

Saint Paul's Hospital Millennium Medical College Department of Obstetrics and Gynecology

**PREVALENCE OF EPISIOTOMY& FACTORS ASSOCIATED WITH PRACTICE OF
EPISIOTOMY AT SPHMMC, ADDIS ABEBA, ETHIOPIA, February 2017.**

(A THESIS SUBMITTED TO SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE,
DEPARTEMENT OF OBSTETRICS AND GYNECOLOGY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR POSTGRADUATE STUDY IN
OBSTETRICS & GYNECOLOGY)

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FEBRARY 2017

Acknowledgement

I would like to thank my advisor Dr. Tadios Mekonnen (Assistant professor of Obstetrics and Gynecology) for his advice and support while doing this research. I also like to thank the OBGYN department and IRB for allowing this research to be undertaken. I would like to thank the midwives who were participated in the data collection process. Finally, I would like to extend my deepest gratitude to those mothers who gave consent and participated in the study.

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ABSTRACT

Introduction -Episiotomy is a surgically planned incision into the perineal body made during the second stage of labor to facilitate delivery. Although rate of episiotomy decreased, it is still one of the most commonly performed procedures in obstetrics (1).

Objective - The objective of the study is to determine the prevalence of episiotomy and identify those risk factors associated with the practice of episiotomy at SPHMMC.

Methodology - Hospital-based cross sectional study was conducted from February/2016 to JUL 1st /2016 and 405 mothers who gave birth vaginally were included in the study. Data was entered into SPSS statistical package version 16 and analyzed. Both bivariate and multivariate analysis used to see the association of the dependent and independent variables with p-value <0.05 considered statistically significant.

Result – A total 405 participants were included in the study. The prevalence of episiotomy was found to be 65.4%. Both Bivariate &Multivariate analysis showed that nullipara, duration of second stage of labor, instrumental delivery, assisted breech delivery& birth weight were strongly associated with the practice of episiotomy with p- value < 0.05.

Conclusions and Recommendations - The prevalence of episiotomy (65.4%) found to be higher than the other study done in Ethiopia & the WHO recommendation (5- 10%) & this higher prevalence of episiotomy cannot be justified. Nulliparity, duration of SSOL, instrumental & breech delivery and birth weight were strongly associated with increased risk of having episiotomy. So we should start to practice episiotomy for selected mothers for the right indication.

Key word – Episiotomy

Acronyms

A.A – Addis Ababa

ABD – Assisted breech delivery

ACOG – American college of Obstetrics & Gynecology

ANC – Antenatal care

EDHS – Ethiopian Demographic Health Survey

EGOPD – Emergency Gynecologic outpatient department

FMOH – Federal Minster of Health

FP – Family planning

OBGYN – Obstetrics &Gynecology

RCOG – Royal College of Obstetrics & Gynecology

RGOPD – Regular Gynecologic outpatient department

SPSS – Statistical package for social sciences

SSOL – Second stage of labor

SVD – Spontaneous vaginal delivery

SPHMMC – Saint Paulo’s Hospital Millennium Medical College

WHO – World Health Organization

Declaration

I, the undersigned declare that this thesis is my original work in partial fulfillment of the requirement for the postgraduate study in Ob-Gyn. I also declare that it has never been presented in this or any other university and that all resources and materials used in the thesis have been duly acknowledged.

Resident's Name:

Signature _____

Date of submission: _____

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

Advisor Name:

Signature: _____

Date of submission: _____

1. Introduction

1.1 Background

Episiotomy is a surgical incision made on the perineum to widen the vaginal opening for delivery. Although rate of episiotomy decreased, it is still one of the most commonly performed procedures in obstetrics (1). Historically, the procedure has been indicated in the circumstance such as abnormal labor progression, non-reassuring fetal heart rate pattern, vacuum- or forceps-assisted delivery, and shoulder dystocia. It was also believed to hasten the second stage of labor and reduced the risk of spontaneous perineal tear, subsequent pelvic floor dysfunction, urinary and fecal incontinent and sexual dysfunction (2, 3).

Its routine use originally began to be defined by Pomeroy in 1918. During many years this routine practice was accepted and taught as an absolute truth in big obstetrics services, although not based on well conducted and controlled studies. From the 1970s on the first consistent clinical tests were published, questioning the value of this procedure. In the last years, many studies, reviews and meta-analyses have evidenced that there is no scientific basis for maintaining the systematic practice of episiotomy (2,4). In fact, it is admitted that its performance brings about an increase of intra and post-operative complications, suggesting its practice to be restricted to selected patients (2, 5).

No such consensus has emerged as to what constitutes an appropriate episiotomy rate. The Argentine Episiotomy Trial Collaborative Group reported that episiotomy rates above 30 percent cannot be justified for multipara and above 40 percent for primigravida (6). Some have suggested a rate of 20 percent may be appropriate. Still WHO suggested that it should be about 10 percent for primigravida and 5 percent for multipara (7).

