PERINATAL AND MATERNAL OUTCOME AMONG PREVIOUS CEASAREAN SCAR AT ATTAT LOURD MERRY PRIMARY HOSPITAL, GURAGEZONE,SOUTHERNNATIONS AND NATIONALITIES REGIONALSTATE, ETHIOPIA

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A RESEARCH THESIS TO BE SUBMITTED TO RESEARCH AND GRADUATE STUDIES COORDINATING OFFICE,JIMMA UNIVERSITY MEDICAL CENTER INSTITUTE OF HEALTHSCIENCES; IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTEROF SCIENCE IN INTEGRATED EMERGENCY SURGERY (OBSTETRICS, GYNECOLOGY AND GENERAL SURGERY)

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JIMMA UNIVERSITY

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Abstract

Background: Vaginal delivery after previous one cesarean section for a non-recurring indication has been described by several authors as safe and having a success rate of 60–80%. Hence many centers are offering VBAC for candidates leaving the century old dictum of once cesarean always cesarean. But predicting success of VBAC after trial of scar (TOs) is still a difficult task due to the lack of a validated prediction tool. Studies on predictors of success are few and most of them conducted in developed countries and difficult to generalize.

Objective: To determine the perinatal and maternaloutcomeof pregnancy in women with previous one cesarean section who give birth at Attat Catholic Hospital from October r01/2015-Septmeber30/2016 GC.

MATERIALS AND METHODES: Facility based retrospective cross-sectional study were conducted at Attat Catholic Hospital, Ethiopia fromOctober01/2015-Septmeber30/2016 GC. The data on Socio-demographic and obstetric factors were collected from medical record booksusing pretested data collection format by trained data collectors. The collected data were cleaned, edited, and fed to computer to be analyzed using SPSS for window version 16. Descriptive statistics was used to describe the study variables. Logistic regression analysis Bivariate and multivariate logistic regression were employed to assess the relative effect of determinants and statistical tests such as Odds ratios (95% confidence intervals) was used to see the associations. A $P<0.05$ was considered as statistically significant in all types of tests for significance.

Results;from total deliveries of 169 who had pervious one caesarean section s scar from which repeated caesarean section 104 (61.5%) and majoriy81(78%) were done as emergence and 146 offered TOS from that 65(44.5%) had successful VBAC and CPD was the major indication for failed VBAC. In logistic regression analysis, parity,passage of liquor at admission, history of vaginal birth after cesarean, cervical dilation during admissionand indication for pervious indication for cesarean section showed significant association to the success ofVBAC

CONCLUSION; successful vaginal delivery after one previous cesarean scar was 45.5% which was relatively low .trial of vaginal birth after cesarean section should be encouraged for appropriate cases .Because of previous cesarean section was the major maternal indication for cesarean section attention should be given to the indication of cesarean delivery to avoid unnecessary cesarean section

Key words: previous Cesarean section, vaginal birth, pregnancy, VBAC

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Contents

LIST OF TABLE AND FIGURE

Acronyms

ANC---------- antenatal care

APGAR ----------appearance, pulse rate, grimace, activity and respiratory rate.

CS ---------- cesarean section

CSA----------central statistics association

CPD---------- cephalopelvic disproportion

GA----------gestational age

GC---------- Gregorian calendar

GYN---------- gynecology

HCT----------hematocrit

HIV ----- ----------human immune deficiency virus

ICU---------- intensive care unite

IEOS---------- integrated emergency obstetrics and surgery

LNMP----------last normal menstrual period

LUSTCS---------- lower uterine segment cesarean section

NGO----------nongovernmental organization

NICU----------neonatal intensive care unit

PMR----------per natal mortality rate

VBAC---------- vaginal birth after cesarean section

WHO----------world health organization

TOS----------trial of scar

CHAPTER ONE: INTRODUCTION

BACKGROUND

Caesarean delivery is an operation done to deliver a baby through an incision in the uterus. It is the most frequently performed surgical procedure worldwide [1]. Cesarean section is one of life saving procedures medical intervention attributed to the decrease of the maternal mortality and morbidity rates.

Even though, variation exists in rates of caesarean delivery across countries; currently the rate ranges from 10% to 40% [1,2]. This high cesareansection rate has put burden on the economy of nation and individuals. Previous caesarean section has been found to be the commonest cause of increased caesarean section rate in many parts of the world [1]. Because of increased risk of maternal complications with repeat caesarean section and safety of VBAC, trial of labor for selected group of patients with previous scar has become a preferred strategIn1988 ACOG recommended that, in the absence of a contraindication, a woman with one previous lowtransverse cesarean delivery be counseled attempt labor in a subsequent pregnancy [1,]

These attempts were highly successful rates of vaginal birth after previous cesarean (VBAC) increased from 3.4 percent in 1980 to a peak of 28.3 percent in 1996, along with a concomitant decline in total cesarean delivery rates for the United States[2]

Vaginal birth after cesarean section (VBAC) is associated with shorter maternal hospitalizations, less blood loss and fewer transfusions, fewer infections, and fewer thromboembolic events than cesarean delivery. Several reports have indicated that the absolute risk of uterine rupture attributable to a trial of labor is about 1 per 1000 [1-4]. A 60 to 80% success rate of vaginal birth after previous caesarean section has been reported by many authors if the primary caesarean was done for nonrecurring indications [1]. Some of the non-recurring indications for caesarean section are: poor labor progress,fetal distress, placenta previa, transverse lie, breech presentation, oblique lie, pregnancy induced hypertension and twins [1]

British figures indicate that among women with a prior caesarean section, 33% will successfully achieve vaginal birth in the subsequent pregnancy. Again there was considerable variation across institutions ranging from6% to 64% [7].One study in Lahore reported Successful vaginal delivery in

70% of the patients and repeat emergency caesarean section in 30% of the patients. The leading indications for the repeat caesarean sections were: failure to progress, fetal distress and scar tenderness. There were no maternal and fetal complications occurred. They concluded that VBAC is a safe practice (.8)

