ISSN: 3066-9812
Research Article
Journal of Clinical Epidemiology and Public Health

Magnitude And Pattern of Abortion in Mettu Karl Compressive Specialized Hospital Southwest, Ethiopia

Dagim Dagne

Department of Public Health, College of Health Sciences, Mettu University, Mettu, Ethiopia

***Corresponding author:** Dagne, D. Department of public Health, Mattu University, Mettu, Oromia, Ethiopia.

Submitted: 28 January 2026 **Accepted:** 09 February 2026 **Published:** 15 February 2026

Citation: *Dagne, D. (2026). Assessment of Prevalence, Indications, Outcomes and Post Operative Complications of Obstetric Hysterectomy: at Mettu Karel Comprehensive Specialized Hospital, Mettu, South Weast, Ethiopia. J of Clini Epi & Public Health, 4(1), 01-06.*

Abstract

Background: *Abortion remains a major public health issue in Ethiopia, yet limited data exist on its magnitude and clinical outcomes, which are crucial for prevention and improved care.*

Objective: *To assess the pattern and magnitude of abortion cases in order to establish baseline information for future studies.*

Methods: *A retrospective review was conducted on records of all abortion cases managed at the Gynecology Outpatient Department of Mettu Compressive specialized Hospital from July 2024 to December 2024. Data were collected in March 2013 using a structured checklist. Five trained nurses extracted socio-demographic, clinical, and management information under supervision. Data were analyzed using SPSS version 16.0.*

Results: *Of 2,169 gynecologic patients, 483 (22.3%) were abortion cases. Most (97.1%) lived in rural areas, and the majority were aged 20–29 years. Over half were married (50.3%), unemployed/housewives (61.3%), and Oromo (51.1%). Spontaneous abortions accounted for 55.1% and induced for 44.9%. Incomplete abortion was the leading clinical type (64.0%), followed by complete abortion (22.6%). About 71.0% required admission. Major complications included anemia (22.2%), hemorrhagic shock (10.4%), sepsis (8.7%), and 10 maternal deaths (2.1%). Manual vacuum aspiration (33.1%) was the most common surgical intervention, followed by evacuation and curettage (15.7%).*

Conclusions: *Abortion represented a substantial proportion of gynecological cases with considerable complications and mortality. Strengthening preventive measures, timely care, and community awareness is critical to reducing abortion-related morbidity and mortality.*

Keywords: Abortion, Magnitude, Pattern, Early pregnancy loss, Complications, Ethiopia.

Abbreviations

WHO World Health Organization
CDC Centers for Disease Control and Prevention
PGE2 prostaglandin E2
EDHS Ethiopian demographic health survey
GA Gestational age
IEOS integrated emergency obstetrics and surgery
(MVA) Manual vacuum aspiration (E&C) Evacuation and curettage (D&E) Dilatation and evacuation (D&X) Dilatation and extraction
PHMS Public Health and Medical Sciences
HCG human chorionic gonadotropin

Introduction

Background

Abortion, defined as the spontaneous or induced termination of pregnancy before fetal viability, represents a significant reproductive health concern worldwide. While the term “miscarriage” is often used to describe spontaneous pregnancy loss, major health organizations such as the Centers for Disease Control and Prevention (CDC), the National Center for Health Statistics, and the World Health Organization (WHO) define abortion as the termination of pregnancy before 20 weeks of gestation or when the fetus weighs less than 500 grams [1, 2].

Advances in sonography and serum human chorionic gonadotro-

pin (hCG) measurement have allowed the detection of very early pregnancies, introducing terms such as "early pregnancy loss" and "early pregnancy failure" in clinical practice.

Globally, spontaneous abortion occurs predominantly in the first trimester, with over 80% of cases reported within the first 12 weeks of gestation. The risk of abortion increases with maternal and paternal age, parity, genetic anomalies, and certain environmental factors [3-6]. Clinically, the mechanisms underlying early pregnancy loss are complex, often involving embryonic or fetal death preceding expulsion, whereas later-term losses may have different patho physiological causes.