Despite this recommendation against routine use of episiotomy, its incidence is still high (2). Episiotomy rates around the world that includes nulliparous and multiparous women range from 9.7% (Sweden) to 100% (Taiwan), (8). For nulliparous women only, a range from 63.3% (South Africa) to 100% (Guatemala) has been recorded, indicating overall greater likelihood for primiparas to receive an episiotomy at birth (8). Different study done in Ethiopia, at Jimma and A.A showed the prevalence of episiotomy being 25 and 40 percent respectively (2,9).

This study is going to be conducted in St. Paul's hospital which is one of the federal hospitals located in the A.A. It was built in 1961 EC and has been functioning since 1961 E.C. It is providing service to an estimate of 200,000 people per year on average. It is also one of the teaching institution under FMOH for Undergraduate and Post graduate programs of different curricula of its kind in Ethiopia.

On average 742 clients per month are seen in the outpatient clinic of the OBGYN department (ANC, EGOPD, FP). About 8400 deliveries attended annually.

1.2 STATEMENT OF THE PROBLEM

Episiotomy is the second most commonly performed obstetric surgical procedure. Current studies show the prevalence of episiotomy is decreasing worldwide but its prevalence is still high in the developing country including Ethiopia (1, 2). A study done at A.A, Tikur Anbesa hospital showed the prevalence of episiotomy is high (40%) (9). There is no study done at SPMMC that shows the prevalence and those factors influencing the practice of episiotomy. This study will be the first to be conducted at SPHMMC and the information obtained will be used as the baseline for the hospital.

1.3 SIGNIFICANCE OF THE STUDY

According to EDHS 2011, only 54% of deliveries are attended at health facilities in urban setup. In A.A the percentage of deliveries attended at health facilities were 82.4%, among these about 83.9% delivered vaginally. There is no national data about the overall prevalence of episiotomy in Ethiopia and only few studies have been done. This study will provide information about the prevalence of episiotomy and those factors influencing the practice of episiotomy at SPHMMC and the information will be used to improve our practice at SPHMMC.

2. LITRATURE REVIEW

Episiotomy is one of the most common operations performed on women. The main support for routine and broadly diffused performance of episiotomy was protection of the perineum in expulsive period. It is believed that incision hindered the disruption of muscle fibers that compose the pelvic floor (2, 3). The current data support that restrictive episiotomy policies appear to have a number of benefits compared to policies based on routine episiotomy (1, 2, and 3). This helps to change trends in obstetrical practice over time for the decision to perform an episiotomy and resulted in a decreasing prevalence of the procedure.

There is a large variation in the use of episiotomy from country to country and also within countries. The prevalence of episiotomy is highest in Latin America and lower in Europe, with reported rates varying widely from 9.7 percent (Sweden) to 80 percent (Argentina), (10,11,12). In USA the trend is decreasing from 60.9 percent of vaginal deliveries in 1979 to 24.5 percent in 2004. The rates tend to be lowest in English-speaking and some European countries (8). In many parts of the world (e.g., Central and South America, South Africa, and Asia), episiotomy rates remain very high. For example, in much of Latin America, 9 of every 10 primiparas can still expect to receive an episiotomy (2, 12, and 13).

More women in developing countries are delivering their babies in hospitals. In Latin America institutional births account for 70% of all deliveries; in Africa, 36%; and in developing countries overall some 40%. What is becoming apparent is that in some countries virtually all the women delivering in hospital will be surgically cut. If they miss out on a caesarean section they will have an episiotomy (11).

A recent Editorial of the British Medical Journal strongly advocated the need to decrease the use of routine episiotomies in developing countries (Maduma-Butshe et al. 1998), (13). The authors polled 10 midwives from Ghana, Kenya, Malawi, Nepal, Nigeria, and Zambia, attending courses in Liverpool, England. Most respondents indicated that health professionals perform episiotomies routinely on primiparas to prevent third degree perineal tears. Maduma-Butshe et al. 1998 also cited a study from Botswana, where one in three mothers having a normal delivery had episiotomy (2). A study from Burkina Faso reported an episiotomy rate of 37% among primiparas (Lorenz et al. 1998). A study done in Nigeria in 2005 the prevalence of episiotomy was 45%. Ninety percent of primigravidae parturient had episiotomy (3,14).

A study done in A.A, Ethiopia a total of 917 deliveries were attended during the study period among which 672 mothers (83.1%) delivered vaginally. Among the vaginal deliveries, 270 (40.2%) mother had episiotomy. Of this 203 (75.2%) mothers were primigravida, about 77.7% were nulliparous and 21.3% were multiparous. In another study done at Jimma the overall incidence of episiotomy was 25%, about 47% of nulliparous and 5% of multiparas needed episiotomy (9,15).

Factors influencing the practice of episiotomy on a study done in Brazil, the prevalence of performing episiotomy was 29.1% (n = 144). They found a significant association of episiotomy with adolescence (PR 1.74; CI95% 1.33-2.28), age over 35 years (PR 0.35; CI95% 0.14-0.90), primiparity (PR 4.73, CI95% 3.33-6.71), absence of previous vaginal delivery (PR 5.44; CI95% 3.67-8.06) and related diseases at the time of delivery (RP 1.71, CI95% 1.30-2.25), (6).

