

OUTCOMES OF OBSTRUCTED LABOUR AMONG MOTHERS WHO HAD GIVEN BIRTH IN ATTAT DISTRICT HOSPITAL IN THE LAST FIVE YEARS, GURAGIE ZONE,SNNPR, SOUTH ETHIOPIA.

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A THESIS SUBMITTED TO JIMMA UNIVERSITY COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCE, POSTGRADUATE STUDIES COORDINATING OFFICE; IN PARTIAL FULFILLMENT FOR THE REQUIREMENT OF DEGREE OF MASTER IN INTEGRATED EMERGENCY OBSTETRICS & GENECOLOGY AND GENERAL SURGERY (IEOS).

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Abstract

Background: Obstructed labour is one of the most preventable causes of maternal & prenatal morbidity and mortality. Worldwide obstructed labour occurs in an estimated 5 % of pregnancies and accounts for an estimated 8% of maternal deaths and 22% in Ethiopia. It is an indicator of inadequacy & poor quality of obstetric care and associated with high prenatal morbidity & mortality. However, there is scarcity of information on patterns and outcomes of obstructed labour in Ethiopia and Gurage zone in particular. Therefore, the current study was aimed at filling these gaps.

Objective: The main objective of the study was to review Prevalence & outcomes of obstructed labour among mothers who had given birth in Attat District Hospital, Gurage zone, SNNP, South Ethiopia.

Methods: All maternal records in the last five years were reviewed using pre-tested record review checklist. Data were analyzed using SPSS version 16.0 for windows. Logistic regression analysis was made to assess the association independent variables with the outcome variable. Ethical clearance was obtained from Ethical Review Board of Jimma University College of Public Health and Medical Sciences. Data was summarized and presented in frequency distribution tables, graphs, charts and texts.

Results: From 9097 total deliveries conducted in the last five years, 255 (2.8%) of them were obstructed labour. The commonest causes of obstructed labour were CPD 142(55.7%), malposition 77(30.2%) and malpresentation 29(11.4%). Management of obstructed labour was cesarean section 49(19.2%) for all alive fetuses, destructive delivery 75(29.4%) for dead fetus, laparotomy 131(51.4%) for ruptured uterus were 126(95.4%) of them were repaired. The most common intrapartum complications were 131(51.4%) uterine rupture and still birth 206(80.8%). The most common postpartum complications were puerperal sepsis 35.9% and fistula 6.7%. The Perinatal and maternal mortality rate were 207 (81.2%), 8(3.1%) respectively. ANC attendance & parity are significantly associated with maternal outcome at (AOR=0.5, at 95% CI/0.3-0.9/ and (AOR=0.2, at 95% of CI /0.1-0.7/ .while ANC attendance only significantly associated with neonatal outcome (AOR=0.3 at CI 95%/0.1-0.9/).

Conclusion and recommendation: The prevalence and complications of obstructed labour are remarkably too high. Thus, proper ANC attendance, early detections and referrals by primary health care workers and, appropriate management, were recommended.

Key words: obstructed labour, causes and outcomes, SNNP and Attat.

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Acronyms

ADH	Attat District Hospital
ANC	Antenatal Care
APGAR	Activity, Pulse, Grimace, Appearance, Respiratory effort
BTL	Bilateral Tubal Ligation
CD	Cesarean Delivery
CS	Cesarean Section
CPD	Cephalo-Pelvic Disproportion
EMOC	Emergency Obstetric Care
FMOH	Federal Ministry of Health
GA	Gestational Age
IUFD	Intrauterine Fetal Death
MWA	Maternity Waiting Area
NGO	Non-governmental organization
NICU	Neonatal Intensive Care Unit
PBP	Persistent Brow Presentation
PNC	Postnatal Care
PPH	Post Partum Hemorrhage
ROM	Rupture of Membrane
RVF	Recto -vaginal fistula
TAH	Total Abdominal Hysterectomy
VVF	Vesico-vaginal Fistula
WHO	World Health Organization

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Chapter One: Introduction

1.1. Back Ground

Obstructed labour is failure of descent of fetal presenting part in maternal birth canal, despite strong uterine contraction. The obstructions could be because of faults in maternal pelvis (abnormal shape or size) or the fetus (abnormally large or presenting abnormally, or congenital malformations) and the commonest cause of obstructed labour is CPD, this could arise as a result of reduced pelvic dimension, it occurs in labouring mother with childhood malnutrition and infection poliomyelitis deformity, sickle cell disease ,or in teenagers increase in diameter of the presenting part such as malposition, malpresentation e.g. brown presentation, compound presentation, occipito-posterior and mento-posterior in face presentation and congenital malformation (hydrocephalus, fetal ascites & double monsters) cause obstructed labour, other causes included fibroid or ovarian tumour impacted in the pelvis below the presenting part, cervical & vaginal stenosis, ridged perineum in primigravida and fetal abnormalities such as hydrocephalus & locked twin(1,2).

Labouring mothers presented with history of prolonged first stage of labour, early rupture of fetal membrane, and if labour delay with obstruction they present with secondary signs and complications. Such as, derangement of vital signs (e.g. low blood pressure),exhaustion ,metabolic acidosis, genital sepsis , injury to the genital tract includes uterine rupture and PPH, bloody urine due to traumatized of the bladder, distended lower uterine segment with constriction ring (bandl's ring),edema of lower vagina and vulva(Kanula syndrome) (2,4,8,17,18).

Obstructed labour is a life threatening obstetric complication associated with significant maternal and fetal morbidity and mortality. There is also a difference in the behavior of the uterus during the obstructed labour, depending upon whether the labouring mothers delivered previously. The patters on primigravida typically diminished contractility with risk of infections and fistula due to tissue necrosis whereas on multipara contractility maintained with risk of uterine rupture. Overall obstructed labour which has an impact on the fetus by causing intracranial haemorrhage due to severe moulding of the head leading to tentorial tear or traumatic delivery, caput, fetal distress and acidosis due to fetal hypoxia and maternal acidosis and neonatal sepsis. If the duration of obstructed labour prolonged without

intervention, the fetus dies because of anoxia by excessive pressure on the placenta& umbilical cord, the dead fetus becomes softened by decay& may trigger the onset of coagulation failure and prolonged uterine contraction end with rupture of uterus this leads to maternal haemorrhage then to hemorrhagic shock, peritonitis, septic shock & death. Mothers may improve with long term complications, like fistula, variable degree of vaginal atresia, cervical stenosis and secondary amenorrhea following hysterectomy due to rupture or Sheehan's syndrome (2,7,11).

The management of obstructed labour cases requires balanced decisions regarding the best methods of relieving the obstructions with the least hazard to the mothers and fetus (a live).In general the principle of management of obstructed labour was correcting fluid, control infection resting bladder and immediate relief of obstruction. Cesarean section followed by operative vaginal deliveries in malposition of fetal head in a live fetus and destructive deliveries in dead fetus were options of operative management (2-8).

1.2. Problem of statement

In 2008, pregnancy related complications resulted in an estimated 358,000 maternal death globally. Up to 90 % of these death are preventable if diagnosis and treated in a timely manner, out of 99% of maternal death occurs in developing countries and 65% occurs just in eleven countries including Ethiopia. Majority of maternal death traced to five causes; PPH, sepsis, obstructed labour which leads sepsis & postpartum hemorrhage, hypertensive disorder and unsafe abortion. Among these etiologies obstructed labour is one of the most common causes of maternal illness and death in sub-Saharan Africa and Southeast Asia. Worldwide obstructed labour occurs in an estimated 5 % of pregnancies and accounts for an estimated 8% of maternal deaths. It is an indicator of inadequacy & poor quality of obstetric care and immediate causes of maternal & prenatal morbidity & mortality due to uterine rupture, complications of caesarean deliveries, PPH, anesthesia complications, puerperal sepsis, fetal asphyxia & brain damage (5, 6).

Ethiopia has estimated maternal mortality ratio (MMR) of 470 in the range of 270-790/100,000 live births in 2010, WHO, equates with 14,000 maternal deaths per year. Obstructed labour accounted for 22% of maternal death in Ethiopia. And associated with high prenatal morbidity & mortality (fetal and new born deaths & disability occurring as around the time of birth). This shocking figures certainly an underestimation of the problem, deaths due to obstructed labour are often classified under other complications such as sepsis, postpartum haemorrhage & uterine rupture and main obstetric causes of obstructed labour in low income countries include CPD, malposition & malpresentation (4, 5).

Delay in management of obstructed labor causes fistula in surviving women, may make them outcasts from their communities for the rest of their lives and it leads to depression and physical illness. Its incidence ranges from 2-8% of from all hospital deliveries in developing countries and has particular impacts in communities' availability of functioning health services sparse, childhood malnutrition, early marriage, low antenatal coverage & mothers spent much time on labor. But, in developed countries the prevalence of obstructed labour in advanced obstetric care near obsolete (7).

