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## **Unsafe Abortion, Its Determinants and Associated Factors: The Case of Malawi. A Systematic Literature Review.**

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## ABSTRACT

### UNSAFE ABORTION, ITS DETERMINANTS AND ASSOCIATED FACTORS: THE CASE OF MALAWI – A SYSTEMATIC LITERATURE REVIEW.

By

ALEXANDER MKULICHI

11/30/2016

**INTRODUCTION:** Unsafe abortion is a public health problem globally, but disproportionately affects the developing world. Interventions aimed at addressing the determinants and risk factors of unsafe abortion have proven to be effective in the reduction of unsafe abortion-related maternal mortality. Identification of determinants of unsafe abortion is important in intervention planning and implementation.

**AIM:** To determine whether religion, marital status and mother's level of education are related to unsafe abortion practices in Malawi, and find which categories are associated with reduction rates in seeking unsafe abortion.

**METHODS:** Relevant online publications were identified from selected databases, then critically appraised. Study methodologies as well as reported data were examined with focus on post-abortion care (PAC) mother's marital status, education and religion.

**RESULTS:** Majority of studies were cross-sectional and hospital-based. The largest proportion of PAC mothers were married, educated and Christians. Educated mothers, single or unmarried mothers are more likely to seek unsafe abortion.

**DISCUSSION:** Health facility and community level stigma deters unmarried women from accessing contraception and PAC services. Increased number of unsafe abortion among educated mothers (most of whom were current students) than their counterparts could be explained by the desire to remain in school. These findings could also be attributed to improved health-seeking behavior among this group in comparison with the uneducated who may not have sought care. The role of religion in influencing the likelihood of seeking unsafe abortion has not been studied in Malawi.

**CONCLUSION:** Complications of unsafe abortion includes heavy bleeding, infection, reproductive tract injury, and death. Abortion-related deaths account for about 23.5% of all maternal deaths in Malawi. The single or unmarried, and educated (attained at least primary education) Malawian women are more likely to have unwanted pregnancy and subsequent unsafe abortion than their counterparts.

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CASE OF MALAWI – A SYSTEMATIC LITERATURE REVIEW.

by

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MPH, GEORGIA STATE UNIVERSITY

A Thesis Submitted to the Graduate Faculty  
of Georgia State University in Partial Fulfillment  
of the  
Requirements for the Degree

MASTER OF PUBLIC HEALTH

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APPROVAL PAGE

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### Author's Statement Page

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Alexander Mkulichi  
Signature of Author

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## **Chapter I**

### **Introduction**

#### **1.1 Background**

Unsafe abortion is a public health problem globally, and disproportionately affects the developing world. According to WHO (2008) data, the incidence of abortion in 2008 was 28 per 1,000 women of child bearing age worldwide; nearly 50 percent of all abortions globally were unsafe. In 2008 alone, there were 6 million induced abortions conducted in the developed countries against 38 million in the developing world (WHO, 2012). This emphasizes that the risk of having an induced abortion increases if a woman lives in the developing world.

Safe induced abortion procedures are conducted in two main ways namely medical abortion (where pharmacological products are used to induce abortion); surgical abortion (involves extraction of products of conception from the uterus through suction or dilatation of the cervix and curettage). Unsafe abortion employs a number of crude procedures such as: (i). Vaginal insertion of sharp objects (sticks, broken glass, or knitting needles) or lemon juice on a vaginal suppository. (ii). Ingestion of drugs/chemicals (quinine, detergents, ground-tree bark/roots extract, and aloe vera). Unsafe abortion leads to a number of complications which are short-term or long term. Some of the complications are injury to the uterus, heavy bleeding, infection, infertility, chronic pain, and death. The risk of dying from abortion is disproportionately high in developing world. Reports indicate that there were about 47,000 deaths in 2008 attributable to unsafe abortion worldwide, and nearly two-thirds of all these abortion-related deaths were from Africa (WHO, 2016).

There are increasing costs to the health care system associated with treatment of complications arising from unsafe abortion. The WHO estimates for 2014 indicate that the cost for treatment of unsafe abortion complications in developing countries was \$232 million, and would have been \$562 million if all those who needed treatment got it. Evidence has shown that morbidity, disability, health care costs for complications, and mortality from unsafe abortion are easily preventable through sexuality education, use of effective contraception, provision of safe and legally acceptable induced abortion, and timely access to care for complications. Most of the times these important elements are lacking due to restrictive laws governing abortion; unnecessary requirements such as third-party authorization; poor availability of services; high costs; stigma and negative attitude of health care providers. It is therefore important to create a conducive environment to ensure easy access of safe abortion in order to mitigate the numerous problems associated with unsafe abortion.