Similar study done at Nigeria, women undergoing episiotomy were younger (mean age 24.7 years: range 16-37) than without episiotomy (mean age 28.5 years: range 20-43). When controlled for maternal age, other risk factors were occipitoposterior position, vacuum extraction, forceps delivery, vaginal breech delivery and a history of caesarean section (3, 9).

The finding was similar in the study done in Ethiopia, the mean age of parturient delivering by episiotomy and spontaneous vertex delivery was 22 +/- 4 and 26 +/- 6 years respectively ($p < 0.0001$), (15). The duration of the second stage of labor more 90 minutes (76% vs 13.8%) and instrumental delivery (86.2% vs 13.8%) has been shown to be significantly associated to having episiotomy (2,16).

Multiple studies have demonstrated significant risks associated with episiotomy, including anal sphincter laceration, fecal and urinary incontinence and dyspareunia (17). The large Argentine Episiotomy Trial Collaborative Group with 2606 participants reported significantly more third or fourth degree tear in the routine episiotomy group (1.5% vs 1.1%), (6,17). Presence of perineal lacerations was higher in the group not subject to episiotomy, however only 1st and 2nd degree lacerations were described. The same finding was reported in Nigeria study (13).

Several other studies reported similar findings with the routine episiotomy group reporting severe perineal tears of 1.4-8.3% compared to the rate of 0 to 4.1% in the selective group (3, 5, 9 &10).

3. Objective

3.1 General

- ❖ The main objective of the study is to determine the prevalence of episiotomy and identify those risk factors associated with the practice of episiotomy at SPHMMC.

3.2 Specific

1. To determine the prevalence of episiotomy among mothers who gave birth vaginally at SPHMMC.
2. To determine those factors influencing the practice of episiotomy.

4. RESEARCH METHODS AND MATERIALS

4.1 Study area

The study was conducted in St. Paul's hospital, which is one of the federal hospitals located in the Addis Ababa which is the capital city of Ethiopia.

4.2 Study period

The study was conducted from February 1/2016 to JUL 1st/2016 for six consecutive months.

4.3 Study design

Hospital-based cross sectional study was used to determine the prevalence of episiotomy & those factors associated with the practice of episiotomy.

4.4 Populations

4.4.1 Source population

All women who gave vaginal birth at SPHMMC during the study period.

4.4.2 Study population

All women who gave vaginal birth at SPHMMC during the study period were included in the study. On average about 2000 mothers gave birth vaginally during the study period.

4.5 Inclusion& exclusion criteria

4.5.1 Inclusion criteria

- The inclusion criterion was women who was admitted to SPHMMC and delivered vaginally during the study period.

4.5.2 Exclusion criteria:

- None.

4.6 Sample size determination and sampling technique

4.6.1 Sample size determination

Sample size was determined using a single population proportion formula by taking P=40 %.
(the anticipated prevalence of episiotomy from the study done in A.A.)

$$n = \frac{(Z_{\alpha/2})^2 P (1-P)}{d^2} = \frac{(1.96)^2 (0.4) (1-0.4)}{(0.05)^2} = 368$$

Where:

n=the required sample size

p=the proportion of women with episiotomy.

$Z_{\alpha/2}$ =the critical value at 95% confidence level of certainty (1.96)

d=the margin of error between the sample and the population 5%.

- With 10% non-response rate, the sample size will be 405.

4.6.2 Sampling technique/procedure

- ❖ Women who were admitted and gave birth vaginally during the study period were included till the required sample size was met. On average a minimum of 1800 mothers admitted & gave birth vaginally over the past 06 months prior to the study period. This total number of mothers who vaginally delivered were divided by the sample size which is 405 to get number 4.4. Systematic random sampling was used; the delivery log book was renumbered starting from number one to number 1720. The first mother card number was selected using lottery method it was number 2, then every 4th mother who

gave vaginal birth during the study period was selected until the desired sample size was achieved.

4.7 Data collection tools and Procedure

Structured and pretested questionnaire assessing sociodemographic characteristics, obstetrics factors and mode of deliveries were prepared in English and the introductory part was translated to Amharic language and it was filled by two trained midwives.

4.8 Data quality assurance

Pretesting of the questionnaire was conducted on women who gave birth before the study period and appropriate modification was made. All filled questionnaires were checked for completeness, accuracy and consistency by the principal investigator. Necessary correction was made by cross checking with the patient's chart. Supervision by the principal investigator throughout the data collection was carried out. The data was checked daily by the principal investigator for completeness and appropriateness.

4.9 Data processing and analysis

Data was entered in to SPSS statistical package version 16. Coding of individual questionnaires was checked before data entry in to the software. Further, data cleaning was performed to check for outliers, missing values and any inconsistencies before the data was analyzed using the software.

