MAGNITUDE OF SPONTANEOUS PERINEAL TEAR AND ASSOCIATED FACTORS AMONG WOMEN RECEIVING DELIVERY SERVICES AT ARBA MINCH GENERAL HOSPITAL, SOUTHERN ETHIOPIA

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ABSTRACT

BACKGROUND: Spontaneous perineal tears are a common complication of vaginal delivery, affecting approximately 79% of women. These tears can lead to pelvic floor dysfunction, chronic pain, and a decline in overall quality of life. Understanding the factors associated with spontaneous perineal tears is essential for guiding clinical practice and developing effective prevention strategies. Therefore, this study aimed to determine the magnitude of spontaneous perineal tears and identify the factors associated with their occurrence among women receiving delivery services at Arba Minch General Hospital.

MATERIALS AND METHODS: A facility-based cross-sectional study was conducted among 398 women receiving delivery services from April 1 to July 30, 2021. The participants were selected via a systematic random sampling technique. Data were collected using a structured interviewer-administered questionnaire and observation checklist. Binary logistic regression analysis was performed to identify factors associated with spontaneous perineal tears.

RESULTS: The magnitude of spontaneous perineal tears was 37.4% (95% CI: 32.7%, 42.2%). Applying fundal pressure (AOR = 7.65; 95% CI = 3.52–16.65), having female genital cutting scar (AOR = 5.23; 95% CI = 2.47–11.07), no mediolateral episiotomy (AOR = 4.63; 95% CI = 1.60–13.36), duration of the 2nd stage of labor >60 minutes (AOR = 4.55; 95% CI = 2.23–9.15), assisted vaginal delivery (AOR = 4.27; 95% CI = 1.21–15.01), no perineal support (AOR = 2.23; 95% CI = 1.1–4.54), and birth weight >3500 grams (AOR = 2.16; 95% CI = 1.10–4.26) were factors associated with spontaneous perineal tear.

CONCLUSIONS: The magnitude of spontaneous perineal tears in this study was high. Fundal pressure, female genital cutting, episiotomy, duration of the second stage of labor, mode of delivery, perineal support, and fetal birth weight were predictors of spontaneous perineal tears. Therefore, it is essential to strengthen preventive strategies through evidence-based obstetric care and targeted interventions addressing modifiable risk factors.

KEYWORDS: Arba Minch, associated factors, spontaneous perineal tear.

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INTRODUCTION

Worldwide, nearly 134 million women give birth each year[1]. Among these, approximately 80% of low-risk pregnant women deliver vaginally[2]. Perineal tear is very common during vaginal delivery, affecting up to 79% of such births, occurring either spontaneously or through a surgical incision known as an episiotomy[3]. Spontaneous perineal tears are any degree of damage to the perineal skin, muscles, external and internal anal sphincters, or rectal mucosa. The severity of the tear is classified as 1st-degree if it involves the perineal skin and/or vaginal mucosa, 2nd-degree if it affects the perineal muscles excluding the anal sphincter muscles, 3rd-degree if it involves the anal sphincter complex, and 4th-degree if it affects the anorectal mucosa beyond the anal sphincter complex[4].

Consequently, perineal tears during childbirth are a major concern globally, affecting up to 79% in high-income countries (HICs)[5] and over 70% in low- and middle-income countries (LMICs)[6]. In sub-Saharan Africa, like Ethiopia, up to 38.8% of women experience spontaneous tears during vaginal delivery[7].

Because perineal tears disrupt muscles, nerves, and blood supply, causing both short- and long-term complications such as pain, dyspareunia, incontinence, sepsis, and postpartum hemorrhage—key contributors to maternal death in LMICs[8]. Up to 85% of women with severe tears experience postpartum hemorrhage[9], and over 50% report pain and anal incontinence[10]. Long-term effects include pelvic floor disorders, impacting breastfeeding, mother–infant bonding, and sexual activity[11]. These issues often reduce quality of life due to stigma, marital rejection, and isolation[12]. Notably, women with severe first-time tears have a 5× higher recurrence risk and are 18× more likely to choose elective cesarean in the next birth[13].