VBAC is a current standard of care and it presents the experiences for CS which causes patient dissatisfaction about maternal care (10). It also prevents the complications resulting from CS such as excessive blood loss by half, risk of blood transfusion and its complications, damage of organs near the uterus which includes bladder, intestine and infection related to the procedure(2)

Statement of the problem

One of the most dramatic features of modern obstetrics is the persistent increase in the cesarean section rate. The rise in CS rate is a major health problem as it increases the risk for mothers and babies as well as of health care compared with normal deliveries Women with previous cesarean sections constitutes a high risk group in obstetrics, with associated medical and legal implications. Vaginal birth after cesarean (VBAC) or trial of scar (TOS) represents a significant change in modern obstetric practice. However, the concern that a scarred uterus might end up in rupturing the uterus, leading to severe maternal and perinatal morbidity, still prevents a large number of obstetricians and pregnant women worldwide, from adopting a TOS after previous one cesarean section

Both, attempting a vaginal birth and opting for an elective repeat cesarean section (ERCS) are associated with different risks for the mother and newborn; and, deciding a delivery plan involves a difficult weighing of those cases.For years, researchers have maintained an interest in the effective prediction or identification of factors, which can influence the outcome of a TOS. The ability to predict the outcome of an attempted trial of vaginal delivery plays an important role in initial counseling of pregnant women with previous one cesarean delivery (16).

Vaginal delivery after previous one cesarean section for a non-recurring indication has been described by several authors as safe and having a success rate of 60–80%. Hence many centers are offering VBAC for candidates leaving the century old dictum of once cesarean always cesarean. But predicting success of VBAC after trial of labor (TOL) is still a difficult task due to the lack of a validated prediction tool. Studies on predictors of success are few and most of them conducted in developed countries and difficult to generalize. Therefore assessing factors associated with successful VBAC is very important to for counseling mothers while offering VBAC(1,2) There are no studies that assess factors associates and Prenatal and maternal outcome among pervious caesarean scar at Attat Catholic Hospital. The researcher hopes to provide research findings that will bridge this information gap. It is hoped that the information provided through this study will inform local hospital policy and also impact on clinical practice of hospital for improved fetal and maternal outcomes.

Significance of the study

Caesarean rate is increasing in Ethiopia because of theflourishing private hospitals in major towns. Even though teaching hospitals offer trial of labor for mothers with one scar, there is no study done which shows the rate of VBAC acceptance and success in Ethiopian Hospitals. The crucial questions are how to reliably predict successful vaginal birth after Caesarean section, and how to and quantify the magnitude of the risk of failure that is acceptable to women.

Many studies have addressed methods for identifying women at low anddetermine high risk of failure of anattemptd vaginal birth after prior caesarean but none of them have resulted in a validated result. Even those factors found to be associatedwith successful VBAC vary from center to center.

Currently, therefore, there is no single validated tool which holds true for all to predict successful vaginal birth among women with a prior cesarean delivery.

The purpose of the present study will to identify maternal demographic, past and present obstetric determinants of successful VBAC. Thisis of great help for physicians in the joint physician-patientdecision while offering TOL.

This study will help in filling the gap of information on factors associates and Prenatal and maternal outcome among pervious caesarean scar at Attat Catholic Hospital. It can also be used as baseline information for future valuable researches to be undergone around the subject of interest. This study will also help in comparing findings among hospitals of our country or other countries

CHAP TER TWO: LITRATURE REVEW

VBAC SUCCESRATES

A large prospective American study of women with a singleton Gestation and prior CS was conducted at 19 academic medical centers (Landon et al, 2004). The authors concluded that a trial of labour after prior caesarean was associated with a greater perinatal risk than elective repeat caesarean, although absolute risks were low. There is now emerging evidence that these publications in the influential New England Journal of Medicine contributed to a reversal of the trend in VBAC rates (Scott, 2011).Data from the National Centre for Health Statistics have shown that VBAC rates in the United States are now in single figure percentages (Scott, 2011). An ACOG survey showed that between 2003-6,26% of American obstetricians were no longer prepared to offer a TOLAC regardless of prior vaginal delivery experience. This decrease in TOLAC rates has led to the overall CS rates in the United States to rise again, which has prompted calls for further reconsideration of national policies for the management of women with a previous c/s. Dublin, the VBAC rate with a trial of labor in 2002 was 65% in the National Maternity Hospital and74% in the Coombe (Annual Clinical Reports, 2002) compared with 73% in the US study (Landon et al,2004). However, overall 52% of women in the NMH and 61% in the Comboe with a prior CS had aVBAC compared with only 29% in the US study[3]

Case series study was undertaken at Marie StopsClinic, in Begum Out of 150 patients, 81 (54%) patients had trial of scar and the remaining 69 (46%) patients underwent repeat elective caesarean section. Among those who had trial of scar only35 (43.2%) patients achieved successful vaginal delivery and remaining 46 (56.8%) had emergency caesarean section[5]
At teaching hospitals in IndiaThe success rateof VBAC was 62.3% with 2513 women had successful vaginal delivery and 1522 (37.7%) delivered by emergency repeat cesarean section.[12]

Study done at Tertiary Care Centre inNorth India The Caesarean section rate was 32.4% and the rate of successful VBAC was 67.6%. Two patients had electiverepeat Caesarean section in view of placenta previa and contractedpelvis [11].

