demonstrated that if half of the unmet need for contraception was met, there could be 37,000 fewer unsafe abortions each year in Burkina Faso.[64]

Social factors were shown to contribute to the unsafe abortion burden in the country. Significant financial burden was also identified among women seeking abortions:

**Table 6. Burkina Faso, Social and Economic Factors (n=3)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Abortion: An Open Secret? Abortion and Social Network Involvement in Burkina Faso*[65] | Peer-reviewed journal article | 2000-2001; Published 2007 | To examine the reasons women talk about their abortions and how they still manage to keep the procedure a secret | 13 key informant interviews in a rural town and 30 in-depth interviews with men and women in the capital | Abortion was associated with secrecy and stigma; however, women were still able to use social networks to identify clandestine abortion providers |

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| *Social Determinants and Access to Induced Abortion in Burkina Faso: From Two Case Studies*[66] | Peer-reviewed journal article | 2011-2012; Published 2014 | To demonstrate how social determinants affect women's experiences seeking and procuring clandestine abortions | Two case studies of a "rich" woman and and "poor" woman seeking clandestine abortions are compared | Poorer women end up paying more for clandestine abortions because they go through a series of failed attempts before achieving abortion or giving up |
| *Costs and Consequences of Abortions to Women and Their Households: A Cross-Sectional Study in Ouagadougou, Burkina Faso*[67] | Peer-reviewed journal article | February-September 2012; Published 2014 | To study costs and consequences of abortions and resulting complications | Cross-sectional, hospital-based study of women receiving post-abortion care in the capital (n=305) | Women paid on average $89 USD for an induced abortion versus $56 USD to manage a spontaneous abortion |

In a 2000-2001 study of social networks and abortion in Ouagadougou, abortion was associated with secrecy and stigma due to a lack of "social consensus" on the issue.[65] However, women were still able to use social networks to identify clandestine abortion providers in this context.[65] A qualitative study determined that poorer women end up paying more for induced abortions because they go through a series of failed attempts outside of the regulated sphere before achieving an abortion or giving up.[66] A cross-sectional study demonstrated that women paid on average $89 USD for an induced abortion versus $56 USD to manage a spontaneous abortion.[67]

The use of misoprostol for post-abortion care has been studied in Burkina Faso:

**Table 7. Burkina Faso, Effectiveness, Use and Acceptability of Misoprostol (n=5)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Is Misoprostol a Safe, Effective and Acceptable Alternative to Manual Vacuum Aspiration for Postabortion Care? Results from a Randomised Trial in Burkina Faso, West Africa*[68] | Peer-reviewed journal article | April-October 2004, Published 2007 | To determine effectiveness of a single 600mg dose of oral misoprostol compared to manual vacuum aspiration for care of incomplete abortion | Randomized control trial at two university hospitals in the capital (n=447) | Misoprostol was effective in managing incomplete abortion in 94.5% of patients |

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| *Sublingual [Corrected] Misoprostol as First-Line Care for Incomplete Abortion in Burkina Faso*[69] | Peer-reviewed journal article | September 288-November 2009; Published 2012 | To investigate the use of misoprostol for post-abortion care patients in lower-level facilities without historical use of misoprostol | Trial at two district hospitals (n=97) | Misoprostol was effective in managing incomplete abortion in 98% of patients |
| *Sublingual Misoprostol Versus Standard Surgical Care for Treatment of Incomplete Abortion in Five Sub-Saharan African Countries*[70] | Peer-reviewed journal article | May 2007-October 2010; Published 2012 | To gather additional evidence to see if sublingual misoprostol can be used instead of surgical care (MVA) to treat incomplete abortion | Randomized control study across five countries (Mauritania, Niger, Senegal, Burkina Faso and Nigeria) (Burkina Faso n= 318) | Misoprostol was effective in managing incomplete abortion in 97.6% of patients in Burkina Faso (MVA was successful in 100%) |
| Progress and Gaps in Reproductive Health Services in Three Humanitarian Settings: Mixed-Methods Case Studies [71] | Peer-reviewed journal article | July-October 2013; Published 2015 | To investigate reproductive health settings in Burkina Faso, South Sudan, and Democratic Republic of Congo | Cross-sectional questionnaires at 63 purposively-sampled health centers (28 in Burkina Faso) | Zero centers in Burkina Faso reported that they provided abortions, even under the permitted legal conditions |
| *The Politics of Unsafe Abortion in Burkina Faso: The Interface of Local Norms and Global Public Health Practice* [72] | Peer-reviewed journal article | Published 2014 | To investigate the history and and factors associated with Burkina Faso's acceptance of post-abortion care | Review of ethnographic research | Post-abortion care is more acceptable than safe abortion because it does not require further national legal change, but remains within the priorities of the international community and donors |

Three studies on effectiveness of the use of misoprostol in Burkina Faso were published in 2007, 2012, and 2012, all of which showed that it could be used effectively to treat incomplete abortions.[68, 69, 70] However, in a 2015 publication on a study from 2002-2004 when 28 health centers in Burkina Faso were asked to report on the services they provided, zero centers reported that they provided abortions, with several giving the response that they were "not authorized" even under given conditions.[71] Similarly, a 2014 publication of qualitative interviews with government officials in Burkina Faso demonstrated that post-abortion care was more acceptable

than safely induced abortion because it did not require further national legal change, but remained within the priorities of international donors. [72]

### iii. Chad

No relevant published literature on Chad was found using the search methodology.

### iv. Ethiopia

Substantial research has been conducted on abortion prevalence before, during, and after the legal change in abortion law in Ethiopia in 2005. The following studies discuss the scope of abortion in the country:

**Table 8: Ethiopia, Abortion Prevalence (n=17)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Magnitude of Abortion-Related Complications in Ethiopian Health Facilities: A National Assessment*[73] | Peer-reviewed journal article | 1996; Published 1999 | To explore instances of post-abortion care, treatment and referral within the Ethiopian healthcare system | Cross-sectional surveys with 214 birth attendants from 95 health facilities in all but two regions of the country (hospitals=20 and health centers=55) | Of the 95 facilities, hospitals averaged 17 post-abortion cases a month; lower-level health centers in rural areas averaged fewer than two cases a month |
| *Abortion among Rural Women in North Ethiopia*[74] | Brief communication in peer-reviewed journal | February-April 1997; Published 2000 | To describe the scope of unsafe abortion in rural, northern Ethiopia | Cluster sampling of married women of reproductive age in a rural district of Northern Ethiopia (n=1158) | Women reported an average of 1.8 pregnancy losses over the course of a lifetime, with only 8.6% of pregnancies due to induced abortion; however, 29.6% of respondents reported that someone in their family died of an abortion |

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| *A Survey of Illegal Abortion in Jimma Hospital, South Western Ethiopia*[75] | Peer-reviewed journal article | February 25-May 5, 1996; Published 2000 | To assess socio-economic factors of women presenting with unsafe abortion and problems associated with unsafe abortion | Cross-sectional hospital-based survey of women with unsafe abortion in a large urban referral hospital in Southern Ethiopia (n=80) | 35% of women with unsafe abortions were students, 88% were literate, 39% were married, and 22.5% procured the abortion for economic reasons |
| *Illegal Abortions in Addis Ababa, Ethiopia*[76] | Peer-reviewed journal article | August 20, 1990-February 20, 1991; Published | To characterize women receiving post-abortion care and the circumstances surrounding the abortion | Cross-sectional, hospital-based survey of women presenting with post-abortion complications following induced abortion in five hospitals in the capital (n=1290) | 35% of women reported the abortion as induced by a health assistant, 28.3% were self-induced, 23.7% were induced by cleaning (janitorial) staff working in the hospital; 5% of the abortions were considered safe because they were conducted in a doctor's office (but led to complications) |
| *Trends of Abortion Complications in a Transition of Abortion Law Revisions in Ethiopia*[77] | Peer-reviewed journal article | 2003-2007; Published 2008 | To assess changes in trends in abortion complications in hospitals during the change in abortion law | Cross-sectional review of medical records from women presenting with post-abortion complications in a university hospital in the capital city (n=773) | A non-statistically significant decrease in the abortion rate took place over the course of legal change, but there was increase in severe complications and in case fatalities during this same period |
| *Maternal Mortality Studies in Ethiopia-- Magnitude, Causes and* | Peer-reviewed journal article | 1980-2008; Published 2009 | To study maternal mortality and associated factors in Ethiopia | Meta-analysis of 12 maternal mortality studies spanning 20 years in Ethiopia | In averaging the 12 studies, 26.4% of all deaths were due to post-abortion sepsis; in all but |

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| *Trends*[78] | | | | | the most recent study (the only study conducted uniquely after 2000), abortion was the leading cause of death (range: 41% in 1991-1992 and 7% 2001-2005) |
| *The Potential of Medical Abortion to Reduce Maternal Mortality in Africa: What Benefits for Tanzania and Ethiopia?* [79] | Peer-reviewed journal article | Published 2010 | To understand the number of deaths that could be adverted through provision of medical abortion | Modeling of mortality risks for unsafe abortion and medical abortion | 2251 lives could be saved each year in Ethiopia if unsafe abortion was replaced by medical abortion |
| *The Estimated Incidence of Induced Abortion in Ethiopia*[80] | Peer-reviewed journal article | Data collected from November 2007-March 2008; Published 2010 | To estimate the annual incidence of safe and unsafe abortion in Ethiopia, including incidence of treatment for unsafe abortion | Nationally representative survey of health facilities (n=347) and professionals (n=80) | The annual incidence of safe and unsafe abortion was estimated to be 382,000 and the annual incidence of treatment for unsafe abortion to be 52,600; 27% of abortions were considered legal; the overall annual abortion rate was 23 per 1000 women, with a higher rate of 49 per 1000 women in the capital |
| *Caring for Women with Abortion Complications in Ethiopia: National Estimates and Future Implications*[81] | Peer-reviewed journal article | Data collected from November 2007-March 2008; Published 2010 | To develop national estimates of abortion-related morbidity/mortality | Prospective morbidity surveys with women seeking post-abortion care (n=1,932) at a nationally-representative sample of health facilities (n=344) | Nearly 58,000 cases of post-abortion complications were treated in 2008; 41% of cases were consistent with unsafe abortion; the case-fatality rate was 628 deaths per |

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| | | | | | 100,000 cases |
| *Meeting the Need for Safe Abortion Care in Ethiopia: Results of a National Assessment in 2008*[82] | Peer-reviewed journal article | Data collected from November 2007-March 2008; Published 2013 | To provide a nationally-representative picture of abortion and changes in abortion in Ethiopia | Interviews with healthcare providers (n=335); prospective surveys and review of medical records of women seeking post-abortion care (n=8911) | 48% of obstetric complications were from unsafe abortions; 67% of facilities reported availability of (legal) second-trimester abortions; 90% reported availability of (legal) first-trimester abortions |
| *The Health System Cost of Postabortion Care in Ethiopia* [83] | Peer-reviewed journal article | Data used was from November 2007-March 2008; Published 2012 | To estimate the cost of post-abortion care to the Ethiopian healthcare system | Post-Abortion Care Costing Methodology was employed using estimates from a nationally-representative 2007-2008 abortion study | Each post-abortion care patient cost the healthcare system USD$36.31, meaning that the total cost to treat post-abortion care in Ethiopia annually was between USD$6.5- 8.9 million |
| *Trends and Differentials of Adolescent Motherhood in Ethiopia: Evidences from 2005 Demographic and Health Survey* [84] | Peer-reviewed journal article | Data from the 2005 Ethiopian Demographic and Health Survey (DHS) were used; Published 2012 | To analyze adolescent motherhood in Ethiopia | Nationally-representative DHS data were analyzed to determine factors associated with adolescent motherhood | Abortion and miscarriage data were too sparse to analyze as proximate factors for adolescent fertility; abortion could explain the gap between adolescent motherhood in urban and rural areas |
| *Abortion in University and College Female Students of Arba Minch* | Peer-reviewed journal article | March 2011; Published 2014 | To study abortion and determine factors contributing to abortion among university and | Cross-sectional survey of female college and university students (n=813) | 54 students reported ever having been pregnant; 23 reported ever |

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| *Town, Ethiopia, 2011*[85] | | | college students | and focus group discussions | having an abortion; 4 abortions were considered unsafe; only 32% of students knew the legal criteria for abortion in Ethiopia |
| *Magnitude and Risk Factors of Abortion among Regular Female Students in Wolaita Sodo University, Ethiopia*[86] | Peer-reviewed journal article | May-June 2011; Published 2014 | To identify factors associated with induced abortion among female university students | Cross-sectional survey among randomly selected female students at a university (n=493) | The ratio of students who reported ever having an abortion was 65/1000; 97% of abortions were induced; half were conducted under unsafe conditions |
| *Induced Abortion and Associated Factors in Health Facilities of Guraghe Zone, Southern Ethiopia*[87] | Peer-reviewed journal article | January-March 2010; Published 2014 | To understand abortion and associated factors in one health zone in Ethiopia | Cross-sectional survey among women who received post-abortion care (n=400) in eight health facilities | 76% of women reported that their pregnancy was unwanted; only 12% of women reported provoking their abortion |
| *Causes of Maternal Mortality in Ethiopia: A Significant Decline in Abortion Related Death*[88] | Peer-reviewed journal article | 1980-2012; Published 2014 | To determine trends in direct causes of maternal mortality | Systematic Review of 18 facility-based maternal mortality studies | From 1980-1999 unsafe abortion caused around 31% of maternal deaths; this proportion decreased between 1980 and 2008; abortion was not one of the four leading causes of maternal death after 2000 |
| *Induced Second Trimester Abortion and Associated Factors in Amhara Region Referral Hospitals Ethiopia*[89] | Peer-reviewed journal article | July 2013-January 2014; Published 2015 | To assess the prevalence of second-trimester abortion and determine associated factors | Cross-sectional survey of systematically sampled women seeking abortion care in five referral hospitals (n=422) | 47% of women had induced abortions; 41% of those were second-trimester abortions |

- A 1999 publication used data from 1996 that was collected in health facilities in nearly every region of Ethiopia to estimate the number of post-abortion cases that were treated on a monthly basis.[73] Of the 95 facilities, hospitals averaged 17 post-abortion cases a month, while health centers or posts in rural areas averaged less than two cases a month.[73]
- In a rural district of Ethiopia in 1997, lifetime history of pregnancy loss was estimated at 20.8%, with a woman averaging 1.8 pregnancy losses in her lifetime.[74] 91.4% of abortions were reported as spontaneous miscarriage, with the remainder implied to be induced abortion.[2] Poverty and birth spacing were related to pregnancy termination and 29.6% of respondents reported that someone in their family died of unsafe abortion.[74]
- A 2000 publication reported on data from a hospital in Southwestern Ethiopia in 1996; complications from induced abortions made up 32% of obstetric cases at the hospital. [75] Among those with induced abortions, 35% were students, 88% were literate, 39% were married, and 22.5% cited economic reasons for why they sought the abortion.[75]
- A 2001 publication on the situation of illegal abortion in Addis Ababa used data from five hospitals in 1990 and 1991.[76] Among women surveyed, 35% reported the abortion as induced by a health assistant, 28.3% were self-induced, 23.7% were induced by cleaning (janitorial) staff working the hospital; 5% of the abortions were considered safe.[76]
- Using medical records from 773 post-abortion care patients from 2003 to 2007, a 2008 publication estimated the overall abortion ratio before and after Ethiopia's legal change in 2005.[77] Among this sample, the overall abortion ratio (per 100,000 live births) decreased, but was already decreasing at the time that legalization took place.[77] The study concluded that there was an increase in severe complications and in case fatality during the time in which the legal transition took place, which could possibly be explained by the selection bias of severe post-abortion complication cases.[77]
- A review of 12 maternal death studies from 1980-2008 in Ethiopia was published in 2009.[78] 26.4% of all deaths were due to post-abortion sepsis and in all but the most recent study (the only one conducted uniquely after 2000), abortion was the leading cause of death (range: 41% in 1991-1992 and 7% 2001-2005).[78]
- A 2010 publication estimated, using modeling of mortality risks for unsafe abortion and medical abortion, that 2251 lives could be saved each year in Ethiopia if unsafe abortion was replaced by medical abortion.[79]
- Using nationally representative data from 2007-2008, a 2010 publication estimated the annual incidence of safe and unsafe abortion in Ethiopia to be 382,000 and the annual incidence of treatment for unsafe abortion to be 52,600.[80] 27% of abortions were considered to be legal and performed at health facilties.[80] The overall annual abortion rate was 23 per 1000 women, with a higher rate of 49 per 1000 women identified in Addis Ababa. [80]
- Using the same 2007-2008 data, an additional publication in 2010 estimated that nearly 58,000 cases of post-abortion complications were treated in 2008.[81] 41% of these cases reported severe or moderate morbidity consistent with unsafe abortion.[81] The case-fatality rate at public health facilities was 628 deaths per 100,000 women seeking care for post-abortion complications.[81]