Descriptive statistics were used to characterize the dependent and independent variables using odd ratio & 95% CI. Result presented as number, percentage, mean $\pm$ SD in tables, bar charts and pie chart. The proportion women with episiotomy were determined.

Both Bivariate and multivariate analysis was performed to verify the association of potential determinant factors with the dependent variable of the study. Initially bivariate analysis was done using about 8 different independent variables. Factors with statistical significance from the bivariate analysis were again run into multinomial logistic regression model.

4.10 Data dissemination plan

The final result of this paper will be submitted to SPHMMC department of obstetrics and gynecology and public health department. There will be presentation of the research outputs to the college community and other concerned stakeholders. Manuscript will also be prepared and sent for publication to peer reviewed journals.

5.Ethical considerations

Ethical clearance & permission letter was obtained from the Institutional Review Board (IRB) of SPHMMC. The privacy of the client and confidentiality of the information was maintained.

6. Variables

6.1 Dependent variables

- Episiotomy

6.2 Independent variables

- Gravity, maternal age,
- Parity, fetal presentation,
- Mode of delivery, Instrumental delivery, Assisted breech delivery
- Duration of second stage of labor,
- Birth weight, stage of labor on admission
- Maternal disease, vaginal delivery after c/s

7. Operational definitions

Spontaneous vaginal delivery- vertex or face spontaneous vaginal delivery.

Instrumental delivery – vacuum or forceps delivery.

8. Result

8.1 Sociodemographic characteristics of the study participant

Among mothers who delivered at SPHMMC 405 were included in the study sample. The mean age of the participant was 25 years ($SD \pm 4.94$), majority being in the age group of 20 – 34 years accounting for 361 (89.1%), followed by age group 35 – 45 years 22 (5.4%) and age < 20 years is 22(5.4%) respectively. About 201(49.6%) of mothers were orthodox by religion, those who are protestant and Muslim were 110(27.2%) and 94(23.2%) respectively. 389(96%) of mothers were married, 11(2.7%) mothers were single and the rest 5(1.2%) were divorced or widowed. The study revealed majority of the mothers live in Addis 256(62.2%), the rest 150(37.0%) live in Oromia region. About 194(47.9%) were Oromo, 128(36.6%) were Amhara, the rest 48(11.9%) and 9(2.2%) were Gurage and Tiger in ethnicity respectively. From the educational background 161(39.8%) of them attended secondary school or above, those who attended primary school and those who had no formal education constitute 123(30.4%) and 121(29.9%) respectively. Majority of the mothers were housewife 200(49.4%), 88(21.7%) were merchant, 69(17.0%) were government employee, 17(4.2) were farmer and the rest 17(4.2%) were daily laborer.

Table 1. Sociodemographic characteristics of mothers who gave birth at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)

Variables	Frequency	Percentage	Mean±SD
Age (in years)	Number	%	25±4.92
< 20	22	5.4	
20-34	361	89.1	
35-49	22	5.4	
Religion			
Orthodox	201	49.6	
Protestant	110	27.2	
Muslim	94	23.2	
Marital status			
Single	11	2.7	
Married	389	96.0	
Divorced	3	0.7	
Widow	2	0.5	
Ethnicity			
Amhara	128	31.6	
Oromo	194	47.9	
Gurage	48	11.9	
Tigre	9	2.2	
Other	26	6.4	
Place of residence			
A.A	252	62.2	
Oromia region	150	37.0	
Others	3	0.7	

Educational status

No formal education	121	25.2
Primary school	123	30.4
Secondary	130	32.1
Above secondary	31	7.7

Occupation

Govt. employee	69	17.0
Merchant	88	21.7
Daily laborer	17	4.2
Housewife	200	49.4
Farmer	17	4.2
Other	14	3.5

8.2 Reproductive performance of the study participant

The study revealed that 197(48.6%) of mothers were primigravida and 208(51.4%) of mothers were multigravida. 215(53.1%) were nullipara and the rest 190(46.9%) of the study participant delivered at least one time. Most of the mother, 353(87.2%) had no history of abortion. About 312(77.0%) of the mothers had ANC follow up, from this 92(29.5%) of them had there ANC follow up at SPHMMC, 185(59.3%) had their follow up at St. Paul's hospital catchment health center, and the rest 35(11.2%) had their ANC follow up at Oromia health center respectively. From those mothers who were admitted and gave birth only 125 (30.9%) had associated maternal disease (like Hypertensive disease in pregnancy, diabetes mellitus, cardiac disease etc.). Majority of the delivery were singleton 378(93.3%) and the rest 27(6.7%) were twin delivery. 271(66.9%) mothers had spontaneous labor and the rest 134(33.1%) had induced labor. The

study also revealed that about 272(67.2%) of the mother the duration of SSOL were more than one and half hour. For the fetal presentation 374(92.3%) of vertex presentation, 17(4.2%) were breech and 14(3.5%) were face presentation. Majority of the mother 318(78.5%) delivered by spontaneous vertex delivery, 70(17.3%) and 17(4.2%) delivered by instrument delivery and assisted breech delivery respectively. The number of mothers who had VBAC was 17 (4.2%). From the total baby who were born 220(50.9%) were male and 212(49.1%) of them were female. Majority of the baby 343(79.5%) were in the normal birth weight range, 78(18%) of the baby weighing between 1000 and 2499gm, about 11(2.5%) of babies born macrosomic (> 4000gm). Most of the deliveries 269(66.4%) were attended by residents.