Comparative prospective study was conducted in Ahmadi Hospital, Kuwait; Trial of labor after cesarean section was successful in 72.13% and was unsuccessful in 27.87%. (4)

Study done Department of obstetrics and gynecology, university of NIJERIA teaching hospital a total of 370 women with one previous Cesarean section had non recurrent indications, ofwhom355

consenting pregnant women with one previous Cesarean section were studied .A majority of the women (320/355, 90.1%)preferred to have vaginal delivery despite the one previous Cesarean section. However, only approximately 54% (190/355) were found suitable for trial of VBAC, out of whom 50% (95/190 had successful VBAC. Ninety-five women (50.0%) had failed attempt at VBAC and were delivered by emergency Cesarean section while 35 women (9.8%) had emergency Cesarean section for other obstetric indications (apart from failed VBAC).[9]

Havana Specialist Hospital, Lagos, Nigeria Of the 1481 deliveries in our hospital during the period, 179(11.9%) had previously been delivered through caesarean section. While 29.3% (51) of the women with previous caesarean delivery had elective caesarean section, 70.7% (123) were allowed trial of labour. Eighty five (69.1%) women had successful trial of labor. (10)

Another study done on pregnancy outcomes after caesarean at tertiary university teaching hospital in Tanzania shows from 80 women who underwent trial of the scar, 44 (55%) delivered vaginally and 8 delivered vaginally while waiting for emergency repeat caesarean section, giving a total of 52 (65%) women with one previous caesarean section delivering vaginally. Among 44 women who delivered vaginally after trial of the scar, three delivered while waiting for caesarean section after decision for failed trial of the scar was declared(15)

Sub-Saharan Africa: a meta-analysis the proportion of women who were allowed a trial of labour ranged from 37% to 97% across reports. The probability of a vaginal delivery among these women was 69% (95% CI 63-75%).[13]

At three teaching hospitals in Addis Ababa, Ethiopia: case control study The total number of mothers with one previous caesarean section who were offered trial of labor (TOL) and included in the study was 204.101(49%) delivered vaginally of them 65 (64.5%) of the cases had spontaneous vaginal deliveries while the rest were instrumental deliveries(16).

FACTOR INFULANCE SECCESFUL VBAC;

Study done at Tertiary Care Centre in North India facto associated with success of trial of labourin previous caesarean section , The interval between previous Caesarean and current pregnancy The presence of vaginal deliveryafter caesarean section associated with success of VBAC[11],

Study in Mafraqhospital Abdabi, vaginal delivery after caesarean section, spontaneous onset of labor and average size babe associated with success of VBAC[7].

Study inUniversity of Malaya show maternal and obstetrical factors associated with a successful trial of vaginal birth after cesarean section were estimated fetal weight ≤3.5 kg was associated with a successful TOLAC, while the presence of BMI >25 kg/m2, gestation≥40, vertex station ≥-2, and cervical dilatation <4 cm were riskfactors for an unsuccessful TOLAC.

Havana Specialist Hospital, Lagos,Cephalic pelvic disproportion and slow progress of labour was the main cause of failure. Majority (58.8%)of the patients that achieved vaginal deliver needed assistance in the form of vacuum delivery (40.0%), vacuum deliver &episiotomy (30.0%), episiotomy alone (28.0%)and forceps deliver(10].

At three teaching hospitals in Addis Ababa, Ethiopia: case control study The strongest factor determining success in this study was cervical dilatation at admission, The other important factor determining success was the position of the preset part, Mothers who had experienced successful VBAC afterthe past caesarean section, those mothers whowere admitted after rupture of membrane and at active firstsstage of labor [16]

PERNATAL AND MATERNAL OUTCOME

On outcome of Study on neonatal outcomes after elective cesarean delivery in America states Neonates born by cesarean delivery had higher NICU admission rates compared with the VBAC group (9.3% compared with 4.9 %)and higher rates of oxygen supplementation for delivery room resuscitation and after NICU admission. Neonates born by VBAC required the least delivery room resuscitation with oxygen; whereas neonate delivered after failed VBAC required the greatest degree of delivery room resuscitation. (3)

At teaching hospitals in India Blood loss was more than 1000ml in 8.0% of TOL whereas in VBAC it was only (0.3%) as compared to EmRCS20.6%. Blood transfusion rates were 3.7% and it was 1.8%

inVBACversus20.6%inEmRCS. Of those 12women only 2 cases of uterine rupture was reported in VBAC. Dehiscence of scar in VBAC was 6(6.8%) as compared to EmCs82 (93.2%) Post-operative complication was 2.8% cases in TOL where as in VBAC (0.4%) as compared to 6.8% in emergency cesarean section. Maternal death was reported in 6 cases of VBAC as compared to 4 cases in emergency cesarean section (12)

A Retrospective study on the risk factors for emergency repeat cesarean delivery and neonatal admission in a trial of labor after prior cesarean section at University of Malaya There were two (0.6%) perinatal deaths but no uterine rupture within this group of 342 women. These rare occurrences precluded meaningful statistical analysis on perinatal death and uterine rupture within our data.[8]