- Again using the same 2007-2008 data, a 2013 publication reported that 48% of cases of obstetric complications resulted from unsafe abortions.[82] Furthermore, despite the legal changes that took place in 2005, only 67% of facilities reported availability of (legal) second-trimester abortions, while 90% reported availability of (legal) first-trimester abortions.[82]
- Once again using the same 2007-2008 data, a 2012 publication estimated each post-abortion care patient resulted in a direct cost of USD$36.31, demonstrating that annual direct costs to treat post-abortion care patients in Ethiopia were between USD$6.5-8.9 million.[83] Inclusion of indirect costs into that calculation would increase the overall annual cost of post-abortion care to USD$47 million.[83]
- A 2012 publication used Ethiopia's Demographic and Health Survey data from 2005 to study adolescent motherhood, proposing abortion as a potential explanation for the gap between adolescent motherhood in urban and rural Ethiopia.[84] However, abortion and miscarriage data were too sparse to use as proximate factors in the analysis to estimate adolescent fertility.[84]
- A proportional sample of female university and college students from a medium-sized city in Southern Ethiopia were surveyed in 2012; of 813 students, 54 reported ever having been pregnant and 23 reported ever having an abortion, 4 of which were considered unsafe.[85] Seven years after legal change in the country, only 32% of students knew the legal criteria for abortion in Ethiopia.[85]
- An additional study with female university students from a similar-sized city in Southern Ethiopia took place in 2011.[86] 65 of every 1000 female students reported having an abortion (3% spontaneous and 97% induced), and half of the induced abortions were done under unsafe conditions.[86]
- Data was collected in 2010 from 400 women who sought post-abortion care in eight facilities in a region of Southern Ethiopia.[87] While 76% reported that the pregnancy was unwanted, only 12% of the women reported provoking their abortion.[12] There was likely reporting bias by respondents in this data.[87]
- A 2014 systematic review of 18 maternal mortality studies in Ethiopia spanned the years between 1980-2012.[88] From 1980-1999, unsafe abortion caused an estimated 31% of maternal deaths, however this proportion decreased from 1980 to 2008, and was not one of the four leading cases of death from 2000-2012.[88]
- Data was collected from women who sought post-abortion care in in regional hospitals in Northern Ethiopia in 2013 and 2014.[89] Of 197 women presenting for post-abortion care from induced abortions over the course of six months, 80 had second trimester and 117 had first trimester abortions.[89]

Social and cultural influences surrounding abortion have also been studied in Ethiopia:

| Table 9: Ethiopia, Social and Cultural Influences on Abortion (n=4) | | | | | |
|---|---|---|---|---|---|
| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
| *The Proximate Determinants of the Decline to Below-Replacement Fertility in Addis Ababa, Ethiopia*[90] | Peer-reviewed journal article | Used data from 1990 and 2000; Published 2003 | To analyze proximate determinants of fertility | Bongaarts framework of proximate determinants of fertility is used to analyze data from two national-level studies in 1990 and 2000 | Induced abortion and increased access to contraception are proposed as potential methods by which unmarried women avoid pregnancy in the capital city |
| *Abortion and Unwanted Pregnancy in Adigrat Zonal Hospital, Tigray, North Ethiopia*[91] | Peer-reviewed journal article | February 2002-January 2004; Published 2010 | To determine causes of unwanted pregnancy and subsequent impact on maternal health | Cross-sectional study of women with abortion complications in a hospital (n=907) | 70% of women reported that their pregnancy was unwanted; 49% cited not being married as the primary reason that the pregnancy was unwanted; additional factors contributing to unwanted pregnancies included rape (20%), economic reasons (18%) and birth spacing (12%) |
| *The Tale of the Hearts: Deciding on Abortion in Ethiopia*[92] | Peer-reviewed journal article | December 2006-November 2007; Published 2012 | To understand decision-making on abortion among unmarried Ethiopian female youth | Qualitative interviews with 25 women who received post-abortion care; 34 key informant interviews; 12 focus group discussions | Sexual relationships and the concept childbearing outside of marriage were the primary motivating factors associated with induced abortion |
| *Determinants of First and Second Trimester Induced Abortion - Results from a Cross-Sectional Study Taken Place 7 Years after Abortion Law Revisions in Ethiopia* [93] | Peer-reviewed journal article | October 2011-April 2012; Published 2014 | To describe characteristics of women seeking safe abortions and those seeking care for complications from unsafe abortion | Cross-sectional survey of safe abortion patients (n=808) and unsafe abortion patients (n=21) at four health facilities | Second trimester abortion was associated with being unmarried, having low education levels and being young |

- In a 2003 discussion of the fertility decline in Ethiopia from 1990-2000, abortion and increased access to contraception were offered as potential methods by which unmarried women were avoiding pregnancy in Addis Ababa.[90]
- In 2002-2004, 70% of women presenting with abortions at hospital in Northern Ethiopia

reported that their pregnancy was unwanted, and 49% cited not being married as the primary reason that the pregnancy was unwanted.[91] Additional factors contributing to unwanted pregnancies included rape (20%) economic reasons (18%) and birth spacing (12%).[91] Sexual relationships and childbearing outside of marriage were fundamental factors associated with induced abortion in this study.[91]

- In Addis Ababa from 2006-2007, qualitative interviews with 25 unmarried women who had induced abortions demonstrated that not giving birth to a child outside of marriage was intrinsically connected to societal self-preservation.[92] Sexual relationships and childbearing outside of marriage were fundamental factors associated with induced abortion in this study.[92]
- A study in 2011 and 2012 of women seeking safe abortions and post-abortion care in the second gestational trimester demonstrated that second trimester abortion was associated with being unmarried, having low education levels, and being young in age.[93]

Studies have been conducted to ascertain the perspectives of healthcare providers on provision of safe abortion in Ethiopia:

**Table 10: Ethiopia, Provider Perspectives (n=2)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Health Providers' Perception Towards Safe Abortion Service at Selected Health Facilities in Addis Ababa*[94] | Peer-reviewed journal article | March25-April 15, 2008; Published 2011 | To assess health providers' perceptions towards abortion | Cross-sectional survey of a random sample of healthcare providers in the capital city (n=431) | 29% of providers reported having been trained in safe abortion; 27% of said that they would be comfortable working in a facility where the procedure was performed |
| *Personal Beliefs and Professional Responsibilities: Ethiopian Midwives' Attitudes toward Providing Abortion Services after Legal Reform*[95] | Peer-reviewed journal article | May 2013; published 2015 | To understand midwives and midwifery students' decisions regarding provision of safe abortion services | Cross-sectional survey of midwives attending a national conference in the capital city (n=188); in-depth interviews with 12 third-year midwifery students | 53% of midwives were willing to perform safe abortions, 17% were possibly willing, and 30% were not willing |

- In 2008 in Addis Ababa, 431 healthcare providers were surveyed: 29% of providers reported having been trained in safe abortion care and only 27% of said that they would be comfortable working in a facility where the procedure was performed.[94] The majority of providers cited religious reasons in their objection to abortion.[94]
- Midwives and midwifery students in Addis Ababa were also surveyed in 2013 on their

willingness to provide abortions: 53% were willing, 17% were possibly willing, and 30% were not willing.[95]

In addition to the scope of and socio-cultural discourse on abortion in Ethiopia, the quality of abortion-related services in Ethiopia has been documented to a greater extent than in many other sub-Saharan African countries:

**Table 11: Ethiopia, Quality of Services (n=7)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Assessment of Quality of Post Abortion Care in Government Hospitals in Addis Ababa, Ethiopia*[96] | Peer-reviewed journal article | November 2001-February 2002; Published 2005 | To assess the quality of post-abortion care in the capital city | Cross-sectional study with women who received post-abortion care at four hospitals In the capital city (n=422); interviews with post-abortion care providers (n=42) | 92% of patients reported satisfaction with the care they received; only 3% received a post-abortion contraceptive method; 94% were not informed of danger signs that would merit a return to the hospital |
| *An Assessment of Postabortion Care in Three Regions in Ethiopia, 2000 to 2004*[97] | Peer-reviewed journal article | 2000-2004; Published 2008 | To assess post-abortion care following training interventions with healthcare personnel | Baseline and end line assessments were conducted at health facilities (n=119) in three regions of Ethiopia before and after training and supply interventions took place in 42 of the sites | Provider capacity, minimum number of skilled providers, and availability of post-abortion contraception improved; there was additional need for training on pain management and provision of post-abortion contraception |
| *Factors Associated with Choice of Post-Abortion Contraception in Addis Ababa, Ethiopia*[98] | Peer-reviewed journal article | October 2008-February 2009; Published 2011 | To determine factors associated with use of modern long-acting contraceptive methods following post-abortion care | Review of medical files of women who sought abortion-related care in seven health facilities in the capital city (n=1200) | Factors associated with adoption of a post-abortion contraceptive method included higher education levels, having a greater number children, being seen in a private facility, and being in the age range of 25-29 years |

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| *Client Preferences and Acceptability for Medical Abortion and MVA as Early Pregnancy Termination Method in Northwest Ethiopia*[99] | Peer-reviewed journal article | March-November 2009; published 2011 | To assess client preferences and acceptability of medical abortion | Pre-abortion and post-abortion questionnaires completed by women with pregnancies up to 63 days gestation (n=414; 251 medical abortions and 159 manual vacuum aspiration procedures) | 92% of patients were satisfied with their medical abortion; 82% of patients were satisfied with their manual vacuum aspiration |
| *An Unequal Burden: Risk Factors for Severe Complications Following Unsafe Abortion in Tigray, Ethiopia* [100] | Peer-reviewed journal article | June 2009-June 2010; Published 2012 | To study factors associated with complications following post-abortion care | Prospective study of women seeking post abortion care (n=266) at 30 facilities using facility records and patient interviews | Those suffering from severe complications were more likely to be married, and they had more lifetime pregnancies and higher number of births |
| *Post Abortion Care Quality Status in Health Facilities of Guraghe Zone, Ethiopia*[101] | Peer-reviewed journal article | January-March 2010; Published 2013 | To assess the quality of post-abortion care in the health zone | Cross-sectional mixed-methods study of patients (n=422), providers (N=34), and facilities (n=6) | 95% of patients were satisfied with the services they received; 57% received post-abortion family planning methods |
| *Contraceptive Use among Women Seeking Repeat Abortion in Addis Ababa, Ethiopia*[102] | Peer-reviewed journal article | October 2008-February 2009; Published 2013 | To assess characteristics of women seeking initial and repeat post-abortion care, including contraception use | Cross-sectional analysis of patient records from seven health facilities in the capital city (n=1200) | 24% of first time abortion seekers and 19% of repeat abortion seekers left their post-abortion care appointment without a contraceptive method |

- In 2001 and 2002, a study on quality of post-abortion care at four hospitals in Addis Ababa demonstrated that while the overwhelming majority of female patients were satisfied with the care they received, only 3% received a post-abortion contraceptive method and 94% were not informed of potential danger signs that would merit a return to the hospital.[96]
- Provision of post-abortion services were assessed in three regions of Ethiopia following an intervention focused on provider training from 2000-2004.[97] While provider capacity, the minimum number of skilled providers, and availability of post-abortion contraception improved, the study cited a need for additional training on pain management and provision of post-abortion contraception for patients.[97]

- Using medical records from both patients receiving abortions and post-abortion care in 2008 and 2009 in Addis Ababa, a 2011 publication determined that 86% of patients left the hospital with a contraceptive method.[98] Factors associated with adoption of a post-abortion modern or long-acting contraceptive methods included higher education levels, having a greater number children, being seen in a private facility, and being in the age range of 25-29 years.[98]
- In 2009, an acceptability study of medical abortion using misoprostol and mifepristone during the first trimester of pregnancy was conducted in four facilities in Northwest Ethiopia.[99] 92% of patients were satisfied in their experience with medical abortion, as opposed to 82% who were satisfied in their experience with manual vacuum aspiration.[99]
- In 2009-2010, factors associated with severe post-operation complications in patients seeking post-abortion care in Northern Ethiopia were studied.[100] Those suffering from severe complications were more likely to be married, and they had more lifetime pregnancies and higher number or births.[100]
- Satisfaction of post-abortion care services was assessed in a region of Southern Ethiopia in 2010; while 95% of patients were satisfied with the services they received, only 57% received a post-abortion family planning method.[101]
- Use of post-abortion contraception among initial and repeat abortion seekers in Addis Ababa was studied in 2008-2009.[102] 24% of first time abortion seekers and 19% of repeat abortion seekers left their post-abortion care appointment without a contraceptive method.[102]

Finally, eight publications discussed the transformation of Ethiopian abortion law and its subsequent rollout:

**Table 12: Ethiopia, Rollout of the New Abortion Law (n=8)**

| *Publication Title* | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Critical Appraisal of the Law Enforcement in Abortion Care in Ethiopia* [103] | Peer-reviewed journal article | 1998-1999; Published 2003 | To demonstrate discordance between induced abortion rates and legal proceedings against those with illegal abortions | Review of court and legal documents from 216 cases of illegal abortion | Of the 111 men and 215 women were accused of involvement of illegal abortions, 11.7% were convicted and 3.1% were acquitted; enforcement of the law is evident, but not wide-reaching |
| *Advocacy for Legal Reform for Safe Abortion*[104] | Commentary | Published 2004 | To demonstrate the legal process surrounding change in abortion policy | A review of abortion policy in Ethiopia from 1994-2003 | Abortion may be better framed as a public health, not rights-based issue |
| *Early Hiccups in the Implementation of the Revised Abortion Law of* | Letter to the editor | Published 2007 | To outline discrepancies in the Ethiopian abortion law | A commentary on various aspects of the law by an Ethiopian | The author states that the 28 week limitation is too advanced, consent for minors should be accompanied |

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| *Ethiopia*[105] | | | | physician | by the parents' consent, rape should be verified as with any other crime, providers should be subjected to more scrutiny and less immunity, providers should be able to consciously object, there are discrepancies in the two language versions of the law, and the law should not be categorized as liberal because abortion is a punishable criminal act except for under certain conditions |
| *Testing the Safe Abortion Care Model in Ethiopia to Monitor Service Availability, Use, and Quality*[106] | Peer-reviewed journal article | May 2007-May 2009; Published 2011 | To document changes in abortion provision in fifty health facilities in a region of Ethiopia | A baseline assessment and monitoring data were collected before and following training of healthcare providers in comprehensive abortion care in 50 facilities | In the facilities where the intervention took place, there was a 94% increase in the number of safe abortion procedures |
| *A New Hope for Women: Medical Abortion in a Low-Resource Setting in Ethiopia*[107] | Peer-reviewed journal commentary | July 2009-September 2010; Published 2011 | To document changes in mortality from unsafe abortion in an intervention setting | Monitoring data were collected in facilities where the comprehensive abortion care training program was implemented | 4354 safe abortions took place between 2009 and publication of the article in 2011 |
| *Comprehensive Abortion Care: Evidence of Improvements in Hospital-Level Indicators in Tigray, Ethiopia*[108] | Peer-reviewed journal article | 2008-2012; Published 2013 | To assess improvements in abortion indicators at the hospital level | Patient records from four hospitals that received the comprehensive abortion care intervention were analyzed (before, during and after the | The number of abortions that were safe increased from 30% to 80% of all abortions, and post-abortion care decreased from 70% to 20% of all abortion cases over the course of the intervention |

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| *Addressing Unmet Need by Expanding Access to Safe Second Trimester Medical Abortion Services in Ethiopia, 2010-2014*[109] | Peer-reviewed journal blurb | 2010-2013, Published 2014 | To discuss the impact of clinical training interventions on safe abortion care | Eight clinical sites that received a provider training intervention in safe abortion care were monitored | A total of 7484 women accessed services from October 2010 to December 2013, with slightly lower adverse outcomes than preceding the study |
| *Awareness of Female Students Attending Higher Educational Institutions toward Legalization of Safe Abortion and Associated Factors, Harari Region, Eastern Ethiopia: A Cross Sectional Study*[110] | Peer-reviewed journal article | January-March 2012; Published 2015 | To assess female students' awareness of the liberalized abortion policy | Cross-sectional survey of randomly selected female students from eight higher education institutions (n=845) | 35.7% of students demonstrated 'good awareness' regarding Ethiopia's abortion law, meaning they could identify when an abortion is legally permitted in Ethiopia |

- A 2003 publication reviewed data from male and female individuals prosecuted for illegal abortion in 1998 and 1999.[103] Of the 111 men and 215 women that were accused, 11.7% were convicted, 3.1% were acquitted, and the remaining cases were either pending, under investigation, closed or not found.[103] The data demonstrated a significant discrepancy between the number of illegal abortions occurring and the number being prosecuted, but indicated that some enforcement of the law did occur.[103]
- A 2004 publication on the legal history of abortion in Ethiopia stated that due to the traditional culture of Ethiopia, abortion may be better framed as a public health, not rights-based issue.[104] At the time of the publication 2004, the new penal code proposition only opened up conditions for rape and incest, which would not satisfy the need for those seeking abortions.[104]
- A 2007 commentary on Ethiopia's new abortion law from a medical doctor in Addis Ababa argued that the 28 week limitation was too advanced, consent for minors should be accompanied by the parent's consent, rape should be verified as with any other crime, providers should be subjected to more scrutiny and less immunity, providers should be able to consciously object, that there are discrepancies in the two language versions of the law, and that the law should not be categorized as liberal because abortion is a punishable criminal act except for under certain circumstances.[105]
- Following the legal change, a project that trained providers on the provision of safe abortion in 2007-2009 demonstrated that, in the facilities where the intervention took

place, there was a 94% increase in the number of safe abortion procedures.[106]

- A 2011 publication reported on safe abortions in 20 rural health posts Northwestern Ethiopia in 2009-2011, stating that due to implementation of a comprehensive abortion care project, 4354 safe abortions had been conducted in the intervention area over the span of around thirteen months.[107]
- In comparing pre-intervention and post-intervention data from a program to train providers in comprehensive abortion care in Northern Ethiopia from 2008-2012, a 2013 publication demonstrated that the number of abortions that were safe increased from 30% to 80% of all abortions, and post-abortion care decreased from 70% to 20% of all abortion cases.[108]
- A brief published in 2013 discussed that through a program to provide comprehensive abortion care, and specifically abortion care in the second trimester, 7484 women received abortions from October 2010-December 2013.[109]
- In 2012, female students in higher educational institutions were surveyed regarding their knowledge of the abortion law in Ethiopia; 35.7% indicated that they have 'good awareness' regarding Ethiopia's abortion liberalization.[110]

**v. Kenya**

Fourteen publications on the scope of unsafe abortion spanned the length of the search time frame (1997 to 2015):

**Table 13: Kenya, Abortion Prevalence (n=14)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
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| *Unsafe Abortions: Methods Used and Characteristics of Patients Attending Hospitals in Nairobi, Lima, and Manila* [111] | Peer-reviewed journal article | February-June 1993; Published 1997 | To study and compare characteristics of women presenting with complications from unsafe abortion in five health facilities across three countries (one facility in the capital of Kenya) | Women who were confirmed to be presenting with unsafe abortion in the hospital in the capital were interviewed (n=201 in Kenya) | Women who presented with complications from induced abortions in Kenya were single (84%), without children (77%), under 25 years old (91%), and secondary-school educated (82%); 26% of women reported a repeat abortion |
| *Reducing Unsafe Abortion in Kenya* [112] | Population Council Brief | Published 1997 | To discuss unsafe abortion in Kenya and recent interventions | Journalistic interviews with subject experts | Citing several studies prior to the search time frame, the brief estimates that over one-third of maternal death |