Various studies have identified multiple factors that contribute to spontaneous perineal tears during childbirth. Maternal factors such as age, occupation, prolonged standing during professional activity, parity, birth interval, prior vaginal birth, previous history of perineal tear, and female genital cutting (FGC) play significant roles[14],[15]. Additionally, fetal factors such as birth weight, gestational age, head circumference, presentation, and position, and intrapartum factors, including antepartum and intrapartum perineal tear preventive techniques, fundal pressure, duration of the second stage of labor, oxytocin use, and mode of delivery, also contribute to the likelihood of perineal tearing[3],[16]. Despite the multifactorial nature of perineal tears, high-quality obstetric care, especially during the second stage of labor, can significantly reduce their incidence and severity[17]. In high-income countries, national guidelines promote evidence-based perineal management techniques such as antenatal perineal massage, warm compresses, hands-on support, Ritgen's maneuver, maternal positioning, and selective episiotomy[18]. As a result, the World Health Organization (WHO), American College of Obstetricians and Gynecologists (ACOG), and the Royal College of Obstetricians and Gynecologists (RCOG) recommend offering these approaches during late pregnancy and labor, tailored to women's preferences, to minimize perineal tear incidences[19]. Nevertheless, the global burden of spontaneous perineal tears remains substantial, with pooled prevalence estimates of 46% in LMICs[6] to as high as 85% in HICs[20]. In LMICs, including Ethiopia, the majority of studies are based on retrospective chart reviews or cross-sectional surveys that overlook key modifiable intrapartum factors[21]. To bridge this gap, the current study used real-time observational checklists during labor to accurately capture modifiable risk factors. Therefore, the study aimed to determine the magnitude and associated factors of spontaneous perineal tears among women giving birth at Arba Minch General Hospital, Gamo Zone, southern Ethiopia, to inform prevention strategies and enhance maternal care.

Materials and Methods

Study Area and Period

The study was conducted at Arba Minch General

Hospital, the only general hospital in the Gamo Zone, Southern Ethiopia, from April 1 to July 30, 2021. The hospital was established in 1969 in the town of Arba Minch, which is 500 km from Addis Ababa (the capital of Ethiopia). It serves about 3.8 million people, including over 880,000 women of reproductive age. In 2020, around 4,000 births occurred at the facility. The obstetrics and gynecology department is staffed by 76 professionals, including midwives, general practitioners, IESOs, and obstetricians/gynecologists.

Study Design

A facility-based cross-sectional study design was employed.

Populations

Source population

All laboring women who were receiving delivery services at Arba Minch General Hospital.

Study population

All laboring women who were receiving delivery services at Arba Minch General Hospital during the study period and fulfilled the eligibility criteria.

Eligibility criteria

Laboring women who were attending delivery services, who were in the active first stage of labor, and those admitted with the second stage of labor.

Sample Size and Sampling Technique

Sample size determination

The sample size was determined via the single population proportion formula on OpenEpi Stat Cal 384. Accordingly, after adding a 5% non-response rate, the final sample size was 403 laboring women.

Sampling technique and procedure

On the basis of the previous year (2020 G.C.) annual delivery report of Arba Minch General Hospital, the total number of deliveries was 4,022, with over 335 deliveries per month. The average expected number of vaginal deliveries in the study period (from April 1 to July 30, 2021) was 1,340, which resulted in a sampling fraction (k) = 1,340/403 = 3.33 ≈ 3. The study participants were selected via a systematic random sampling technique in which the first woman was selected via a lottery, and the next respondents were selected at an interval of 3, according to their order of admission to the labor and delivery ward with the diagnosis of the active first stage or second stage of labor.

Operational Definitions and Definitions of Terms

Spontaneous perineal tear is any degree of break in the continuity of the perineum, either the first, second, third, or fourth degree, according to the RCOG classification of perineal tears[4]. In this study, if a woman had any of the four-degree tears, she was considered to have spontaneous perineal tears. It is coded as (0 = no and 1 = yes) and was identified by trained data collectors via physical examination immediately after the complete delivery of the fetus and placenta.

Assisted vaginal deliveries: These are deliveries performed either with the help of instruments (forceps or vacuum devices) or assisted breech delivery maneuvers[22].

Spontaneous (non-operative) vaginal delivery: In this study, SVD refers to the delivery of a fetus through the vaginal route without the use of instruments like forceps or a vacuum extractor, as well as without employing assisted breech delivery maneuvers[14].

The fundal pressure/Kristeller maneuver involves the application of manual pressure to the uppermost part of the uterus directed toward the birth canal in an attempt to assist spontaneous vaginal birth and avoid a prolonged second stage or the need for operative birth[23]. However, its use is not supported in modern obstetrics due to insufficient evidence of benefit and concerns of potential risks.

Ritgen's maneuver is a manual perineal protection technique that involves applying pressure on the perineum with one hand and applying pressure to the baby's head with the other hand to slow the speed of the birth of the baby's head[24].