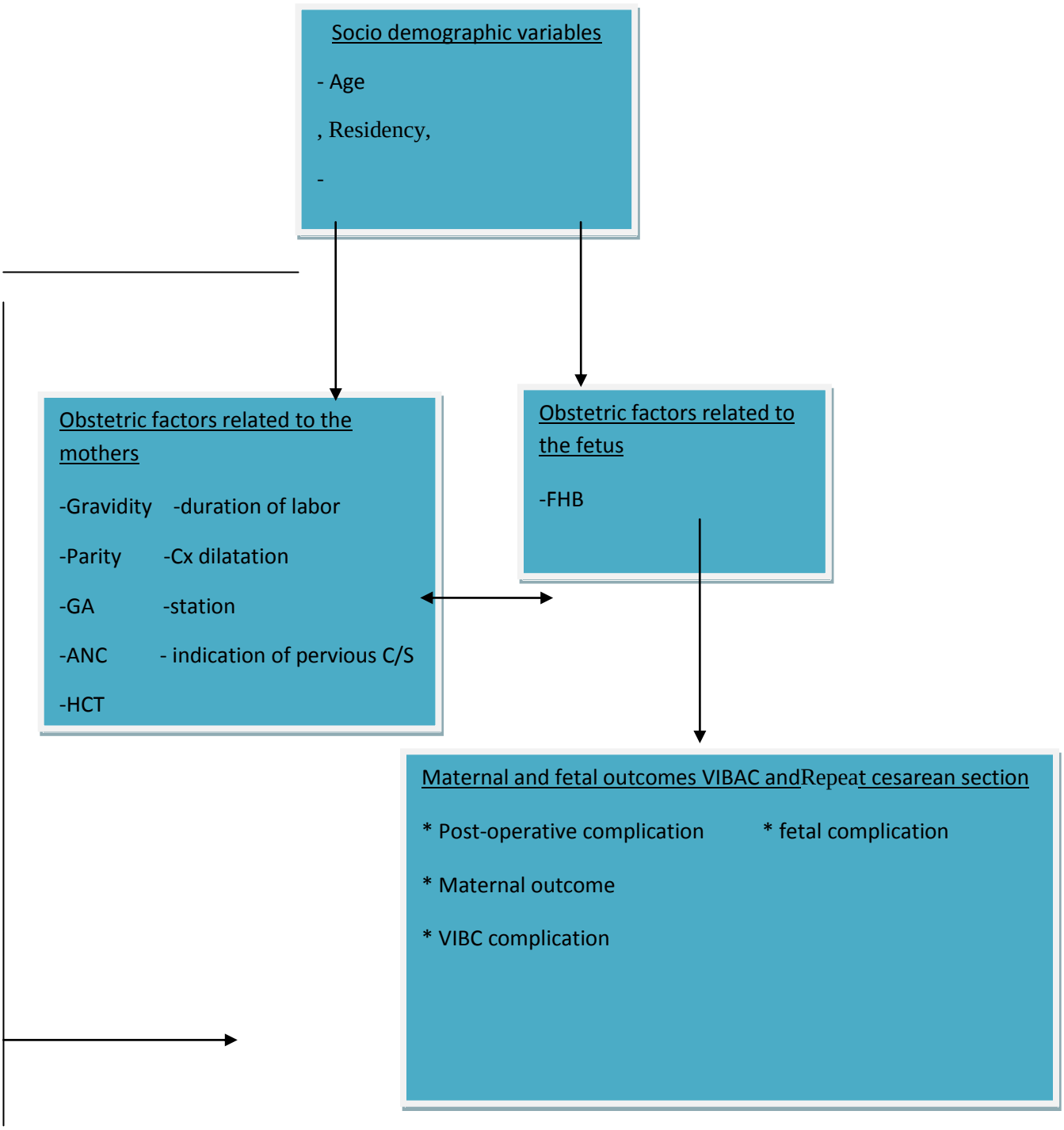
Another study done on pregnancy outcomes after caesarean at tertiary university teaching hospital Tanzania the incidence of uterine rupture was 2% and per natal mortality ratio were 55 per 1000 live birth. (21) Maternal deaths (case fatality rate of 1.1 [16]

Study done Department of obstetrics and gynecology, university of NIJERIA teaching hospital there was no case of uterine rupture or neonatal and maternal deaths recorded in any group. Apgar scores of less than 7 in the first minute were significantly more frequent amongst women who had vaginal delivery when compared to those who had elective repeat Cesarean section (P0.03)[9]

Havana Specialist Hospital, Lagos, Nigeria When fetal and maternal outcome were compared between emergency and elective caesarean section, it was only in Apgar score at 1 minute was there significant difference. One (0.8%) uterine rupture occurred because of delayed consent and she was not among the eight patients that had oxytocin augmentation of labor [10].

Sub-Saharan Africa: a meta-analysismaternal mortality among all women with a previous caesarean section was 1.9/1000 (95% CI0-4.3). Uterine rupture and scar dehiscence occurred in 2.1% (95%CI1.0-3.2). Criteria used to select women for a trial of labor appeared to have a limited impact on the probability of vaginal delivery [13]

Fig 1;Conceptual frame workon outcome of VBAC and repeated cesarean section and related factors of mother have previous C/s scar give birth in Attat hospital from October 01/2015-Septmeber30/2016 GC.



CHAPTER THREE OBJECTIVE

General objective::

To determine the perinatal and maternal outcome of pregnancy in women with previous cesarean section who give birth at Attat Catholic Hospital from October r01/2015-Septmeber30/2016 GC.

Specific objective

1.To determine the common mode of delivery of pervious one scar at Attat Hospital

2.To assessthe outcomes of VBAC and Repeated cesarean section at Attat Hospital

3. To determine the prevalence of VBAC at Attat Catholic Hospital

4.To investigate complications of VBAC and Repeated cesarean section at AttatHospital

CHAPTER FOURMETHODS AND MATEREIAL

Study area

The study were conducted at Aattat Primary Hospital Gurage Zone, SNNPR, Ethiopia, , which is 175 kilometers from Addis Ababa and 410 kilometers from regional city, Hawasa. The climate is weynadega; teff and inset is the main agricultural product. They also have rare domestic animals like cow and got.

The hospital was established in 1961E.C by Catholic Missionary and still now governsby them. The catchment population is 800,000, of which 51.2% females and 48.8 % males .The Zone has 40 Health Centers and 2 newly established hospital which are government owned, and all referred to this Hospital. It is one of affiliated hospital training IEOS students in conjunction with JUSU. It has 100 beds with delivery room, which give services for parturient mothers and other patients. The hospital has multidisciplinary staffs (Gynecologist, General Surgeon, emergency surgery students, Pharmacist, Lab. Technologist, midwives and clinical nurses.) Through all the days of week the services are provided free of charge for all laboring mother.

Study period and Study design

- Hospital based cross-sectional retrospective study designwere conducted fromOctober r01/2015-Septmeber30/2016 GC.A standard data extraction format was used to collect patient information from Delivery registration books, operation registration books and individual charts.

Population

Source population

All mothers have pervious cesarean one scar gave birth in Attat Catholic Hospital from October 01/2015-Septmeber30/2016 GC.

Study population

All mothers have one pervious cesarean scar gave birth in Attat Catholic Hospital within the study period..

Inclusion Criteria:

1)Women with one previous lower segment cesarean section

2) Singleton pregnancy

3) Cephalic presentation

4) Term gestation

Exclusion Criteria:

1) Two or> Two cesarean sections

2)Previous uterine surgery like myomectomy

3) Classical section

Sample size

All mothers have one pervious cesarean scar was gave birth In Attat Catholic Hospital was included in the study.

Study Variables

Independent variables- Age, residence,gravidity,parity, LNMP,ANC follow up, GA, duration of labor, FHB, cervicaldilatation, station, pre operation HCT, pervious indication of cesarean section.