In Sub-Saharan countries including Ethiopia women are traditionally expected to give birth at home and consequently delay their health care seeking in child birth, even if complications arise. Moreover, women are marginalized in decision making regarding when & where to

seek care financial demand and inadequately developed health care system including poor infrastructure, poor transportation and poor obstetric services are also a major contributors for obstructed labour. It is preventable labour complication and highly prevalent in rural areas of Ethiopia, particularly among women who are in labour at home for a long time (8).

Many studies conclude that obstructed labour is preventable and depends on good nutrition starting childhood, universal coverage of antenatal care, monitoring of labour with skilled staff, pelvic assessment at 36wks, routine use of partogram, good referral system and availing comprehensive obstetric care in near health institution or establishment of a mother's waiting area (2, 4).

Nevertheless, such studies were conducted in only limited local areas. As far as the knowledge of the authors is concerned, there is no such published study in Guragie zone, particularly in cheha district. Therefore, the current study is aimed at identifying the outcomes of obstructed labor in the hospital of the district through a five years retrospective record review.

Chapter Two: Literature Review

2.1. Literature Review

In many studies the prevalence of obstructed labour ranges from 0.9-12.5%. In Pakistan, 2.1% in public sector university, Sindh (7) and 2.4% in Tertiary care Hospital (9), 4.52% in Khyber Teaching Hospital, Peshawar (10), 1.12% in India, Jhalawar Medical College (11), 4% in specialist Gombe Hospital, Gombe state (12) and 1.3% in Wad Medani Teaching Hospital (13). And in six hospital obstetrics record review in South Western Uganda the prevalence was 10.5%, in two hospitals registered highest prevalence of obstructed labour was 12.4% and 12.5% (8) and other studies showed 0.9% in Kassal hospital, Sudan (14), 3.3% in Adigrat zonal hospital, Ethiopia (17) and 12.2% in Jimma university specialized hospital, Ethiopia (18).

In different studies identified causes of obstructed labour were mainly CPD, malposition, malpresentation and fetal abnormality. In Pakistan, public sector university causes of obstructed labour were 49.9% CPD, 43.3% malposition/malpresentation and 6.8% fetal congenital malformation (7), in the same country another study in teenage pregnancy indicated 66% CPD, 17.06% malposition, 12.8% malpresentation and 4% fetal abnormality (3), in Khyber Teaching hospital, Peshawar, 47.5% CPD, 45.5% malposition/malpresentation, 7.8% fetal abnormality (7.1% fetal hydrocephalus & 0.7% fetal ascites) (10) and in Jhalawar Medical college, India, 63% CPD, 27% malposition, 3% malpresentation and 1.5% cervical fibroid (11).

In Specialist Gambe Hospital (12) and Wad Medani Teaching Hospital (13) the main cause of obstructed labour was CPD 83% and 63% respectively. Six hospital obstetrics recorded reviewed in South Western Uganda the causes were 63.7% CPD, 16.2% Malposition, 19.8% malpresentation and 0.3% hydrocephalus (8), In Adigrat hospital, Ethiopia the main causes of obstructed labour were 53.7% CPD and 25.9% malposition/malpresentation (16) and also in the same place at different time 64.9% CPD, 32.5% malposition/malpresentation, 2.1% fetal congenital malformation and 0.5% fibroids (17) and in another study conducted in Jimma Specialized University Hospital, Ethiopia showed that 67.6% CPD, 27.4% malpresentation, 3.4% fetal anomaly and 1.1% pelvic mass (18).

In different retrospective and prospective studies the case distribution of obstructed labour varies with age. In Pakistan, public sector university hospital, Sindh, 27.3% in < 20yrs, 52.2

% in 20-29 yrs and 20.5% in ≥ 30 yrs (7), Khyber Teaching Hospital, Peshawar, 15.9% < 20 yrs, 55.6% in 20-29 yrs, 28.4% ≥ 30 yrs (10). In six hospital reviewed South Western Uganda, 17.5% < 20 yrs, 61.3% in 20-29 yrs and 21.2% ≥ 30 yrs (8), in Adigrat Zonal Hospital, Ethiopia 11% < 20 yrs, 45% in 20-29 yrs and 44% in ≥ 30 yrs (17) and in Jimma Specialized University Hospital, Ethiopia 8.4% ≤ 19 yrs, 61.5 % in 20-25 yrs and 27.2% ≥ 30 yrs (18).

Based on residence and parity, obstructed labour distribution, in Pakistan, Public Sector University 72.2% belonged to rural, 47.7% primigravida, 9.1% para two to four and 43.2 % greater or equal to five (7) , In Jhalawar Medical College, India, 85.7% in rural and 81.4% were primigravida (11), In Wad Medani Teaching Hospital, 44.9% , 55.1% were urban and rural dwellers respectively (13), in Kassal Hospital, Sudan, 90.5%, 52.5% were rural in residence and primigravida respectively (14), in Adigrat Zonal Hospital, Ethiopia 88% came from rural and 28.8% primigravida, 47.1% para two to four and 24.1% greater than or equal to Para five (17) and in Jimma University specialized Hospital, 34.1% were primigravida, 41.9% Para two to four, 24% were greater or equal to Para five (18).

The frequency of obstructed labour related with ANC follow up and duration of labour. In Pakistan, Public Sector University, Sindh, only 29.5% had ANC follow up and the mean duration of labour was 27.5 hrs (7), Tertiary Hospital ,in Pakistan, the mean duration of labour ranges from 8-12 hrs 22.8%, 67.3% in 13-24 hrs (9), 34.8% , 36.2% had ANC follow up in Jhalawar Medical College, India (11) and Wad Medani Teaching Hospital (13) respectively .And in Adigrat zonal Hospital, Ethiopia 14.8% had ANC follow up and 45.4 hrs was the mean duration of labour (17) and 71.5 % had no ANC follow up in Jimma Specialized University Hospital (18).

In another study carried out in Wad Medani Teaching Hospital, obstructed labour presented with clinical features of dry tongue & sweating 100%, raised pulse 89%, pyrexia 87%, caput & moulding 62.3%, offensive vaginal discharge 49.3%, fetal distress 26.1%, bandl's ring 23.3%, hypotension and vulva edema 23.2% (13).

The commonest mode of management of obstructed labour was cesarean section followed by instrumental delivery and destructive delivery for dead fetus. In Public Sector University Hospital of Sindh, 81.1% done cesarean section and 6.8% laparotomy for rupture uterus (7), In Pakistan, University of Larkana, Sindh, 84% done C/S, 12% assisted Vaginal delivery, 4%

Spontaneous delivery with Episiotomy (3) and 84.1 % of C/S done in Khyber Teaching Hospital, Peshawar (10), 92.9% C/S, 7.1% laparotomy and subtotal hysterectomy in Jhalawar Medical college, India (11) and 72.2% C/S in specialist Gombe Hospital ,Gombe state (12). In six Hospital in South Western Uganda, 91.1% C/S, 6.3% laparotomy for rupture uterus, 1.2% assisted vaginal delivery, 0.5% symphysiotomy and 0.2% craniotomy for dead fetus (8),In kassal hospital, Sudan 95.25% C/S, 4.8% forceps delivery in alive fetus and 14.3% laparotomy for rupture uterus (14), In Adigrate zonal Hospital 45.3% C/S, 16.2% craniotomy, 14.1% instrumental delivery, 14.6% hysterectomy and 8.9% repaired of rupture uterus (17) and in Jimma Specialized University Hospital, Ethiopia 54.7% C/S , 32.4% laparotomy & hysterectomy and 12.8% destructive delivery (18).

In many retrospective and cross- sectional observational studies obstructed labour leads to devastated short and long term complications and directly affect maternal and fetal outcome. In University of Larkan sindh, Pakistan ,the common complications were 44% PPH, 1.1% scar dehiscence due to prolonged trail of labour, 1.94% VVF , 1.95% of die due to septicemia and perinatal mortality was 54.6% (3), in Tertiary Care Hospital, in Pakistan , PPH 27.14%, extension of uterine incision 28.57%, uterine rupture 17.14% and bladder rupture 11.42% (9), Khyber Teaching Hospital, Peshawar, fetal morbidity occurred in 47.8% of cases, 1%, 38% of maternal & prenatal mortality respectively (10), in Jhalawar Medical College, India, sepsis 27.1% & 55.7% of newborns were admitted in NICU after cesarean section due to low 1st minute APGAR score (11).

In six hospital obstetrics record reviewed in south western Uganda the fetal outcome was 10127 of the11180 women records analyzed, the prenatal mortality rate was 141/1000 total Births 165/1167 for women who had obstructed labor and 65/1000 total Births (586/8960) among women in non obstructed labor, overall the prenatal mortality rate was 74/1000 total Births and risk of maternal complications were 10.8% in women in obstructed labor compared to 1.4% in women without obstructed labor. Maternal complication were observed among obstructed labor were rupture uterus 7.1%, puerperal sepsis 3.4%, bladder injury 1.8%, post partum haemorrhage 1.2%, fistula 1.4% and one case of disseminated intravascular coagulation and 1.2% died (8).