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| *Maternal Mortality in Kenya: The State of Health Facilities in a Rural District* [113] | Peer-reviewed journal article | January-December 1997; Published 2001 | To examine factors in maternal mortality in a rural district of Kenya | Retrospective collection of medical records and provider questionnaires at rural health facilities (n=30); focus group discussions (n=30) | Half of the health centers identified unsafe abortion as a key cause of obstetric complications; abortions made up 30% of all registered complications |
| *Sex Workers in Kenya, Numbers of Clients and Associated Risks: An Exploratory Survey*[114] | Peer-reviewed journal article | 2000-2001; Published 2004 | To explore the lives, work, and characteristics of sex workers in rural and urban Kenya | Sex workers were interviewed in four rural towns (n=336) and three townships in the capital city (n=139) | An estimated 86% of female sex workers had experienced at least one abortion in their lifetime |
| *The Magnitude of Abortion Complications in Kenya*[115] | Peer-reviewed journal article | August-December 2002; Published 2005 | To assess the number and characteristics of women with post-abortion complications at a public Kenyan hospitals | Cross-sectional review of medical records of women presenting with post-abortion complications and gestation earlier than 22 weeks at 63 public hospitals in Kenya (n=809) | The annual abortion complications rate was estimated to be 19 per 1000 live births or 3.03 per 1000 women of reproductive age; the case fatality rate was .87% |
| *Unsafe Abortion in Kenya*[116] | Guttmacher Brief | Published 2008 | To describe the situation of unsafe abortion in Kenya; to highlight gaps in the research | Review of recent abortion-related research in Kenya[115] | There were 29 abortions for every 100 live births; however, miscarriages could not be disaggregated from induced abortions in the data |
| *Abortion and Unintended Pregnancy in Kenya*[117] | Guttmacher Brief | Published 2012 | To describe the situation of unsafe abortion in Kenya; to highlight gaps in the research | Review of abortion-related research[115] and policy change in Kenya | Despite a policy change to include provisions for women's life and health, no further research on on unsafe abortion prevalence was conducted following the 2002 study |
| *Hospital Admissions Resulting from* | Peer-reviewed journal | Studies range from 1989-2003; | To estimate hospital admissions from | Review of nationally-representative | The estimated annual hospital admission |

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| *Unsafe Abortion: Estimates from 13 Developing Countries* [118] | article | Published 2006 | unsafe abortion in developing countries | studies in 18 countries, including one in Kenya[115] | incidence in East Africa was 10 per 1000 women of reproductive age (considerably higher than Kenya's rate of 3.03) |
| *Unsafe Abortion in Kenya*[119] | Peer-reviewed journal "short report" | 2002; Published 2005 | To determine causes of maternal mortality in a Kenyan hospital | Review of medical records of all maternal deaths in a referral hospital in 2002 (n=32) | At 25%, complications due to unsafe abortion were the leading cause of death |
| *Maternal Mortality in the Informal Settlements of Nairobi City: What Do We Know?* [120] | Peer-reviewed journal article | January 2003-December 2005; Published 2009 | To identify the causes and magnitude of maternal deaths in two slums in the capital city | Verbal autopsies were conducted on maternal deaths reported in urban demographic surveillance (n=289) | The estimated maternal mortality ratio was 706 deaths per 100,000 live births, with 31% due to unsafe abortion complications |
| *Maternal Morbidity and Mortality in Peri-Urban Kenya--Assessing Progress in Improving Maternal Healthcare* [121] | Peer-reviewed journal article | 2005-2006; Published 2009 | To review maternal mortality and morbidity in a mission hospital | Retrospective facility-based review of medical records of all women aborting or giving birth at the hospital (n=1675) | There was a very low maternal mortality ratio of 2 deaths per 1673 live births; septic abortion was the cause of one of these deaths |
| *Contraceptive Needs of Female Sex Workers in Kenya - a Cross-Sectional Study* [122] | Peer-reviewed journal article | June-December 2008; Published 2011 | To understand use of and unmet need for contraception among female sex workers | Targeted snowball-sampled female sex workers were interviewed across two sites in Kenya (n=597) | 6.2% of female sex workers had produced least one abortion in their lifetime |
| *An Analysis of Pregnancy-Related Mortality in the Kemri/CDC Health and Demographic Surveillance System in Western Kenya* [123] | Peer-reviewed journal article | 2003-2008; Published 2013 | To estimate pregnancy-related mortality and risk factors in Western Kenya | Pregnancy-related deaths were identified through the Health and Demographic Surveillance System (n=249); verbal autopsies were conducted with the primary caregiver of the deceased | 17% of direct pregnancy-related causes of death were attributed to induced or spontaneous abortion; the data between induced abortion and miscarriage could not be disaggregated in the analysis |
| *Unsafe Abortion in Kenya: A Cross-Sectional* | Peer-reviewed journal | 2012; Published 2015 | To describe complications from unsafe | Prospective, 30-day study of women presenting | The case-fatality rate was 266 deaths per |

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| *Study of Abortion Complication Severity and Associated Factors*[124] | article | | abortion and factors associated with unsafe abortion in Kenya | with abortion complications at 292 healthcare facilities in Kenya (n=2625) | 100,000 patients; providers had not been trained to provide safe abortions |

- A multi-country study published in 1997 found that at a Nairobi hospital in 1993, most women who presented with complications from induced abortions were single (84%), without children (77%), under 25 years old (91%) and secondary-school educated (82%).[111] 26% of women reported a repeat abortion.[111]
- An additional 1997 publication that cited several studies prior to the search time frame estimated that over one-third of maternal death in Kenya was due to unsafe abortion.[112]
- A 2001 publication of quantitative and qualitative data collected in 1997 from 30 rural health facilities documented factors contributing to maternal mortality.[113] Half of the health centers identified unsafe abortion as a key cause of complications and abortions made up 30% of all registered complications in those health centers.[113]
- A study conducted in 2000 and 2001 with female sex workers in both urban and rural settings in Kenya was published in 2004; it estimated that 86% of female sex workers had at least one abortion in their lifetime.[114]
- A nationally-representative study of 63 hospitals in 2002 estimated abortion-related complications and was used to inform four publications.[115,116,117,118] It estimated the annual incidence of abortion-related complications to be 3.03 per 1000 women of reproductive age, and the case fatality rate to be .87%.[115] 34% of women presenting with abortion-related complications were adolescents aged 14-19.[115] These data were extrapolated to estimate that 46 spontaneous and induced abortions occur per every 1000 women each year in Kenya,[116] however due to this lack of differentiation between miscarriages and abortion, the true incidence of abortion remained elusive.[117] The data were also used to estimate annual hospital admissions from unsafe abortion in all of East Africa, which was estimated at 10 per 1000 women of reproductive age.[118]
- 32 maternal deaths were identified and investigated at a provincial hospital in 2002, demonstrating that that at 25%, complications due to unsafe abortion were the leading cause of death.[119]
- The use of verbal autopsies in two Nairobi slums from 2003-2005 demonstrated a maternal mortality ratio of 7.06 deaths per 1000 live births, with 31% due to abortion complications from unsafe procedures. [120]
- A two-year study of maternal death in 2004-2006 at a referral hospital reported a low maternal mortality ratio of two deaths for 1673 births.[121] Septic abortion was the cause of one of these deaths.[121]
- A 2008 qualitative and quantitative study with 597 urban and semi-urban sex workers demonstrated that 6.2% had procured least one abortion in their lifetime.[122]
- Surveillance system data covering a 50,820 women of reproductive age in Western Kenya was used to estimate pregnancy-related mortality between 2003 and 2008.[123] While 17% of direct pregnancy-related causes of death were attributed to induced or spontaneous

abortion, the data including both induced abortion and miscarriage was not disaggregated in the analysis.[123]

- A nationally-representative study of referral hospitals in 2012 collected data from 2625 post-abortion care patients.[124] The annual case-fatality rate was 266 deaths per 100,000 patients.[124] The study also explained that providers have not been trained in safe termination of pregnancy, and as such, induced abortions remain unsafe.[124]

Sixteen Publications discussed social and cultural aspects of abortion in Kenya:

**Table 14: Kenya, Social and Cultural Influences on Abortion (n=16)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Adolescent Knowledge, Values, and Coping Strategies: Implications for Health in Sub-Saharan Africa*[125] | Peer-reviewed journal article | Published 1997 | To study adolescents' experiences and knowledge and how it impacts their health | Fifteen age-specific focus groups of urban 12-22 year olds (five male groups, five female groups, five mixed groups) of 12 participants each were conducted once a week for twenty-six weeks | Induced abortion was the ninth most discussed topic; some of the adolescents had experienced abortion; there was discussion of abortion attempts that resulted in live births, suggesting that adolescents sought abortions at late gestational age |
| The Effect of Women's Role on Health: The Paradox[126] | Peer-reviewed journal article (commentary) | Published 1997 | To describe how women are considered custodians of health in African communities, but that they are not enabled to influence health policy | A review of relevant literature on women's roles and women's health | Refusal on behalf of African governments to confront unsafe abortion is a manifestation of disregard for women's health |
| *Developing Community-Based Strategies to Decrease Maternal Morbidity and Mortality Due to Unsafe Abortion: Pre-Intervention Report*[127] | Peer-reviewed journal article | Published 1999 | A baseline study on community perceptions, women's decision making, identification of abortion providers, and potential community collaboration would be used | Focus groups discussions (n=32) and in-depth interviews (n=74) with a variety of different community members in one urban and one rural setting | Unwanted pregnancy (and subsequent unsafe abortion) was associated by young women with not being married; abortions were completed by both health center staff and local/traditional practitioners; traditional providers were viewed as more |

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| | | | to inform future interventions focused on preventing unsafe abortion | | affordable; the male partner's involvement in abortion was typically limited to monetary contributions |
| *Abortion: Knowledge and Perceptions of Adolescents in Two Districts in Kenya*[128] | Peer-reviewed journal article | July 1995-June 1996; Published 1999 | To examine the perceptions held by adolescents in school and adolescents seeking post-abortion care regarding induced abortion in Kenya | Cross-sectional survey of 10-19 year-old students in one urban and one rural setting in Kenya (n=1628) and with adolescent post-abortion patients in the capital (n=192); focus group discussions in the urban and rural schools with different students (n groups=12; n students=133) | The school-based adolescents reported familiarity with where one could go to get an abortion, were generally aware of potential abortion complications, and overwhelmingly disapproved of abortions; the subset of adolescents girls who were interviewed immediately following receipt of post-abortion care were supportive of legalization of abortion and aware of its consequences |
| *Abortion: Behaviour of Adolescents in Two Districts in Kenya*[129] | Peer-reviewed journal article | July 1995-June 1996; Published 1999 | To examine adolescents' behavior surrounding induced abortion | Cross-sectional survey of 10-19 year-old students in one urban and one rural setting in Kenya (n=1628) and with adolescent post-abortion patients in the capital (n=192); focus group discussions in the urban and rural schools with different students (n groups=12; n students=133) | Knowledge of the risks of induced (unsafe) abortions did not deter schoolgirls from seeking out the procedure, nor did knowledge of risk influence from whom they sought the abortion |
| *Nurse-Midwives' Attitudes Towards Adolescent* | Peer-reviewed journal article | September-December 2001, Published | To understand nurse-midwives' perceptions of sexual and | Cross-sectional survey of registered nurse-midwives | 80% of midwives in Kenya disagreed that adolescent girls with unwanted |

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| *Sexual and Reproductive Health Needs in Kenya and Zambia* [130] | | 2006 | reproductive health services for adolescents, in order to inform improved services for adolescents | from two districts in Kenya (n=322) and two districts in Zambia (n=385) | pregnancies should be allowed to have abortions; nurse-midwives were more open to providing contraception than abortion to sexually active adolescents |
| *Poor Pregnancy Outcomes among Adolescents in South Nyanza Region of Kenya*[131] | Peer-reviewed journal article | 2002; Published 2006 | To determine factors associated with poor pregnancy outcomes in adolescents in a region of Kenya | Cross-sectional data from the Adolescent Safe Motherhood Survey was used; secondary data analysis was conducted on 269 completed pregnancies from 245 individuals, supplemented by 39 in-depth interviews with adolescents with pregnancies before age 16 or whose pregnancies did not end in live births | Induced abortions among adolescents were characterized by multiple attempts, some of which ended in abortions and others that ended in birth; drinking a concentrated tea to produce an abortion was mentioned in the interviews |
| *Social Scripts and Stark Realities: Kenyan Adolescents' Abortion Discourse* [132] | Peer-reviewed journal article | Published 2006 | To examine students' reactions to an internet-based cartoon vignette focused on abortion | 614 students (average age =16) responded to hypothetical stories of induced abortion with qualitative responses | 12% of adolescents responded that in hypothetical situations, they would have themselves or their partner procure an abortion; adolescents were generally condemning of abortion, but could also describe friends' experiences with abortion, and acknowledged the social and economic reasons that one would seek an |

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| *Effectiveness of Web-Based Education on Kenyan and Brazilian Adolescents' Knowledge About HIV/AIDS, Abortion Law, and Emergency Contraception: Findings from Teenweb*[133] | Peer-reviewed journal article | Published 2008 | To evaluate knowledge gained by adolescents using a web-based sexual and reproductive health intervention | 1178 students in the Kenyan capital completed a pre-test, received the web-based intervention at a school setting, and then completed a post-test; one of the pre and post tests questions pertained to correct knowledge of abortion laws in Kenya | At baseline, only 14% of Kenyan students correctly identified the conditions under which abortion was legal in their country; this increased to 25% at end line |
| *Intimate Partner Violence and Reproductive Health of Women in Kenya* [134] | Peer-reviewed journal article | 2003; Published 2008 | To understand associations between reproductive health and intimate partner violence in Kenya | Data from the nationally-representative 2003 Demographic and Health Survey was analyzed | An association was made between likelihood to have a terminated pregnancy and experience with intimate partner violence; however, no differentiation was made between induced termination of pregnancy and miscarriage in the analysis |
| *Men, Women, and Abortion in Central Kenya: A Study of Lay Narratives* [135] | Peer-reviewed journal article | 2002-2003; Published 2009 | To understand perceptions of abortion among men and women and to compare those perceptions | 12 focus group discussions with purposively sampled men (6 groups) and women (6 groups) (n=74) who were married and over the age of 25 and lived in both urban and rural areas | Women associated abortion with negative social and economic consequences of more children or children that were mistimed, as well as "inconvenient entry into motherhood," while men associated abortion with women covering up unfaithfulness, adultery or promiscuity |

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| *Gender Scripts and Unwanted Pregnancy among Urban Kenyan Women* [136] | Peer-reviewed journal article | 2009; Published 2011 | To understand narratives of unwanted pregnancy among women in urban settings | Individual, in-depth interviews of purposively sampled women between the ages of 16 and 49 who reported ever having an unwanted pregnancy (n=80) were conducted over the course of four months | Unwanted pregnancies were associated with culturally-inappropriate sexuality of women and women described unwanted pregnancy as a major cause of unsafe abortion |
| *Improving Maternal Health in Kenya: Challenges and Strategies for Low Resource Nations*[137] | Published commentary | Published 2013 | To communicate an opposing view to abortion provision | A Kenyan medical doctor working for a Christian organization in Kenya commented on abortion in Kenya | Safe abortion provision was an unsuitable solution to maternal death in Kenya as it is contrary to the Kenyan view of life, which places fundamental value on children, even before birth |
| *Community Mobilization and Service Strengthening to Increase Awareness and Use of Postabortion Care and Family Planning in Kenya*[138] | Peer-reviewed journal article | July 1, 2010, to December 31, 2011; Published 2014 | To assess the effectiveness of a community-based intervention in awareness and utilization of healthcare services, including post-abortion care | Baseline and end line evaluations took place in three intervention communities and three comparison communities before and after the education-based intervention | The intervention was successful in increasing awareness, but unsuccessful in increasing the use of post-abortion care; stigma around induced abortion likely influenced women's decisions not to seek care; there was no discussion of the change in abortion legislation that occurred during the study period |
| *Women's Perceptions About Abortion in Their Communities: Perspectives* | Peer-reviewed journal article | October 2012; Published 2014 | To understand the methods, providers, and norms used in unsafe abortion procedures in | Five focus groups discussions were conducted with unmarried women under | Abortion services were held outside of the regulated sphere in order to maintain secrecy, because there was a lack of |

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| *from Western Kenya*[139] | | | Western Kenya | age 21 and five focus group discussions were conducted with married women age 24-29 | knowledge about the specifics of Kenya's abortion law, and because women thought that going to a health center would be more expensive than a traditional practitioner; where women knew about a potentially safe option for abortion, the cost for the procedure was unaffordable |
| *Social Networks and Decision Making for Clandestine Unsafe Abortions: Evidence from Kenya*[140] | Peer-reviewed journal article | July 2011-July 2012; Published 2015 | To understand the relevance of social networks in women's decision and procurement of unsafe abortion | Cross-sectional surveys with 320 women treated for post-abortion complications; 2 in-depth case studies of women treated for post-abortion complications; 6 key informant interviews with unsafe abortion providers and 11 with health providers associated with clinics; 2 focus group discussions with community health workers | 95% of women consulted with others before procuring an unsafe abortion; consultation most often occurred with the male partner, female friends, and the woman's mother; 92% of women reported that their confidant advised them to procure the abortion |

- A 1997 publication on weekly focus group discussions with adolescents in Nairobi over the course of six months found that induced abortion was the ninth most discussed topic, and that some of the adolescents had experienced abortion.[125] There was discussion of abortion attempts that resulted in live births, demonstrating that adolescents sought abortions at late gestational age.[125]
- A 1997 commentary on women's health and status in Kenya highlights the paradox around women as "custodians of health in the home" but unable to maintain their own health, using high rates of abortion as an example of indifference by governing bodies.[126]
- A baseline report from an exploratory study on unsafe abortion in a province in Western