### **Research Question and Study Rationale**

This paper is aimed at conducting a systematic literature review of studies conducted in Malawi, with focus on socio-demographic characteristics of women seeking post-abortion care (PAC). The research question for this study is: Does marital status, level of education, or religion influence pregnant mothers to seek unsafe abortion? Understanding of the relationship between these sociodemographic characteristics and unsafe abortion is critical in determining interventions aimed at reducing unsafe abortion in Malawi. This has the potential of contributing to reduction of maternal morbidity and mortality in the long-term.

The objectives of this study are:

- (i). To determine whether being educated, being religious, or being in marriage reduce the likelihood of seeking unsafe abortion in Malawi.
- (ii). To determine which categories of these characteristics are associated with reduction of rates in seeking unsafe abortion.

## **Chapter II**

### **Literature Review**

Unsafe abortions are rampant in Malawi because safe abortion is not easily accessible. The laws of Malawi government do not permit abortion, except in very special circumstances. According to the Penal Code 149 through to 152, abortion is a felony which carries a maximum prison sentence of up to fourteen years (Benson et al., 2011). The abortion policy for Malawi is aimed at saving the life of pregnant mothers. It is never available on request, grounds of rape or incest, fetal impairment, economic or social reasons, and preservation of mental health. Below are Malawi's abortion laws which are highly restrictive (SAfAIDS Policy Brief- Malawi):

- An abortion can only be legally induced when the life of the expectant mother is in danger.
- Legal induced abortion occurs at the discretion of obstetric specialists.
- Two independent obstetricians must agree that an abortion is necessary in order for one to be approved.
- All approved abortions must be reported to the authorities.

These policies tend to force pregnant women to seek clandestine procedures. However, it is undisputable that the government is aware that unsafe abortions are taking place. This is because post-abortion services are being provided to manage abortion complications in most public and private facilities. As noted earlier, this is costly to the health care system as opposed to provision of safe abortion. It is estimated that public

health care facilities spend up to \$314, 008 annually in provision of post-abortion care, while adopting safe and legally acceptable abortion could reduce the cost by about 30% (Benson et al., 2015). Evidence has shown that laws that restrict abortion have no proven impact in decreasing the number of unsafe abortion procedures as research demonstrates that countries with restrictive abortion laws have higher incidence of unsafe abortion (SAfAIDS Policy Brief- Malawi). Malawi has one of the highest maternal mortality rates in the world, estimated at 510 maternal deaths per 100,000 live births, with about 10% attributable to unsafe abortion (WHO, 2013).

In Malawi, unsafe abortion complications such as heavy bleeding, injury to the genital tract, and infection are a serious problem to women. Kinoti et al. (1995) established that unsafe abortion complications constitute about 60% of acute gynecological admissions in both public and private health care facilities in Malawi. In their study of Malawian adolescents, Lema et al. (2002) observed that, “more than one-third of 15-19 year-olds and about one-fifth of 12-14 year-olds reported having at least one close friend who had tried to end a pregnancy through unsafe abortion.”

Abortion complications present with different degrees of severity classified as mild, moderate and severe based on various clinical characteristics (Appendix 1). Kalilani-Phiri et al. (2014) looked at levels of abortion severity in Malawi. This was a hospital-based, cross-sectional study involving 2,067 women who presented at Post-Abortion Care (PAC) facilities. They established that 72.3% (n=1,053) of women had mild complications, 6.7% (n=138) had moderate complications and 20.7% (n=426) with severe complications. Case fatality rate in this study was approximately 387 deaths per 100, 000 post-abortion care

procedures. Another important finding in this study was that the risk of severe complications decreased slightly with an increasing level of education.

Use of contraceptives is one of the recommended approaches in reducing unsafe abortion, through prevention of unintended pregnancies. Unfortunately, usage of contraceptives is still low in Malawi. “It is estimated that although 90% of 15-19 year olds approve family planning (a conscious effort by a couple to limit or space the number of children they have through the use of contraceptive methods), most of those who are sexually active do not use contraceptives. It is reported that among sexually active adolescents in this age group, only 15% of females and 31% of males currently use any modern contraceptive method (a product or medical procedure that interferes with reproduction from acts of sexual intercourse). Among sexually experienced 15-19-year-olds, 24% of women and 38% of men have ever used a modern contraceptive. Recent survey by Malawi Demographic and Health Survey [MDHS] (2015-16) indicates a slight improvement in uptake of contraception, with a Contraceptive Prevalence Rate (CRP) increase from 46% in 2010 to 59% in 2015-16. There is still a lot of work to be done to improve family planning because unmet need for contraception (women with unmet need are those who want to stop or delay childbearing but are not using any method of contraception) among currently married women in Malawi is still high, estimated at 19%, while 40% of sexually active unmarried women have unmet need (MDHS, 2015-16).

