

# Prevalence of Episiotomy and Its Associated Factors in University of Gondar Comprehensive Specialized Referral Hospital: A Retrospective Study from Ethiopia

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**Abstract:** Background: Episiotomy is a surgical incision of the perineum during delivery to enlarge the vaginal orifice. It is one of the most commonly performed obstetric intervention world widely. The magnitude of episiotomy varies from population to population. Limited information exists related to the practice of episiotomy in Ethiopia. This study aimed to assess the prevalence of episiotomy and its associated factors in University of Gondar Comprehensive Specialized Referral Hospital, Ethiopia. Methods: Institution based retrospective cross-sectional study was undertaken from March to June 2014 on 306 mothers who had a vaginal delivery in the Hospital. Systematic random sampling technique was employed to select study units. The data were collected using pretested check list. Proportion of patients who had episiotomy was calculated and the association between dependent and independent variables was checked using both binary and multiple logistic regression and Chi-square. Results: Prevalence of episiotomy in University of Gondar Comprehensive specialized Referral Hospital was 47.7% (n = 146). Majority (89.5%) of the delivery was spontaneous vaginal delivery while vacuum, forceps and destructive delivery were 4.6%, 4.6%, and 1.3% respectively. During pregnancy and delivery, 84% of mothers had no associated diseases while 8% had hypertensive disorder, 5% diabetes mellitus and 3% of them has other diseases. After multivariate analysis episiotomy was significantly associated with maternal age (15-24 years) ( $p = 0.041$ , AOR (CI 95%) 1.65 (1.02 - 2.66)), primiparity ( $p = 0.010$ , AOR (CI 95%) 2.61 (1.54 - 4.44)), prolonged labor ( $p = 0.001$ , COR (CI 95%) 6.45 (2.89 - 14.38)), and weight of newborn ( $p = 0.044$ , COR (CI 95%) 2.48 (1.16, 5.31)). Conclusion: Prevalence of episiotomies in the institution was 47.7% and variables that remained associated significantly with episiotomy were maternal age, primiparity, prolonged labor, and newborn weight.

**Keywords:** Episiotomy, Primiparity, Perineum, Prolonged Labour

## 1. Introduction

Episiotomy is a surgical incision of the perineum during

delivery to enlarge the vaginal orifice. It is first reported back in 1741 [1] and continues to become part of modern obstetrics [2]. This surgical incision of the perineum is aimed

to protect the perineum from large tears, speed up birth, reduce postnatal pain, and postnatal urinary incontinence [3]. There is also an evidence that shows association of episiotomy with higher quality of life. According to this study, women who had episiotomy and who experienced perineal symptoms have a better psycho-physical health status [4].

For many years routine episiotomy practice was accepted and taught but now a days restrictive episiotomy performance is promoted than the routine [1, 5] for its reduced perineal trauma, reduced suturing, less complications and reduced third and fourth degree perineal lacerations [6]. Even though episiotomy is ascribed to women wellness, since it is a surgical procedure it is not free from risks. Some literatures indicate that episiotomy itself is associated with sexual dysfunction [7], anal sphincter laceration, fecal and urinary incontinence [8], recto-vaginal fistula, perineal pain, dyspareunia, and greater blood loss as compared with vaginal delivery without episiotomy [9, 10]. A study done in Kuopio Finland states that third-degree perineal injuries are more common in both primiparous and multiparous women if episiotomy is performed [11].

Additionally, researchers hadn't found any difference in prevalence of urinary incontinence between women with episiotomy and with spontaneous perineal tears [12-14] as well as in the perineal perception of pain [15, 16]. Very limited information exists related to the practice of episiotomy in Ethiopia. Therefore, this study aimed to assess the prevalence of episiotomy and its associated factors in University of Gondar Comprehensive Referral Hospital, North West Ethiopia.

## 2. Methods

Retrospective cross sectional study was carried out on selected 306 mothers who gave birth at University of Gondar Comprehensive Specialized Referral Hospital. The Hospital was the only referral and teaching hospital in the area. There were 7,920 births in the study year 2014. Systematic random sampling technique was conducted to select the sample population from medical registration book of the maternity ward. Since there was no research done on the prevalence

and associated factors of episiotomy in the hospital, 0.25 proportion was taken from a study in Jimma University to determine the representative sample size.

The sample size was calculated using a single population proportion formula and the medical record books of the selected mothers were extracted for collection of data. Medical record book that contain incomplete data and cesarean delivery were excluded from the study. Data was collected using a pretested check list and revision of medical records was carried out by principal investigator. Independent variables such as socio-demographic factors, weight of the newborn, age of the newborn, health attendant who attended the delivery, parity of the mother, types of delivery, APGAR score, presence of associated disease at birth, absence of previous vaginal birth and prolonged labor were studied along with the dependent variable episiotomy.