Kenya was published in 1999.[127] The researchers found that unwanted pregnancy (and subsequent unsafe abortion) was associated by young women with not being married.[127] Abortions were completed by both health center staff and local/traditional practitioners and traditional providers were viewed as more affordable.[127] The male partner's involvement in abortion was typically limited to monetary contributions.[127]

- Two 1999 publications from a questionnaire-based study conducted with Kenyan adolescents in 1995 and 1996 investigated knowledge, perceptions, and behavior of adolescents in Kenya.[128,129] Adolescents reported familiarity with where one could go to get an abortion, were generally aware of potential abortion complications, and overwhelmingly disapproved of abortions.[128] However, a subset of adolescents girls who were interviewed immediately following receipt of post-abortion care were supportive of legalization of abortion and aware of consequences.[128] The study determined that knowledge of abortion risk did not deter schoolgirls from seeking out the procedure, nor from whom they sought it.[129]
- A 2001 study on nurse-midwives' attitudes towards adolescents' sexual and reproductive healthcare was published in 2006.[130] 80% of midwives disagreed that adolescent girls with unwanted pregnancies should be allowed to have abortions.[130] Nurse-midwives were more open to providing contraception than abortion to sexually active adolescents.[130]
- A 2006 publication used data from in-depth interviews conducted in 2002 with adolescents in Southern Kenya to examine factors surrounding poor pregnancy outcomes.[131] Induced abortions among adolescents were characterized by multiple attempts, some of which ended in abortions and others that ended in birth.[131] Drinking a concentrated tea to produce an abortion was mentioned.[131]
- A 2006 online response forum was used to investigate the adolescent discourse in Kenya around abortion.[132] 12% of adolescents responded that in hypothetical situations, they would have themselves or their partner procure an abortion.[132] Adolescents were generally condemnatory towards abortion, but could also describe friends' experiences with abortion, and acknowledged the social and economic reasons that one would seek an abortion. [132]
- Results from a 2003 web-based health education program in Nairobi were published in 2008.[133] At baseline, only 14% of Kenyan students correctly identified the conditions under which abortion was legal in their country; at end line, this had increased to about 25%.[133]
- Demographic and Health Survey data from 2003 was analyzed and published in 2008, determining an association between likelihood to have a terminated pregnancy and experience with intimate partner violence.[134] However, no differentiation was made between induced termination of pregnancy and miscarriage in the analysis.[134]
- A 2009 publication on the lay narratives around abortion among men and women in Central Kenya used qualitative data from 2002-2003.[135] Women associated abortion with negative social and economic consequences of more children or children that were mistimed, as well as "inconvenient entry into motherhood," while men associated abortion with women covering up unfaithfulness, adultery or promiscuity.[135]
- Data regarding factors associated with unwanted pregnancy was collected from 80

women in Nairobi in 2009.[136] The 2011 publication of the analyzed data demonstrated that unwanted pregnancies were associated with culturally-inappropriate sexuality of women and women described unwanted pregnancy as a major cause of unsafe abortion.[136]

- A 2013 commentary from a Kenyan obstetrician and gynecologist argues that safe abortion provision is an unsuitable solution to maternal death in Kenya as it is contrary to the Kenyan view of life, which places fundamental value on children, even before birth.[137]
- As reported in a 2014 publication, an intervention that took place in three Kenyan communities from 2010-2012 was unsuccessful in increasing the use of post-abortion care, and offered stigma around induced abortion as a likely explanation.[138] There was no discussion of the change in abortion legislation that occurred during the study period.[138]
- Focus group discussions on the subject of safe abortion services were conducted with women in Western Kenya in 2012.[139] Women noted that abortion services were held outside of the regulated sphere in order to maintain secrecy, because there was a lack of knowledge about the specifics of Kenya's abortion law, and because women thought that going to a health center would be more expensive than a traditional practitioner.[139] Even when women knew about a potentially safe option for abortion, the cost for the procedure was unaffordable.[139]
- Data from a questionnaire-based study with 320 women who received post-abortion care was published in 2015.[140] 95% of women consulted with others before getting a clandestine abortion. Consultation most often occurred with the male partner, female friends, and the woman's mother; 92% of women reported that their confidant advised them to procure the abortion.[140]

Three published studies on provision of post-abortion family planning provision also demonstrate cultural influences on utilization of services:

**Table 15: Kenya, Post-Abortion Care (n=3)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Creating Linkages between Incomplete Abortion Treatment and Family Planning Services in Kenya*[141] | Peer-reviewed journal article | 1996-1997; Published 1999 | To assess and compare three different models of post-abortion contraceptive provision in Kenya: by health staff on the gynecology ward (model 1), by family planning-specific staff on the gynecology ward (model 2), or by family | The three different models were implemented in six different hospitals (two each), and evaluated for effectiveness by the percentage of post-abortion patients leaving the facility with a contraceptive method | Model 1 was most effective when measured by the percentage of woman who left with a contraceptive method (82%); models 2 and 3 were less effective (62% and 54%, respectively) |

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| | | | planning-specific staff at a family planning clinic (model 3) | | |
| *Age Matters: Differential Impact of Service Quality on Contraceptive Uptake among Post-Abortion Clients in Kenya*[142] | Peer-reviewed journal article | January-June 2006; Published 2012 | To study contraceptive uptake among post-abortion care patients | Two in-depth interviews with post-abortion care providers in a private clinic in a town in Kenya; retrospective review of medical records of 1080 post-abortion care patients | Contraceptive counseling and free methods were offered to all women; contraceptive uptake increased by 36% those over 26 years of age and by 6% in those under the age of 18; youth remained unable to utilize services even when they were free and available |
| *Post-Abortion Care Services for Youth and Adult Clients in Kenya: A Comparison of Services, Client Satisfaction and Provider Attitudes*[143] | Peer-reviewed journal article | September-December 2009; Published 2014 | To examine how post-abortion care experiences differ based on the age of the client | Post-abortion care patients from eight health facilities in two Kenyan provinces were surveyed over the phone following their procedure (n=283); 20 providers were also interviewed | 15-24 year-olds received fewer contraceptive methods following post-abortion care than other age groups; low levels of knowledge about contraception and fear regarding side-effects (including infertility) were reasons for low uptake among women in this age range |

A 1997 study demonstrates that provision of post-abortion family planning information and services would be most effective and acceptable when offered on the same obstetric and gynecologic ward where women received their post-abortion care, as opposed to in a different location indicated specifically for family planning.[141] Providing family planning in the same location as post-abortion care was relevant in these settings because male partners could be present, whereas cultural acceptability prohibited their attendance at locations intended uniquely for providing family planning.[141] A 2006 study in rural Kenya introduced post-abortion family planning counseling and free contraception.[142] While contraceptive uptake increased by 36% those over 26 years of age, it only increased by 6% in those under the age of 18, demonstrating that youth remain unable to utilize services even when they are free and available.[142] A 2009 study shows similar results: while some provisions of post-abortion care were

shown to be the same across age groups, 15-24 year olds received fewer contraceptive methods following post-abortion care than other age groups.[143] Low levels of knowledge about contraception and fear regarding side-effects (including infertility) were cited as reasons for low uptake among this age range.[143]

Abortion by and pertaining to people living with HIV/AIDS has also been documented in Kenya:

**Table 16: Kenya, People Living with HIV and Abortion (n=2)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Maternal Health Care Utilization among HIV-Positive Female Adolescents in Kenya*[144] | Peer-reviewed journal article | 2009; Published 2011 | To examined the use of maternal health services by female youth living with HIV | Youth living with HIV were identified through HIV-focused programs; 506 pregnancy histories from 393 female adolescents were analyzed | It was uncommon for these adolescents to receive skilled healthcare for abortion, miscarriage, or stillbirth (20%) but relatively common for them to receive skilled healthcare for a live birth (78%) |
| *Factors Associated with Unintended Pregnancy, Poor Birth Outcomes and Post-Partum Contraceptive Use among HIV-Positive Female Adolescents in Kenya*[145] | Peer-reviewed journal article | 2009; Published 2012 | To investigate factors surrounding unintended pregnancies, adverse pregnancy outcomes, and contraceptive use among female adolescents living with HIV | Cross-sectional surveys of youth living with HIV, identified through HIV-focused programs; data from female youth who had ever been pregnant were analyzed (n=394) | Adolescent females living with HIV were less likely to procure an abortion if they were married; higher-order pregnancies were more likely than first pregnancies to end in abortion (potentially demonstrating the use of abortion to space births) |

A 2009 study documented outcomes and experiences pertaining to unwanted pregnancy among 15-19 year old females living with HIV.[144] It was uncommon for these adolescents to receive skilled healthcare for abortion, miscarriage, or stillbirth (20%) but relatively common for them to receive skilled healthcare for a live birth (78%).[144] Data from this study was again analyzed and published in 2012, determining that these adolescents were less likely to procure an abortion if they were married, and that higher-order pregnancies were more likely than first pregnancies to end in abortion (potentially demonstrating the use of abortion to space births).[145]

The provision of particular medical practices in post-abortion care has been studied:

| Table 17: Kenya, Medical Practices Surrounding Abortion (n=3) | | | | | |
|---|---|---|---|---|---|
| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
| *Provision of Abortion by Mid-Level Providers: International Policy, Practice and Perspectives*[146] | Peer-reviewed journal article | Published 2009 | To describe abortion policies (specifically as they relate to providers) in 13 countries | Review of PubMed and Popline databases for studies from 13 countries, including Kenya | 44 nurse-midwives at private facilities in Kenya were successfully trained to use manual vacuum aspiration for post-abortion care |
| *Implementation of Misoprostol for Postabortion Care in Kenya and Uganda: A Qualitative Evaluation*[147] | Peer-reviewed journal article | March-April 2010; Published 2013 | To perform a qualitative evaluation of a program implementing the use of misoprostol for post-abortion care in Kenya and Uganda | In-depth interviews with key informants (providers, trainers, facility managers, etc.) in five public hospitals in Kenya during a post-abortion care training intervention that took place from January 2009-October 2010 (n=15) | Providers reported positive experiences on behalf of themselves and their patients when using misoprostol for post-abortion care; there was difficulty getting women to return for follow-up visits; there were no national guidelines for use of misoprostol |
| *Facilitating Women's Access to Misoprostol through Community-Based Advocacy in Kenya and Tanzania*[148] | Peer-reviewed journal article | 2012; Published 2014 | To assess the effectiveness of interventions lead by community-based organizations to educate community members about gynecological uses of misoprostol | Seven community-based organizations in the capital and 11 in a smaller city were given grants for around $2000 that were used for nine months; follow-up was conducted with each group during and following the intervention | High acceptability of the intervention was reported by all but one group; the one deviant group experienced pushback from anti-abortion (anti-choice) students at a medical school in the capital city |

A 2008 commentary on the global success of post-abortion care by mid-level providers cites a project that successfully trained nurse-midwives in Kenya to complete post-abortion care using manual vacuum aspiration.[146] A qualitative evaluation on providers' experiences using misoprostol for post-abortion care took place from 2009-2010.[147] Providers reported positive experiences on behalf of themselves and their patients when using misoprostol for post-abortion

care, despite the absence of national guidelines for use of misoprostal.[147] Finally, a 2012 study investigated acceptability by local (community-based) organizations to distribute information on the gynecological uses of misoprostol and how/where to procure it; high acceptability was reported by the organizations.[148]

Lastly, significant commentary surrounding abortion controversies and abortion policy has taken place in Kenya:

**Table 18: Kenya, Politics Surrounding Abortion (n=6)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Kenyan Government Admits to High Maternal Death Rates*[149] | Lancet Commentary | Published 2001 | To report on recent developments on abortion in Kenyan politics | Journalistic reporting on government statistics on pregnancy-related complications released in October 2001 | A representative from the Kenyan government reported that half or more of the estimated 700 women who die every year from pregnancy complications are due to unsafe abortion |
| *Kenya Government's Shake up of Health Services Provokes Anger*[150] | Lancet Commentary | Published 2001 | To report on recent developments on abortion in Kenyan politics | Journalistic reporting on recommendations set forth by a government-appointed consulting team to liberalize the abortion law | There was potential for a change in abortion law in Kenya following the consultants' report; 4000 practitioners threatened to strike if a bill liberalizing abortion provision was drafted |
| *Abortion Law Reform in Sub-Saharan Africa: No Turning Back*[151] | Peer-reviewed journal article | Published 2004 | To explain abortion laws with colonial origins in the region and to describe current post-abortion care efforts | A review of select abortion laws in sub-Saharan Africa and commentary on recent politics on abortion in Kenya | In 2004, there was initial public support for safe abortion services due to findings from a study on unsafe abortion complied by the Kenyan government and non-government partners; a change in public opinion about providing abortion kits to clinics occurred when 15 fetuses were found with documents from a local clinic in a likely "set-up" near an anti–abortion church |
| *Murder Charge for Abortion* | Journal article | Published 2005 | To describe the dynamic events | Journalistic reporting on | A well-known physician and two |

| | | | | | |
|---|---|---|---|---|---|
| *Doctor Divides Medical Profession in Kenya*[152] | | | surrounding a medical doctor associated with illegal abortion in Kenya | current events | nurses were arrested following the discovery of fifteen fetuses near an anti-abortion church and charged with murder |
| *Legislating against Sexual Violence in Kenya: An Interview with the Hon. Njoki Ndungu*[153] | Peer-reviewed journal article | Published 2006 | To describe a member of parliament's perceptions of a 2006 Kenyan bill on sexual offences | An in-depth interview with the Honorable Njoki Ndungu, Member of the Kenyan Parliament | Groups tried to block the passing of the "Sexual Offenses Act" by providing misinformation that it included text about legalization of abortion (which it did not); the issue of abortion was incredibly polarizing at that time |
| *Contribution of Obstetrics and Gynecology Societies in East, Central, and Southern Africa to the Prevention of Unsafe Abortion in the Region*[154] | Peer-reviewed journal article | 2009-2014, Published 2014 | To demonstrate the progress made by societies of obstetricians/ gynecologists (OBGYNs) in select African countries | A review of the actions taken by the OBGYNs to address unsafe abortion | The Kenya OBGYN society was able to conduct trainings and sensitizations of healthcare workers in comprehensive abortion care and register misoprostol and mifepristone for reproductive health indications; stigma inhibited operationalization of abortion guidelines in Kenya |

A 2001 publication reported on a statement by the Kenyan government that at least half of the estimated 700 women who die every year from pregnancy complications are due of unsafe abortion.[149] The publication also stated that the Medical Services Assistant Minister of Kenya encouraged Parliament to bring an amendment to the abortion law to the Kenya's House of Represenatives.[149] An additional press release in 2001 speculated that there was potential for a change in abortion law in Kenya; this occured after the publication of a report by consultants hired by the Ministry of Health on how to coordinate laws to improve health care delivery.[150]

Publications from 2004 and 2005 describe the contentious atmosphere in Kenya surrounding abortion.[151, 152] In 2004, there was initial public support for safe abortion services due to findings from a study on unsafe abortion complied by the Kenyan government and non-government partners.[151] However, a change in public opinion about providing abortion kits to clinics occurred when 15 fetuses were found with documents from a local clinic in a likely "set-up" near an anti–abortion church.[151] The arrest of a well-known physician and two nurses was followed by the

proposition of a new constitution that would declare life to begin at conception.[151] In 2005, an additional press release noted that the aforementioned doctor and nurses were charged with murder of two fetuses found in Naiobi.[152]

A 2006 interview with a Kenyan Member of Parliament discussed the adoption of the 2006 Sexual Offences Act.[153] The Member of Parliament discussed that groups tried to block the act by providing misinformation that it included text about legalization of abortion, which it did not, demonstrating how polarizing the issue of abortion was at that time. [153]

A 2014 publication outlined the involvement of The Kenya OBGYN Society in establishing a protocol to deliver comprehensive abortion care in public hospitals "to the full extent of the law", mentioning trainings and sensitizations of healthcare workers in comprehensive abortion care as well as the registration of misoprostol and mifepristone for reproductive health indications.[154] The article concludes that operationalization of guidelines for safe abortion is limited due to stigma.[154]

**vi. Mali**

The four publications from Mali included studies on the scope of unsafe abortion, voluntary intoxication, and characteristics associated with women who procure unsafe abortions:

**Table 19: Mali, All Publications (n=4)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Complications of Illegal Induced Abortions at Bamako (Mali) between December 1997 and November 1998*[155] | Peer-reviewed journal article | December 1997-November 1998; Published 2000 | To determine socio-demographic characteristics of women with pregnancy complications | Retrospective review of medical records at a referral hospital in the capital city of all women who presented for post-abortion care (n=1081) | 18.3% of cases were the result of induced and illegal abortions; 72% of induced abortions were procured at a medical practitioner's home and the median age of women was 20.8 |
| *Epidemiology and Risk Factors for Voluntary Intoxication in Mali*[156] | Peer-reviewed journal article | 2000-2010; Published 2013 | To describe factors associated with voluntary intoxication | Retrospective study of medical records from voluntary intoxications in 15 hospitals (n=884, n females=651) | 42.2% of women who poisoned themselves were pregnant, which could mean that they were either attempting to terminate a pregnancy or commit suicide |
| *Assessment of Maternal* | Peer-reviewed | 1989-1994; Published | To estimate the maternal | Prospective study of 4717 pregnant | The maternal mortality ratio of |

| | | | | | |
|---|---|---|---|---|---|
| *Mortality and Late Maternal Mortality among a Cohort of Pregnant Women in Bamako, Mali*[157] | journal article | 1999 | mortality rate of the capital city | women identified through quarterly household visits | 327 deaths per 100,000 births did not include cases of early-term induced (clandestine) abortion |
| *Induced Abortion. Report of 180 Cases at the Gabriel Toure Hospital*[158] | Peer-reviewed journal article | September 2003-June 2004; Published 2008 | To study factors associated with induced abortion | Prospective study of 180 women presenting with induced abortion at a referral hospital in the capital | 51% of the women were between the ages of 16 and 20 and 80% were single |