Directed pushing: A pushing method in the second stage of labor in which the laboring woman is told to take a deep breath at the start of the uterine contraction, hold it, and push it down throughout the contraction[25].

Spontaneous pushing is a pushing method in the second stage of labor in which the laboring woman pushes three to five times per contraction, just by following her instincts[25].

Shoulder dystocia: Shoulder dystocia is diagnosed clinically when there is a failure of delivery of the fetal shoulder(s) after initial attempts of downward traction of the fetal head and when ancillary obstetric maneuvers are used[26]. In this study, it was diagnosed clinically when the delivery attendant used either the suprapubic or McRoberts maneuver (tightly bending the mother's legs toward her abdomen) to deliver the fetal shoulder(s).

Digital stretching of the perineum: The use of one or two fingers to gently stretch and massage the perineal tissues after fetal crowning with the intent to increase elasticity and reduce the risk of perineal tear during vaginal delivery[18].

Results

Among the 403 recruited laboring women, 398 participated in this study, and the remaining 5 women were not volunteers, resulting in a response rate of 98.8%.

Sociodemographic characteristics of the study participants

More than half of the study participants (257; 64.6%) were urban dwellers. Two hundred forty-two (60.8%) participants performed their daily activities, mostly in a sitting position (Table 1).

Table 1 Sociodemographic characteristics of women who were receiving delivery services at Arba Minch General Hospital, southern Ethiopia, 2021 (N=398)

Variables	Frequency (n)	Percentage (%)
Age (in completed years)		
14 – 19	30	7.5
20 – 24	117	29.4
25 – 29	124	31.2
30 – 34	101	25.4
35 +	26	6.5
Marital status		
Married	372	93.5
Single	21	5.2
Divorced	3	0.8
Widowed	2	0.5
Current residence		
Rural	141	35.4
Urban	257	64.6
Occupation		
Employee	80	20.1
Day laborer	9	2.3
Farmer	41	10.3
Housewife	187	47.0
Merchant	51	12.8
Student	30	7.5
Most frequent body position		
Siting	242	60.8
Standing	48	12.1
Walking	108	27.1
Level of education		
No formal education	57	14.3
Primary education	118	29.6
Secondary education	128	32.2
Tertiary	95	23.9

Obstetrics-related characteristics of the study participants

Past and current obstetric history of the study participants

As shown in Table 2, Of the 398 respondents, 253 (63.6%) were multiparous, and among them, 244 (96.4%) had a previous history of vaginal birth. Approximately 3/4th of the participants (75.1%) gave birth after a birth interval of more than two years.

Regarding the current pregnancy, the majority (366; 92.0%) had attended antenatal care (ANC) visits, while 32 (8.0%) had not. In terms of ANC

visit frequency, nearly half (202; 50.8%) had four or more visits, 123 (33.6%) had three visits, and only 5 (1.4%) had a single visit. Concerning the gestational age at birth, 331 (83.2%) of the deliveries were at term, 42 (10.6%) were post-term, and 25 (6.3%) were preterm (Table 2).

Table 2 Past and current obstetric history of women who were receiving delivery services at Arba Minch General Hospital, Southern Ethiopia, 2021

Variables	Frequency (n)	Percentage (%)
Parity		
Primiparous	145	36.4
Multiparous	253	63.6
Previous vaginal delivery (n= 253)		
No	9	3.6
Yes	244	96.4
Perineal trauma in previous vaginal delivery/deliveries (n=244)		
No	41	16.8
Yes	203	83.2
Type of perineal trauma in previous delivery/deliveries (n=203)		
Episiotomy only	155	76.4
Spontaneous tear only	29	14.3
Both	19	9.3
Recurrence of perineal trauma in previous deliveries (n=92)		
No	66	71.7
Yes	26	28.3
Birth interval (in a year) (n =253)		
≤ 2 yrs.	63	24.9
>2 yrs.	190	75.1
FGC scar		
No	181	45.5
Yes	217	54.5
ANC		
No	32	8.0
Yes	366	92.0
Frequency of ANC visits (n= 366)		
Once only	5	1.4
Two times	52	14.2
Three times	123	33.6
Four and more	186	50.8
Medical/obstetric problems in this pregnancy		
No	324	81.4
Yes	74	18.6
Gestational age at birth (in weeks)		
Preterm (< 37 weeks)	25	6.3
Term (37 to <42) weeks	331	83.2
Post (≥ 42 weeks)	42	10.6
GA calculated from		
Last normal Menstrual Period	230	57.8
Early Sonography	87	21.9
Current Sonography	60	15.0
Fundal height	21	5.3

Labor- and delivery-related characteristics of the study participants

Among the 398 study participants, labor commenced spontaneously in 374 (94%) women, and labor was augmented in 54 (13.6%) women. In the second stage of labor, 229 women (57.5%) labored for 60 minutes or more. Digital stretching of the perineum was performed in 123 (30.9%), fundal pressure was applied in 95 (23.9%), the perineum was supported manually in 329 (82.7%), and Ritgen's maneuver was applied in 58 (14.6%) parturients during the second stage of labor. Mediolateral episiotomy was done in 153 (384%) participants (Table 3).