Levandowski et al. (2012) conducted a cross-sectional study in Malawi, involving 2,076 women of reproductive age (14 – 44 years) presenting to health facility for PAC. They found a high unintended pregnancy rate of 139 per 1,000 women aged 15-44. Approximately 31,021 women were treated for abortion complications in health facilities

in Malawi, for both spontaneous and induced abortion. This study also reported that 70,194 unsafe abortions were estimated to have occurred in Malawi in 2009, translating to 24.0 per 1000 women aged 15-44.

Like in most parts of the world, unwanted pregnancies in Malawi are associated with a number of negative social consequences. These include early marriages, stigmatization of teen pregnancy, and expulsion from school. There is a common occurrence of stigma surrounding unwanted pregnancy especially among women who are unmarried or whose husbands were away (Levandowski et al., 2012). As a result, women tend to seek induced abortion to keep both extramarital and premarital affairs, and resulting pregnancies as secret as possible.

There are a number of factors leading to unsafe abortion among young women. Some of the factors are poverty and inability to take care of a child, unplanned pregnancies, fear of being forced out of school, fear of parents or guardians, fear of community stigma, contraceptive failure, fear of being forced into early marriage, low uptake of contraception, and restrictive laws governing abortion.

## **Chapter III**

### **Methods and Procedures**

#### **3.1 Sample**

The systematic literature review involved an online search of published, peer reviewed articles from the following databases: Global Health, MEDLINE with Full Text, Sociological Collection, Women's Studies International, and CINAHL Plus with Full Text. This online search was conducted between 10/05/2016 and 10/10/2016. The online literature searches were conducted by using the following selected key words: unsafe abortion in Malawi, induced abortion, contraception and unplanned pregnancy, post-abortion care, and social stigma. Inclusion criteria for studies in this review were: Those that were measuring the estimated incidence of abortion in Malawi; studies examining abortion complications in Malawi; studies documenting socio-demographic and reproductive characteristics of women who had experienced an abortion (spontaneous or induced) in Malawi. Initial search yielded 15 articles. Further scrutiny of the articles led to exclusion of 9 articles, and remained with 6. (Appendix 2). The exclusion of the 9 articles was because of either not focusing on determinants of unsafe abortion, duplicate articles, or studies done in other countries other than Malawi.



## **Chapter IV**

### **Results**

These results represent observed common trends, where there are unique observations from one study, there is a special mention of that particular study. Appendix 2 outlines the highlights of the reviewed studies.

#### **4.1 Methodologies of Reviewed Studies**

All the reviewed studies were cross-sectional. Five of the studies were hospital-based. Four of these studies [(Jackson et al., 2011); (Lema & Mpanga, 2000); (Lema et al., 2002); (Chamanga et al., 2012)] used face-to-face interviews to collect relevant data, while Kalilani-Phiri et al. (2014) and Levandowski et al. (2012) used clinical care records. The study by Jackson et al. (2011) was community-based, but used in-depth face-to-face interviews with participants recruited through purposive and snowball sampling in order to capture a broad range of key informants. Probability sampling was conducted in selecting health facilities in some of the studies (multi-center studies), apart from the studies by (Chamanga et al. 2012; Lema et al. 2002) which were based at a teaching hospital in Blantyre. The sample sizes were variable ranging from 18 to 2 067 participants. Participants in three facility-based studies were conveniently sampled, as all women presenting for PAC with a diagnosis of either incomplete, inevitable, missed, complete, or septic abortion, during the study period were included in the study. Chamanga et al. (2002) sampled only adolescent women. Verbal informed consent was obtained in four studies [(Lema et al. (2002); Lema et al. (2000); Chamanga et al. (2002); Jackson et al. (2011)]. However, no consent was obtained in studies by Kalilani et al. (2014) and Levandowski et

al. 2012), because they used de-identified clinical records. The most common variables collected and analyzed in these studies were PAC women's age, marital status, level of education, place of residence, number of previous pregnancies, reported previous abortions, reported tried to end index pregnancy, physical examination findings, and complications. There were slight differences in the definitions of the variables between studies (as highlighted in Appendix 2). These variables were reported by relative frequency of occurrence.