Two studies on the scope of unsafe abortion were conducted in Mali; one was prior to the 2002 legal change and the second was conducted during and after the legal change. From 1997-1998, medical files were reviewed from patients presenting with pregnancy complications at a referral hospital in Bamako showed that 18.3% were the result of unsafe and illegal abortions.[155] The average age of those presenting with abortion was 20.8 years, 72% had never had children, and 21% said that the reason they had the abortion was so that they could stay in school.[155] The majority of cases were performed by state nurses and midwives (57%) and most were carried out at the home of the practitioner (71%).[155]

From 2010-2015, data was collected on death and hospitalization from voluntary intoxication in Mali.[156] 42.2% of women who poisoned themselves were pregnant, which could mean that they were either attempting to terminate a pregnancy or commit suicide.[156]

An additional study published in 1999 argued that while the overall maternal mortality ratio in Bamako was estimated to be 327 deaths per 100,000 live births, deaths from clandestine abortions were unlikely to be counted in this ratio; deaths due to clandestine abortions often occurred before the second trimester, which is when women would state or declare that they were pregnant.[157]

Analysis of 180 cases of induced abortion at a referral hospital in Bamako from 2003-2004 showed that 51% of women were between the ages of 16 and 20 and 80% were single, demonstrating that being young and not married were associated with procuring an abortion.[158]

### vii. Niger

Estimates for maternal mortality due to abortion are extremely limited in Niger:

| **Table 20: Niger, All Publications (n=2)** | | | | | |
|---|---|---|---|---|---|
| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |

| | | | | | |
|---|---|---|---|---|---|
| *Preventable Maternal Mortality in an Urban Area in Niamey (Niger)*[159] | Peer-reviewed journal article | July 1, 1992-January 25, 1994; Published 1997 | To determine avoidable factors contributing to maternal mortality in the capital city | For each of 25 maternal deaths, a retrospective survey was given at three locations: the facility of admission, the facility of referral, and with the family | Two of the deaths were due to unsafe abortion |
| *Maternal Mortality in Niger: A Retrospective Study in a High Risk Maternity*[160] | Peer-reviewed journal article | January 1, 2007-December 31, 2007; Published 2011 | To analyze maternal deaths occurring in a tertiary hospital in the capital city | Retrospective, facility-based review of records from 121 maternal deaths | 11% of maternal deaths were due to unsafe abortion |

Prior to the legal change in 2006, an analysis of 25 maternal deaths was conducted in Niamey.[159] Two of the deaths were due to unsafe abortion, which the restrictive law did not inhibit women from procuring.[159]

In 2007, all obstetric deaths at a tertiary referral hospital in Niamey were studied; 11% were due to unsafe abortion.[160] The overall maternal mortality ratio was estimated at 26.4 deaths per 1000 live births.[160]

**viii. Rwanda**

Of the three publications from Rwanda, one discussed the scope of post-abortion care in Rwanda, one discussed financial implications of post-abortion care, and one discussed the politics and personal stories surrounding unsafe abortion in the country:

**Table 21: Rwanda, All Publications (n=3)**

| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
|---|---|---|---|---|---|
| *Abortion Incidence and Postabortion Care in Rwanda*[161] | Peer-reviewed journal article | May-August 2010; Published 2012 | To estimate the incidence of induced abortion in Rwanda | Nationally-representative survey of health facilities providing post-abortion care (n=165) and a purposively-sampled key informant surveys (n=56) | 7 of every 1000 women of reproductive age received post-abortion care; 40% of women with clandestine abortions required post-abortion care; the estimated annual abortion rate was 25 per 1000 women |

| | | | | | |
|---|---|---|---|---|---|
| *The Health System Cost of Post-Abortion Care in Rwanda*[162] | Peer-reviewed journal article | Analysis of data from 2012; Published 2014 | To estimate the cost of post-abortion care to the Rwandan healthcare system | Used 2012 data[161] and estimates of direct and indirect costs of post-abortion care | Each post-abortion care patient cost the national health system $93, resulting in a total annual cost of $1.7 million |
| *Advocating for Safe Abortion in Rwanda: How Young People and the Personal Stories of Young Women in Prison Brought About Change*[163] | Peer-reviewed journal article | 2009-2012; Published 2013 | To describe advocacy efforts that lead to the change in the reproductive health law in Rwanda | Review of advocacy efforts that took place preceding the legal change in the country | Twenty-one of 114 women in a Rwandan prison were sentenced for unlawful abortion and 90% were under the age of 25; their reasons for seeking abortion included rape, incest, transactional sex, the desire to finish school, and social norms |

In 2012, the same year that legal reform on abortion occurred in Rwanda, a nationally representative survey of 166 health facilities from 2009 was published.[161] It reported that 7 of every 1000 women of reproductive age received treatment for post-abortion complications, and that 40% of women with clandestine abortions ultimately required treatment for complications.[161] Using this data, it was estimated that the induced abortion rate—of which all were illegal at the time of the study—was 25 per 1000 women, or about 60,000 annual incidences.[161] 39 of these 166 health facilities were sampled again in 2012 to estimate the total cost of post-abortion care at health facilities in Rwanda.[162] The 2014 publication of this data estimated that each post-abortion care patient cost the national health system $93, resulting in a total annual cost of $1.7 million.[162]

In 2013, one year after legal reform took place, a paper was published outlining how a youth group used qualitative interviews with young women imprisoned for illegal abortions to advocate for the change in law.[163] Twenty-one of 114 women in a Rwandan prison were identified as having received sentences for unlawful abortion, and 90% were under the age of 25.[163] Their testimonies cited rape, incest, transactional sex, the desire to finish school, and social/familial norms as reasons for seeking abortions; despite the law change, these women did not have their sentences reduced.[163]

**ix. Swaziland**

The published literature from Swaziland focused on abortion as it pertains to female sex workers and adolescents.

| Table 22: Swaziland, All Publications (n=2) | | | | | |
|---|---|---|---|---|---|
| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
| *Health Providers' Perceptions of Adolescent Sexual and Reproductive Health Care in Swaziland*[164] | Peer-reviewed journal article | January-March 2005; Published 2008 | To investigate the perceptions of healthcare providers on sexual and reproductive healthcare services for adolescents | Semi-structured questionnaires with healthcare providers from 11 health facilities in 2 regions of Swaziland (n=56) | Providers were more comfortable with the idea of providing post-abortion care to adolescents than with providing actual abortion procedures |
| *Use of Emergency Contraceptive Pills among Female Sex Workers in Swaziland*[165] | Peer-reviewed journal article | July-September 2011; Published 2014 | To examine the use of emergency contraception among female sex workers | Cross-sectional questionnaire administered to purposively-sampled female sex workers (n=325) | Lifetime abortion incidence among female sex workers was estimated to be 11.7% |

In 2005, the same year that legal reform took place in Swaziland, 56 healthcare workers from 11 health centers were interviewed regarding provision of abortion to adolescents.[164] The qualitative findings were published in 2008, and demonstrated "unresolved" perspectives among providers; moral objections to the procedure were juxtaposed with the harsh realities that pregnant adolescent girls faced.[164] The majority of providers were more comfortable with the idea of providing post-abortion care than actual abortion procedures.[164]

One study published in 2014 estimated lifetime abortion incidence among female sex workers to be 11.7%.[165] While data were collected in 2011, six years after the legal change in Swaziland, these abortions were understood to have occurred outside of the legal sphere.[165]

**x. Togo**

Abortion in Togo was only discussed as a risk factor for pre-term delivery in later pregnancies:

| Table 23: Togo, All Publications (n=1) | | | | | |
|---|---|---|---|---|---|
| Publication Title | Type of Publication | Time period | Purpose | Methods | Key findings related to induced abortion |
| *Risk Factors Associated with Prematurity at the University Hospital of Lome, Togo*[166] | Manuscript | Over the course of 6 months, before December 2001 (not specified); Published 2002 | To determine the rate of premature births and contributing factors | Prospective, descriptive study of all births before 37 gestational weeks in the University Hospital in the capital (n=186) | 11.3% of women with premature births had a history of induced abortion |

In 2002, a substantial risk of preterm delivery at the central teaching hospital in Lomé, Togo,

was history of induced abortion (11.3%).[166]

# Chapter 4: Implications

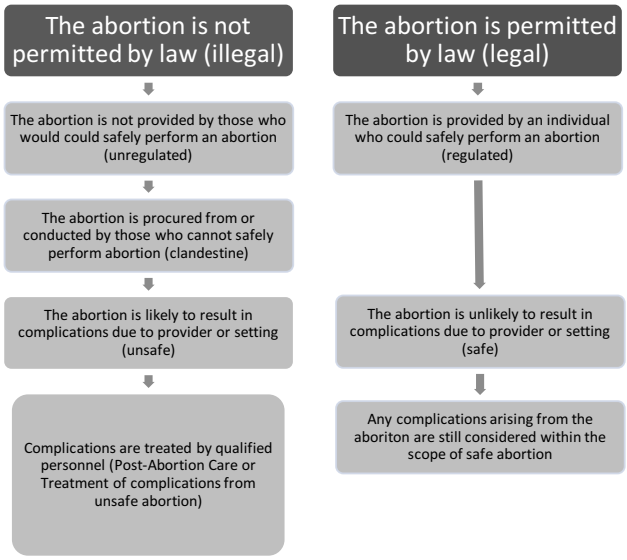
## E. What does it mean? Discussing abortion themes across the continent

These 117 publications demonstrate an unequal distribution of research on safe and unsafe abortions and associated factors across the 10 identified countries. While the country of Chad produced no relevant literature within the parameters of the search terms and time period, both Kenya and Ethiopia have substantial documentation of the abortion situation in their respective countries before, during, and after legal change. Given this unequal distribution, it should be understood that the thematic findings of the literature are oriented towards Kenya and Ethiopia. Furthermore, as evident through the aforementioned country-specific literature sections, the heterogeneity of the publications does not lend itself to a traditional systematic review or meta-analysis of the data. Given this, the following thematic analysis seeks to produce an inclusive overview of the emergent concepts from the literature and produce a holistic picture of the abortion situations in the selected countries.

### Theme I: Unsafe abortion is equated with illegal abortion, and vice versa

The number of hospitalizations and deaths from unsafe abortion demonstrated throughout the literature affirm that unsafe pregnancy termination is pervasive across the continent, and that mortality and morbidity from unsafe abortion remain real and constant threats to women and girls living in the region. Clandestine, unsafe, unregulated, and illegal abortions are lumped in together in terminology and usage across the literature, which essentially creates a dichotomous concept of abortion, as demonstrated in the below figure:

**Figure 1: Abortion Terminology in the Literature**



While the reality of this dichotomous interpretation of unsafe versus safe abortion is inherently subjective and circumstantial (e.g. there are women who induce their own abortions that do not suffer complications, and there are individuals who provide safe abortions even though they are not qualified, per se, to do so)[76], this frame is consistently used as it allows for dichotomous measurement and interpretation (legal=safe, illegal=unsafe). The World Health Organization definition equating unsafe abortion to those procedures "performed by an individual without the necessary skills, or in an environment that does not conform to the minimum medical standards, or both," and its classification of 97% of abortions in Africa as unsafe, reinforces this dichotomous frame. [15] Therefore, in understanding that the majority—if not all—of the literature subscribes to the idea that an abortion cannot be considered safe unless it is legal, there is no discussion of safe abortion prior to legal change in any country, *even if illegal abortions resulted in safe outcomes during that period.*

**Theme II: Unsafe abortion is underestimated**

Mortality and morbidity relating to unsafe abortion are quantified using two measures: death from confirmed or suspected unsafe abortions (including suicide by attempted abortion), and instances of post-abortion care (including poisoning) sought at medical facilities. Both death and complications resulting from unsafe abortion may be a) directly witnessed/counted b) counted using confidants-based methods or autopsies/retrospective questioning or c) not counted.

Notably, instances of post-abortion care represent those women with unsafe abortions that resulted in complications severe enough to merit a visit to a health facility and who had the means to seek care, meaning that the demonstrated burden of post-abortion care only represents a subset of the actual instance of unsafe abortions that resulted in complications. Likewise, direct count of death from unsafe abortion would follow the same line of reasoning, with the additional consequence of death that occurred after unsuccessful treatment. In understanding this, the publications that attempt to estimate instances of abortion or abortion-related morbidity/mortality both within and beyond the scope their respective population subsets do so with substantial limitations.

However, given that these limitations are founded in reporting bias by women, families, and providers[53, 87, 157], sparse data[84], and the inability to differentiate between data on miscarriages and induced abortions[117, 123, 134], it is possible to hypothesize that underreporting/counting, and not over reporting/counting, remains the key issue in estimating unsafe abortion instance at the study level. That is, due to the historically restrictive legal and social environments concerning abortion that are demonstrated across these ten countries, there is much to gain for a woman, family, or provider by denying that an unsafe abortion occurred, but very little to gain by stating that an unsafe abortion occurred when it didn't.

**Theme III: Unsafe abortion measurement following legal change is limited to Ethiopia**

Complications from unsafe abortion were shown to make up substantial percentages of obstetric-related hospital admissions and death in this subset of countries prior to legal change

[51, 73, 74, 76, 78, 88, 112, 113, 114, 115, 116, 117, 118, 119, 120, 155, 160, 161, 166] and following legal change. [57, 58, 60, 61, 62, 63, 80, 81, 82, 89, 124, 156] To understand relative pre and post-law change, however, only Ethiopia's literature offers enough nationally-representative data from both timeframes to extrapolate potential impacts for the law change.

Importantly, Ethiopia's legal change in abortion policy was implemented in 2005 with the establishment of a new penal code, and in that legal change, abortion became permitted under the conditions of rape, incest, and fetal impairment, whereas the previous penal code only permitted abortion under the conditions threatening the mother's life or health.[13] However, Ethiopia also instituted additional provisions for abortion that allowed for the procedure when the woman was a minor (under age 18) and when she suffered from physical or mental disability.[24] These additional indications make Ethiopia unique in this subset of countries as they are beyond the scope of the Maputo Protocol's minimum standard of conditions for abortion provision.[18] While Rwanda included an additional condition for women who were victims of forced marriage, this condition falls under the umbrella of rape, as written.[41]

In Ethiopia, studies prior to the legal change were smaller in scope than those that followed legal change. No nationally representative study on the prevalence of unsafe abortion was conducted prior to 2005, but the instance of post-abortion care was estimated using provider recall from 95 randomly selected health facilities in all but two regions of the country in 1996. [73] Hospitals estimated that they averaged 439 patients a year, where rural health centers and posts averaged 55 per year. [73] A World Bank publication reports the number of hospitals and health centers/posts in Ethiopia in 1997/1998 to be 96 and 1084, respectively.[167] If the same estimated post-abortion care incidence is applied to this number of facilities, estimates for 1997/1998 post-abortion care incidence would approximately be 42,144 at hospitals and 59,620 at health centers/posts, totaling 101,764. Importantly, the 1996 study did not provide clinical diagnosis of unsafe abortion, and that the number extrapolated from those estimates likely also include cases of miscarriage-related complications that were misclassified as complications from unsafe abortion. Alternatively, these post-abortion care cases also only represented those women with unsafe abortions who had complications severe enough to merit treatment and who were able to reach health facilities. However, according to a study of 1158 married women in rural Northern Ethiopia in 1997, 53% of women did not seek any post-abortion care upon pregnancy termination/loss (be it from miscarriage or unsafe abortion).[74] If this same proportion is applied to the aforementioned estimated 101,764 number of post-abortion cases in 1997/1998, unsafe abortion incidence could have been as high as 216,519 during that year.

Following legal change, a nationally representative study from 2007-2008 that estimated annual incidence of unsafe abortion to be 382,000 and annual incidence of post-abortion care to be 52,600 has been widely cited in the post-legalization era literature and provides the most comprehensive coverage of any study.[80] The study also determined that around 103,000 safe abortion procedures took place in a one-year time period in Ethiopia.[80] While it cannot be determined, per se, that these 103,000 safe abortion cases would have otherwise been unsafe abortion cases, the literature demonstrated that no safe abortions were recorded prior to the legal change. As demonstrated by these numbers, the nationally representative study proposes

a much higher unsafe abortion-to post-abortion care ratio than the 53% cited in 1997. As such, if post-abortion care alone is used as a proxy to indicate unsafe abortion incidence, 2007 would demonstrate significant decreases in post-abortion complications from 1997.

An additional attempt was made to determine the impact that the change in abortion policy had on one hospital's incidence of patients presenting with compilations from unsafe abortions.[77] From 2003-2007, 773 post-abortion care patients were admitted to the hospital, with 598 preceding legalization and 175 following legalization.[77] While both the case fatality ratio and the proportion of severe abortion complications presenting to the hospital grew after legalization, the actual incidence of post-abortion complications dropped.[77] This drop in post-abortion care cases aligns with the aforementioned national-level estimations.

**Theme IV: Women and girls procure unsafe abortions for social reasons**

Across the studies that explicitly asked women why they procured or would theoretically procure an unsafe abortion and among publications that associated certain factors with the procurement of unsafe abortion, two major themes appeared.

1. The pregnant individual was categorized in her socio-cultural context as prematurely pregnant. This prematurity, however, was not characterized exclusively by age, but rather by her status as a youth or student[75, 93, 155, 158, 163] or more often, as her status as an unmarried individual. [90, 91, 92, 93, 111, 127, 135, 136, 145, 158, 163], While individual desires were expressed in the qualitative studies (e.g. the individual wishing to complete her studies and not being able to do so if she is pregnant) [163] there was also substantial discussion of the fear of social consequence as a result of a socially-defined premature pregnancy (e.g. family would be disgraced if their daughter had a child).[75,135] This is of particular relevance because it allows for the understanding that abortion which is sought due to premature pregnancy is not done so uniquely for the benefit of the individual, and maintains even a technically illegal act within the collectivist nature of sub-Saharan African cultures.