Annually, an estimated 46 million abortions are performed worldwide, of which nearly 20 million are unsafe. Unsafe abortions predominantly occur in developing countries (97%), with over half reported in Asia [7, 8]. Unsafe abortion is a major contributor to maternal morbidity and mortality. Approximately 68,000 women die each year due to unsafe abortion, and millions more experience complications including hemorrhage, sepsis, peritonitis, and trauma to the reproductive tract [9-11]. The burden of unsafe abortion on health systems is substantial. In low-income and middle-income countries, post-abortion care can consume up to 50% of obstetric and gynecologic hospital budgets. In sub-Saharan Africa, studies in Uganda and Tanzania indicate that treating complications is up to ten times more costly than providing safe, elective abortion services.

Unsafe abortion continues to pose a silent but preventable public health crisis, particularly in developing countries where legal restrictions, cultural norms, and lack of awareness limit access to safe abortion services. Women in rural or low-resource settings often resort to clandestine methods performed by untrained providers, increasing the risk of severe complications, prolonged hospitalization, and maternal death [12-15]. In Ethiopia, despite efforts to expand maternal health services, abortion-related morbidity and mortality remain significant contributors to maternal health burdens. Limited data on the magnitude, clinical patterns, and outcomes of abortion cases hinder evidence-based interventions.

Understanding the magnitude and clinical characteristics of abortion is critical for guiding public health policy, clinical practice, and preventive strategies. Documenting institutional abortion cases provides baseline evidence to inform healthcare providers, policymakers, and stakeholders in developing targeted interventions to improve access to safe abortion, reduce complications, and enhance maternal health outcomes. Furthermore, this study emphasizes the importance of increasing community awareness about reproductive rights, safe abortion services, and the legal context, which can ultimately reduce preventable maternal morbidity and mortality.

By providing a comprehensive analysis of abortion patterns and outcomes in Ethiopia, this study contributes to addressing gaps in knowledge, guiding health system planning, and promoting reproductive health equity.

Methodology

Study area and Period

A retrospective review of abortion cases was conducted at the Obstetrics and Gynecology Outpatient Department of Mettu Karle comprehensive specialized Hospital. Mettu Karle comprehensive specialized Hospital is located in Mettu Town, 595 km southwest of Addis Ababa. It serves an estimated 1.5 million people in the Illu-Ababora Zone and surrounding areas. The hospital has 291 staff members and 160 beds across various wards. The obstetric and gynecologic ward is equipped with two delivery coaches and several beds for different stages of labor and postpartum care.

The hospital provides comprehensive services including outpatient care, antenatal and postnatal services, child health, psychiatric care, voluntary counseling and testing (VCT), prevention of mother-to-child transmission (PMTCT), pharmacy, laboratory, radiology, and a maternity waiting area for high-risk mothers. The study period covered records from January 1, 2024, to December 30, 2024, with data collection carried out in March 2024.

Study Design

A hospital-based cross-sectional retrospective study design was employed, reviewing medical records of patients diagnosed and managed for abortion.

Source and Study Population

The source population included all women of reproductive age who visited the Gynecology Outpatient Department during the study period. The study population comprised all patients who sought care for abortion-related conditions during the same period.

Eligibility Criteria

Inclusion Criteria: All patients managed for abortion during the study period.

Exclusion Criteria: Charts of patients who died before management, as well as incomplete or lost medical records.

Sample Size and Sampling Method

All patients diagnosed and managed for abortion during the study period were included; hence, total enumeration was used without sampling.

Operational Definitions

- **Abortion:** Termination of pregnancy before 20 weeks' gestation or fetus <500 g.Threatened abortion: Vaginal bleeding before 20 weeks without cervical dilatation or product expulsion.Complete abortion: Expulsion of all products of conception before 20 weeks.
- **Incomplete abortion:** Partial expulsion of products of conception.
- **Inevitable abortion:** Bleeding with cervical dilatation before 20 weeks, without expulsion.
- **Missed abortion:** Fetal death with retained products in utero.
- **Septic abortion:** Infection of the uterus ± surrounding structures.
- **Blighted ovum:** Gestational sac without a viable fetus.
- **Induced abortion:** Medical or surgical termination of pregnancy before viability.
- **Therapeutic abortion:** Termination indicated for maternal or fetal medical reasons.
- **Elective abortion:** Termination at the request of the woman

without medical indications.