Another study also showed that, in Kassal Hospital, 14.3% rupture uterus & 4.8% vesico-vaginal fistula were the main complications and there were 4.8% and 35.7% maternal &

prenatal mortality respectively (14). Medical record review of a major emergency obstetric care in Tikur Amebassa specialized Hospital, Ethiopia the gross prenatal and early neonatal mortality rates 91.8 & 26.1/100,000 b

Births each respectively. About half 48.8% of the total causes of prenatal deaths were mechanical factors, predominately obstructed labor (15).

In Adigrat Zonal Hospital observed complication were 19.9% puerperal sepsis, 9.9% fistula, 4.7% PPH, 22.5% rupture uterus, 5.8% rupture bladder and fetal complications were 34% fetal asphyxia , 7.3% fetal birth injury, 50.3% still birth and maternal & neonatal fatality rate were 3.7 & 55.5 % respectively (17). And in Jimma Specialized University Hospital, Ethiopia 45.1% uterine rupture, 39.5% puerperal sepsis, 8.2% PPH, 4.1% VVF, 2.6% bladder rupture, 45.8% of fetuses were born alive and all had low first minute Apgar score and prenatal mortality rate was 66.1per100 Births. Their weights were in normal range (2500-3999gms) 153 cases, 8.5% were macrosomic >4000gms and others 10 had low birth weight (18).

2.2. Conceptual Frame work

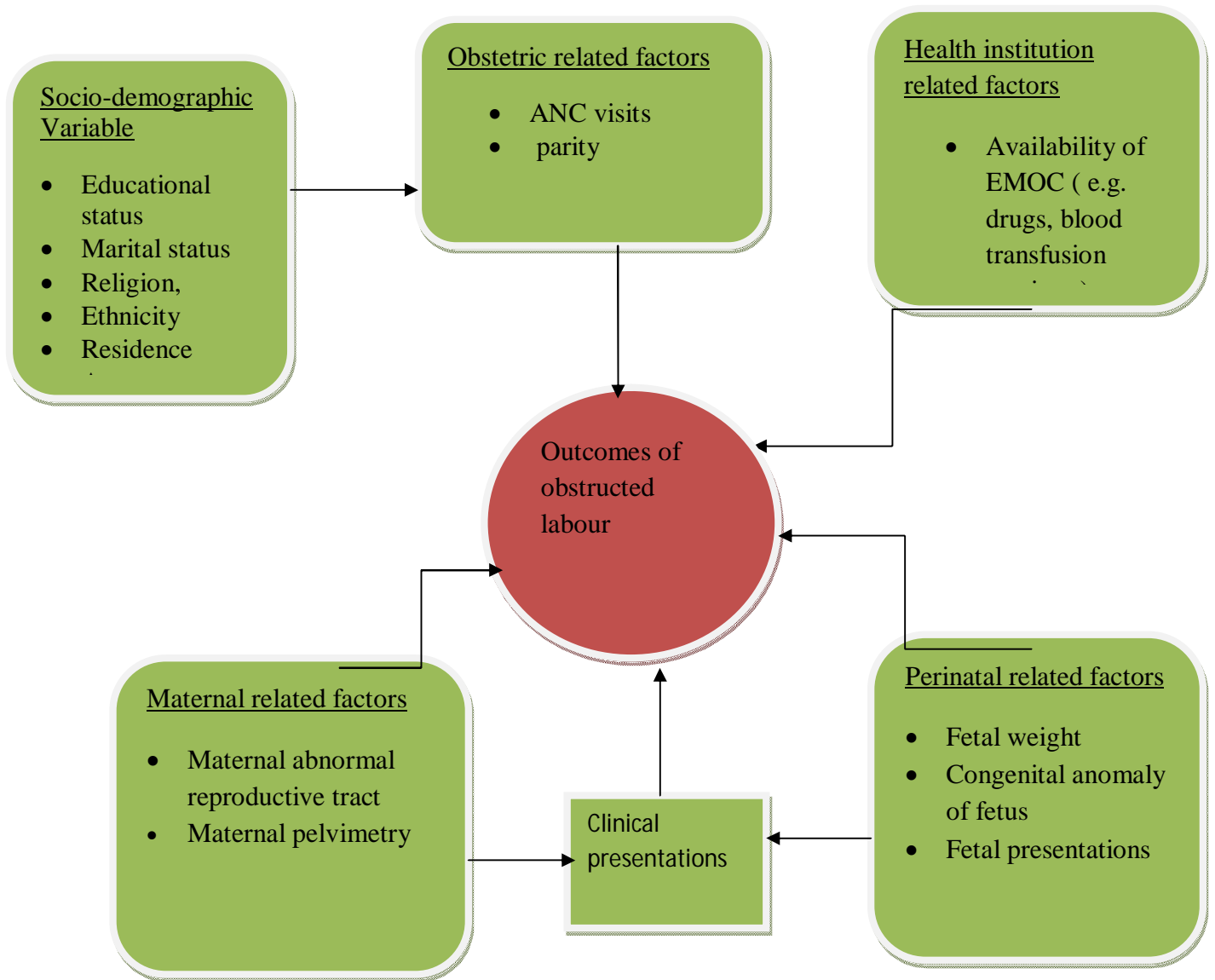


Figure 1: Factors affecting Perinatal and maternal outcomes of obstructed labour.

2.3. Significance of the study

Obstructed labour is one of the most common preventable causes of direct maternal morbidity & mortality in developing countries. Ethiopia is one of the developing countries, which has the highest maternal morbidity & and mortality. Therefore, the current study will contribute to the existing knowledge to understanding causes, patterns, management & outcome of obstructed labour and the finding will help to increase the provision of emergency obstetric care and functioning health facility based on evidence.

Obstructed labour is an indicator of obstetric care. As far as the knowledge of the author is concerned, the current study is the first of its type for the study area. Therefore, the finding will act as baseline data for improving obstetric care in Guragie zone by providing policy makers, programs implementers, NGOs, baseline data which helps as an input for future planning and intervention for appropriate strategies to prevent maternal and perinatal morbidity & mortality associated with obstructed labour.

Chapter Three: Objective

3.1. General Objective

- ❖ To assess outcomes of obstructed labor among mother who had given birth in Attat District Hospital in the last five years, Guragie zone, SNNP, South Ethiopia.

3.2. Specific Objectives.

1. To verify outcomes of obstructed labor among mother who had birth in Attat District Hospital.
2. To identify possible causes of obstructed labour among mother who had given birth in Attat District Hospital.
3. To identify the management practice of obstructed labor among mother who had birth in Attat District Hospital.
4. Factors associated to Perinatal and maternal outcomes of obstructed labor among mother who had birth in Attat District Hospital.

Chapter Four: Methods and Materials

4.1. The study area and period

The study was conducted from Feb 23 to April 1/2013 G.C in Attat District Hospital, in Gurage Zone, SNNPR located 175km Southwest of Addis Ababa and 17km from the town of Welkite. The catchment area for the curative services covers a population of 800,000 and hospital is owned by Ethiopian Catholic Church & managed by medical mission sisters an international religious congregation. The beneficiaries of the service are mainly the residents of Cheha Woreda and the hospital has been in operative since 1969 (19).

Attat district Hospital serves as a referral center for 35 health centers and for 5 clinics. The hospital has 113 beds out of which 48 beds are in maternity waiting area (MWA), 3 in labour ward beds, 5 in obstetric beds and 2 in delivery beds. The main services provided by the hospital are inpatient and outpatient medical, surgical, pediatrics and Obstetrics& Gynecology services. The main surgical procedure performed in the hospital is Obstetric& Gynecological, accounting for 918 operations from a total of 1689 major operations in 2011 and there were a total of 1,739, 1,814, 1931 deliveries and abnormal labor accounted for 1053, 1115, 1161 in the years 2009, 2010 and 2011 respectively (19).

Attat Hospital has 166 staffs. Of which, 79 are health professional staffs including, one surgeon, one obstetrician & gynecologist, three general practitioners ,one health officer, two health coordinators, two pharmacists, four druggists, forty-four nurses (i.e. thirty-six clinical nurses, three midwifery, three senior expert nurses, one nurse anesthetic and one ophthalmic nurse) and the rest 87 are supportive staffs (19).

4.2. Study design

A cross-sectional study based on review of obstetric registration &operation records.

4.3. Populations

4.3.1. Source of population

The source of population was all obstetric records from April 1/2008 to April /2013.

4.3.2. Study population

The study population was all obstetric records from April 1/2008 to April /2013 which fulfill inclusive criteria.

4.3.3. Study unit

The study unit was records of mothers who had given birth at Attat Hospital and admitted on diagnosis of obstructed labor from April 1/ 2008 to April /2013.