Table 2. Reproductive performance of the study participant at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)

Variable	Frequency	Percent (%)
Gravidity		
Primigravida	197	48.6
Multigravida ≥ 2	208	51.4
Parity		
Nullipara	215	53.1
Para ≥ 1	190	46.9
Abortion		
Yes	353	87.2
No	52	12.8
ANC follow up		
Yes	312	77.0
No	93	23.0
Place of ANC		
SPHMMC	35	11.2
Catchment H/C	185	59.3
Non CH/C	92	29.5

Table 3. Obstetrics characteristics of the study participant at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)

Variable	frequency (number)	Percent (%)
Gestation		
Singleton	378	93.3
Twin	27	6.7
Presentation		
Vertex	374	92.3
Breech	17	4.2
Face	14	3.5
Onset of labor		
Spontaneous	271	66.9
Induced	134	33.1
Sex of baby		
Male	220	50.9
Female	212	49.1
Birth weight		
1000 – 2499 gm	78	18.0
2500 – 3999 gm	343	79.5
≥ 4000 gm	10	2.5

Figure 1. A pie chart showing distribution of study participant by mode of delivery at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)

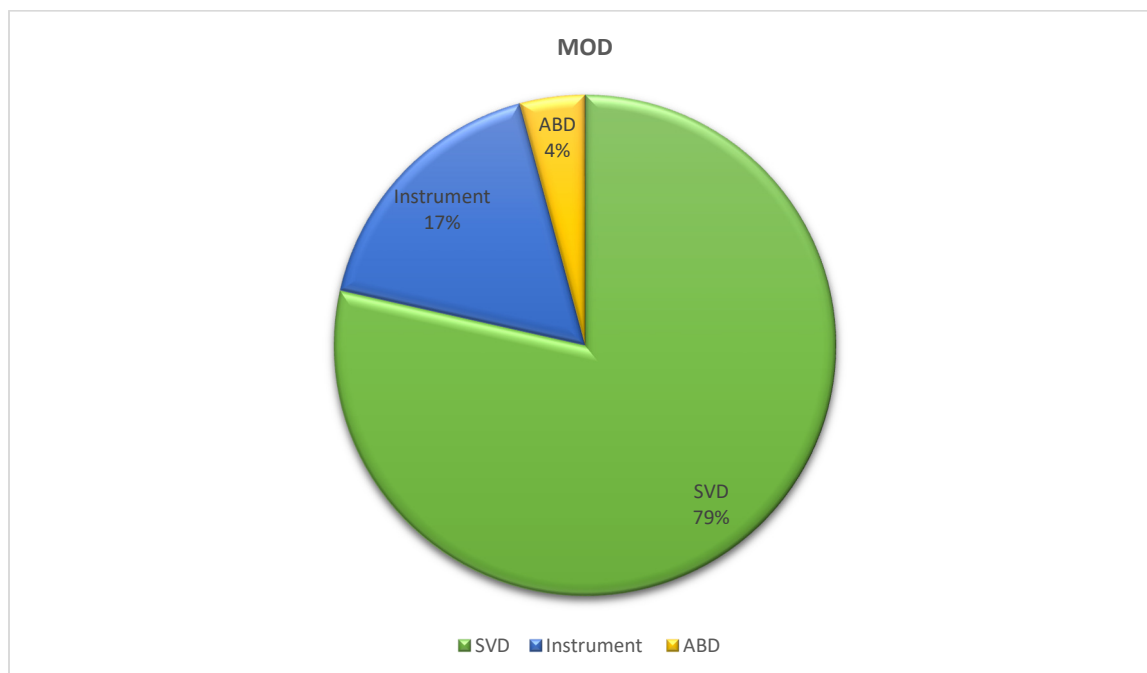
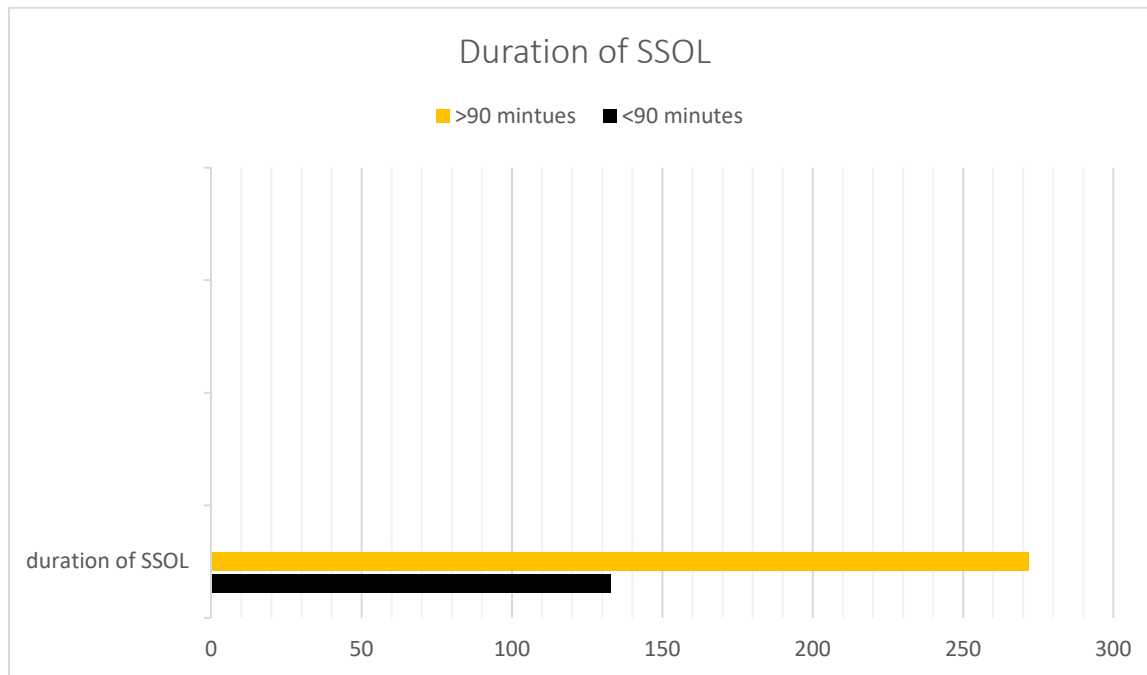