Data Collection Instruments

Data were collected using a pre-tested structured checklist in English, capturing socio- demographic characteristics, clinical presentation, and management outcomes. The checklist was pre-tested on 5% of the population before actual data collection.

Variables of the Study

Independent variables: Age, residence, marital status, occupation, gestational age, and clinical type of abortion.

Dependent variables: Abortion complications (e.g., hemorrhagic shock, anemia, sepsis, uterine perforation, death) and management outcomes (e.g., manual vacuum aspiration [MVA], evacuation and curettage [E&C], misoprostol administration).

Quality Assurance

Data collectors received training on study objectives and checklist use. Daily supervision was conducted by the principal investigator to ensure completeness and accuracy. Errors were corrected before subsequent data collection. Only qualified healthcare professionals participated in data extraction.

Data Management and Analysis

Collected data were checked for completeness, entered into EpiData, and exported to SPSS version 16.0 for analysis. Descriptive statistics, including frequencies and percentages, were computed for independent and dependent variables. Associations between variables were tested using the chi-square test, with statistical significance set at $p < 0.05$.

Ethical Consideration

Ethical clearance was obtained from ethical review committee of Mettu University, faculty of public health and medical sciences and official letter of co-operation was given to Mettu Karle compressive specialized Hospital. Confidentiality has been keeping for relevant information taken from the Hospital medical records. Charts and medical records of patients will revise only for the purpose of interest of the study. Information about the study has been told to the departments of hospital, labor and delivery, maternity ward, Operating Room (OR) and card office.

Results

Socio-Demographic and Obstetric Characteristics

During the study period, 304 (15.3%) of 1,983 gynecology outpatients at Mettu Karle comprehensive specialized Hospital were managed for abortion. Most patients resided in rural areas (69.4%), with 30.6% from urban areas. The predominant age groups were 20–24 years (37.5%) and 25–29 years (35.9%). Ethnically, Oromo (51.1%) comprised the majority, followed by Gurage (16.8%) and Amhara (10.4%). Most patients were married (50.3%), and 61.3% were unemployed or housewives (Table 1).

Table 1: Socio-demographic characteristics of abortion cases (n = 304)

Variable	Category	Frequency	%
Residence	Urban	93	30.6
	Rural	211	69.4
Variable	Category	Frequency	%
Age	15–19	33	10.9
	20–24	114	37.5
	25–29	109	35.9
	30–34	30	9.9
	≥35	18	5.9
Marital Status	Single	191	39.5
	Married	243	50.3
	Separated/Divorced	49	10.1
Occupation	Unemployed/Housewife	296	61.3
	Employed	74	15.3
	Student	80	16.6

Abortion-Related Clinical Profile

Among the 304 cases, spontaneous abortions accounted for 77.3%, while induced abortions comprised 22.7%. Incomplete abortion (66.4%) was the most frequent clinical type, followed by inevitable abortion (13.8%). Nulliparous women (44.1%) were most affected. The majority (83.6%) had no prior abortion history. 65.5% required admission. Major complications included anemia (21.7%), hemorrhagic shock (10.5%), sepsis (7.6%), and 6 deaths (2%).

Table 2: Clinical profile and complications of abortion cases (n = 304)

Variable	Category	Frequency	%
Type of abortion	Spontaneous	235	77.3
	Induced	69	22.7

Clinical type	Incomplete	202	66.4
	Inevitable	42	13.8
	Threatened	18	5.9
	Missed	6	2.0
Complication	Anemia	66	21.7
	Hemorrhagic shock	32	10.5
	Sepsis	23	7.6
	Death	6	2.0

Management of Abortion Cases

Medical management included misoprostol (19.7%), mifepristone (3.9%), oxytocin (3.6%), and combined drugs (13.5%). Antibiotics were administered to 71.4% of patients for >5 days. Anti-D prophylaxis was given to 2.6% of Rh-negative patients. Surgical interventions were dominated by manual vacuum aspiration (61.8%), followed by E&C (21.1%), D&C (1.6%), and hysterectomy/laparotomy (1.3%).