Table 3: Labor and delivery-related characteristics of women who were receiving delivery services at Arba Minch General Hospital, Southern Ethiopia; 2021

Variables	Frequency (n)	Percentage (%)
Method of induction (n= 24)		
Misoprostol	20	83.4
Oxytocin	2	8.3
Mechanically	2	8.3
Augmentation method (n=54)		
Oxytocin only	35	64.8
ARM* only	10	18.5
Both	9	16.7
Pushing methods in the 2nd stage of labor		
Directed	292	73.4
Spontaneous	106	26.6
Mode of delivery		
SVD	344	86.4
AVD	54	13.6
Maternal position during delivery		
Lithotomy	220	55.3
Dorsal recumbent	178	44.7
Time of Delivery/delivery shift		
Afternoon	121	30.4
Morning	121	30.4
Night	156	39.2
Place of delivery		
Bed	158	39.7
Delivery coach	240	60.3
Duration of the 2nd stage of labor		
< 60 min.	169	42.5
≥60 min	229	57.5
The total duration of labor (in hr)		
< 14 hr.	218	54.8
≥ 14 hr.	180	45.2
Length of time with ruptured membranes (in hr.)		
< 12 hr.	311	78.1
≥ 12 hrs.	87	21.9
Delivery attended by		
Diploma midwife	134	33.7
BSc Midwife	131	32.9
MSc Clinical Midwifery students	92	23.1
IESOs	29	7.3
Other*	12	3.0
Digital stretching of the perineum		
No	275	69.1
Yes	123	30.9
Fundal pressure applied		
No	303	76.1
Yes	95	23.9
Manual perineal support during fetal expulsion		
No	69	17.3
Yes	329	82.7
Ritgen's maneuver applied		
No	340	85.4
Yes	58	14.6
Oxytocin use without augmentation protocol		
No	351	88.2
Yes	47	11.8
Mediolateral Episiotomy		
Yes	153	38.4
No	245	61.6

SVD* = spontaneous vaginal delivery, AVD* = assisted vaginal delivery, ARM* = artificial rupture of membranes

Other* = general practitioners, medical interns, obstetricians, and gynecologists. IESOs = Integrated Emergency Surgery Officer

Fetal-related characteristics

Among the 398 newborns, 211 (53.3%) were male, 263 (80.2%) had a birth weight of 3500 grams or less, and more than half of the 234 (58.8%) had a head circumference of 35 cm or above (Table 4).

Table 4 Fetal-related characteristics of women who were receiving delivery services at Arba Minch General Hospital, southern Ethiopia; 2021

Variables	Frequency (n)	Percentage (%)
Baby sex		
Female	187	47.0
Male	211	53.0
Birth Weight (in grams)		
≤ 3500	263	66.1
> 3500	135	33.9
Presentation		
Cephalic	392	98.5
Breech	6	1.5
Among cephalic presentations (n = 392)		
Vertex	384	98.0
Nonvertex	8	2.0
Position in Vertex presentation (n= 384)		
Occipito-anterior	376	97.9
Occipito-posterior	8	2.1
Shoulder dystocia (Shoulder release maneuver used)		
Yes	41	10.3
No	357	89.7
Head Circumference		
< 35 cm	164	41.2
≥ 35 cm	234	58.8
156	39.2	

Magnitude of spontaneous perineal tear

Among all study participants, 149 (37.4%) experienced spontaneous perineal tears. Of these, 145 (97.3%) were 1st and 2nd degree, and 4 (2.7%) were OASIs.

Factors associated with spontaneous perineal tear

As presented in Table 5, The likelihood of experiencing a spontaneous perineal tear was significantly higher among participants exposed to certain obstetric factors. Women who delivered with the application of fundal pressure were 7.65 times more likely to sustain a tear compared to those without fundal pressure (AOR = 7.65; 95% CI: 3.52–16.65). Similarly, participants with a history of FGC had 5.23 times greater odds of developing spontaneous perineal tears than those without FGC (AOR = 5.23; 95% CI: 2.47–11.07). The absence of a mediolateral episiotomy was associated with a 4.63-fold increase in the risk of

perineal tears compared to those who underwent the procedure (AOR = 4.63; 95% CI: 1.60–13.36). Participants who spent 60 minutes or more in the second stage of labor had 4.55 times higher odds of experiencing a tear compared to those whose second stage lasted less than 60 minutes (AOR = 4.55; 95% CI: 2.23–9.15).