Figure 2. Bar chart showing duration of SSOL of the study participant at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)



8.3 Prevalence of episiotomy

Among 405 mothers who delivered, those mothers who had episiotomy are about 265(65.4%) and the rest 140(34.6%) had no episiotomy. The prevalence of episiotomy in primiparas and multipara was 64.5% and 68.3% respectively. Only one mother had third degree perineal tear (0.2%) after she had episiotomy.

Table4. Prevalence episiotomy of the study participant at SPHMMC, Addis Ababa, Ethiopia 2016/17 (n=405)

Variable	Frequency (number)	Percent (%)
Episiotomy		
Yes	266	65.4
No	140	34.6

8.4 Factors associated with the practice of episiotomy

Selected variables were entered in to the binary logistics regression model and seven of the variables were found to have significant risk factor for having episiotomy. Taking the p- value < 0.2 as a cut of point, about seven of variables were included in the multiple logistics regression. After controlling the potential confounding factors, gravidity, parity, presentation, duration of second stage of labor(DSSOL), mode of delivery (MOD) & birth weight were found to be statistically significantly.

Gravidity is significantly associated ($p\text{-value} \leq 0.039$) with having episiotomy. Primigravida mothers have about 3.1 times more likely to have episiotomy than multigravida mothers ($AOR = 3.146, 95\%CI: 1.058, 9.357$). Being nullipara is also 6 time more risk for episiotomy than multipara mothers with $p\text{-value} < 0.000$ ($AOR = 6.385, 95\%CI: 3.690, 11.050$). This study also shows that mothers having breech baby presentation are 11 times more likely to have episiotomy during delivery than those mothers having cephalic presentation with $p\text{-value} \leq 0.028$ ($AR = 11.638, 95\%CI: 1.297, 104.4$). Those mothers whose duration of SSOL more than one & half hour are 2.5 times more likely to have episiotomy during delivery with $p\text{-value} \leq 0.000$ than those mothers whose duration of second stage of labor less than one& half hour ($OR = 2.583, 95\%CI: 0.135, 0.412$). Both instrument or assisted breech delivery was associated with 9 times more likely to have episiotomy with $p\text{-value} \leq 0.000$ than those mothers who delivered though SVD ($OR = 9.49, 95\%CI: 1.064, 82.33$). Finally, those mothers who gave birth to babies weighing $\geq 2500\text{gm}$ are 4 times likely to have episiotomy during delivery with ($p \leq 0.038$) ($OR = 4.289, 95\%CI: 0.007, 0.540$) than those mothers who gave birth between 1000-2499 gm.