5.3.4. Inclusion & exclusion criteria

4.3.4.1. Inclusion criteria

- ❖ All records of admitted mothers with a diagnosis of obstructed labour.

4. 3.4.2. Exclusion criteria

- ❖ Mothers admitted after delivery from any other health institution or from home with complications of obstructed labor.
- ❖ A woman with obstructed labor referred to other hospital before delivery.

4.4. Sample size and sampling technique

4. 4.1. Sample Size Determination

The sample size was all records (255) of mother with a diagnosis of obstructed labor in (maternity& labor& delivery ward) admitted from April 1/2008 to April 1/2013.

4. 4.2. Sampling technique

All obstetric records with a diagnosis of obstructed labour on maternity, labor& delivery ward and operation registration books were reviewed, card number & name was collected. And the cards was accessed by using card number & name, collected from record room and all necessary data were reviewed using checklists.

4.5. Variables

4. 5.1. Dependant variable

- ❖ Outcomes of obstructed labor

4.5.2. In dependant Variable

- ❖ Age
- ❖ Parity
- ❖ Ethnicity
- ❖ Religion
- ❖ Educational status
- ❖ Availability of emergency obstetrics care
- ❖ Clinical presentations
- ❖ Marital status

- ❖ Fetal weight
- ❖ Duration of labour
- ❖ Duration of rupture of membrane
- ❖ ANC visit
- ❖ Residence
- ❖ Clinical pelvimetry
- ❖ Maternal abnormal reproductive tract
- ❖ Congenital malformation of fetus

4.6. Operational definitions

- ❖ Maternal outcomes
 - Favorable maternal outcomes—a mother's who had a diagnosis of obstructed labour, No observed complications from admission to discharge.
 - Unfavorable maternal outcomes-a mother that had a diagnosis of obstructed labour, observed one or more complications from admission to discharge.
 - Uterine rupture, bladder rupture
 - Sepsis & puerperal sepsis
 - Postpartum hemorrhage
 - Fistula (RV/VV)
 - Pubic osteitis and foot drops
 - Maternal death
- ❖ Perinatal outcomes
 - Favorable prenatal outcomes-no observed complications during intrapartum and till discharge from the hospital.
 - Unfavorable prenatal outcomes-fetal and neonatal complications happen during intrapartum and till discharge from the hospital.
 - Fetal distress
 - Still birth (due to asphyxia)
 - Neonatal death
- ❖ Perinatal death-still birth plus neonatal deaths in first week due to obstructed labour.
- ❖ Perinatal mortality rate-the number of still birth or neonatal death among all delivery with a diagnosis of obstructed labour from April 2008 to April 2013.

- ❖ Maternal death-death of labouring mothers with obstructed labour or its complication from April 2008 to April 2013.

4.7 .Data collection methods

The data were collected by using record review checklist after traced of the patient card with card number and name & the data collected from registration books in labor& delivery, patient cards, Operation Theater notes.

4.8 .Data collection procedure

The data were collected through filling pre-tested check list by trained health profession of two midwives and three clinical nurses, a total of five day was taken to complete the data collection.

4.9. Data processing and analysis

The data were entered, cleaned and analysis with SSPS version 16.0 and descriptive analysis was done on the socio-demographic and economical factors, causes, symptoms, signs and outcomes of obstructed labour. Bi-variate and multi-variable logistic analysis was also done to see the relationship between the dependant and independent variables. Finally, the result was presented in frequency distribution tables and summarized graphs & pie-chart.

4. 10. Data quality control

The checklist was pretested in Mettu Karl Hospital and the checklist was standardized after the pretest, and the training was given for data collectors and supervisor, close supervision was done by principal investigator and supervisor during data collection and completeness of data was checked daily. Besides on correction was made on the gaps identified daily

4. 11. Ethical consideration

Ethical clearance was obtained from ethical reviewed board of Jimma university collage of public health& medical sciences. Ethical committee has given a letter of cooperation to Attat hospital, and permission was obtained from Attat Hospital administration and from the respective study participants.

4.12 .Dissemination of findings

Based on the finding, conclusion & recommendation was given, then the result of the study will be submitted to the college of public health and medical science & post graduate office, to Attat Hospital & other responsible bodies and the result will be presented during thesis

defense, meeting & workshop. Moreover, an effort will be done to publish the finding on a reputable journal.

Chapter Five: Result

5.1. Maternal socio-demographic variables

During the last 5 years, there were a total of 9097 deliveries among which 255(2.8%) obstructed labour .About three of obstructed labour occurred in teenagers, 120(47.1%) were in the age group of 20-29 yrs and 132 (51.8%) in the age groups of ≥ 30 years. Majority of mothers with obstructed labour were married 253(99.2%) and from 244(95.7%) rural area (Table 1).

Table 1: Socio demography characteristics of obstructed labour cases, Attat district hospital, from April 2008 to April 2013.

Sr.no	Socio-demography characteristics	Categories	Number of cases (n=255) (%)
1.1	Age	<20yrs	3 (1.2)
		20-29yrs	120 (47.1)
		≥ 30 yrs	132 (51.8)
1.2	Marital status	Married	253 (99.2)
		Others(single, divorced)	2 (0.8)
1.3	Religion	Christian	169 (66.3)
		Muslim	86 (33.7)
1.4	Residence	Urban	11(4.3)
		Rural	244 (95.7)

5.2. Maternal obstetrics variables

Concerning the maternal obstetric variables, in about 119(56.7%) of the cases, the labour lasted greater than 24hrs, 117(45.9%) had early ROM that lasted greater than 24hrs, 155 (60.2%). Of the mother had no ANC visit and 163 (63.9) were multipara mothers (Table 2).

Table 2: Obstetrics history obstructed labour cases, ADH, from April 2008 to April 2013.

Sr.no	Clinical presentations	Categories	Number of cases (n=255) (%)
1.1	Duration of labour	<12hrs	2 (0.8)
		12-24hrs	125 (49)
		>24hrs	119 (46.7)
1.2	Duration of ROM	<12hrs	42 (16.5)
		12-24hrs	87 (34.1)
		>24hrs	117 (45.9)
1.3	ANC	Had one or more ANC visit	100 (39.2)
		Had no ANC visit	155 (60.2)
1.4	Parity	Primigravida	60 (23.5)
		Multigravida	163 (63.9)
		Grand-multipara	32 (12.6)

5.3. Causes of obstructed labour

The commonest causes of obstructed labour were CPD 142(55.7%) followed by malposition 77(30.2%) , malpresentation 29(11.4%), hydrocephalus 5(2.0%) and pelvic tumor (leiomyoma) 2(0.8%) (Figure 2).