Dependent variables- Maternal and Neonatal outcome, VBAC

Data collection tools and collection procedures

Data was collect using structured check list. The check list was prepared in English and data was collect from medical record books. Four supervisors and eight data collectors were participate in the data collection process. One day intensive training wasgiven to the data collectors and supervisors. The data collection underwent from June 10-30/2017 GC. Before the actual data collection, the questionnaires were tasteed on 5% of the total study during study period.

Data quality management;

The questionnaire was pre-taste on pilot sample, if necessary amendment was made to ensure their accuracy and consistency of the data prior to actual datacollection. Data collectors weretrained for one day on objective of the study, how to gather the appropriate information, procedures of data collection techniques and the whole contents and subject matter of the questionnaire. Day to day supervision was Carrie out during the whole period of data collection by the supervisor. At the end of each day, the questionnaire was review and cross checked for completeness, accuracy and consistency by the investigator and corrective discussion wereunder taken with all the data collectors. Data was cleaned and edited after it is entered in to the SPSS version 20.0 computer program software.

Data processing and analysis

The collected data wasbeing checked for its completeness, entered using epidata and exported to SPSS-20.0 databaseprogram for analysis after edition. Frequencydistributions of both dependent and independent variables were worked out and theassociation between independent and dependent variables was measured and tested using chi square. To determine factors for VIBAC and repeat cesarean section and its outcome,bivariate analysiswill used.A 95 %confidence interval and 5% level of precision was utilize to check for association betweenvariables. Finally, the data was described and presented by using tables and charts.

Ethical considerations

Letter of ethical clearance wereobtained from Research Ethical Committee of Jimma University and from the coordinator of integrated emergency obstetrics/Gyn and surgeryand letter of permission wereobtained from Attat Catholic Hospital Additionally confidentiality and anonymity of the record information were kept.

Operational definitions

Gestational age- is calculated from the LNMP or fundal height that was documented on the card,if not from the duration of amenorrhea documented from mothers recall & is rounded to the nearest weeks. Amenorrhea of 9 months was taken as 37-42 weeks gestation for all mothers.

Cesarean section- delivery of the fetus, membrane and placenta after 28 weeks of gestation byopening of abdomenand uterus.

Elective cesarean section - operation that done at a pre-selected time before onset of labour, usually at completed 39 week

Elective Repeat cesarean section – cesarean section done at a pre-selected time before onset of labour in presence of previous c/s

Successful VBAC-A vaginal delivery (spontaneous or assisted) in a woman had previous c/s.

Parity- number of births (both life birth infants & stillbirth) of at least 28 weeks of gestational age].

TOL-trial of labor after cesarean section to achieve VBAC

Birthweightin grams. [1]

Low - 1500-2499 gms.

Normal -2500-3999 gms.

High>= 4000 gms.

. Station - degree of engagement of the presenting part, measured as distance in centimeters or between the fetus and the ischial spines.

. Arrest Disorders- (1) secondary arrestof dilatation, with no progressive cervical dilatation in the active phase of labor for 2 hours or more; and

(2) arrest of descent, with descent failing to progress for 1 hour or more]

. Cephalopelvic Disproportion (CPD) - is failure of the fetus to pass safely through the birth canal because the fetal head being relatively larger than the maternal pelvic size.]

. Prolonged 2nd stage: the 2nd stage of labor lasting more than 1 hour in multipara And 2 hours in nulliparous.

Cervical dilatation status. Active stage- In general, requires ≥80 % effacement and ≥4 cm dilation of the cervix.

Full dilatation/ second stage -is from full dilation (10 cm) until delivery of the baby.

APGAR- a score for the new born based on appearance, heart rate, grimace, activity (movement) and response.

Fetal distress (NRFHRP) - abnormal fetal heart rate pattern with tachycardia of > 160 beats / min. and bradycardiaof < 110 beats / min.

Operative vaginal delivery-applying direct traction on the fetal skull with forceps of Vacuum.
Uterine dehiscence-when the uterine muscle is separated but the visceral peritoneum is intact.

Limitations of the study

. Since the study is based on secondary data, some information's may not be complete.

. The study were not show long term complications

Plan for dissemination of findings

Based on the finding conclusion & recommendation was given, then the result of the study was submitted to the college of public health &medical science& post graduate office of Jimma University, to Atat Catholic Hospital &other responsible bodies. Also, the result was presented during thesis defense, meeting & workshop. Moreover, effort was done to publish the finding in reputable journals.

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CHAPTER-FIVE Results

During the one year period a total number of 3260deliveries were conducted at Attat Catholic hospital. From this 2537 (78%) were delivered by spontaneous vaginal delivery (SVD) and 723(22%) were delivered by caesarian section (C/S).from total delivery, 169have pervious one caesarean section scarand from that 146 offered TOS, 65(44.5%) have successfulVBAC, emergency repeated caesarean section were done for81 (55.5%) mother and, 23 elective repeat cesarean sectionwere done. Basedon the data from a retrospective chart review of mother who had one caesarean sections scar delivered at Attatcatholic hospital between October 01/2015-Septmeber30/2016 GCwith chart retrieval rate of 97 %.

Socio-demographic characteristics

From a total of 169 mothers who have one caesarean scar were delivered among which about 91(53.8%) were in the age group 25-30years with mean age of 28 years SD±4and more than halfcomes from rural area - 117(69.2%) .

Table5.1 Socio demographic variables

Variables	Category	No.	%
Age in years	<25	45	26.6
	25-30	91	53.8
	<30	33	19.5
Residence	Urban	52	30.8
	Rural	117	69.2

Obstetrics History

Most of the study subjects 69(41 %) were Para one, Majority of them were term by their gestational age 139(82.2%) and ANC follow up 137(81%). More than Half of the mother wereno passageof liquor at admission 92(54.4%) and 73(43.2%) had history of VBAC. Repeatedcaesarean section were104 (61.5%) majority caesarean section were done as anemergence81 (78 %) and station above zero at the time of admission 144(85.2%).65(38.8%) have successfulVBAC.unknown indication for pervious caesarean section were the commonest78(46.2%) and CPD were leading indication for current caesarean section34 (32.6%) SVD were the major mode of delivery for VBAC.