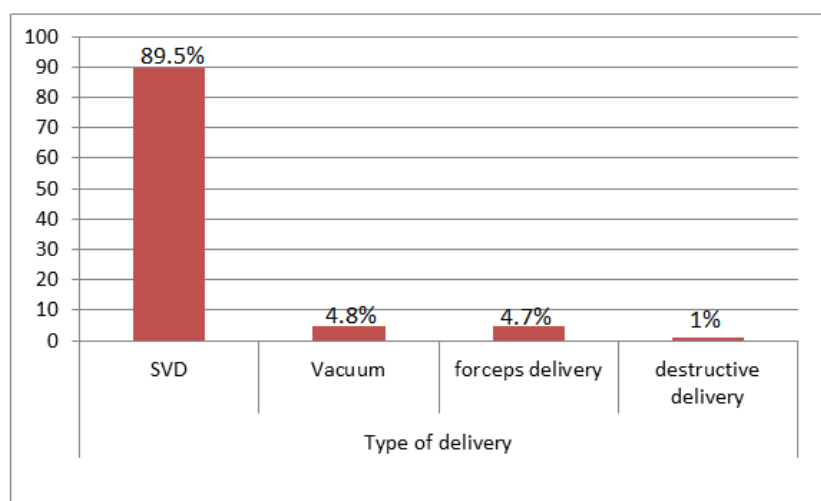
The study was conducted in accordance with the guidelines laid down in the Declaration of Helsinki, and the study was approved by the Ethical Committee University of Gondar, College of Health Sciences, Nursing department. Confidentiality, anonymity, neutrality, and accountability was maintain throughout the study.

## 3. Statistical Analysis

Data was entered into Epi Info statistical software then exported to SPSS software version 20 for analysis. Chi-square, binary and multinomial logistic regression were used to compute the association between parameters. P-value of <0.05 at 95% confidence level was considered to be statistically significant in all the analyses.

## 4. Result

The institutional prevalence of episiotomy was 47.7%. Maternal age varied between 15 and 44 years, with an average of 25.9 years for mothers who had episiotomy, and 26.7 year in those without episiotomy. Majority (89.5%) of the delivery was spontaneous vaginal delivery while the other types of delivery account only 10.5% (Figure 1).



**Figure 1.** The percentage of type of delivery among mothers giving birth at University of Gondar Comprehensive Specialized Hospital.

The parity of the mothers was dominantly 215 (70.3%) primipara and most 243 (79.4%) of the children weight were within the range of 2.5Kg - 3.5Kg. Out of the total 306 study

participants 24 (7.8%) had hypertensive disorder, 17 (5.6%) diabetes mellitus and 8 (2.6%) of them has other diseases during pregnancy and delivery. (Table 1)

**Table 1.** Obstetric and obstetric related factors in University of Gondar Comprehensive Specialized Hospital.

Factors		Frequency	Percent (%)
Parity of the mother	Primipara	215	70.3
	Multipara	85	27.8
	Grandmultipara	6	2
Weight of the Newborn	<2.5Kg	35	11.4
	2.5Kg-3.5Kg	243	79.4
	>3.5Kg	28	9.2
Age of the Newborn	Preterm	36	11.8
	Term	251	82
	Post-term	19	6.2
Associated diseases	Hypertensive	24	7.8
	Diabetes	17	5.6
	Others	8	2.6
Health attendant	No disease	257	84
	Doctor	121	39.5
	Midwife	71	23.2
APGAR score	Nurse	28	8.2
	EOS	89	29.1
	7-10	275	89.9
Prolonged labor	4-6	20	6.5
	<4	11	3.6
	Yes	45	14.7
Absence of previous vaginal birth	No	261	85.3
	Yes	217	70.9
	No	89	29.1

EOS: Emergency Obstetric Surgeon

#### Factors associated with episiotomy

Multivariate analysis was done for those factors that were significantly associated with binary logistic regression. Accordingly, factors such as maternal age between 15 and 24, primiparity, weight of the newborn and prolonged labor were associated with episiotomy. From the total 146 mothers who had episiotomy, 80.8% were primipara and this mothers conferred 2.6 fold higher risk of having episiotomy. Similarly,

mothers within the age group of 15-24 and with prolonged labor were 1.6, and 6.4 fold at risk of having episiotomy. Newborn weight >3.5Kg was a post birth factor that increase the risk of episiotomy by 2.48 fold. No association was observed between Apgar score ( $p=0.486$ ), associated disease ( $p=0.63$ ), health worker ( $p=0.14$ ), and age of new born ( $p=0.614$ ) and episiotomy. (Table 2)

**Table 2.** Factors associated with episiotomy at University of Gondar Comprehensive Specialized Hospital, North West Ethiopia.