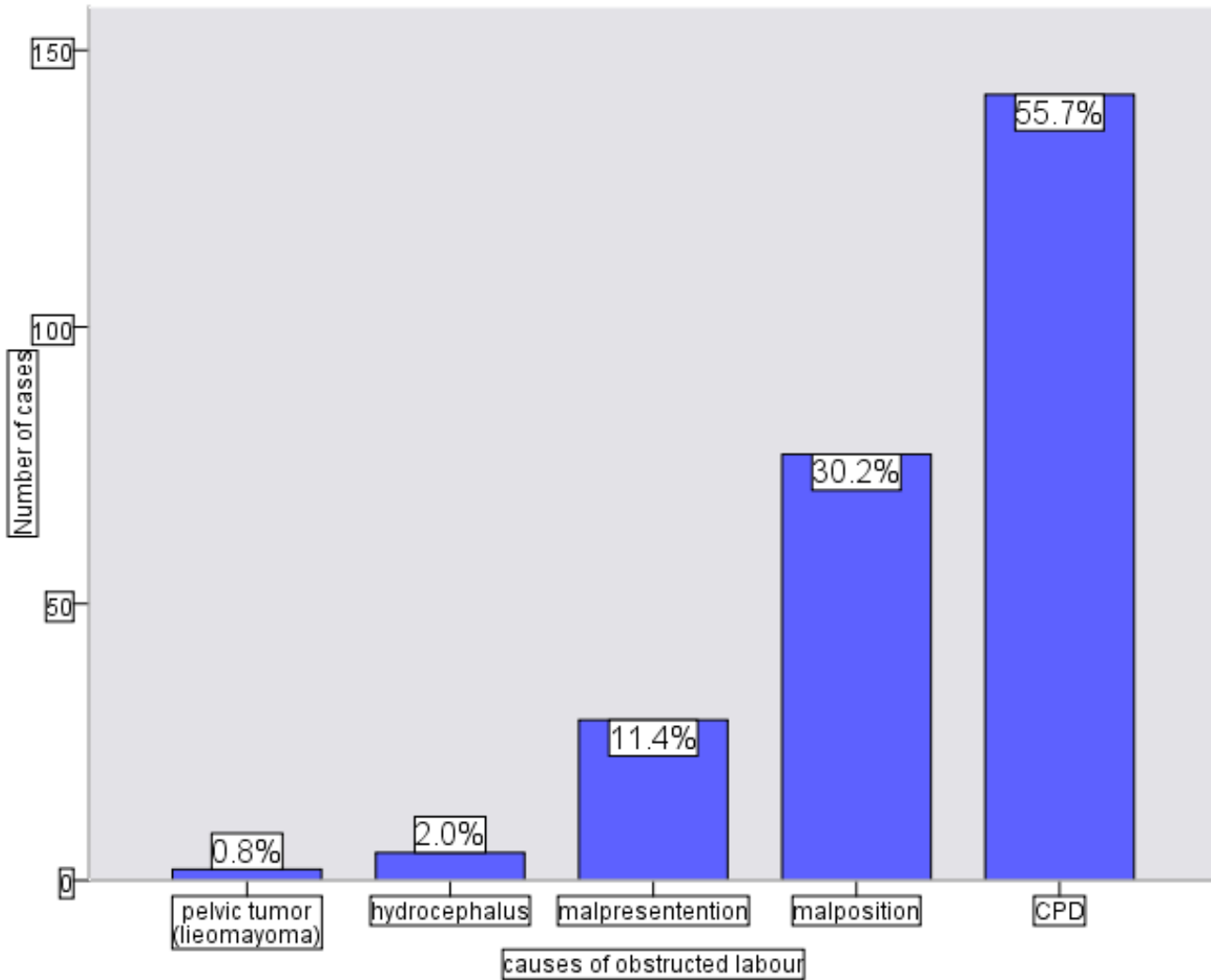


Figure 2: Distribution of obstructed labour based on causes. ADH, from Aril 2008 to April 2013.

5.4. Common symptom and signs of obstructed labour

Table 3 indicated the common symptoms and signs of obstructed labour, they were presented with clinical presentations of dehydration, weakness & exhaustion 255(100%), lower vagina & vulva edema 87(34.1%), bandl's ring 100(39.1%), birth canal infection 229(89.8%), fetal distress 33(12.9), IUFD 206(80.8%).

Table 3: Common symptoms and signs of obstructed labour cases. ADH, from April 2008 to April 2013.

Common symptoms & signs (%)	Number of cases (n=255)
Symptoms	
Dehydration	255(100)
Weakness and exhausted	225(100)
Bloody urine	229(89.7)
Hx of prolonged labour	119(46.7)
signs	
Lower Vagina & Vulva edema	87(34.1)
Bandl's ring	100(39.1)
Birth canal infections	229(89.8)
Fetal distress	33(12.9)
IUFD	206(80.8)
Vital signs derangement	73 (28.6)
Caput and moulding	218(85.5)

5.5. Management practices of obstructed labour

The commonest interventions performed for obstructed labour for a live fetus were cesarean section which was lower uterine segmental transverse cesarean delivery 49(19.2%), destructive delivery for dead fetus 75(29.4%) mainly craniotomy 73(28.6%) and 131(51.4%) laparotomy for all rupture uterus (Figure 3).

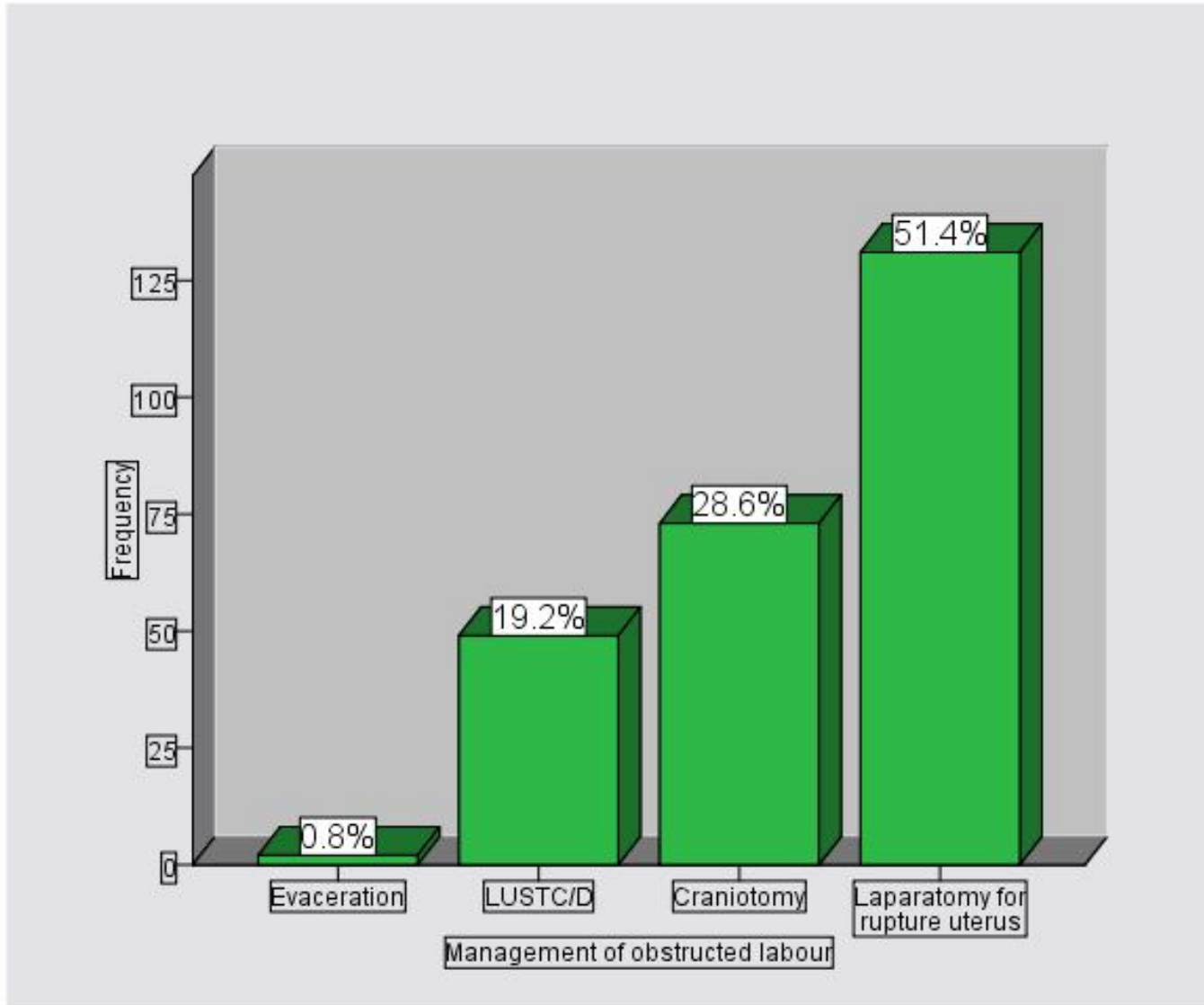


Figure 3: Interventions performed for obstructed labour cases. ADH, from April 2008 to April 2013.

5. 5.1. Management practice of uterine rupture

The commonest interventions observed for rupture uterus were 126(95.4%) repaired rupture uterus (49(37.1%) with tubal ligation and 77(58.3%) without tubal ligation) followed with 5(3.8%) total abdominal hysterectomy (out of these one TAH done for uterine incision extensions during C/S) and 1(0.8%) of subtotal abdominal hysterectomy (Figure 1).