Table 2 Obstetric history

Variable		Frequency	%
Gravidity	2-4	149	88.8
	>4	20	11.2
Parity	I	69	41
	II	59	35
	>=III	41	24
ANC Follow up	Yes	137	81
	No	32	19
Passage of liquor at the time of admission	Yes	77	45.6
	No	92	54.4
Duration of labor from the time of admission	<=12	123	72.8
	>12	13	7.7
	Not in labor	33	19.5
Cervical dilatation at the time of admission	<4cm	100	55
	4-7	64	38
	8-10cm	7	4.1
	Not done	5	3

Station at time of admission	Above 0	144	85.2
	0 or below	20	12
	Not done	5	3
HCT done before delivery	7-11	17	10
	>11	100	59.2
	Not stated	52	30.8
History of VBAC	YES	73	43.2
	NO	96	57.8

Table 3 Indications for previous caesarian section

Indications for previous caesarian section	Frequency	(%)
Malpresentation	16	9.5
Failed Induction	5	3.0
Non Reassuring Fetal Heart Rate	24	14.2
CPD	44	26
APH	4	2.4
Other	6	3.6
Unknown	70	41.4
Total	169	100.0

Fig2 Pie chart for Current indications for cesarean section

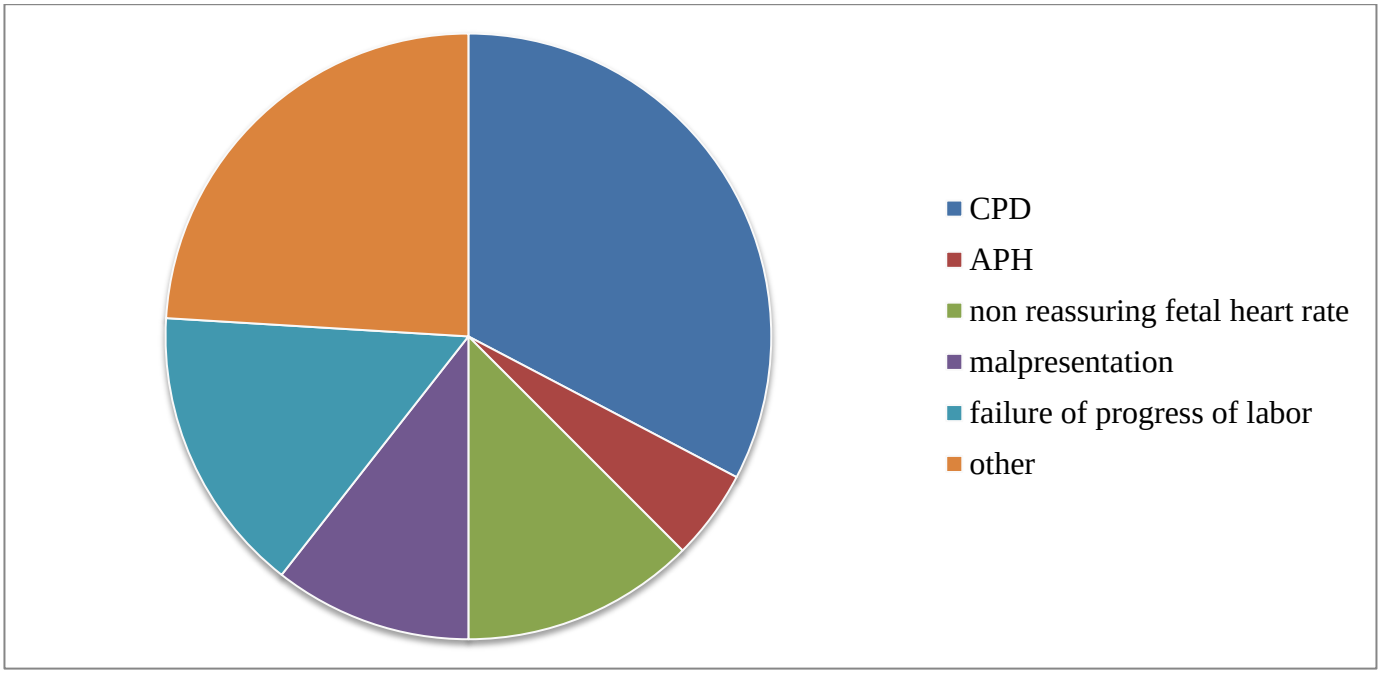
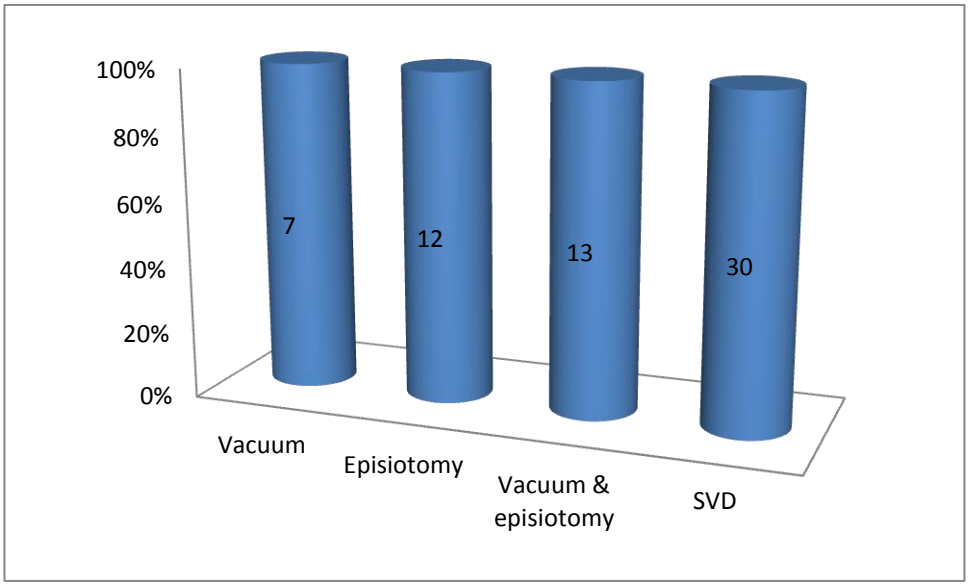


Fig 3;bar chart for mode of delivery for successful VBAC of mother have previous C/s scar.