Table 5. Maternal variables associated with episiotomy in SPHMMC, Addis Ababa, Ethiopia 2016/17 (n= 405)

Variable	Episiotomy Yes(number)	Yes (%)	Episiotomy% within variables	Episiotomy No(number)	No (%)	P- value
Gravidity						
Primigravida	171	64.5	86.8	26	18.6	0.000
Gravida≥2	94	35.5	45.2	114	81.4	
Parity						
Nullipara	181	68.3	84.2	34	24.3	0.000
Para≥1	84	31.7	44.2	106	75.7	
Presentation						
Vertex	241	90.9	64.4	133	95.0	0.021
Face	10	3.8	71.4	4	2.9	
Breech	14	5.3	82.4	3	2.1	
DOSSOL						
<90 minute	58	21.9	43.6	75	53.6	0.000
≥90 minute	207	78.1	76.1	67	46.4	
MOD						
SVD	188	70.9	59.1	130	92.9	0.000
Instrument delivery	63	23.8	90.0	7	5.0	
ABD	14	5.3	82.4	3	2.1	
Birth weight						
1000-1499	40	15.1	54.8	33	23.6	0.012
2500-3999	216	81.5	67.1	106	75.7	
≥4000	9	3.4	90.0	1	0.7	
Maternal age						
<20	18	6.8	81.8	4	2.8	0.001
20-34	240	90.6	66.5	121	86.4	
35-49	7	2.6	31.8	15	10.7	
Maternal disease						
Yes	65	24.5	52	60	42.9	0.000
No	200	75.5	71.4	80	57.1	

Table 6. Bivariate and Multivariate logistics analysis, to show those factors associated with episiotomy in SPHMMC, Addis Ababa, Ethiopia 2016/17 (n= 405)

Variables	Episiotomy Yes	Episiotomy No	p- value	COR(95 % CI)	AOR(95 % CI)	
Gravidity						
Primigravida	171	26	0.039	0.125(0.076,0.206)	3.146(1.0258,9.357)	
Gravida ≥2	94	114				
Parity						
Nullipara	181	34	0.000	0.1499(0.094,0.237)	6.385(3.690,11.050)	
Multipara	84	106				
Presentations						
Cephalic	251	137	0.028	1	1	
Breech	14	3				
Duration of SSOL						
< 90 min	58	75	0.000	1	1	9.
≥90 min	207	65				
MOD						
SVD	187	130	0.000	1	1	Dis
Instrument/ABD	78	10				
Birth weight						
1000 – 2499gm	40	33	0.038	1	1	ion
2500 – 3999gm	255	107				
Maternal age						The
< 20	18	4		1	1	prev
20-34	24	121	0.835	0.109(0.026,0.453)	1.192(0.229,6.202)	alen
35-49	7	15				
Maternal disease						ce
Yes	65	80		1	1	of
No	200	65	0.081	2.316(1.485,3.611)	0.604(0.343,1.064)	epis

iotomy varies from country to country and also with in the countries. The highest being in Latin America, like Argentina (80%) to the lowest being in Europe, Sweden (9.7%) (2,12,13). In developing countries studies shows prevalence range from 36% to 40% (11). A study done in Ethiopia the prevalence of episiotomy range from 25% in Jimma to 40% in Addis Ababa (9,15).

This study revealed that the prevalence of episiotomy is 65.4% (n=405). This prevalence was lower than the finding in Argentina but higher than those result found in Ethiopia.

Among factors influencing the practice of episiotomy this study showed that primigravida is strongly associated with having episiotomy than multigravida 86.9% vs 45% with p – value <0.039 (AOR=3.14,95%CI:1.058,9.357). This finding was similar with the study done in Brazil (60%) and also the study done in Ethiopia (6,9,15). Being nullipara was also strongly associated practice of episiotomy when compared to multipara 68.3% vs 31.7% with p- vale< 0.000 (AOR=6.385,95%CI:3.690,11.05). Similar association was found in studies done at Brazil and Ethiopia (6,9,15). Those mothers who had breech presentation was found to be 11 times more likely to have episiotomy during delivery than those with cephalic (vertex or face) delivery with p- value <0.028 (AOR=11.63,95%CI:1.297,97.32).

The duration of second stage of labor more than 90 minute is 2.5 times likely to have episiotomy when compared to those mothers whose duration of second stage of labor is less than 90 minute with p- value <0.000 (78.1% vs 21.9%) (AOR=2.583,95%CI:0.135,0.412). This finding was similar with the study done in Ethiopia, as the duration of second stage of labor lasts longer than one and half hour the rate of episiotomy reaches up to 76% (16).

Instrument and breech delivery was also found to be strongly associated with the practice of episiotomy with p- value <0.000. Mothers who gave birth through instrument or breech delivery were more 9 times likely to have episiotomy than those mothers who gave birth through spontaneous vertex delivery 82.4% vs 59.1% (AOR=9.49,95%CI:1.094,82.33). Similar association was found with the study done in Ethiopia which is 86% (3,4) and also study done in Nigeria (3,16).

This study also showed that the birth weight of the babies was associated with the practice of episiotomy. Those mothers who gave birth to babies weighing more than 2500gm are 4 times more likely to have episiotomy when compared to those mothers who gave birth to babies weighing between 1000 to 2499gm with p- value <0.038(AOR=4.289,95%CI:0.007,0.540).

Maternal age and maternal disease at the time of delivery was not significantly associated with the practice of episiotomy. This might be due to the number of those mothers who delivered were few (5.4%) and the mean age of mothers who delivered was 25 years $\pm$ 4.92.