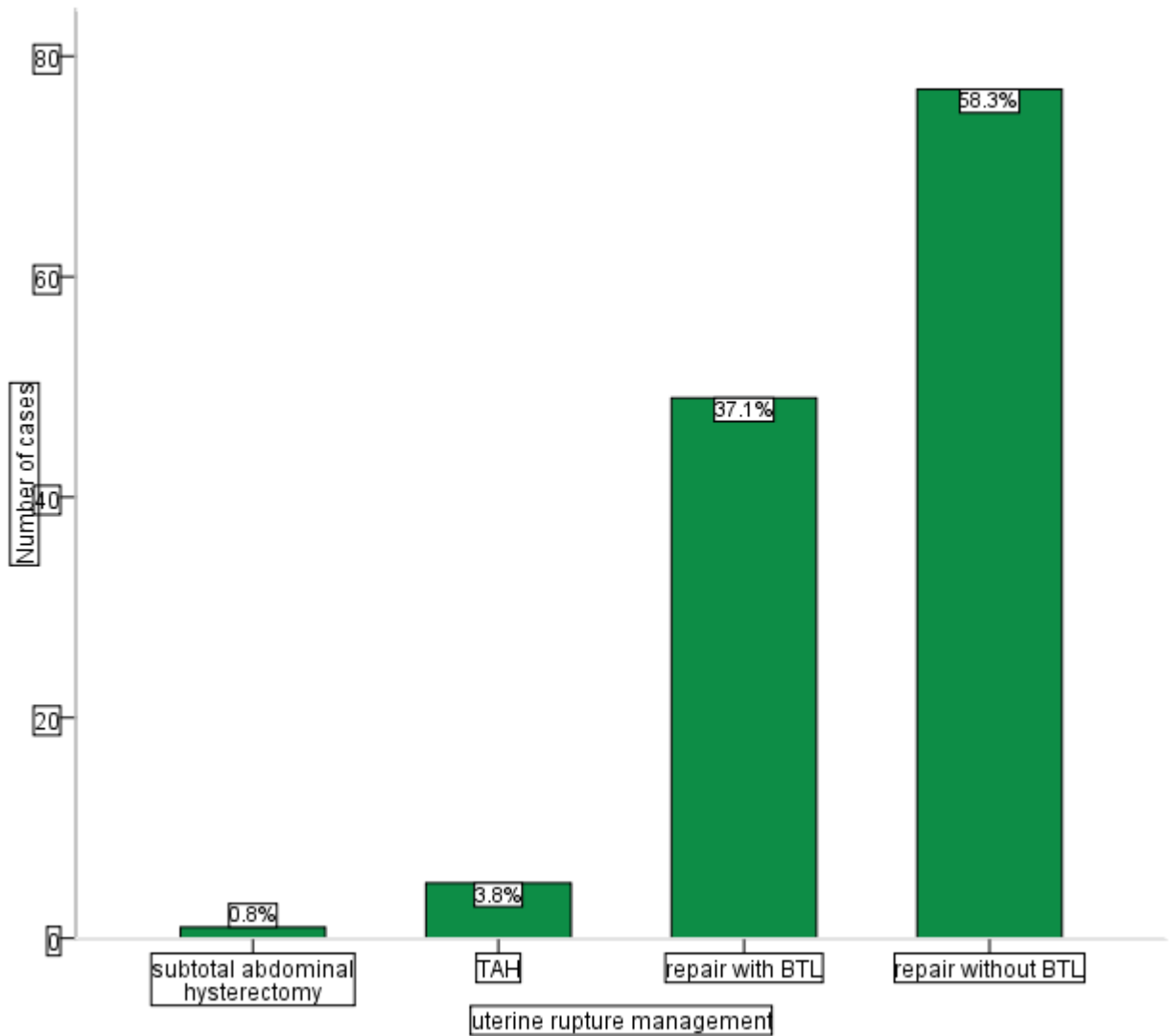


Figure 4: Management practice performed for uterine rupture. ADH, from April 2008 to April 2013.

5.6. Maternal outcomes

5.6.1. Maternal intrapartum complications

Table 4 shows intrapartum outcomes of obstructed labour and majority of cases were unfavorable outcomes 170 (66.7%) from this 131(51.4%) uterine rapture ,121(47.4%)sepsis and 160(62.7%) more than one complications .

Table 4: Maternal intrapartum complications/outcomes of obstructed labour cases. Attat District Hospital from April 2008 to April 2013.

Sr.no	Maternal outcomes	Number of cases (n=255) (%)
1	Favorable outcome	85(33.3)
2	Unfavorable outcomes	170(66.7)
2.1	Uterine rapture	131(51.4)
2.2	Sepsis	121(47.4)
2.3	Bladder rupture	12(4.7)
2.4	Uterine incision extention	1(0.4)
2.5	More than one complications	160(62.7)

5.6.2. Postpartum maternal complications/outcomes

Among totally observed obstructed labour cases 133(52.2%) had favorable outcomes followed with122(48.8%) unfavorable postpartum maternal outcomes (Table 5).

Table 5: Distributions of postpartum maternal complications of obstructed labour. Attat District Hospital from April 2008 to April 2013.

Sr.no	Maternal outcomes	Number of cases (n=255) (%)
1	Favorable outcomes	133 (52.2)
2	Unfavorable outcomes	122 (48.8)
2.1	PPH	12 (4.7)
2.2	Puerperal sepsis	90 (35.5)
2.3	Fistula (RV/VV)	17 (6.7)
2.4	Pubic osteitis and foot drops	10 (3.9)
2.5	Maternal death	8 (3.1)
2.6	More than one complication	21 (8.2)

NB. One case may have more than one complication.

5. 6.3. Overall observed intrapartum and postpartum maternal complications of obstructed labour

From overall maternal outcomes/complications, only 65(25.5%) had favorable outcomes and majority 190(74.5%) unfavorable outcomes and 169(66.2%) had more than one complication (Table 6).

Table 6: Overall intrapartum and postpartum complications/outcomes of obstructed labour cases. Attat District Hospital from April 2008 to April 2013.

Sr.no	Maternal outcomes	Numbers of cases (n=255)
1	Favorable outcomes	65 (25.5)
2	Unfavorable outcomes	190 (74.5)
	Uterine rupture	131 (51.4)
	Sepsis	121 (47.4)
	Bladder rupture	12 (4.7)
	Uterine incision extention	1 (0.4)
	PPH	12 (4.7)
	Puerperal sepsis	90 (35.3)
	Fistula (RV/VV)	17 (6.7)
	Pubic ostetis & footdrops	10 (3.9)
	Maternal death	8 (3.1)
	More than one complications	169 (66.2)

NB. One case may have more than one complication and the sum of percentage not equal to 100%.

5.7. Perinatal outcomes of obstructed labour

Table 7 shows intrapartum and postpartum fetal & neonatal outcomes of obstructed labour. Majority of cases had unfavorable outcomes 240(94.1%)i.e.Still birth (due to asphyxia) 206(80.8%) followed with 33(12.9%)feta distress (Low APGAR score \leq 7/ 10 minute and 15(5.9%) $>$ 7/ 10 minute) .

Tabel 7 :Intrapartum and postpartum prinal complications /outcomes of obstructed labour cases. ADH, from April 2008 to April 2013.

Prinatal Outcomes	Number of cases (n=255) (%)
Favorable outcome	15 (5.9)
Unfavorable outcomes	240 (94.1)
Fetal death (still birth)	206 (80.8)
Fetal distress	33 (12.9)
Neonatal death	1 (0.4)

Majority of fetal weight were in normal range 216(84.7%)from 2500-3999gms , 37(14.5%) macrosomic ≥ 4000 gms and 2(0.8%) lowbirth wieght < 2500 gms .

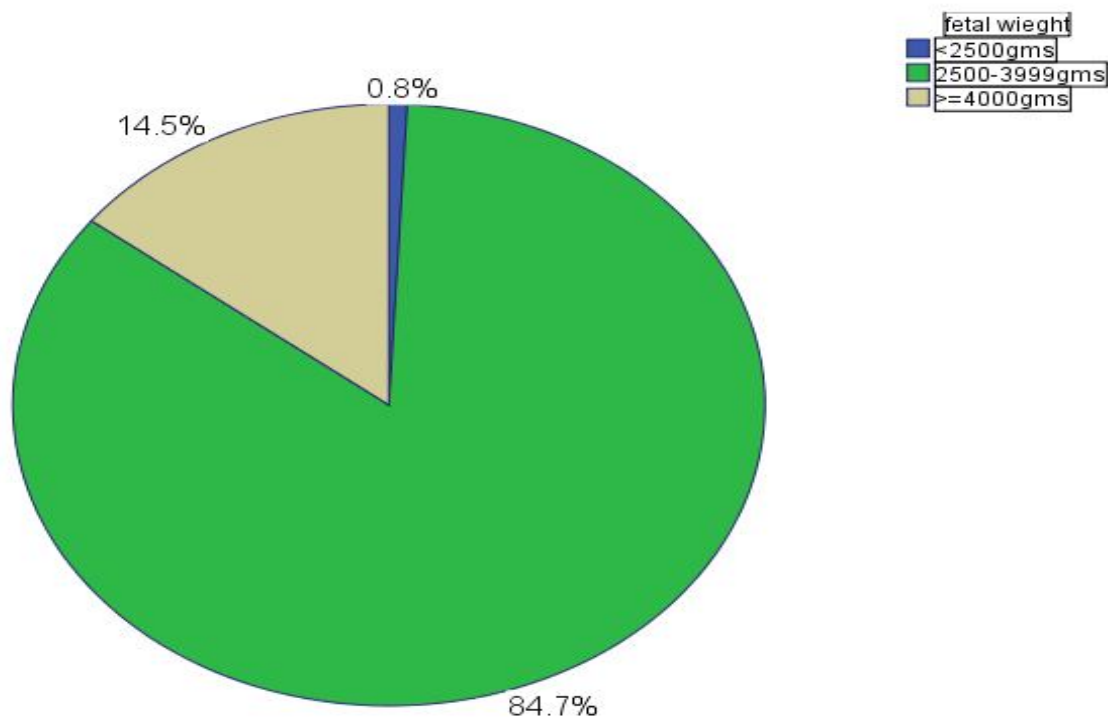


Figure 5: Birth weights babies among cases of obstructed labour.ADH, from April 2008 to April 2013.