In order to determine whether the abortion was spontaneous or induced, three studies relied on either one or both of the following indicators: (a) Self-reporting by the women after being asked by the research personnel if there was an interference with the pregnancy or not. (b). Clinical features as observed by PAC providers such as mechanical injury to the cervix or uterus, presence of foreign body in the vagina, cervix or uterus. In the studies by Kalilani-Phiri et al. (2012); Levandowski et al. (2009) used both (a) and (b), while Lema et al. (2000) used only (b).

#### **4.2 Associations of age and unsafe abortion**

Majority of PAC women were aged 18-24. Levandowski et al. (2012) observed that 50% of women were under the age of 25, and reported interference more often than adult women. Kalilani-Phiri et al. (2012); Levandowski et al. (2009) observed that physicians reported 3.51 times more mechanical injuries to cervix, and uterus for adolescent PAC patients than among adult women. Chamanga et al. (2012) sampled only adolescents making it difficult to make comparisons with the findings of the rest of the studies in terms of age distribution. (Appendix 2 highlights the age-specific data).

#### **4.3 Associations of marital status and unsafe abortion**

Kalilani-Phiri et al. (2014); Levandowski et al. (2009); Lema et al. (2002) in their facility-based studies observed that there was a higher prevalence of married women (78.7% - 81.0%) of all women presenting for PAC than single, separated, widowed or divorced women. However, majority of the Malawian studies did not indicate whether abortions were induced or spontaneous, except Lema et.al (2002) who reported that 86.3% of women who interfered with index pregnancy were single. Similar findings were reported by Levandowski et al. (2012). After controlling for age, residence, region, education and religion, unmarried mothers were 6.8 (95%CI 4.7-9.8) times more likely to report interference than married mothers. This study also demonstrated that married young adults were 2.8 times more likely to report contraceptive use at time of pregnancy than unmarried young adults.

#### **4.4 Associations of religion and unsafe abortion**

Only 2 of the reviewed studies analyzed religion as one of the characteristics of PAC Women. Levandowski et al. (2012) observed a high prevalence of abortion among Christians (Protestants and Catholics, 62.2% and 23.4% respectively). Similar results were demonstrated in a study by Chamanga et al. (2012), that among the adolescent PAC women, 88% were Christians while Muslims were 16.7%. There was no separate analysis of unsafe abortion prevalence by religion.

#### **4.5 Associations of education and unsafe abortion**

All the studies reported increased prevalence of abortion among the educated PAC women. In all the studies reviewed, educated mothers were considered as those who had obtained at least primary level of education regardless of their completion. Kalilani-Phiri

et al. (2014); Levandowski et al. (2014); Lema et al. (2002) found the highest prevalence of abortion among those women who had attained junior primary education (54.1 - 55.0%). Only Chamanga et al. (2012) observed the highest prevalence of abortion among adolescents who were in secondary school (61.0%). Out of all the studies, only Lema et al. (2002) looked at the prevalence of unsafe abortion in relation to level of education, where they found that 65.0% of those who had unsafe abortion had attained secondary school level of education or more, and that 78.8% were students.

## **Chapter V**

### **Discussion and Conclusions**

#### **5.1 Discussion of Research Questions**

The findings of high prevalence of abortion among married women than their unmarried counterparts are consistent with those of a similar study in Kenya by Lema et al. (1996) where it was observed that 73.4% of all PAC mothers were married, and 79.7% of spontaneous abortion group were married. However, this could be an indicator of improved health seeking behavior among married women compared to single women. In Burkina Faso, being married was reported to be protective against unsafe abortion with women who reported being married observed to have 83% lower risk of having unsafe abortion even when pregnancy was unwanted [OR 0.17] (Ilboudou et al. 2014). Increased contraceptive use leads to reduction in unwanted pregnancies. Lema et al. (1996) reported that 90.4% of mothers with unsafe abortion admitted that the pregnancy was unintended. Despite a high contraceptive awareness among both induced and spontaneous abortion groups, only 12.1% of total participants reported using contraception at time of conceiving index pregnancy. Contraception use was lower (23%) among mothers in the induced group. All these studies were hospital-based, therefore, the results might not be representative of the general population. Stigmatization towards unmarried or single post-abortion women has been reported both at community and facility levels which could deter them from seeking PAC.

In these studies, abortion was noted to be more prevalent among Christians than Muslims. There was no separation between spontaneous and unsafe abortion, when

analyzing the relationship between religion and abortion. A study done by Ilboudou et al. (2014) in Burkina Faso found that unsafe abortions were prevalent among Christians (20%) [They were comparing only Christians and Muslims in their study]. All these were hospital-based surveys, subject to be affected by the distribution of the religions in the catchment areas of the facilities. For example, in Malawi, majority of the population are Christians, there is a high likelihood of them being over represented in the PAC group. It is possible to get a more representative sample through stratified sampling at community level, which would be more informative.