2. Birthing and raising a child or an additional child would not be economically favorable to the pregnant individual or her family.[75, 91, 135, 158] This was characterized through women providing an economic reason for why they sought the unsafe abortion that lead to a need for post-abortion care [75, 91, 158] as well as in community-based qualitative interviews.[135]

The literature was almost completely void of the following reasons that women seek unsafe (or safe) abortions: fetal abnormalities, threats to the woman's mental and physical health, and threats to the woman's life. Rape and incest were given as reasons for unsafe abortions [91, 158] but were sometimes implied (e.g. a teacher/older community member/ family member impregnating a teenager) instead of explicitly stated.[163] Rape was also notably left out of the findings section of one study, despite being given as a reason for procuring an unsafe abortion in the study data.[158]

Only one study explicitly asked men why women seek unsafe abortions.[135] The consensus from

men in that study was that women seeking unsafe abortions did so to terminate pregnancies that were a result of unfaithfulness, promiscuity, or adultery.[135] Women from the same study (interviewed separately) cited the same thematic reasons that emerged from other literature (premature and economically unfavorable pregnancies). [135]

**Theme V: Youth bear a unique burden**

Complications from unsafe abortion as a youth and adolescent health issue featured predominantly in the literature. While categorization of adolescents and youth varied among the literature, generally these groups were made up of females under the age of 20. In some cases, this extended to age 25. In addition to the aforementioned discussion of association between premature pregnancy and unsafe abortion, three additional themes surrounded abortion and youth:

1. Adolescents/youth made up substantial portions of post-abortion care cases in several studies. In Kenya, a publication from 1997 showed that 91% of post-abortion cases in two hospitals were for patients under 25[111] and in a 2005 publication, 14-19 year olds made up 34% of cases.[115] A 2008 publication from Mali saw 51% of PAC patients between the ages of 16-20.[158] Adolescents were also characterized as make numerous of attempts to procure an abortion before succeeding. [131]

2. Female adolescents themselves see unsafe abortion as a risk for their age groups. Interviews in Kenya and Rwanda demonstrated self-awareness by adolescents of their own vulnerability for unsafe abortion, citing ignorance about pregnancy and contraception. [125,163] Additional studies from Kenya showed that adolescent knowledge about the risks of unsafe abortion did not deter them from seeking the procedure, and that adolescents often make multiple attempts before successfully completing an abortion or giving up. [128, 129]

3. Providers treat adolescents differently than other women of reproductive age. Midwives in Kenya and Swaziland were opposed to the idea of providing abortions for adolescents experiencing unwanted pregnancies.[130, 164] Adolescents were also less likely to be provided with post-abortion contraception. [142,143]

**Theme VI: Need for pregnancy termination supersedes fear of legal repercussion**

Discussion of the illegality of abortion in the designated countries pervades the background sections of nearly all the publications, yet legal action taken against individuals procuring illegal abortions was only mentioned in two of the 117 publications.[103, 163] Given this, it is perhaps unsurprising that women seeking and procuring illegal abortions in these countries (which, again, may only be estimated by the proxy indicator of the number of women seeking post-abortion care) appear to demonstrate that the potential benefits of terminating a pregnancy outweigh fears regarding potential legal repercussion.

This substantial gap in the literature could be understood in terms of a public health (rather than

legal) focus in the literature identified through the search terms on PubMed, but is perhaps more critically analyzed through the idea that in the sub-Saharan African setting, abortion laws and policies are more effective in restricting access to services than to prosecuting infractions. This is of particular interest as many of the abortion laws and polities (*see Table 2)* are enacted though national penal codes, which by definition, outline punishments for crimes committed.

**Theme VII: Accessibility and acceptability are barriers following liberalization**

Some disconnect between legal authorization of abortion and the operationalization of services has been demonstrated in the literature following rollout of liberalized abortion policy.

Ethiopia, which in 2015 was ten years past the advent of liberalization, provides some evidence of this concept. In 2007-2008, positive results from a nationally-representative study showed that 90% of facilities reported offering first trimester safe abortions, and 67% of facilities reported offering second trimester safe abortions.[82] Furthermore, in 2013 at specific intervention sites where providers have been targeted, provision of safe abortions has occurred in significant numbers[109] and the percentage of women seeking safe abortion has superseded the number seeking post-abortion care.[108] This output at the health center level, however, is juxtaposed with two studies from 2012 where only about one-third of surveyed university females knew about the legal criteria for abortion in their country.[85, 110] Provider objection to abortion was also studied in 2008 with less than a third of select providers stating that they would be comfortable if the procedure was performed at their facility[94], though in 2013, 70% of midwives and midwifery students surveyed said they would be willing or possibly willing to perform safe abortions.[95]

This discordance between the legal policy for safe abortion and awareness/acceptability of the procedure has implications for a woman's ability to access a safe abortion. The persistence of unsafe abortion taking place when legal and safe procedures are available demonstrates that crucial components of safe abortion services (as discussed in thematic finding II) are at odds with women's realities. Providers' objections to the service provides some insight into what one of those critical components may be, but perception of cost (discussed in Theme VIII), as well as generalized need for secrecy due to social stigma is also highlighted in the literature.[65, 100,101] Similar discordance between liberalized policies and awareness of the circumstances under which abortion may be legally performed was highlighted among providers in Burkina Faso[71] and community members in Kenya.[139] Furthermore, a targeted invention to increase the number of women with post-abortion complications who sought care that was implemented directly following liberalization of the law was unable to bring more women into facilities, and cited stigma (not fear of legal repercussion) as a primary deterrent.[138]

**Theme VIII: Unsafe abortion is costly**

The financial cost of unsafe abortions for individuals and healthcare systems was also estimated throughout the literature. In Rwanda in 2012, the average cost of an individual's post-abortion care was USD$93, resulting in a total national annual cost of USD$1.7 million.[162] In Burkina Faso, higher post-abortion care cost was associated with induced abortion (USD$89) than with

miscarriages (USD$56)[62] and poorer women were identified as paying more for unsafe abortions and subsequent care due to multiple failed attempts.[66] A similar concept is seen in Kenya, where unsafe abortion was generally perceived as less expensive than safe abortion at a health facility, when in fact, it was not.[127]

While none of the 117 publications explicitly calculated the cost of a safe abortion in the selected countries, the same study that estimated costs per post-abortion case and at the national level in Rwanda cites an additional study from Uganda estimating a safe abortion to cost between $6 and $23 per patient.[168] This stark difference between safe abortion costs and treatment costs for post-abortion care should also take into consideration that post-abortion care cost for the individual does not account for the payment the women or her family/partner may have paid to a traditional healer for products to induce an unsafe abortion.

**Theme IX : Medical innovations and personnel interventions work**

A significant number of studies, including randomized control trials and acceptability studies in clinical studies, were conducted on the use of medical abortions to treat post-abortion complications, and in some places, to provide safe abortions.[56,58,68,70,99] Misoprostol and misoprostol in combination with mifepristone in early gestational pregnancy (range: 12-18 weeks and under) was found to be both highly effective and acceptable to patients and providers in Benin, Burkina Faso, Kenya and Ethiopia.[56,68,69,70,99,147] Successful training of providers[97], and specifically mid-level providers (i.e. nurse midwives[146]), in post-abortion care demonstrates that within the legal boundaries of given countries' abortion policies, personnel can be trained and supported to provide services, and that post-abortion care through both manual vacuum aspiration and medication administration is feasible in these settings. In Ethiopia, provider trainings have resulted in increased numbers of patients seeking and procuring safe abortion, which the literature argues would be in place of otherwise unsafe procedures.[106,107,108,109]

## F. Limitations of the literature

The amassed publications included in this document seek to capture all relevant studies on unsafe abortion, induced abortion, and post-abortion care in the given countries during the relevant time frame. However, their limitations are significant.

First, they are limited to publications identified by the PubMed search features In English, French, Spanish and Portuguese, and as a result, are exclusive of those studies that were not composed in those languages. With the exception of Ethiopia, all of the selected countries had a national language of either English or French, which likely resulted in relatively few publications omitted due to language. The Ethiopian Medical Journal, the source of many of Ethiopian articles, is published in English. However, press releases were more likely affected by the language exclusion, as they are the least likely to be translated into French or English, as opposed to a formal study published in a scientific journal.

Very few of the publications represented national-level or nationally-representative studies, and when aggregated, provided somewhat piecemeal picture of each country's abortion situation. Further implications of this reality include general emphases on capital cities or easily accessible communities, as well as communities where international non-government organizations that work on safe abortion operate.

As discussed throughout the thematic findings, underreporting of induced abortion likely skewed those prevalence studies that were based on incidence frequencies, and not statistical modeling. Attempting to quantify a highly stigmatized and often illegal procedure naturally lends itself to issues of data collection, including reporting and social desirability biases, and in the case of post-abortion care, confirmation bias and misclassification with spontaneous miscarriage.

The quality and rigor of the studies were also not addressed in this document, as the epidemiological and statistical assessment of each individual quantitative study was beyond the scope of the project. It should be understood that that those publications offering individual opinion pieces, press releases, and professional commentaries were noted in the literature, and used as anecdotal evidence to support larger themes around abortion in each country. Methodology for qualitative and quantitative studies varied significantly between publications, even within the same country and timeframe. Publications were largely vetted by their availability on the PubMed search feature, and those that were not related to induced abortion were removed though selection methods (see: Chapter 2).

Finally, it should be noted that the scope of the literature presented here focuses intentionally on public health related studies and scientific discourse surrounding abortion. While many of the qualitative studies focused on socio-cultural determinants of health, they do not include analysis of religious doctrine or socio-cultural interpretations of religion that contribute to the formation and implementation of abortion laws and policies across the continent.

## G. Policy recommendations

The thematic findings from this body of literature, which spanned the eras before, during, and after policy change, should inform current policy developments in other sub-Saharan African countries and also lend insight to countries that have seen recent liberalization in abortion policy. The following six recommendations are derived directly from the published literature and seek to respond to unsafe abortion using a public health frame: if unsafe abortion is a cause of morbidity and mortality, the policy that seeks to reduce unsafe abortion should target the distal factors that lead women to unsafe abortions.

i. Recognize the published literature on the public health impact of unsafe abortion

The ten countries and 117 publications examined in this document demonstrate a substantial portion of the public health research and discourse on unsafe abortion, but by no means cover

the entire scope of the literature on abortion, unsafe abortion, and post-abortion care in sub-Saharan Africa. The majority of sub-Saharan African countries have assessed in some form of formal study the prevalence or scope of post-abortion care in their respective settings, and in doing so found that unsafe abortion exists within their borders, constituting a public health problem that is largely left unaddressed by national policies. Obtaining copies of these studies, however, requires requesting research articles from institutions and libraries around the world, many of which are not located in the countries in which the studies took place. In amassing the data and studies in a respective country, the policy maker or policy influencer gains evidence upon which to base their assertions.

ii. Acknowledge the root causes of post-abortion care

The discussion of post-abortion care both in the literature and within national policy falls into a somewhat safe domain because it has the ability to obscure the origin of the abortion and allows for ambiguity around whether it was induced or spontaneous. However, as seen through the examination of the literature in question, a significant portion of post-abortion care is indisputably treatment for induction of an abortion that was intentionally conducted without coercion and at significant risk to the woman's life, health, social status, and general wellbeing. Post-abortion care is treatment for a preventable state of physical harm that was induced in a manner that caused medical complications. As such, post-abortion care should be understood as a reaction to a lack of safe abortion practice, and not a substitute for it.

iii. Understand the impact of criminalizing medical treatment

Abortion is one of the only medical procedures that appears in the penal codes of many African countries, thereby pushing it out of the medical sphere and into the criminal sphere. While legal proceedings against those who have completed induced abortions under conditions that were not legal are not well documented in the literature, they can reasonably be considered to make up only a very small portion of those who actually seek unsafe (illegal) abortions. As such, it is shown that criminalizing abortion neither restricts women from procuring abortions, not does it successfully punish those who do so. If the laws that govern abortion, therefore, act neither as a deterrent from nor a punishment for seeking the procedure, they are ineffective in achieving their intended outcome. From the literature, it is identified that restricting safe and legal abortion is only successful in pushing women towards unsafe procedures.

iv. Conceptualize the cost of unsafe abortion

The financial costs of treating unsafe abortion through post-abortion care are shown to be substantially more than providing safe abortions. The further cost of lives lost due to unsafe abortion, and the cost impacts of morbidity for women are also substantial. While cost-analysis of post-abortion care and mortality/morbidity from unsafe abortion have not been conducted in every country, those countries that have conducted analyses demonstrate that treating the results of unsafe abortion, and not abortion itself, is not cost effective.

v. Match the policy with the need

With the exception of Ethiopia, which allows abortion under so-called social conditions, the legal provisions for safe abortion in these sub-Saharan African countries simply do not match up with the reasons that the majority of women seek unsafe abortions. This lack of cohesion equates attempting to use a set of conditions (risk to life, risk to health, fetal malformations, rape and incest, or some combination thereof) to answer to a public health need that is not, in large part, created by those conditions. Certainly, survivors of rape and incest, as well as women whose pregnancies pose a threat to their mental health, have been noted in the literature, though their percentages have not superseded those seeking abortion for economic reasons or those seeking abortions because they wish to continue their studies. Furthermore, women seeking unsafe abortions due to threats to the health, life, or condition of either the fetus or the woman have simply not appeared in the literature, which does not meant that they don't exist—but rather that their scope is dwarfed by women seeking abortion for other reasons.

This is not to say, however, that the ambition of the Maputo Protocol's contributions to abortion provision is futile, but rather that the conditions themselves appear to share very little consistency with factors for unsafe abortion as demonstrated in the aforementioned studies and published commentaries. In fact, the Maputo Protocol is in large part laying the groundwork for what could eventually become less restrictive abortion policies in the future. However, while much discourse surrounding the Maputo Protocol cites morbidity and mortality from unsafe abortion in Africa as the reason for its inclusion of Article 14, the provisions, as demonstrated, are simply not based in public health evidence. Rather, the approach of the Maputo Protocol in addressing unsafe abortion is conducted through a rights-based frame, in which certain women have the right to procure safe abortions (instead of unsafe abortions) and others do not. In order to effectuate change, the women who are seeking and procuring unsafe abortions are those who need to be targeted for access to safe abortion. In addition to the Maputo Protocol guidelines, those given legal access to abortion must include, at the very least, women seeking abortion for social reasons, economic reasons, and academic reasons.

vi. Implement a policy that can be operationalized

The scope of this document is limited in its study of operationalization of abortion policies, but successful interventions (as seen in Theme IX) demonstrate that providers, including mid-level providers, can be trained to effectively provide safe abortions. A policy that not only allows providers to complete safe abortions, but also trains and empowers them to do so, is perhaps the single greatest enabler of services, as reduced stigma and greater acceptability of safe abortion within communities will be irrelevant without trained professionals who can complete the procedure effectively.

# References


1. United Nations Population Division, Department of Economic and Social Affairs. *Classification of Countries by Major Area and Region of the World*, 2012. World Population Prospects: The 2012 Revision.

2. Guilbert, Kieran. "Sierra Leone Legalizes Abortion, Will Save 'Countless' Lives: Activists." *Reuters*, December 10, 2015.

3. IPAS. "Sierra Leone Parliment Votes to Reform Abortion Law." December 8, 2015.

4. Sedgh, Gilda, Susheela Singh, Iqbal H. Shah, Elisabeth Åhman, Stanley K. Henshaw and Akinrinola Bankole. "Induced Abortion: Incidence and Trends Worldwide from 1995 to 2008." *The Lancet* 379, no. 9816 (2012): 625-632.

5. Gerdts, Caitlin, Ozge Tunçalp, Heidi Johnston and Bela Ganatra. "Measuring Abortion-Related Mortality: Challenges and Opportunities." *Reproductive Health* 12, no. 1 (2015): 1-3.

6. Grimes, David A., Janie Benson, Susheela Singh, Mariana Romero, Bela Ganatra, Friday E. Okonofua and Iqbal H. Shah. "Unsafe Abortion: The Preventable Pandemic." *The Lancet* 368, no. 9550 (2006): 1908-1919.

7. Brookman-Amissah, E. and J. B. Moyo. "Abortion Law Reform in Sub-Saharan Africa: No Turning Back." *Reprod Health Matters* 12, no. 24 Suppl (2004): 227-34.

8. Singh, S., Hussain, R., Bankole A., and Sedgh, G. *Abortion Worldwide: A Decade of Uneven Progress*. Guttmacher Institute, 2009.

9. Hord, Charlotte and Merrill Wolf. "Breaking the Cycle of Unsafe Abortion in Africa." *African Journal of Reproductive Health / La Revue Africaine de la Sante Reproductive* 8, no. 1 (2004): 29-36.

10. Ngwena, C.G. "Reforming African Abortion Laws." In *Abortion Law in Transnational Perspective*, edited by R.J. Cook, Erdman, J.N., Dickens, B.M., 166-186. Philadelphia: University of Pennsylvania Press, 2014.

11. République Démocratique du Congo. Code Penal Congolais. Journal Officiel, Special. 2004. http://www.wipo.int/wipolex/en/details.jsp?id=7510. (Accessed 1 January 2016).

12. United Nations Population Division, Department of Economic and Social Affairs. Democratic Republic of Congo Abortion Policy, 2001.

13. United Nations, Department of Economic and Social Affairs, Population Division. Abortion

Policies and Reproductive Health around the World. 2014.

14. RAISE Initiative. *Safe Abortion in Emergencies: Democratic Republic of Congo*. 2014.

15. Guttmacher Institute. *Fast Facts on Abortion in Africa*. 2015.

16. Singh, S. and I. Maddow-Zimet. "Facility-Based Treatment for Medical Complications Resulting from Unsafe Pregnancy Termination in the Developing World, 2012: A Review of Evidence from 26 Countries." *BJOG: An International Journal of Obstetrics & Gynaecology*, (2015).

17. Healy, J., K. Otsea and J. Benson. "Counting Abortions So That Abortion Counts: Indicators for Monitoring the Availability and Use of Abortion Care Services." Int J Gynaecol Obstet 95, no. 2 (2006): 209-20.