Factors		Episiotomy				AOR (CI)	p
		Done (146)		Not done (160)			
		No	%	No	%		
Maternal age	15-24	70	55.6	56	44.4	1.65 (1.02, 2.66)	0.041
	25-34	69	43.7	89	56.3	0.82 (0.23, 1.86)	0.045
	35-49	7	31.8	15	68.2	1	
Parity	Primipara	118	54.9	97	45.1	2.61 (1.54, 4.43)	0.010
	Multipara	28	30.8	63	69.2	0.37 (0.22, 0.61)	0.028
	Grandmultipara	1	26.7	5	83.3	1	
Age of Newborn	Preterm	20	55.6	16	44.4	1.12 (0.72, 2.94)	0.83
	Term	116	46.2	135	53.8	0.77 (0.37, 3.43)	0.61
	Post term	10	52.6	9	47.4	1	
Weight Newborn	>3.5Kg	23	42.9	11	57.1	2.48 (1.16, 5.31)	0.044
	2.5-3.5Kg	112	46.1	133	53.9	0.21 (0.08, 0.74)	0.038
	<2.5Kg	11	62.9	16	37.1	1	
Diseases	Hypertensive	19	79.2	5	20.8	4.13 (2.73, 6.81)	0.63
	Diabetes	21	94.1	6	5.9	6.21 (1.92, 8.35)	0.58
	Non	106	41.2	151	58.8	1	
Health worker	Doctor	54	44.6	67	55.4	1	
	Midwife	22	31	49	69	0.56 (0.47, 3.33)	0.20
	EOS	55	61.8	34	38.2	2.01 (0.08, 5.40)	0.14
APGAR score	7-10	128	46.6	147	53.4	1	

Factors		Episiotomy				AOR (CI)	p
		Done (146)		Not done (160)			
		No	%	No	%		
Prolonged labor	4-6	12	60	8	40	1.72 (0.23, 1.96)	0.36
	<4	6	54.5	5	45.5	1.38 (0.22, 2.43)	0.48
	No	109	41.7	152	58.2	1	
	Yes	37	58	8	1.4	6.45 (2.89, 14.38)	0.01

AOR: Adjusted Odds Ratio, CI: Confidence Interval, EOS: Emergency Obstetric Surgeon

## 5. Discussion

The prevalence of episiotomy in the Hospital was 47.7%. This result is in line with studies conducted in Western community hospital USA (48%) [17], and Nigeria (46.6%) [18] while the finding was higher compared with the studies conducted in Recife, Pernambuco, Brazil (29%) [19] and Jimma, Ethiopia (25%) [20]. The difference might be due to different study population characteristics. Additionally, the hospital is the only referral hospital in the area where complicated cases are referred and most primiparas choose to give birth in for the sake of better treatment.

To prevent unnecessary perineal surgical incision, countries are following restricted episiotomy practice and reducing the episiotomy rate. One of such evidence is a study conducted in the United States that shows a decline of episiotomy rate from 60.9% in 1979 to 24.5% in 2004 [21]. There is also a study that indicate the possibility of a zero percent episiotomy with a high frequency of intact perineum, reduced need for suturing, and no adverse outcomes such as severe perineal lacerations [22].

After logistic analysis, this study found that mothers within the age group of 15-24 had 1.6 fold higher risk of having episiotomy. This result is similar to the study conducted in Recife, Pernambuco, Brazil which suggests the tensor musculature of adolescents for increased releasing period of cephalic pole presentation which in turn might lead health professionals to do episiotomy [19]. With a similar justification, primiparity and absence of previous vaginal delivery increase the risk of having episiotomy by 2.6 and 2.2 fold in this study which is similar to a study conducted in Australia on Vietnamese born women [23]. As the higher the risk of episiotomy, there is higher third and fourth degree laceration of the perineum [24] that requires suturing. But with the application of a protocol of perineal protection and no episiotomy, there can be reduced need for suture in vaginal deliveries [25].

Additionally, prolonged labor and a newborn weight of >3.5kg were found to increase the rate of performance of episiotomy 6.4 and 2.5 times respectively. Once episiotomy is performed because factors such as primiparity, prolonged labor, birth weight and the like; there can be increased risk of a spontaneous perineal tear or an episiotomy in the second delivery according to a study conducted in Granada, Spain [26]. Therefore, preventive methods such as perineal massage before delivery [27] as well as trainings and awareness creation programs for health professionals might be mandatory to reduce episiotomy rate and to promote

evidence based restrictive episiotomy practice [28].

## 6. Conclusion

Prevalence of episiotomy in the institution was 46.7% and it was associated with age of the mother, primiparity, prolonged labor and birth weight of the new born.

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## Conflict of Interest

Authors declare that there are no conflict of interest.

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