The study done in Argentina showed that the rate of third or fourth degree perineal tear was 1.5% and it was most occurred in routine use of episiotomy (6,13,17). In this study one mother had third degree perineal tear (0.2%) after she had episiotomy.

10. Limitations of the study

The result cannot be generalized to the population because those mothers who gave birth at SPHMMC are mostly referred from health center with labor abnormality.

11. Conclusion

The study showed that the prevalence of episiotomy found to be 65.4% which is much higher than the other study done in Ethiopia, which is also higher than WHO recommendation (5- 10%). Even though St. Paul's hospital is a teaching hospital the higher prevalence of episiotomy cannot

be justified. Although there are many factors that influence the practice of episiotomy, primigravidity, nulliparity, duration of SSOL, instrumental & breech delivery and birth weight were strongly associated with increased risk to have episiotomy.

12. Recommendations

- Selective use of episiotomy should be practiced to decrease the high prevalence of episiotomy which was found in this study.
- Since St. Paul's hospital is a teaching hospital more emphasis should be given to the medical students including residents about the benefit of selective use of episiotomy because they are the one who attended most of the deliveries.
- Multicenter study should be done to determine the prevalence of episiotomy in Ethiopia.
- Further study should be done to determine the prevalence of 3rd or 4th degree perineal tear.

ANNXEES I: Consent form

Consent form

- There is a research being conducted in Saint Paul's Hospital Millennium Medical

College. We are studying the prevalence of episiotomy and the factors associated with the practice of episiotomy. The candidates for this study are women who gave birth vaginally at SPHMMC during the study period.

- You are selected randomly and your participation will contribute a lot and the information you provide will be kept strictly confidential and is to be used only for the purpose of this study. Your participation is voluntary
- Do you have any questions?
- Are you willing to participate?
- Yes I agree.....
- Signature of interviewer.....

ANNEX I: Consent (Amharic version)

ANNEX II: QUESTIONNAIRE

Card No. _____

Date _____

Socio Demographic Status

1. Age -----

2. Religion

1 Orthodox

4. Catholic

2. Muslim

3. Protestant

5 Other -----

3. Ethnicity

1 Amhara

4. Tigre

2 Oromo

5. Other-----

3 Gurage

4. Marital status

1. Married

3. Divorced

2. Single

4. Widow

5. Place of residence

1 A.A

2. Oromyia

Others

6. Educational status

1 Can't read & write

4. Secondary school

- | | | |
|---|----------------|---------------------------|
| 2 | Read & write | 5. Above Secondary school |
| 3 | Primary school | |

7. Occupation

- | | |
|-----------------------|---------------|
| 1 Government Employee | 4. House wife |
| 2 Merchant | 5. Farmer |
| 3 Daily laborer | 6. Other |

Obstetrics Factor

8. Gravity -----

9. Parity-----

10. Abortion-----

11. Do you have ANC follow up?

1. Yes 2. No

12. If yes to question no. 11, where?

1. SPHMMC 2. At catchment health center 3. Other specify.....

13. What was the number of gestation?

1. Singleton 2. Twine pregnancy 3. Other specify.....

14. What was the onset of labor?

1. Spontaneous

15. If the onset of labor was spontaneous, what was the stage of labor during admission to labor ward?

1. LFSOL 2. AFSOL 3. SSOL

16. What was the presentation?

1. Vertex presentation 2. Face presentation 3. Breech presentation

17. If the presentation is vertex, what was the position?

1. Occipito anterior position 2. Occipito posterior position
3. If other specify.....

18. What was the total duration of SSOL?

19. What was the mode of delivery (If twine delivery please choose mode of delivery for both)?

1. SVD 4. ABD
2. Vacuum delivery 5. Destructive delivery
3. Forceps delivery

20. If the mode of delivery was vacuum or forceps, what was the indication?

1. NRFHRP 2. Prolonged SSOL
3. To shorten SSOL for maternal indication 4. Other specify.....

21. Was episiotomy done?

1. Yes 2. No

22. If the answer to question no 21 is yes, was there any perineal tear?

1. Yes 2. No

23. If the answer to question no 21 is yes mention the degree of perineal tear

1. Third degree perineal tear
 2. Fourth degree perineal tear
24. If the answer to question no 21 is No, was there any perineal tear?
1. Yes
 2. No
25. If the answer to question no 24 is yes, mention the degree of perineal tear
1. First degree perineal tear
 3. Third degree perineal tear
 2. Second degree perineal tear
 4. Fourth degree perineal tear
26. Was there any maternal disease?
1. Yes
 2. No
27. If the answer to question no 26 is yes, specify.....
28. Do you have history of cesarean section?
1. Yes
 2. No
29. If the answer to question no 28 is yes, was this your first VBAC?
1. Yes
 2. No
30. Who attended the delivery?
1. Resident, mention the level of the resident -----
 2. Intern
 3. Midwife
31. What was the birth weight?
1. 1000 gm – 2449 gm
 2. 2500 gm – 3999 gm
 3. 4000gm and above

32. What was the sex of the baby?

1. Male

2. Female

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