18. African Union. *Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa.* 2003.

19. African Union. *List of Countries Which Have Signed, Ratified/Acceded To The Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa.* 2013.

20. Warriner, IK and Shah, IH, eds., *Preventing Unsafe Abortion and its Consequences: Priorities for Research and Action.* Guttmacher Institute, 2006.

21. Ngwena, C. G., E. Brookman-Amissah and P. Skuster. "Human Rights Advances in Women's Reproductive Health in Africa." *Int J Gynaecol Obstet* 129, no. 2 (2015): 184-7.

22. Guttmacher, S., Kapadia, F., Naude, J.T.W., and de Pinho, H. "Abortion Reform in South Africa: A Case Study of the 1996 Choice on Termination of Pregnancy Act." *International Family Planning Perspectives* 24, no. 4 (1998).

23. Boland, R., and Katzive, L. "Developments in Laws on Induced Abortion: 1998–2007." *International Family Planning Perspectives* 34, no. 3 (2008).

24. Center for Reproductive Rights. *Briefing Paper, Abortion Worldwide: 20 Years of Reform*. 2014.

25. Jewkes, R. and H. Rees. "Dramatic Decline in Abortion Mortality Due to the Choice on Termination of Pregnancy Act." *S Afr Med J* 95, no. 4 (2005): 250.

26. Center for Reproductive Rights, "Benin's Abortion Provisions" http://www.reproductiverights.org/world-abortion-laws/benins-abortion-provisions (accessed 1 January 2016).

27. *Burkina Faso: Code Pénal*, 13 December 1996, available at: http://www.refworld.org/docid/3ae6b5cc0.html (accessed 1 January 2016).

28. Burkina Faso Assemblee Nationale. *Loi N. 049-2005/AN Portant Sante De La Reproduction*, 22 Decembre 2005. http://www.africanchildforum.org/clr/Legislation%20Per%20Country/burkina%20faso/bfaso_reproductivehealth_2005_fr.pdf (accessed 1 January 2016).

29. Burundi. *Décret-loi n° 16 du 4 Avril 1981 portant réforme du code pénal*. http://cyber.law.harvard.edu/population/abortion/Burundi.abo.html (accessed 1 January 2016).

30. Burundi. *Code Pénal du Burundi, Loi N°1 / 05 Du 22 Avril 2009 Portant Revision Du Code Penal.* https://www.icrc.org/ihl-nat.nsf/0/cb9d300d8db9fc37c125707300338af2/$FILE/Code%20Pénal%20du%20Burundi%20.pdf. (accessed 1 January 2016).

31. Center for Reproductive Rights. *The World's Abortion Laws 2016.* http://worldabortionlaws.com/map/. (accessed 1 January 2016).

32. Isaac, K. "Abortion Legislation in Eritrea: An Overview of Law and Practice." *Med Law* 24, no. 1 (2005): 137-61.

33. Penal Code of the State of Eritrea. 2015. http://www.refworld.org/pdfid/55a51ccc4.pdf. (accessed 1 January 2016).

34. The Penal Code of Ethiopia of 1957, No. 158 of 1957. http://www.refworld.org/pdfid/49216a0a2.pdf. (accessed 1 January 2016).

35. The Criminal Code of the Federal Democratic Republic of Ethiopia. Proclamation No. 414/2004. http://www.wipo.int/wipolex/en/text.jsp?file_id=248268. (accessed 1 January 2016).

36. The Republic of Kenya. Penal Code, Chapter 63 of revised edition 2012 (2010). http://www.vertic.org/media/National%20Legislation/Kenya/KE_Penal_Code.pdf. (accessed 1 January 2016).

37. The Constitution of Kenya. 2010. https://www.kenyaembassy.com/pdfs/The%20Constitution%20of%20Kenya.pdf. (accessed 1 January 2016).

38. Women on Waves. *Abortion Law Niger.* https://www.womenonwaves.org/en/page/5013/abortion-law-A5:I24. (accessed 1 January 2016).

39. Republique du Niger. Assemblee Nationale du Niger du 24 Mai 2006. Loi sur la santé de la reproduction au Niger.

http://www.hsph.harvard.edu/population/trafficking/niger.reproduction.06.pdf. (accessed 1 January 2016).

40. Code Pénal du Rwanda du 1977. http://www.wipo.int/wipolex/en/details.jsp?id=901. (accessed 1 January 2016).

41. Organic Law Instituting the Penal Code of Rwanda. Law N° 01/2012/OL of 02/05/2012. http://www.police.gov.rw/uploads/tx_download/Official_Gazette_no_Special_of_14.06.2012. (accessed 1 January 2016).

42. United Nations Population Division, Department of Economic and Social Affairs. Swaziland Abortion Policy, 2013. www.un.org/esa/population/abortion/doc/swaziland.doc. (accessed 1 January 2016).

43. The Constitution of the Kingdom of Swaziland Act, 2005. http://www.icla.up.ac.za/images/constitutions/swaziland_constitution.pdf. (accessed 1 January 2016).

44. Republique Togolaise. Loi Portant Code de la Sante Publique de la Republique Togolaise du 13/5/09. http://apps.who.int/medicinedocs/documents/s21006fr/s21006fr.pdf. (accessed 1 January 2016).

45. République du Cameroun. *Code Penal n° 67/LF/1 Du 12 Juin 1967.* http://www.vertic.org/media/National%20Legislation/Cameroon/CM_Code_Penal_Cameroun.pdf. (accessed 1 January 2016).

46. United Nations Population Division, Department of Economic and Social Affairs. Cape Verde Abortion Policy, 2001. www.un.org/esa/population/abortion/doc/capeve1.doc. (accessed 1 January 2016).

47. Equatorial Guinea Act No. 1/1991 of 4 April 1991 regulating abortion. ttp://www.hsph.harvard.edu/population/abortion/EQUATORIALGUINEA.abo.htm. (accessed 1 January 2016).

48. Boletim Da República, Publicação Oficial Da República De Moçambique, 14.suplemento. http://www.wlsa.org.mz/leisnacionais/. (accessed 1 January 2016).

49. Uganda. The Penal Code Act. June 15, 1950. http://www.wipo.int/wipolex/en/text.jsp?file_id=170005. (accessed 1 January 2016).

50. Fourn, L., E. B. Fayomi and T. Zohoun. "[Prevalence of Induced Abortions and Family Planning in Benin]." *J Gynecol Obstet Biol Reprod (Paris)* 26, no. 8 (1997): 804-8.

51. Goyaux, N., T. Calvez, F. Yace-Soumah, C. Welfens-Ekra, O. Faye, L. De Bernis, F. Diadhiou, M.

Goufodji, E. Alihonou, N. Carre and P. Thonneau. "[Obstetric Complications of the First Trimester in Western Africa]." *J Gynecol Obstet Biol Reprod (Paris)* 27, no. 7 (1998): 702-7.

52. Goyaux, N., E. Alihonou, F. Diadhiou, R. Leke and P. F. Thonneau. "Complications of Induced Abortion and Miscarriage in Three African Countries: A Hospital-Based Study among Who Collaborating Centers." *Acta Obstet Gynecol Scand* 80, no. 6 (2001): 568-73.

53. Capo-chichi, V. and F. Juarez. "Is Fertility Declining in Benin?" *Stud Fam Plann* 32, no. 1 (2001): 25-40.

54. Jacques, S., O. Edgard-Marius and D. Bruno. "[Maternal Deaths Audit in Four Benin Referral Hospitals: Quality of Emergency Care Causes and Contributing Factors]." *Afr J Reprod Health* 10, no. 3 (2006): 28-40.

55. Oludiran, O. O. and F. E. Okonofua. "Morbidity and Mortality from Bowel Injury Secondary to Induced Abortion." *Afr J Reprod Health* 7, no. 3 (2003): 65-8.

56.Adisso, S., B. I. Hounkpatin, G. D. Komongui, O. Sambieni and R. X. Perrin. "Introduction of Misoprostol for the Treatment of Incomplete Abortion Beyond 12 Weeks of Pregnancy in Benin." *Int J Gynaecol Obstet* 126 Suppl 1, (2014): S36-9.

57. Lankoande, J., C. M. Ouedraogo, A. Ouedraogo, B. Tieba, M. Akotionga, J. Sanou and B. Kone. "[Maternal Mortality in Adolescents at the University Hospital of Ouagadougu]." *Rev Med Brux* 20, no. 2 (1999): 87-9.

58. Rossier, C., G. Guiella, A. Ouedraogo and B. Thieba. "Estimating Clandestine Abortion with the Confidants Method--Results from Ouagadougou, Burkina Faso." *Soc Sci Med* 62, no. 1 (2006): 254-66.

59. Filippi, V., R. Ganaba, R. F. Baggaley, T. Marshall, K. T. Storeng, I. Sombie, F. Ouattara, T. Ouedraogo, M. Akoum and N. Meda. "Health of Women after Severe Obstetric Complications in Burkina Faso: A Longitudinal Study." *Lancet* 370, no. 9595 (2007): 1329-37.

60. Ganaba, R., T. Marshall, I. Sombie, R. F. Baggaley, T. W. Ouedraogo and V. Filippi. "Women's Sexual Health and Contraceptive Needs after a Severe Obstetric Complication ("near-Miss"): A Cohort Study in Burkina Faso." *Reprod Health* 7, (2010): 22.

61. Sedgh, G., C. Rossier, I. Kabore, A. Bankole and M. Mikulich. "Estimating Abortion Incidence in Burkina Faso Using Two Methodologies." *Stud Fam Plann* 42, no. 3 (2011): 147-54.

62. Ilboudo, P. G., S. M. Somda and J. Sundby. "Key Determinants of Induced Abortion in Women Seeking Postabortion Care in Hospital Facilities in Ouagadougou, Burkina Faso." *Int J Womens Health* 6, (2014): 565-72.

63. Ouattara, A., A. Ouedraogo, C. M. Ouedraogo and J. Lankoande. "[Unsafe Abortions in Countries That Restrict Legal Abortions. Epidemiologic, Clinical, and Prognostic Aspects at the University Hospital Center Yalgado-Ouedraogo of Ouagadougou]." *Med Sante Trop* 25, no. 2 (2015): 210-4.

64. Vlassoff, M., A. Sundaram, A. Bankole, L. Remez and D. Belemsaga-Yugbare. "Benefits of Meeting Women's Contraceptive Needs in Burkina Faso." *Issues Brief (Alan Guttmacher Inst)*, no. 1 (2011): 1-33.

65. Rossier, C. "Abortion: An Open Secret? Abortion and Social Network Involvement in Burkina Faso." *Reprod Health Matters* 15, no. 30 (2007): 230-8.

66. Ouedraogo, R. and J. Sundby. "Social Determinants and Access to Induced Abortion in Burkina Faso: From Two Case Studies." 2014, (2014): 402456.

67. Ilboudo, P. G., G. Greco, J. Sundby and G. Torsvik. "Costs and Consequences of Abortions to Women and Their Households: A Cross-Sectional Study in Ouagadougou, Burkina Faso." *Health Policy Plan* 30, no. 4 (2015): 500-7.

68. Dao, B., J. Blum, B. Thieba, S. Raghavan, M. Ouedraego, J. Lankoande and B. Winikoff. "Is Misoprostol a Safe, Effective and Acceptable Alternative to Manual Vacuum Aspiration for Postabortion Care? Results from a Randomised Trial in Burkina Faso, West Africa." *Bjog* 114, no. 11 (2007): 1368-75.

69. Blandine, T., A. Z. Ouattara, A. Coral, C. Hassane, H. Clotaire, B. Dao, J. Lankoande, A. Diop and J. Blum. "Sublingual [Corrected] Misoprostol as First-Line Care for Incomplete Abortion in Burkina Faso." *Int J Gynaecol Obstet* 119, no. 2 (2012): 166-9.

70. Shochet, T., A. Diop, A. Gaye, M. Nayama, A. B. Sall, F. Bukola, T. Blandine, O. M. Abiola, B. Dao, O. Olayinka and B. Winikoff. "Sublingual Misoprostol Versus Standard Surgical Care for Treatment of Incomplete Abortion in Five Sub-Saharan African Countries." *BMC Pregnancy Childbirth* 12, (2012): 127.

71. Casey, S. E., S. K. Chynoweth, N. Cornier, M. C. Gallagher and E. E. Wheeler. "Progress and Gaps in Reproductive Health Services in Three Humanitarian Settings: Mixed-Methods Case Studies." *Confl Health* 9, no. Suppl 1 Taking Stock of Reproductive Health in Humanitarian (2015): S3.

72. Storeng, K. T. and F. Ouattara. "The Politics of Unsafe Abortion in Burkina Faso: The Interface of Local Norms and Global Public Health Practice." *Glob Public Health* 9, no. 8 (2014): 946-59.

73. Jeppsson, A., M. Tesfu and L. Bohmer. "Magnitude of Abortion-Related Complications in Ethiopian Health Facilities: A National Assessment." *East Afr Med J* 76, no. 10 (1999): 547-51.

74. Getahun, H. and Y. Berhane. "Abortion among Rural Women in North Ethiopia." *Int J Gynaecol Obstet* 71, no. 3 (2000): 265-6.

75.Kebede, S., C. Jira and D. Mariam. "A Survey of Illegal Abortion in Jimma Hospital, South Western Ethiopia." *Ethiop Med J* 38, no. 1 (2000): 35-42.

76. Tadesse, E., S. Yoseph, A. Gossa, E. Muletta, D. Pogharian, K. Ketsella and Z. Hawaz. "Illegal Abortions in Addis Ababa, Ethiopia." *East Afr Med J* 78, no. 1 (2001): 25-9.

77. Gebrehiwot, Y. and T. Liabsuetrakul. "Trends of Abortion Complications in a Transition of Abortion Law Revisions in Ethiopia." *J Public Health (Oxf)* 31, no. 1 (2008): 81-7.

78. Gaym, A. "Maternal Mortality Studies in Ethiopia--Magnitude, Causes and Trends." *Ethiop Med J* 47, no. 2 (2009): 95-108.

79. Baggaley, R. F., J. Burgin and O. M. Campbell. "The Potential of Medical Abortion to Reduce Maternal Mortality in Africa: What Benefits for Tanzania and Ethiopia?" *PLoS One* 5, no. 10 (2010): e13260.

80.Singh, S., T. Fetters, H. Gebreselassie, A. Abdella, Y. Gebrehiwot, S. Kumbi and S. Audam. "The Estimated Incidence of Induced Abortion in Ethiopia, 2008." *Int Perspect Sex Reprod Health* 36, no. 1 (2010): 16-25.

81. Gebreselassie, H., T. Fetters, S. Singh, A. Abdella, Y. Gebrehiwot, S. Tesfaye, T. Geressu and S. Kumbi. "Caring for Women with Abortion Complications in Ethiopia: National Estimates and Future Implications." *Int Perspect Sex Reprod Health* 36, no. 1 (2010): 6-15.

82. Abdella, A., T. Fetters, J. Benson, E. Pearson, Y. Gebrehiwot, K. Andersen, H. Gebreselassie and S. Tesfaye. "Meeting the Need for Safe Abortion Care in Ethiopia: Results of a National Assessment in 2008." *Glob Public Health* 8, no. 4 (2013): 417-34.

83. Vlassoff, M., T. Fetters, S. Kumbi and S. Singh. "The Health System Cost of Postabortion Care in Ethiopia." *Int J Gynaecol Obstet* 118 Suppl 2, (2012): S127-33.

84. Gurmu, E. and T. Dejene. "Trends and Differentials of Adolescent Motherhood in Ethiopia: Evidences from 2005 Demographic and Health Survey." *Afr J Reprod Health* 16, no. 4 (2012): 162-74.

85. Animaw, W. and B. Bogale. "Abortion in University and College Female Students of Arba Minch Town, Ethiopia, 2011." *Sex Reprod Healthc* 5, no. 1 (2014): 17-22.

86. Gelaye, A. A., K. N. Taye and T. Mekonen. "Magnitude and Risk Factors of Abortion among Regular Female Students in Wolaita Sodo University, Ethiopia." *BMC Womens Health* 14, (2014): 50.

87. Tesfaye, G., M. T. Hambisa and A. Semahegn. "Induced Abortion and Associated Factors in Health Facilities of Guraghe Zone, Southern Ethiopia." *J Pregnancy* 2014, (2014): 295732.

88. Berhan, Y. and A. Berhan. "Causes of Maternal Mortality in Ethiopia: A Significant Decline in Abortion Related Death." *Ethiop J Health Sci* 24 Suppl, (2014): 15-28.

89. Mulat, A., H. Bayu, H. Mellie and A. Alemu. "Induced Second Trimester Abortion and Associated Factors in Amhara Region Referral Hospitals." *Biomed Res Int* 2015, (2015): 256534.

90. Sibanda, A., Z. Woubalem, D. P. Hogan and D. P. Lindstrom. "The Proximate Determinants of the Decline to Below-Replacement Fertility in Addis Ababa, Ethiopia." *Stud Fam Plann* 34, no. 1 (2003): 1-7.

91. Gessessew, A. "Abortion and Unwanted Pregnancy in Adigrat Zonal Hospital, Tigray, North Ethiopia." *Afr J Reprod Health* 14, no. 3 (2010): 183-8.

92. Kebede, M. T., P. K. Hilden and A. L. Middelthon. "The Tale of the Hearts: Deciding on Abortion in Ethiopia." *Cult Health Sex* 14, no. 4 (2012): 393-405.

93. Bonnen, K. I., D. N. Tuijje and V. Rasch. "Determinants of First and Second Trimester Induced Abortion - Results from a Cross-Sectional Study Taken Place 7 Years after Abortion Law Revisions in Ethiopia." *BMC Pregnancy Childbirth* 14, (2014): 416.

94. Abdi, J. and M. B. Gebremariam. "Health Providers' Perception Towards Safe Abortion Service at Selected Health Facilities in Addis Ababa." *Afr J Reprod Health* 15, no. 1 (2011): 31-6.

95. Holcombe, S. J., A. Berhe and A. Cherie. "Personal Beliefs and Professional Responsibilities: Ethiopian Midwives' Attitudes toward Providing Abortion Services after Legal Reform." *Stud Fam Plann* 46, no. 1 (2015): 73-95.