Maternal and Neonatal Outcome

There was no maternal death the during study period, laparotomy were done for three scar decencies (2%) and 6 (3.6%) of mother had hemoglobin <7 and transfused blood . majority of neonate with birth weights between2500-4000gm161(95%), 127(75.1%) of neonate with first minute APGAR score of>=7 and 3 (1.8 %)fetal death occurred.

Tabie4 maternal and Neonatal out come

Variable		No	%
Intra and post operation complication	PPH	4	3.8
	Infection	5	4.8
	No complication	95	91
Complication during vaginal birth	Scar dehiscence	3	4.6
	PPH	2	3
	No complication	60	92
Hemoglobin after delivery	<7	6	3.6
	>=7	112	30.2
	Not stated	51	66
Fetal out come	Alive	166	98.2
	Dead	3	1.8
Fifths minute Apgar score	<7	13	7.7
	>=7	153	90.5
	0	3	1.8

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Factors Associated with successful vaginal birth after cesarean section

To assess the association between variables of interest and the prevalence of induced labor, binary logistic regression model was used. At bivariate analysis,parityof the mothers, (COR13.12, 95% CI 4.99, 34.975)passage of liquor at admission, (COR .230,95%CI.116,.457) the indication for pervious cesarean section(OR0.53, 95%CI.O14,.199)cervical dilation during admission(COR 3.6,95%CI1.877,6.903) and history of vaginal birth after cesarean section (COR .46,CI020,.103) factors significantly associated with successful VBAC.

In multivariate logistic regression after it was adjusted for the variables in the model, women who have passage of liquor at admission. (AOR.248, 95%CI,.084,.733) times more likely have successfulvaginaldeliverywhen compared to no historyof passage of liquor at admission.Similarlyhistory of vaginal birth after cesarean section (AOR1. 88, 95% CI, 022,.349)more likely to have successful vaginal delivery than those who have not history of vaginal birth after cesarean section.Cervical dilation during admission>=4 (AOR10.671,95%CI,3.303,34.437) more likely to have successful vaginal delivery when compared to cervical dilation during admission<4.Indication for pervious cesarean sectionNRFHR(AOR.703,95%CI,014,.364)0.53 more likely to havesuccessful vaginaldeliveryaftercesareansection than other indication.no association between other variable(Table5)

Table 5.variables which are associated with vaginal birth after cesarean section in bivariate analysis,

Variable		VBAC success		*COR 95%CI*	AOR *95%CI*	*P value*
		Yes	No			
Parity	Para I	8	61	13.12(4.99,34.97)*	1.436(.224,9.902)	.702
	ParaII	31	28	1.456(.651, 3.29)	.488(.141,1.692)	.258
	Para III and above	26	15	1	1	
Passage of liquor	Yes	16	61	.230(.116, .457)*	.248(084,.733)	.012*
	No	49	43	1	1	
HX of VBAC	YES	54	11	.46(.20, .103)*	1.88(022,.349)	001*
	No	19	85	1	1	
CX dilation at admission	<4	23	42	3.6(1.877,6.903)*	10.671(3.303,34.473)*	.000**
	>=4	69	3o	1	1	
Indication of previous c/s	Mal presentation	8	8	.373(1.2,1.133)	.272(047,1.586)	.148
	Failed induction and augmentation	2	3	.944(.143,6.247)	1.66(.121,23.00)	.703
	NRFHR	21	3	.053(014,.199)	.703(014,.364)*	002*
	CPD	11	33	1.118(.472,2.647)	.813(.243,2.72)	.737
	APH	1	3	1.118(.109,11.445)	6.564(.335,128.6)	.215
	OTHER	3	3	.373(.069,2.009)	.109(.005,2.258)	.152
	Unknown	19	51	1	1	1
***significant variable ** Highly significant**						

CHAPTER SIX DISCUSSION

Previous caesarean section was said to constitute the highest single indication for repeatedcaesarean section because obstetricians still regard vaginal birth after previous caesarean section as a high-risk option.Common mode of delivery this study was repeatedcaesarean section104 (61.5%)and CPD was the major indication for repeated caesarean section these may be due to un appropriate diagnoses of CPD. This study was conducted with the main objective of identifying factors associated with successful vaginal delivery on mothers offered trial of labor after previous one lower segment caesarean section. Significant Determinants found history of successful VBAC,cervical dilatation at admission, indication of past caesarean section, rupture of membrane at admission and parity.

The VBAC success rate ofwide vary from place to place 45.5% in this study was approximately similar to 49% reported from threeteaching hospitals in Addis Ababa, Begum, 43.2% Nigeria teaching hospital, 50 %[16,5,9]. But the figure is lower than the rate of VBAC Tanzania 55%, Havana Nigeria 69% teaching hospital India62.3%, Kuwaite72.1%,[15,10,12,4]and higher than in USA 29%[3].

The strongest factor determining success in this studywas cervical dilatation at admission. Those who were admitted with cervical diameter greater >=4 cm (Active first stage of labour) had a strong likelihood of vaginal delivery than those admitted at cervical diameter of <4 cm (latent first stage of labour). This is due to high frequency of false labour and slow progress in the latter it also the same finding in another study done in AddisAbaba and Malaysia, Kuwait [16, 8, 4] Prior successful VBAC was found to be associatedwith high success which is similar to other reports Many authors reported Previous vaginal birth was the single best predictor for successful VBAC[1,3,8,9,16],.

Those mothers with fetal distress were indication for pervious cesarean section has been found associatedwith high success than unknownindication. CPD and frailer of progress of labor were the main cause of failure which was the same result withHavana Specialist Hospital, Lagos,teaching hospitalsin India [11,13].

Passage of liquor at admission was good prognostic factor which is same finding with research done in Addis Ababa and other studyKuwait. [16, 4].