Table 3: Medical and surgical management of abortion cases (n = 304)

Treatment	Frequency	%
MVA	188	61.8
E&C	68	21.1
D&C	5	1.6
Hysterectomy/Laparotomy	4	1.3
Misoprostol	60	19.7
Mifepristone	12	3.9
Oxytocin	11	3.6
Combination drugs	41	13.5

Post-Abortion Family Planning

Post-abortion contraceptive uptake was suboptimal: injectable contraceptives (33.2%), combined oral contraceptives (20.4%), and 23% of patients received no method.

Investigations

hCG testing was performed in 81.9%, with 76% positivity. Ultrasound was used in 33.6% of cases.

Hemoglobin testing revealed severe anemia (<7 g/dL) in 4.3%, moderate anemia (7–10 g/dL) in 26.3%, and mild anemia (11–12 g/dL) in 43.4%; 17.8% were untested.

Maternal Outcomes

Binary logistic regression revealed:

- Gestational age >12 weeks was associated with lower odds of maternal death compared to <12 weeks (OR = 0.256; 95% CI: 0.084–0.781).
- Presence of sepsis increased the odds of death (OR = 1.264; 95% CI: 0.988–1.618).

Table 4: Logistic regression of maternal outcomes

Variable	Maternal Death	OR	95% CI
Gestational age >12 wks	7 (70%)	0.256	0.084–0.781
Gestational age <12 wks	3 (30%)	–	–
Sepsis	9 (90%)	1.264	0.988–1.618
No sepsis	1 (10%)	–	–

Discussion

The incidence of abortion in this study was 22.3% of known pregnancies, consistent with the World Health Organization estimates of 21% globally (26% in developed countries and 20% in developing countries) [12]. This similarity underscores that the absolute incidence of abortion may not differ significantly between regions with restrictive versus liberal abortion laws; however, restrictive laws are associated with higher rates of unsafe procedures.

The majority of abortion cases occurred in women aged 20–24 years (33.5%), aligning with global data showing that unsafe abortions peak in women aged 20–29 years in developing regions. Adolescents (15–19 years) account for a smaller proportion in Africa compared to other regions, highlighting age-related disparities in reproductive health risks [12].

Most women in the study were married (50.3%) and unemployed (61.3%), suggesting that socioeconomic factors, including poverty, lack of partner support, and educational disruption, are key determinants for seeking abortion [2,3,15]. Induced abortions comprised 44.9% of cases, reflecting a high demand for termination due to unintended pregnancies, maternal health risks, or social circumstances.

Gestational age analysis showed that over 80% of abortions occurred in the first trimester, with 61.1% at 8–12 weeks, consistent with other studies indicating that early pregnancy is the most common period for abortion. MVA (33.1%), E&C (15.7%), misoprostol (16.1%), and mifepristone (6.4%) were the main methods employed, though second-trimester medical abortion regimens common in other settings were not widely practiced locally [3,11].

Antibiotics were administered in 87.6% of cases, reflecting the high prevalence of infection at presentation. Hospitalization (71%) was frequently required due to complications such as incomplete abortion, sepsis, hemorrhage, or procedural challenges. Maternal death occurred in 2.1% of cases, largely related to gestational age and type of complication, comparable with global estimates of abortion-related mortality ranging from 1–49%, with Africa and Asia bearing the highest burden [12].

Post-abortion family planning uptake was low, particularly for traditional methods (<3%), suggesting a need for better counseling and accessibility of effective contraception.

Conclusion

This study highlights the magnitude and clinical patterns of abortion in the study area, emphasizing the prevalence of spontaneous and induced abortions, common complications, and treatment modalities. The findings provide critical evidence for policy makers, healthcare providers, and reproductive health planners, raising awareness on the risks associated with unsafe abortion and the need for comprehensive preventive and therapeutic interventions.