5.8. Factors associated with maternal and perinatal outcomes

5.8.1. Factors associated with maternal outcomes

Binary logistic regression analysis was done for each selected independent variables .Parity,ANC, age with dependent variable. Finally, ANC & parity became significant factors associated with maternal outcome at p-value of <0.05 (Table 8).

On bivariate and multivariate logistic regressions parity was significantly associated. Primigravida mothers were 80% less likely to have unfavorable maternal outcomes as compared to multipara and mothers who have one or more antenatal care attendance were 50% less likely to have unfavorable maternal outcomes as compared to mothers who have no antenatal care attendance (Table 8) .

Tabel 8 : Factors associated with overall maternal outcomes/complications of obstructed labour cases.ADH, from April 2008-April 2013.

Variable		Maternal outcomes		COR/95%CI/p-value	AOR/95% CI/p-value
		Favorable	Unfavorable		
Parity	Primigravida	29	31	0.2/0.09-0.7/ 0.007	0.2/0.1-0.7/ 0.008
	Multipara	36	158	1	1
ANC	Had one or more ANC vistit	34	66	0.5/0.3-0.9/0.01	0.5/0.3-0.9/ 0.02
	Had no ANC visit	31	124	1	1
	≤29yrs	38	85	0.6/0.3-1/0.06	
	>=30yrs	27	120	1	

5.8.2. Factors associated with perinatal outcomes

Univariate Binary logistic regression analysis shows Parity and ANC, were significantly associated with perinatal outcomes. However, ANC was the independent factor influencing perinatal outcomes in which fetus or neonate who born from who attended ANC follow up had 70% less likely to have unfavorable outcome as compared to those who born from mothers who had no antenatal care at COR=0.3 at 95% CI (0.1-0.9)) (Table 9).

Table 9: Factors associated with overall perinatal outcomes/complications of obstructed labour cases. ADH, from April 2008-April 2013.

Factors		Perinatal outcomes		COR/95% CI/P-value	AOR/(95% CI/P-value)
		Favorable	Unfavorable		
Parity	Primigravida	5	55	1(0.3-5)0.25	
	Multipara	10	185	1	
ANC	Had one or more ANC visit	10	90	0.3(0.1-0.9)0.03	0.3(0.1-0.9)0.03
	Had no ANC Visits	5	150	1	1

Chapter Six: Discussion

Obstructed labour is one of a dangerous labour complications of pregnancy, which has almost obsolete from the developed world, but it is the most frequent cause of direct maternal morbidity and mortality and poor fetal out comes in sub-Saharan countries including Ethiopia (7,8).The prevalence of obstructed labour varies among different studies and various center. Several studies in developing countries shows the prevalence of obstructed labour in the ranging from 0.9 to 12.5% .In this study a prevalence of obstructed labour was 2.8% of hospital delivery which is within ranges reported others countries (7, 9, 17), but lower than a study conducted in South-Western Uganda and Jimma university Specialized Hospital, Ethiopia of which 10.5%, 12.2% respectively (8, 18). This may be due to the study conducted at the rout level of the community at district hospital, the presence of mother's waiting area (MWA) to keep risk mothers e.g. malpresentation at term, twins pregnancy and on the other hands, this hospital based data may underestimate the actual prevalence because only limited number of pregnant women delivered in the hospital, many rural communities have limited accesses to care, misdiagnosis of obstructed labour cases and documentations.

The main obstetric causes of obstructed labour in all patients taken together in this study are nearly similar with earlier reports, which found CPD was the commonest cause of OL followed with malposition and malpresentation (3, 7, and 18). Cephalo pelvic disproportion was responsible for 55.7% followed malposition/malpresentation were responsible for 41.6% of cases, but as compared to a study done in Nigeria, Gambe state(12), CPD of which 83% and a study on Jimma university Specialized hospital, Ethiopia (18), CPD was account 67.7% . This may be due to low percentage of teenagers pregnancy (1.2%), primigravida (23.5%) and only 14.5% of fetal weight ≥ 4000 gms, which predisposed to CPD in additions to contracted pelvis due to early childhood malnutrition and to high percentage of 41.6% malposition/malpresentation may be due to higher proportions of multiparous ladies at risk of increasing relax of anterior abdominal wall due to repeated pregnancies.

Parity was significantly associated with all over maternal outcomes in which, mothers whose parity were primigravida 80% were less likely to have unfavorable outcomes as compared to grand multipara, and on multiple logistic regression mothers whose parity were grand multipara 80% were more likely to have unfavorable outcomes as compared to primigravida . Mothers who had one or more ANC visits 50% (were less likely to have

unfavorable outcomes as compared to mothers who had no ANC visits. ANC attendance was the only factor significantly associated with prenatal outcomes. Mothers who have ANC visits 70% were less likely to have unfavorable prenatal outcomes as compared to mothers who have no ANC visits. However, indicated the gap of ANC coverage and missing of core time for promotion of health, and health institution delivery and birth preparedness and ANC visits and birth spacing should be improved to prevent the burden of obstructed labour.

The commonest mode of management practices observed in a live fetus were c/section followed with instrumental delivery & symphysiotomy, destructive delivery for dead fetus mainly craniotomy and laparotomy for rupture uterus were mainly identified management practices stated with different authors (3,7-8,10-12,17-18). In this study the management of obstructed labour in all a live fetus was c/section 19.2%. Destructive delivery in intact uterus for dead fetus 29.4% and laparotomy for rupture uterus 51.4% and instrumental delivery. In Pakistan, University of Larkana, Sindh C/s rate was 84% (3), In Nigeria, Specialist Gambe Hospital 72.2% (12), and Kassel Hospital, Sudan 95.25% (14) too high as compared to this study.

The reason being that labouring mothers visiting the hospital after spent >24hrs (46.7%) which leads to fetal death due to asphyxia (80.8%) and increasing of destructive delivery (29.2 %) and rupture uterus with intra-uterine fetal death which leads for laparotomy (51.4%) and overall these two main factors decreasing the percentage of C/S in this study hospital, even if cesarean sections nowadays a common procedures performed without risk and still destructive delivery best options in developing countries in case of intra-uterine fetal death in which criteria of destructive delivery fulfilled, poor infrastructures (roads, transportations and in functioning health institutions), delaying of referral from primary health institutions on time and failure to anticipate the risk mothers during ANC contributes for long durations of labour and for complications of uterine rupture and prenatal death which leads for destructive delivery and laparotomy for rupture uterus and decreasing of c/s rate.

The management of rupture uterus as reported in different studies was hysterectomy (11, 18), except in the study conducted in Adigrat zonal hospital, which indicated 8.9% of ruptured uterus being repaired (17). But the finding of this study has quiet difference on the interventions of rupture uterus which was 95.4% repaired (37.1% with BTL & 58.3% without BTL). Repairing of rupture uterus has significant advantages, in decreasing

anesthesia risks ,blood loose, surgery time and important to preserve menstruation and fertility. On the other hands, repaired of the uterus has risk of puerperal sepsis and subsequent pregnancy uterine rupture.

The main maternal obstetric complications of obstructed labour identified in different studies were mainly uterine rupture, sepsis, bladder rupture, extensions of incision during C/sections, PPH, puerperal sepsis, fistula (VV/RV), maternal death(7-11,17) .In this study the main maternal complications were uterine rupture (51.4%). It is too high as compared to others studies in similar countries, a study conducted in Adigrat zonal hospital, Ethiopia (22.5%) uterine rapture and other study on Jimma University Specialized Hospital, Ethiopia (45.1%). This significant variations may be due to the late arrival of labouring mothers after rupture of uterus and high proportions of 75.3% multiparous ladies with increased risk of uterine rupture due to the degenerations of uterine muscles and thinned out of the lower uterine segment and others frequent complications observed were puerperal sepsis (35.5%) and comparable to a study conducted in Jimma University Specialized Hospital, Ethiopia (39.5%) and the current study may puerperal sepsis increased due to high percentage of uterine rupture and sepsis during intrapartum and also repair of rupture uterus increase the prevalent. Various authors have reported that obstructed labour is one of the major causes of prenatal and maternal mortality (3,10-15,17,18) .This study similarly shows high Perinatal and maternal mortality 81.2 per 100 total births (still births plus live births) and (3.1%) respectively. Particularly Perinatal mortality was too high as compared to earlier studies. These figures may be due to high proportions of labouring mothers presented to the hospital after spent much time at home on labour and came with complications of intra-uterine fetal death mainly due to uterine rapture (51.4%).

Strength and weakness of the study

Strength

- ❖ Exhaustive review five year data which come up with important obstetric & gynecologic findings which have an important input to obstetric care.

Weakness

- ❖ Possibility of inaccurate information as the study utilized secondary data.
- ❖ It would have been better if prospective study was to identify factors affecting outcome of OL (incomplete data).