Multiparty were associated with high success rate of VBAC, This again emphasizes the fact that increases in the number of vaginal deliveries increases the chances of having a successful VBAC, the same finding with Abu Dhabi, [8] and opposite to study in Addis Ababa.[16]

In this study, maternal age, gestational age, duration of labor after admission, station at the time of admission, and birth weight were not found significant determinants.

Gestationalage was not found a significant predictor of success inthis study. There are reports which found that gestational age above >=40 weeks is associated with poor success [8, 4]. In our case the finding could also be confounded by high number of unknown dates and ascertainment of correct date was not possible.

Perinatal and maternal outcome of labor were recorded among women who had trial of VBAC in this study were 3 (2%) scar dehiscence similar with research done in Tanzania 2%india2% and sub-Sahara Africa [16,1214], and 3(1.8) perinatal death and no maternal death .which was similar finding with Malaysia2(1.6%).[9]and no perinatal and maternal death in repeated caesarean section butInfection 5(4.8%),PPH4(3.8%) blood transfusion which were higher than VBAC there wereno difference in the first and fifth minute APGAR score.

CHAPTERSEVEN; CONCLUSION AND RECOMNDETION

CONCLUSION

A total of 169 one cesarean scar women'sdocument was reviewed in medical record books at Attat Catholic hospital that was registered from October 01/2015-Septmeber30/2016 GC. Among this about 104(61.5%) laboring mothers were undergone TOL. Of this, successful VBAC was observed in 65(45.5%) which was relatively low from standard which was 60-80%.

This study revealed that parity, history of successful VBAC,historyof rupture of membrane at admission, cervical dilation atadmission and previous indication for the past cesarean section showed significant association to the success of VBAC.

The analysis indicated that mother who was Para III and above13 Times more likely to have successful vaginal delivery than Para I and II. Cervical dilation during admission>=4cm.3.6 times more likely to have successful vaginal delivery.Passageof liquor at admission and history of vaginal birth after cesarean section.230 and1.9times more likely to have successful vaginal delivery respectively and indication for pervious cesarean section NRFHR 0.53 times more likely to have successful vaginal delivery after cesarean section than other indication.

RECOMNDETION

1 To Federal Ministry of Health and PartnersVBAC was good practiceresearch should be doneusing rigorous prospective designs to identify the prevalence and determinants VBAC and strengthen maternal waiting area to keep high risks Mather

2 The hospitalSince the C/S rate22% is higher than the upper limit of WHO15% cut of line, and attention should begiven to the indication of primary cesarean delivery to avoid unnecessary cesarean section

3 The hospitalBecause of previous cesarean section was the major maternal indication for cesarean section trial of vaginal birth after cesarean section should be encouraged in appropriate cases.

CHAPTER EIGHT: DISSEMINATION PLAN OF THE STUDY FINDINGS

Findings will be presented during Master's thesis defense and in different seminars, meeting, conferences and workshops. The results of this study will be submitted to the department and disseminated to the study site and other concerned bodies. Also there will be an attempt to publish the result in a standard journal

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ANNEX

Data collection format

This checklist was designed to assess PERNATAL AND MATHERNAL OUT COME AMONG PRE VIOUS CEASAREAN SCAR AT Attat Catholic Hospital, a retrospective study over one year from octoberr01/2015-sebtmber 30/2016 GC.

. Data were collected from labor ward records, operation record and from the patient's case notes retrieved from the Medical Record Department of Attat Catholic Hospital Gurage Zone, Southern nations and nationalities regional stateEthiopia.

Variables	Category	Remark
Socio demographic variables		
Age	1,<25 2,25-30 3,>30	
Residence	1/ urban 2/ rural	
Obstetric history		
Gravidity	1, 2-4 2, >=5	
Parity	1, one 2, two 3, three and above	
GA	1, <37 2,37-40 3 ,>40	
ANC follow up	1, yes 2, no	
Passage of liquor	1, yes 2, no	
Duration of labor	1, <=12 2,>12 3, not in labor	
FHB at time of admission	1<110 2, 110-160 3, negative	
Cervical dilatation at time of admission	1,<4 2, 4-7 3,8-10 4 ,not done	
Station at time of admission	1, above zero 2, zero or below 3,not done	
HCI before delivery	1, <7 2,7-11 3,>11 4, not stated	
History of VBAC	1, yes 2, no	
Indication of pervious	1,mal presentation 2,failed induction	

caesarean section	3,NRFHR 4,CPD 5,APH 6,other 7,unknown	
If VBAC mod of delivery	1, vacuum 2, forceps 3, episiotomy 4, vacuum and episiotomy 5, SVD	
Circumstance of caesarean section	1, elective 2,emergency	
Current indication of caesarean section	1,CPD 2,APH 3,NRFHR 4 , mal presentation 5,failure of progress of labor 6,other	
BTL done	1,yes 2,no	
Intra and postoperative complication	1,PPH 2 ,infection 3,other 4 ,no stated complication	
Complication of VBAC	1,Scar dehiscence 2,PPH 3, infection 4,other 5,no stated complication	
Fetal out come	1,alive 2,dead	
First and fifths minute Apgar score	1, <7 2, >=7 3, negative	
Birth weight in gram	1,<2500 2,2500-4000 3,>4000	
Maternal out come	1,alive 2,dead	
HCT after delivery	1,<7 2,7-11 3,>11 4,not stated	
Mother transfused blood	1,yes 2,no	
How many unite of blood if transfused		

Name of data collector---------- Sign----------

Declaration

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

MSC candidate: MAHLET TESFAYE
Signature: _____ Date_____

Name of institution: Jimma University

The thesis has been submitted for examination with my approval as university Advisor:-

DR DEJINE ASEFA (MD, ASSISTANT PROFESSOR OF OBSTETRICIAN AND GYNECOLOGIST)

Signature_____ Date_____

GEREMEW MUIETA, (MSc, ASSISTANT PROFESSOR OF BIOSTATISTIC)

Signature_____ Date_____

External Examiners

DR FANTA ASFA (MD, OBSTETRICIAN AND GYNECOLOGIST)

Signature_____ Date_____