From this review, educated women are more likely to seek unsafe abortion. These findings are consistent with studies done in Kenya and Burkina Faso [Lema et al. (1996); Ilboudou et al. (2014)], which reported a higher prevalence of unsafe abortion among educated women than their counterparts, with Lema et al. (1996) reporting the highest prevalence of induced abortion among those mothers who had attained secondary education or higher. All these findings were based on hospital-based studies. It is important therefore, to consider that having high proportion of abortion among the educated women at PAC centers may not be a reliable measure, when attempting to determine the association between unsafe abortion and level of education. This is because, it could merely be an indicator of improved health seeking behavior among the educated PAC women than their counterparts.

WHO estimates that around 5 million women are admitted to hospital as a result of unsafe abortion every year in developing countries; a lot more women who have complications following unsafe abortion do not receive health care for various reasons. Some of the reasons are being too ill to make it to the hospital, fear of stigma and negative

attitude of health care providers, and fear of prosecution in the face of restrictive laws governing abortion. This underlines the importance of community-based as opposed to facility-based studies which only deals with just the tip of the iceberg, making it difficult to generalize the findings. Based on the available literature, there are little or no studies in Malawi that have been conducted at community level to determine socio-demographic and reproductive characteristics of mothers seeking unsafe abortion.

Reliance on self-reporting by PAC mothers about interference with pregnancy has its own weaknesses. Not all women would be ready to disclose interference on the background of existing stigma against induced abortion, and restrictive laws governing abortion in Malawi. Self-reporting could lead to significant under-reporting and misclassification. It is therefore not a reliable indicator. This could explain why only 8.0% to 17.0% of PAC patients in studies by Kalilani-Phiri et al. (2014); Levandowski et al. (2012); Lema et al. 2000, reported interference. Similarly, relying on clinical features to determine whether there was interference with pregnancy may lead to underestimation of the problem. This is because not every induced abortion will have clear clinical features, for example in cases of chemical or pharmacological induction, consequently a good proportion of unsafe abortion could be misclassified. These findings are in agreement with a study done in Burkina Faso, by Ilboudou et al. 2014 where 12% of all abortions were reported as certainly induced. However, they are in slight contrast to those from a facility-based study conducted in Kenya where it was found that 169 (15.7%) of PAC women had induced abortion out of 1,077 incomplete abortion patients (self-reported interference and clinical evidence) [Lema et al. 1996]. These findings are far below the WHO estimates which indicate that nearly 50% of all abortions are unsafe.

## **5.2 Study Limitations**

There were limited publications available for review on determinants of unsafe abortion in Malawi during the period of conducting this study.

## **5.3 Implications of Findings**

The adolescent mothers, the single/unmarried, and the educated mothers are at an increased risk of unsafe abortion than their counterparts. Contraceptive use is protective against unsafe abortion by preventing occurrence of unintended pregnancy.

## **5.4 Recommendations and Prevention Strategies**

**Education:** Sexuality education needs to be introduced in schools. This includes contraception and safe sex as a way of reducing unintended pregnancies thus reducing demand for unsafe abortion. This could also be an opportunity to dispel myths regarding contraception. Outreach sensitization is also needed to reach uneducated women who might not be aware of the availability of PAC services and Contraception in order to improve service utilization.

**Marital status and stigma:** Health workers should be sensitized against stigmatizing single/unmarried women presenting for services such as Contraception and PAC. At community level, there is also a need for campaigns to condemn stigmatization against single/unmarried pregnant mothers. This would reduce the likelihood of seeking unsafe abortion among these mothers in long-term.

**Abortion laws:** Restrictive laws governing abortion should be amended, since there is overwhelming evidence that countries where these laws have been removed have observed dramatic reduction in abortion-related complications and maternal mortality.



## **5.5 Research Gap**

(i). No community-based studies have been conducted in Malawi to determine the true incidence and determinants of unsafe abortion. It has always been a dilemma for researchers to determine prevalence of unsafe abortion in communities due to sensitive nature of the subject. This is the main reason why only estimates have been used. Therefore, there is a need for a reliable way of detecting unsafe abortion. Unless this puzzle is solved, it will remain a challenge to learn the true determinants for unsafe abortion in Malawi.