Recommendations

1. Enhance access to safe abortion services: Strengthen the availability of medically supervised abortion, particularly for women in rural areas and high-risk groups.
2. Improve post-abortion care and family planning: Ensure timely administration of antibiotics, Rh prophylaxis, and effective contraceptive counseling to reduce recurrence of unintended pregnancies.
3. Increase community awareness: Educate women and communities on reproductive rights, safe abortion methods, and the legal framework to reduce unsafe practices.
4. Strengthen health system data: Accurate and comprehensive data collection on abortion and its complications is essential for evidence-based policymaking and resource allocation.
5. Support further research: Investigate barriers to safe abortion access, sociocultural determinants, and interventions to reduce maternal morbidity and mortality associated with unsafe abortion.

By implementing these recommendations, health systems can reduce preventable maternal complications and deaths, improve reproductive health outcomes, and promote safer practices for women seeking abortion services.

Consent for Publication

Not applicable.

Availability of Data and Materials

Data are available upon reasonable request from the corresponding author.

Competing Interests

The authors declare no competing interests.

Funding

This study was self-funded.

Author Contributions

Dagim Dagne is the sole author. The author read and approved the final manuscript.

Acknowledgments

The author thanks Mattu University, Mettu Karle compressive specialized hospital and data collectors for their support. Special gratitude to study participants for their invaluable contributions.

References

1. World Health Organization. (2003). Safe abortion: Technical and policy guidance for health systems. Geneva, Switzerland: WHO.
2. Williams Gynecology > Section 1 Benign General Gynecology > Chapter 6. First-Trimester Abortion >
3. Hoffman, B. L., Schorge, J. O., Schaffer, J. I., Halvorson, L. M., Bradshaw, K. D., & Cunningham, F. G. (Eds.). (n.d.). Williams Gynecology. Section 1: Benign General Gynecology, Chapter 6: First-Trimester Abortion.
4. Singh, S., Fetters, T., Gebreselassie, H., Abdella, A., Gebrehiwot, Y., Kumbi, S., & Audam, S. (2010). The estimated incidence of induced abortion in Ethiopia. International Perspectives on Sexual and Reproductive Health, 36(1), 16–25.
5. Scott, J. R., Gibbs, R. S., Karlan, B. Y., & Haney, A. F. (Eds.). (2003). Danforth's obstetrics & gynecology (9th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
6. Benson, J. (2005). Evaluating abortion-care programs: Old challenges, new directions. Studies in Family Planning, 36, 189–202.
7. Ganatra, B. (2006). Unsafe abortion in South and South-East Asia: A review of the evidence. In I. K. Warriner & I. H. Shah (Eds.), Preventing unsafe abortion and its consequences: Priorities for research and action (pp. 151–186). New York, NY: Guttmacher Institute.
8. United Nations, Population Division. (2002). Abortion policies: A global review. Vol. III: Oman to Zimbabwe. New York, NY: United Nations.
9. Alan Guttmacher Institute. (1999). Sharing responsibilities: Women, society and abortion worldwide. New York, NY: The Alan Guttmacher Institute.
10. Mpangile, G. S., Leshabari, M. T., & Kihwele, D. J. (1999). Induced abortion in Dar es Salaam, Tanzania: The plight of adolescents. In A. I. Mundigo & C. Indriso (Eds.), Abortion in the developing world (pp. 387–403). New Delhi, India: World Health Organization.
11. World Health Organization. (2004). Unsafe abortion: Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2000 (4th ed.). Geneva, Switzerland: WHO.
12. Gebreselassie, H., Gallo, M. F., Monyo, A., & Johnson, B. R. (2005). The magnitude of abortion complications in Ken-

ya. BJOG: An International Journal of Obstetrics & Gynaecology, 112, 1229–1235.
13. Shah, I., & Åhman, E. (2004). Age patterns of unsafe abortion in developing country regions. Reproductive Health Matters, 12, 9–17.
14. Koster-Oyekan, W. (1998). Why resort to illegal abortion in Zambia? Findings of a community-based study in Western Province. Social Science & Medicine, 46, 1303–1312.
15. Johnson, B. R., Horga, M., & Fajans, P. (2004). A strategic assessment of abortion and contraception in Romania. Reproductive Health Matters, 12, 184–194.