96. Melkamu, Y., F. Enquselassie, A. Ali, H. Gebresilassie and L. Yusuf. "Assessment of Quality of Post Abortion Care in Government Hospitals in Addis Ababa, Ethiopia." *Ethiop Med J* 43, no. 3 (2005): 137-49.

97. Fetters, T., S. Tesfaye and K. A. Clark. "An Assessment of Postabortion Care in Three Regions in Ethiopia, 2000 to 2004." *Int J Gynaecol Obstet* 101, no. 1 (2008): 100-6.

98. Prata, N., S. Bell, M. Holston, C. Gerdts and Y. Melkamu. "Factors Associated with Choice of Post-Abortion Contraception in Addis Ababa, Ethiopia." *Afr J Reprod Health* 15, no. 3 (2011): 51-7.

99. Woldetsadik, M. A., T. Y. Sendekie, M. T. White and D. T. Zegeye. "Client Preferences and

Acceptability for Medical Abortion and MVA as Early Pregnancy Termination Method in Northwest Ethiopia." *Reprod Health* 8, (2011): 19.

100. Gerdts, C., N. Prata and A. Gessessew. "An Unequal Burden: Risk Factors for Severe Complications Following Unsafe Abortion in Tigray, Ethiopia." *Int J Gynaecol Obstet* 118 Suppl 2, (2012): S107-12.

101. Tesfaye, G. and L. Oljira. "Post Abortion Care Quality Status in Health Facilities of Guraghe Zone, Ethiopia." *Reprod Health* 10, (2013): 35.

102. Prata, N., M. Holston, A. Fraser and Y. Melkamu. "Contraceptive Use among Women Seeking Repeat Abortion in Addis Ababa, Ethiopia." *Afr J Reprod Health* 17, no. 4 (2013): 56-65.

103. Lukman, H. Y. and A. T. Ramadan. "Critical Appraisal of the Law Enforcement in Abortion Care in Ethiopia." *East Afr Med J* 80, no. 11 (2003): 581-4.

104. Ashenafi, M. "Advocacy for Legal Reform for Safe Abortion." *Afr J Reprod Health* 8, no. 1 (2004): 79-84.

105. Gaym, A. "Early Hiccups in the Implementation of the Revised Abortion Law of Ethiopia." *Ethiop Med J* 45, no. 1 (2007): 109-10.

106. Otsea, K., J. Benson, T. Alemayehu, E. Pearson and J. Healy. "Testing the Safe Abortion Care Model in Ethiopia to Monitor Service Availability, Use, and Quality." *Int J Gynaecol Obstet* 115, no. 3 (2011): 316-21.

107. Prata, N., A. Gessessew, M. Campbell and M. Potts. ""A New Hope for Women": Medical Abortion in a Low-Resource Setting in Ethiopia." *J Fam Plann Reprod Health Care* 37, no. 4 (2011): 196-7.

108. Prata, N., S. Bell and A. Gessessew. "Comprehensive Abortion Care: Evidence of Improvements in Hospital-Level Indicators in Tigray, Ethiopia." *BMJ Open* 3, no. 7 (2013).

109. Edelman, A., T. Alemayehu, Y. Gebrehiwot, S. Kidenemariam and Y. Getachew. "Addressing Unmet Need by Expanding Access to Safe Second Trimester Medical Abortion Services in Ethiopia, 2010-2014." *Int J Gynaecol Obstet* 128, no. 2 (2015): 177-8.

110. Geleto, A. and J. Markos. "Awareness of Female Students Attending Higher Educational Institutions toward Legalization of Safe Abortion and Associated Factors, Harari Region, Eastern Ethiopia: A Cross Sectional Study." *Reprod Health* 12, (2015): 19.

111. Ankomah, A., C. Aloo-Obunga, M. Chu and A. Manlagnit. "Unsafe Abortions: Methods Used and Characteristics of Patients Attending Hospitals in Nairobi, Lima, and Manila." *Health Care Women Int* 18, no. 1 (1997): 43-53.

112. "Reducing Unsafe Abortion in Kenya." *Popul Briefs* 3, no. 2 (1997): 2.

113. Rogo, K. O., C. Aloo-Obunga, C. Ombaka, M. Oguttu, S. Orero, C. Oyoo and J. Odera. "Maternal Mortality in Kenya: The State of Health Facilities in a Rural District." *East Afr Med J* 78, no. 9 (2001): 468-72.

114. Elmore-Meegan, M., R. M. Conroy and C. B. Agala. "Sex Workers in Kenya, Numbers of Clients and Associated Risks: An Exploratory Survey." *Reprod Health Matters* 12, no. 23 (2004): 50-7.

115. Gebreselassie, H., M. F. Gallo, A. Monyo and B. R. Johnson. "The Magnitude of Abortion Complications in Kenya." *Bjog* 112, no. 9 (2005): 1229-35.

116. Biddlecom, A. "Unsafe Abortion in Kenya." Issues Brief (Alan Guttmacher Inst), no. 4 (2008): 1-4.

117. Hussain, R. "Abortion and Unintended Pregnancy in Kenya." *Issues Brief (Alan Guttmacher Inst)*, no. 2 (2012): 1-4.

118. Singh, S. "Hospital Admissions Resulting from Unsafe Abortion: Estimates from 13 Developing Countries." *Lancet* 368, no. 9550 (2006): 1887-92.

119. Osiemo, R. "Unsafe Abortion in Kenya." *Trop Doct* 35, no. 3 (2005): 159-60.

120. Ziraba, A. K., N. Madise, S. Mills, C. Kyobutungi and A. Ezeh. "Maternal Mortality in the Informal Settlements of Nairobi City: What Do We Know?" *Reprod Health* 6, (2009): 6.

121. Ukachukwu, V. E., H. Unger, C. Onoka, C. Nduka, S. Maina and N. Ngugi. "Maternal Morbidity and Mortality in Peri-Urban Kenya--Assessing Progress in Improving Maternal Healthcare." *East Afr J Public Health* 6, no. 2 (2009): 112-8.

122. Sutherland, E. G., J. Alaii, S. Tsui, S. Luchters, J. Okal, N. King'ola, M. Temmerman and B. Janowitz. "Contraceptive Needs of Female Sex Workers in Kenya - a Cross-Sectional Study." *Eur J Contracept Reprod Health Care* 16, no. 3 (2011): 173-82.

123. Desai, M., P. A. Phillips-Howard, F. O. Odhiambo, A. Katana, P. Ouma, M. J. Hamel, J. Omoto, S. Macharia, A. van Eijk, S. Ogwang, L. Slutsker and K. F. Laserson. "An Analysis of Pregnancy-Related Mortality in the Kemri/Cdc Health and Demographic Surveillance System in Western Kenya." *PLoS One* 8, no. 7 (2013): e68733.

124. Ziraba, A. K., C. Izugbara, B. A. Levandowski, H. Gebreselassie, M. Mutua, S. F. Mohamed, C. Egesa and E. W. Kimani-Murage. "Unsafe Abortion in Kenya: A Cross-Sectional Study of Abortion Complication Severity and Associated Factors." *BMC Pregnancy Childbirth* 15, (2015): 34.

125. Balmer, D. H., E. Gikundi, M. C. Billingsley, F. G. Kihuho, M. Kimani, J. Wang'ondu and H. Njoroge. "Adolescent Knowledge, Values, and Coping Strategies: Implications for Health in Sub-Saharan Africa." *J Adolesc Health* 21, no. 1 (1997): 33-8.

126. Kabira, W. M., E. W. Gachukia and F. O. Matiangi. "The Effect of Women's Role on Health: The Paradox." *Int J Gynaecol Obstet* 58, no. 1 (1997): 23-34.

127. Rogo, K. O., L. Bohmer and C. Ombaka. "Developing Community-Based Strategies to Decrease Maternal Morbidity and Mortality Due to Unsafe Abortion: Pre-Intervention Report." *East Afr Med J* 76, no. 11 Suppl (1999): S1-71.

128. Mutungi, A. K., J. G. Karanja, V. N. Kimani, K. O. Rogo and E. O. Wango. "Abortion: Knowledge and Perceptions of Adolescents in Two Districts in Kenya." *East Afr Med J* 76, no. 10 (1999): 556-61.

129. Mutungi, A. K., E. O. Wango, K. O. Rogo, V. N. Kimani and J. G. Karanja. "Abortion: Behaviour of Adolescents in Two Districts in Kenya." *East Afr Med J* 76, no. 10 (1999): 541-6.

130. Warenius, L. U., E. A. Faxelid, P. N. Chishimba, J. O. Musandu, A. A. Ong'any and E. B. Nissen. "Nurse-Midwives' Attitudes Towards Adolescent Sexual and Reproductive Health Needs in Kenya and Zambia." *Reprod Health Matters* 14, no. 27 (2006): 119-28.

131. Magadi, M. "Poor Pregnancy Outcomes among Adolescents in South Nyanza Region of Kenya." *Afr J Reprod Health* 10, no. 1 (2006): 26-38.

132. Mitchell, E. M., C. T. Halpern, E. M. Kamathi and S. Owino. "Social Scripts and Stark Realities: Kenyan Adolescents' Abortion Discourse." *Cult Health Sex* 8, no. 6 (2006): 515-28.

133. Halpern, C. T., E. M. Mitchell, T. Farhat and P. Bardsley. "Effectiveness of Web-Based Education on Kenyan and Brazilian Adolescents' Knowledge About Hiv/Aids, Abortion Law, and Emergency Contraception: Findings from Teenweb." *Soc Sci Med* 67, no. 4 (2008): 628-37.

134. Emenike, E., S. Lawoko and K. Dalal. "Intimate Partner Violence and Reproductive Health of Women in Kenya." *Int Nurs Rev* 55, no. 1 (2008): 97-102.

135. Izugbara, C. O., K. J. Otsola and A. C. Ezeh. "Men, Women, and Abortion in Central Kenya: A Study of Lay Narratives." *Med Anthropol* 28, no. 4 (2009): 397-425.

136. Izugbara, C. O., R. Ochako and C. Izugbara. "Gender Scripts and Unwanted Pregnancy among Urban Kenyan Women." *Cult Health Sex* 13, no. 9 (2011): 1031-45.

137. Kagia, J. "Improving Maternal Health in Kenya: Challenges and Strategies for Low Resource Nations." *Linacre Q* 80, no. 2 (2013): 161-6.

138. Undie, C. C., L. M. Van Lith, M. Wahome, F. Obare, E. Oloo and C. Curtis. "Community Mobilization and Service Strengthening to Increase Awareness and Use of Postabortion Care and Family Planning in Kenya." *Int J Gynaecol Obstet* 126, no. 1 (2014): 8-13.

139. Marlow, H. M., S. Wamugi, E. Yegon, T. Fetters, L. Wanaswa and S. Msipa-Ndebele. "Women's Perceptions About Abortion in Their Communities: Perspectives from Western Kenya." *Reprod Health Matters* 22, no. 43 (2014): 149-58.

140. Osur, J., A. Orago, I. Mwanzo and E. Bukusi. "Social Networks and Decision Making for Clandestine Unsafe Abortions: Evidence from Kenya." *Afr J Reprod Health* 19, no. 1 (2015): 34-43.

141. Solo, J., D. L. Billings, C. Aloo-Obunga, A. Ominde and M. Makumi. "Creating Linkages between Incomplete Abortion Treatment and Family Planning Services in Kenya." *Stud Fam Plann* 30, no. 1 (1999): 17-27.

142. Tavrow, P., M. Withers and K. McMullen. "Age Matters: Differential Impact of Service Quality on Contraceptive Uptake among Post-Abortion Clients in Kenya." *Cult Health Sex* 14, no. 8 (2012): 849-62.

143. Evens, E., R. Otieno-Masaba, M. Eichleay, D. McCarraher, G. Hainsworth, C. Lane, M. Makumi and P. Onduso. "Post-Abortion Care Services for Youth and Adult Clients in Kenya: A Comparison of Services, Client Satisfaction and Provider Attitudes." *J Biosoc Sci* 46, no. 1 (2014): 1-15.

144. Birungi, H., F. Obare, A. van der Kwaak and J. H. Namwebya. "Maternal Health Care Utilization among Hiv-Positive Female Adolescents in Kenya." *Int Perspect Sex Reprod Health* 37, no. 3 (2011): 143-9.

145. Obare, F., A. van der Kwaak and H. Birungi. "Factors Associated with Unintended Pregnancy, Poor Birth Outcomes and Post-Partum Contraceptive Use among Hiv-Positive Female Adolescents in Kenya." *BMC Womens Health* 12, (2012): 34.

146. Berer, M. "Provision of Abortion by Mid-Level Providers: International Policy, Practice and Perspectives." *Bull World Health Organ* 87, no. 1 (2009): 58-63.

147. Osur, J., T. L. Baird, B. A. Levandowski, E. Jackson and D. Murokora. "Implementation of Misoprostol for Postabortion Care in Kenya and Uganda: A Qualitative Evaluation." *Glob Health Action* 6, (2013): 1-11.

148. Coeytaux, F., L. Hessini, N. Ejano, A. Obbuyi, M. Oguttu, J. Osur and K. Shuken. "Facilitating Women's Access to Misoprostol through Community-Based Advocacy in Kenya and Tanzania." *Int J Gynaecol Obstet* 125, no. 1 (2014): 53-5.

149. Siringi, S. "Kenyan Government Admits to High Maternal Death Rates." *Lancet* 358, no. 9292 (2001): 1523.

150. Siringi, S. "Kenya Government's Shake up of Health Services Provokes Anger." *Lancet* 358, no. 9289 (2001): 1248.

151. Brookman-Amissah, E. and J. B. Moyo. "Abortion Law Reform in Sub-Saharan Africa: No Turning Back." *Reprod Health Matters* 12, no. 24 Suppl (2004): 227-34.

152. Mbugua, F. "Murder Charge for Abortion Doctor Divides Medical Profession in Kenya." *Bmj* 330, no. 7481 (2005): 10.

153. Murungi, B. "Legislating against Sexual Violence in Kenya: An Interview with the Hon. Njoki Ndungu." *Reprod Health Matters* 15, no. 29 (2007): 149-54.

154. Jaldesa, G. W. "Contribution of Obstetrics and Gynecology Societies in East, Central, and Southern Africa to the Prevention of Unsafe Abortion in the Region." *Int J Gynaecol Obstet* 126 Suppl 1, (2014): S13-6.

155. Diallo, F. S., M. Traore, S. Diakite, F. Perrotin, F. Dembele, I. Diarra and A. Dolo. "[Complications of Illegal Induced Abortions at Bamako (Mali) between December 1997 and November 1998]." *Sante* 10, no. 4 (2000): 243-7.

156. Diallo, T., H. Hami, A. Maiga, B. Coulibaly, D. Maiga, A. Mokhtari, R. Soulaymani and A. Soulaymani. "[Epidemiology and Risk Factors for Voluntary Intoxication in Mali]." *Sante Publique* 25, no. 3 (2013): 359-66.

157. Etard, J. F., B. Kodio and S. Traore. "Assessment of Maternal Mortality and Late Maternal Mortality among a Cohort of Pregnant Women in Bamako, Mali." *Br J Obstet Gynaecol* 106, no. 1 (1999): 60-5.

158. Diarra, I., S. Tall, S. Sogoba and A. Dolo. "[Induced Abortion. Report of 180 Cases at the Gabriel Toure Hospital]." *Mali Med* 23, no. 2 (2008): 30-3.

159. Vangeenderhuysen, C., J. P. Banos and T. Mahaman. "[Preventable Maternal Mortality in an Urban Area in Niamey (Niger)]." *Sante* 5, no. 1 (1995): 49-54.

160. Garba, M., M. Nayama, A. P. Alio, M. L. Holloway, B. S. Hamisu and H. M. Salihu. "Maternal Mortality in Niger: A Retrospective Study in a High Risk Maternity." *Afr J Med Med Sci* 40, no. 4 (2011): 393-7.

161. Basinga, P., A. M. Moore, S. D. Singh, E. E. Carlin, F. Birungi and F. Ngabo. "Abortion Incidence and Postabortion Care in Rwanda." *Stud Fam Plann* 43, no. 1 (2012): 11-20.

162. Vlassoff, M., S. F. Musange, I. R. Kalisa, F. Ngabo, F. Sayinzoga, S. Singh and A. Bankole. "The Health System Cost of Post-Abortion Care in Rwanda." *Health Policy Plan* 30, no. 2 (2015): 223-33.

163. Umuhoza, C., B. Oosters, M. van Reeuwijk and I. Vanwesenbeeck. "Advocating for Safe Abortion in Rwanda: How Young People and the Personal Stories of Young Women in Prison Brought About Change." *Reprod Health Matters* 21, no. 41 (2013): 49-56.

164. Mngadi, P. T., E. Faxelid, I. T. Zwane, B. Hojer and A. B. Ransjo-Arvidson. "Health Providers' Perceptions of Adolescent Sexual and Reproductive Health Care in Swaziland." *Int Nurs Rev* 55, no. 2 (2008): 148-55.

165. Yam, E. A., Z. Mnisi, S. Maziya, C. Kennedy and S. Baral. "Use of Emergency Contraceptive Pills among Female Sex Workers in Swaziland." *J Fam Plann Reprod Health Care* 40, no. 2 (2014): 102-7.

166. Balaka, B., S. Baeta, A. D. Agbere, K. Boko, K. Kessie and K. Assimadi. "[Risk Factors Associated with Prematurity at the University Hospital of Lome, Togo]." *Bull Soc Pathol Exot* 95, no. 4 (2002): 280-3.

167. El-Saharty, S., Kebede, S., Dubusho, P.O., Siadat, B. "Ethiopia: Improving Health Service Delivery." The World Bank: Health, Nutrition, and Population, 2009.

168. Johnston HB, Gallo MF and Benson J, Reducing the costs to health systems of unsafe abortion: a comparison of four strategies, Journal of Family Planning and Reproductive Health Care, 2007, 33(4):250–257.