(ii). No studies in Malawi have assessed the role of religion in influencing the likelihood of seeking unsafe abortion. Majority of Malawians are Christians and Muslims, and these religions prohibit induced abortion and/or use of contraceptives. It is not known whether these factors influence mothers to seek unsafe abortion. This calls for research to determine the role religion plays in influencing occurrence of unsafe abortion in Malawi.

## **5.6 Conclusion**

Unsafe abortion is a public health problem in Malawi. The reviewed studies indicate a high prevalence of abortion (both spontaneous and unsafe) among educated women (at least primary education), married and Christian women. Restrictive laws governing abortion drives mothers to seek unsafe abortion. Complications of unsafe abortion includes heavy bleeding, infection, reproductive tract injury, and death. Abortion-related deaths account for about 23.5% of all maternal deaths in Malawi. According to the limited data available, the single or unmarried, the educated Malawian women are more likely to have unwanted pregnancies and subsequent unsafe abortion than their counterparts. There are no studies in Malawi identified to have analyzed prevalence of unsafe abortion in relation to religion. Community-based studies on determinants of unsafe

abortion are needed in order to provide appropriate and reliable data. This information is critical in developing targeted interventions to address abortion-related maternal morbidity and mortality. As a nation, it is important to have local data than relying on studies done in other countries, because determinants and risk factors for induced abortion are different due to differences in social, cultural and economic environments as observed in this review.

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Appendix 1:

Severity classification of abortion complications. Adapted from Kalilani-Phiri et al. (2014).

Severe

- Body temperature  $>37.9^{\circ}\text{C}$
- Organ or system failure
- Generalized peritonitis (inflammation throughout the entire peritoneum)
- Pulse  $> 119$  beats/ minute
- Evidence of foreign body or mechanical injury
- Sepsis
- Shock
- Tetanus
- Death

Moderate

- Body temperature  $37.3^{\circ}\text{C}$ - $37.9^{\circ}\text{C}$
- Localized peritonitis (inflammation in a localized area of the peritoneum)
- Retained products of conception

Mild/no morbidity

- All other cases.

## Appendix 2

### **Abortion-related definitions:**

- **Abortion** – termination of pregnancy before the fetus is capable of surviving outside the uterus.
- **Unsafe abortion** - a procedure for termination of pregnancy that is performed by an individual without the necessary skills, or in an environment that does not conform to minimal medical standards, or both.
- **Induced abortion** – Deliberate termination of pregnancy before the fetus is capable of surviving outside the uterus.
- **Spontaneous abortion** – loss of fetus without outside intervention before 20<sup>th</sup> or 24<sup>th</sup> week of pregnancy (aka non-induced abortion).
- **Incomplete abortion** – abortion in which some fetal or placental tissue remains in the uterus.
- **Complete abortion** – complete expulsion or extraction of all pregnancy tissues from the uterus.
- **Missed abortion** – abortion in which the fetus dies in the uterus but still retained for 2 or more months.
- **Inevitable abortion** – bleeding of intrauterine origin with progressive dilatation of cervix but without expulsion of fetus or placenta before 20<sup>th</sup> or 24<sup>th</sup> week of pregnancy.

- **A Post-Abortion Care (PAC) mother or patient** - any woman with a diagnosis of incomplete, inevitable, missed, or complete abortion, seeking care at a health facility. It does not include women seeking induced services.

Appendix 2: Research studies reporting on sociodemographic characteristics of Malawian mothers experiencing abortion.

Journal and Year of Publication	Authors/Title	Objective/Research Questions	Target Population and Study Sample Design/Methodology	Variables	Key findings	Summary
International Journal of Gynecology and Obstetrics (2014)	Kalilani-Phiri, L., Gebreselassie, H., Levandowski, B. A., Kuchingale, E., Kachale, F., & Kangaude, G.  The Severity of Abortion Complications in Malawi.	1). To assess the severity of abortion complications in Malawi. 2). To determine associated risk factors of abortion complications in Malawi.	- Single-stage stratified sampling to select a nationally representative sample of health facilities offering post-abortion care. (n = 161 facilities).  -Convenient sampling of all hospitalized, Malawian women with a diagnosis of either incomplete, inevitable, missed, complete, or septic abortion [induced/spontaneous] seeking post- abortion care between 20 <sup>th</sup> July and 13 <sup>th</sup> September, 2009. (n= 2067). -Care provider collected data using a	-Age (Years). -Marital status (single; married; cohabiting; separated; widowed; divorced). -Education level (none, Junior Primary, Secondary or higher). -Residential area (rural/urban). -Clinical signs and symptoms of complications.	1). Approximately 25% of women seeking post-abortion care in Malawi presented with moderate to severe complications in 2009.  2). Most women presenting for PAC were married (80.9%); attained junior primary education (54.1%); at least secondary education (32.5%) age group 18-24 (41.7%); reported interference (8.4%); believed interference by health provider (12.6%).  3). Severity of complications was significantly associated with area of residence, marital status, and pregnancy duration.	- Women seek unsafe services or unsafe methods when the environment is highly restrictive in accessing safe abortion services.  -Unsafe abortion result in increased maternal mortality and morbidity. -Available data does not describe the profiles (characteristics) of women with induced abortion.