Chapter Seven: Conclusion and Recommendation

7.1. Conclusion

The commonest cause was CPD (55.7%) followed with malposition/malpresentation (41.6%). The common clinical presentations were dehydration, weakens 100(%), prolonged labour (46.7%), and birth canal infection and fetal compromised and common complication were uterine rupture, sepsis, puerperal sepsis and Perinatal mortality (81.2%) and maternal mortality (3.1%). Management practice observed were C/S for all alive fetus, destructive delivery for dead fetus with intact uterus and laparotomy for rupture and majority of them undergone repair of rupture uterus. Antenatal care is the independent factor influencing maternal and fetal & neonatal outcomes.

7.2. Recommendation

Based on the study findings the following recommendations were forwarded:

- ❖ Since obstructed labour is prevented labour complications, FMOH, SNNPR health Bureau, Guragie Zone Health Department, Woreda Health Office in collaboration with other development sectors should improve good nutrition for development of normal pelvis during infancy and through their development stages. Furthermore; early detection and prompt management of risky mothers during ANC visit should be improved at each level of health service delivery points by all health care providers involved in maternal care and support.
- ❖ All health care providers involved in maternal care and support should pay attention to clinical symptoms and sign obstructed labour such as dehydration, weakens & exhausted, prolonged labour, and birth canal infection and compromised fetal conditions for early anticipation of OL and on time referral.
- ❖ Since ANC visit was protective on the unfavorable outcomes of obstructed labour, ANC service utilization through quality and accessibility should be enhanced by the Guragie Zone Health Department.
- ❖ Attat Hospital should enhance and expand widely used of mother waiting area.
- ❖ The Attat Hospital should be use the FMOH of obstructed labour management guideline, to minimize the risk developing postpartum complications.
- ❖ Finally further and large scale community based prospective studies are recommended to determine possible risk factors and outcomes of obstructed labour and its implications.

Reference

1. WHO. Education material for teachers of midwifery managing of prolonged and obstructed labour, WHO. 2nd ed, Geneva; 2008.
2. Dutta . Text book of obstetrics including perinatology and contraception. 6thed, 2004:402-404.
3. Shaikh S, Shaikh AH, Shaikh SAH, Isran B. Frequency of obstructed labour in teenage pregnancy. *NJOL*, 2012 Jan-Jun; 7(3):36-37.
4. FMOH. Labour and delivery care Blended Learning modular for health extension programme. *FMOH*; 2012:113-126.
5. WHO, UNICEF, UNFPA, World bank. Trends of maternal mortality: 1990 to 2008. WHO :Geneva; 2010.
6. Neilson JP, Lavander T, Quenby S, Wray S. Obstructed labour, *British Medical Bulletin*, 2003; 67:191-204.
7. Memon S, Ara Qozi R, A. Khushk P, A. Khushk I. Pattern of obstructed labour at public sector university hospital of Sindh, Pakistan. *JLUMHS*, 2009; 8(1).
8. Kabakyenge J K, Osterogren P O, Turyakira E, Mukasa P K, Pettersson KO. Individual and health facility factors and the risk for obstructed labour and its adverse outcomes in south-western Uganda. *BMC pregnancy and child health*, 2011; 11(73).
9. Khurshed F, Madhudas C, Khawaja BI, Shaikh RB . Early morbidity in women with obstructed labour at Tertiary Hospital. *MC*, 2011; 17(2):60-62.
10. Ara A. Outcome of obstructed labour in Khyber teaching Hospital, Peshawar. *JPMI*; 18(3):512-517.
11. Gupta R, Porwal SK. Obstructed labour: incidence, causes and outcome in Gyne & obs dept, Jhalawar medical college in India. *InterJBioMedRes*, 2012; 3(3):2185-2188.
12. Melah GS, El-Nafaty AU, Massa AA, Audu BM . Obstructed labour: a public health problem in Gombe, Gombe state, Nigeria. *Obstet Gynaecol*, 2003 Jul; 23(4):369-367.
13. Dafallah E, Ambago J, El-Agip F. Obstructed labour in Teaching Hospital in Sudan. *Saudi Med J*, 2003; 24(10):1102-4.
14. Ali AA, Adam I. Prenatal and maternal outcome of obstructed labour in Kassala University Hospital, Sudan. *J obstet Gynaeco*, 2010; 30(4):376-7.

15. Berhanu Y, Abdella A. Emergency obstetric performance with emphasis on operative delivery outcome: Does it reflect the quality of care? *Ethiop. J. Health Dev.* 2004; 18(2).
16. Gessesew A, Melese M, Rupture uterus eight years retrospective analysis of causes and management outcome in Adigrat Hospital, Tigray Region, Ethiop. *J. Health Dev.* 2002; 16(3):241-245.
17. Gessesew A, Mesfin M, Obstructed labour in Adigrat Hospital, Tigray Region. *Ethiop. J. Health Dev.* 2003; 17(3):175-180.
18. Fantu S, Segni H, Alemseged F .Incidence causes & outcome of obstructed labour in Jimma University Specialized *Hospital. Ethiop. J. Health .sci*, 2010; 20(3).
19. Attat our lady of Lourdes Catholic Hospital integrated health service annual report. Attat District Hospital; 2011.

Annex 1. Checklist

Part .1 - Socio- demographic characteristic of a women whose diagnosis as obstructed labor in the study period

1.1 Ageyrs

1.2 Marital status

A. Single B. Married

1.3. Religion

A. Christian (orthodox, catholic, protestant)

B. Muslim

1.4. Residence

A .urban B. Rural

1.5. Educational status

A. Illiterate (can't read or write)

B. Read and write

C.1-8 grade

D. 9-12 grade

E. College or university level

1.6. Occupations

A. Student

B. Private Business (merchant)

C. Government or NGO employ

D. House wife

E. Daily laborer

F. Other, specify_____

1.7. Ethincity

A. Orthodox

C. Muslim

B. Protestant

D. Catholic

E. Others, specify-----

Part .2. Clinical presentation &Present pregnancy history

2.1 Duration of labor

- A. <12hrs
- B. 12-24hrs
- C. 24-36hrs
- D. >36hrs

2.2 Duration of rupture of membrane

- A. ≤12hrs
- B. 13-24hrs
- C. 24-36hrs
- D. >36hrs

2.3 Has ANC follow up?

- A. Had one or more ANC visit
- B. Had no history of ANC follow up

2.4. Parity_____

2.5 Any symptoms of obstructed labor

- A. Dehydration
- B. Weakness & exhausted
- C. Bloody urine
- D. History of prolonged labor
- E. If others specify_____

2.6 Sign of obstructed labor

- A. Lower vagina & vulva edema
- B. Bandl's ring
- C. Birth canal infection (fever, offensive vaginal discharge....)
- D. fetal distress
- E. intra uterine fetal death
- F. If others specify_____

2.7 .On physical examination:-

- A. Has vital sign derangement on admission? Yes, No
- B. Has moulding? Yes or No
- C. Has caput? Yes or No

Part. 3. Causes of obstructed labour

- 3.1. Has malposition? If yes, specify the position_____
- 3.2. Has mal presentation? If yes, specify the presentation_____
- 3.3. Has CPD? YES or NO
- 3.4. Has abnormality of fetal condition.

A. Hydrocephalus

B. Locked twin

C. If other specify _____

3.5. Abnormality of reproductive tract

A. Has pelvic tumor? If yes, specify _____

B. Has stenosis? If yes, specify _____

C. If other specify _____

Part 4. Management of obstructed labour

4.1 Fetus alive

A. Cesarean section delivery if yes, specify types of cesarean section _____

B. Instrumental delivery, if yes, specify types of instrumental delivery _____

4.2. Fetus dead

A. Cesarean section delivery if yes, specify types of cesarean section _____

B. Destructive delivery, if yes, specify types of destructive delivery _____

4.3. Fetal weight & APGR score _____ & _____ 10th minute respectively.

Part. 5. Fetal & maternal Complication

5.1. Intra partum (circle the presenting complication)

A. Uterine rupture

B. Fetal distress

C. Sepsis

D. Fetal death

E. Maternal death

E. If other specify _____

5.2. Post partum (circle the presenting complication)

A. post partum hemorrhage

B. puerperal sepsis

C. Fistula (VV/RV)

D. pubic osteitis & foot drops

E. Neonatal death

F. Maternal death

G. If other specify _____

6. For uterine rupture what was done?

A. Total abdominal hysterectomy

B. Sub-total hysterectomy

C. Repaired with BTL

D. Repaired without BTL

Name of data collector _____

Signature _____

Date _____

Declaration

I, the undersigned, declare that this is my original works has not been presented for a degree in this or any other university and that all sources of materials used for thesis have been fully acknowledge.

Name: Shibabaw Dagnaw

Signature_____

Name of health institution Jimma University

Date of submission 21/05/2013

This thesis has been submitted for examination with my approval as university advisor.

First advisor

Name: Mr. Gugsu Nemera (RN, B.Sc, MSc N.)

Signature_____

Date_____

Second advisor

Name: Mr.Garumma Tolu (B.Sc, MPH)

Signature_____

Date_____