			<p>standardized data collection form.</p> <p>-A prospective hospital-based cross-sectional survey.</p>			
<p>African Journal of Reproductive Health June (2012)</p>	<p>Levandowski, B. A., Pearson, E., Lunguzi, J., &amp; Katengeza, H. R.</p> <p>Reproductive health characteristics of young Malawian women seeking postabortion care.</p>	<p>To determine the circumstances surrounding young Malawian women seeking PAC in a nationally sample of PAC-providing facilities</p>	<p>-A stratified random-sampling used to select a Nationally representative sample of 166 health facilities that provide PAC</p> <p>-Prospective morbidity data from hospital records, of all patients presenting at PAC facility during the 30-day data capture period.</p>	<p>- Age (years).</p> <p>- Self-reported interference with pregnancy.</p> <p>-Marital status (currently married; currently unmarried).</p> <p>-Education level (None; Primary; Secondary or higher).</p> <p>-Religion (Catholic; Protestants; Muslims; None/other).</p> <p>-Mechanical injury to cervix.</p> <p>-Self-reported pregnancy interference.</p>	<p>-Risk of interference with pregnancy is high among unmarried women in all age groups.</p> <p>-50% of women seeking PAC were under the age of 25</p> <p>-20.8% were adolescents</p> <p>-81% of women were currently married (includes 57.8% of adolescents &amp; 79.4% of young adults)</p> <p>-Currently unmarried (18.8%)</p> <p>-No education (12.2%)</p> <p>-Primary education (55.1%)</p> <p>-Secondary education or more (32.7%).</p> <p>-Majority of PAC patients were religious. (Protestants 62.2, Catholics 23.4, Muslims 10.3), None/other 4% [These are for all types abortion]</p> <p>- Women under 25 years reported interference more often</p>	<p>-Community level stigma is attributable to reduced access to PAC, this raises questions to the validity/ reliability of data to make generalized characteristics to women at risk of abortion.</p> <p>- 1<sup>st</sup> study to detail demographic &amp; reproductive health characteristics of young women seeking PAC in Malawi.</p>

					<p>than adult women (15.8% of adolescents vs 6.1% of young adults).</p> <ul style="list-style-type: none"> <li>- Physicians reported 3.51 times more mechanical injuries to cervix, uterus for adolescent PAC patients than among adult women.</li> <li>- Marital status had influence on contraceptive use. Married young adults were 2.8 times more likely to report contraceptive use at time of pregnancy than unmarried young adults.</li> <li>- Report of a previous abortion was associated with being unmarried among the young adults (p-value &lt; 0.05).</li> </ul>	
Journal of Research in Nursing and Midwifery (2012).	<p>Chamanga, R. P., Abigail Kazembe, A., &amp; Maluwa, A.</p> <p>Psychological Distress among adolescents before, during</p>	To explore the psychological experiences of adolescents before, during and after the unsafe induced abortion	<ul style="list-style-type: none"> <li>- Descriptive cross sectional Qualitative study.</li> <li>- Study setting: Hospital-based.</li> <li>- Target population: Adolescents (15-19 years) admitted at gynecological ward of</li> </ul>	<ul style="list-style-type: none"> <li>- Age (years)</li> <li>- Education level (years in school [7-8 years; Form 1-2; Form 3-4]).</li> <li>- Religion (Catholic; Protestants; Muslims).</li> </ul>	<ul style="list-style-type: none"> <li>- Majority of the women were 17-19 years old (61%)</li> <li>- Most of the students were in secondary school (61%).</li> <li>- Religion: Majority were Christians (88%), Moslems (16.7%).</li> </ul>	<ul style="list-style-type: none"> <li>- There is a need to create awareness among the youths on consequences of unwanted pregnancies so that the rate of unsafe abortion can be reduced</li> <li>- Unsafe abortion is being procured by</li> </ul>

	and after Unsafe induced abortion in Malawi		a referral hospital, Malawi. - Data collection: Face- to-face in depth interviews			adolescents in Malawi.
East African Medical Journal. (2002).	Lema, V. M., Mpanga, V., & Makanani, B. S.  Socio- demographic characteristics of adolescent post-abortion patients in Blantyre, Malawi	To study socio- demographic characteristics of adolescent PAC patients and that of their partners, with the aim of understanding the determinants of adolescent fertility in Malawi, thus facilitating design of appropriate intervention strategies.	- A hospital- based, descriptive cross- sectional study. - n = 446 adolescents managed for incomplete abortion during the study period. - Face-to-face interviews conducted using partially structured and pretested questionnaire.	-Age (years) - Highest level of education attained (None; Primary [1- 4]; Primary [5-8]; Secondary; Post- Secondary College; University).  -Marital status (Single/unmarried; Married).	-Adolescents comprised 27.6% of all post-abortion patients. -Mean age 17.5 years -Unmarried adolescents comprised 43.9%. -Students 38.6% -Secondary education 30% -Unintended index pregnancy 45.1% of the total. -Adolescents formed the 2nd largest group after the 20-24- year category.  <b>Education:</b> None- 5.2%, Primary- 64.3%, Secondary- 30%, Post- secondary- 0.45%  <b>Marital status:</b> -Majority said were unmarried – (56.1%)	The unsafe sexual liaisons result in unwanted pregnancies, which invariably end in unsafe abortion (3 U's)

					-Majority, 379(85%) reported sexual liaison leading to index pregnancy was wanted.	
East African Medical Journal (2000).	Lema, V. M., & Mpanga, V.  Post-abortion contraceptive acceptability in Blantyre, Malawi.	To determine contraceptive acceptance amongst post-abortion patients in Blantyre, Malawi.	A cross-sectional pilot study, Hospital based. -Participants were patients treated for incomplete abortion during the period of study. -Face-to-face interviews were used to obtain data.	-Age (years) -Education (None; Primary [1-4]; Secondary; Post-secondary; College) -Marital status (Single; Married; Widowed/Divorced /Separated)	-N = 464 patients. Their mean age and parity were 24 (SD 6.1) and 1.5 (SD 1.9) respectively. -The single comprised 20.3% and students 16.4%. -Married (78.7%) -Primary education (55.2%). -Secondary school level or more (34.5%). - Index pregnancy reportedly unwanted by 45.3% and 17.2% reported they had unsafe abortion. (Of these 373 [80.4%] accepted contraception). - The single women (92.6%), the more educated and the students (94.7%) (P=0.0001) were more likely to have unwanted pregnancy. - 17.2% reported induced abortion with 70% being adolescents; 65% had attained secondary level of education or more; 78.8% were students, while 86.3% were single. - 36.2% of those reporting unintended index pregnancy had induced abortion.	- Properly planned postabortion contraception is acceptable in Malawi. It has the potential to provide an additional contraceptive service opportunity, thus increasing the currently low National CPR, and reduce repeat unwanted pregnancy, unsafe abortion, with all its potential sequel.

Reproductive Health Matters (2011).	<p>Jackson, E., Johnson, B. R., Gebreselassie, H., Kangaude, G. D., &amp; Mhango, C.</p> <p>A strategic assessment of unsafe abortion in Malawi.</p>	<p>Conducted as part of efforts to achieve Millennium Development Goal 5 (to reduce maternal mortality by 75% and achieve universal access to reproductive health by 2015).</p>	<p>-485 in-depth face-to-face interviews about sexual and reproductive health, maternal mortality and unsafe abortion, conducted with randomly selected Malawians from all parts of the country and social strata. (Community representatives, Professionals, Institutional representatives).</p> <p>-Cross-sectional, community-based study</p>	<p>-Factors leading to abortion.</p> <p>-Contraceptive use.</p> <p>-Methods of inducing abortion.</p>	<p>-Health care workers treating patients negatively if they suspected that she had had or attempted an abortion; women who had abortions were described as prostitutes” or “morally loose” by community members.</p> <p>-Financial status determined available options for abortion (Safe/ unsafe).</p> <p>-Indication by informants that safe abortion was not part of the culture of Malawi.</p> <p>-Malawi's restrictive abortion law, inaccessibility of safe abortion services, particularly for poor and young women, and lack of adequate family planning, youth-friendly and post-abortion care services were the most important barriers to reproductive health.</p>	<p><b>Important barriers to access of reproductive health services:</b></p> <p>Malawi's restrictive abortion law, inaccessibility of safe abortion services, particularly for poor and young women, and lack of adequate family planning, youth-friendly and post-abortion care services were the most important barriers.</p>
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