Furthermore, women who gave birth via AVD were 4.27 times more likely to develop spontaneous perineal tears than those who had SVD (AOR = 4.27; 95% CI: 1.21–15.01). Lack of manual perineal support during delivery was also significantly associated with tears, with a 2.23-fold increased risk (AOR = 2.23; 95% CI: 1.10–4.54). Lastly, delivering a neonate weighing more than 3500 g was linked to a 2.16 times higher likelihood of perineal tears compared to those delivering neonates weighing 3500 g or less (AOR = 2.16; 95% CI: 1.10–4.26).

Table 5:Results of the multivariable logistic regression analysis of factors associated with spontaneous perineal tear among women who gave birth at Arba Minch General Hospital, southern Ethiopia, 2021

Variables	Spontaneous Perineal Tear		Odd Ratio (95% CI)		p value for AOR
	Yes	No	Crude odds ratio	Adjusted odds ratio (AOR)	
History of prior perineal tear					
Yes	97	106	2.83 (1.31– 6.10)	2.04(0.71-5.84)	0.19
No	10	31	1	1	
Had FGC scar					
Yes	95	122	1.83 (1.23 - 2.84)	5.23 (2.47 – 11.07)	< 0.001*
No	54	127	1	1	
Onset of labor					
Induced	13	11	2.07 (0.90-4.7)	1.33(0.37 -4.83	0.67
Spontaneous	136	238	1	1	
Mode of delivery					
AVD	38	26	2.94 (1.72 – 5.13)	4.27(1.21 -15.01)	0.024*
SVD	111	223	1	1	
Oxytocin use without induction/augmentation protocol					
Yes	22	25	1.55(0.84 – 2.87)	1.79 (0.55 – 5.84)	0.34
No	127	224	1	1	
Duration of the 2nd stage					
≥ 60 min.	103	122	2.33 (1.52 - 3.63)	4.55(2.26 – 9.15)	< 0.001*
< 60 min.	46	127	1	1	
Digital stretching of the perineum					
Yes	58	65	1.80 (1.17 -2.79)	1.56(0.72 – 3.36)	0.26
No	91	184	1	1	
Perineal support					
No	36	33	2.09 (1.23 -3.52))	2.23(1.1 – 4.54)	0.024*
Yes	113	216	1	1	
Birth Interval					
≤ 2 yrs.	35	28	1.96 (1.10 – 3.49)	1.68(0.77 – 3.65)	0.19
>2 yrs.	74	116	1	1	
Ritgen's maneuver					
No	133	207	1.69 (0.94 - 3.14)	2.45 (0.88– 6.77)	0.08
Yes	16	42	1	1	
Fundal pressure applied					
Yes	60	35	4.12 (2.54 -6.69)	7.65 (3.52 -16.65)	< 0.001*
No	89	214	1	1	
Episiotomy					
No	116	129	3.27 (2.10 – 5.23)	4.63 (1.61 – 13.36)	0.005*
Yes	33	120	1	1	
Baby sex					
Female	56	131	1	1	
Male	93	118	1.84 (1.22 – 2.79)	1.43(0.73 – 2.80)	0.304
Birth weight					
>3500gms	74	61	3.04 (2.03 – 4.72)	2.16 (1.10 - 4.26)	0.027*
≤ 3500gms	75	188	1	1	
Shoulder dystocia					
Yes	24	17	2.62 (1.36 – 5.06)	1.40(0.45 – 4.41)	0.57
No	125	232	1	1	

Notes: * Indicates that the variables had a significant association, and 1 = the reference category in the model.

Discussion

The findings of the study demonstrated that spontaneous perineal tear was found in 37.4% of the respondents. Key factors that increased the likelihood of experiencing a spontaneous tear are applying fundal pressure, having an FGC scar, not doing a mediolateral episiotomy, duration of the second stage of labor exceeding 60 minutes, AVD, no perineal support during delivery, and birth weights greater than 3500 grams.

The 37.4% rate of spontaneous perineal tears in this study aligns with findings from Brazil (38%)[29], Iraq (33.3%)[30], Kenya (38.8%)[7], and Ethiopia (38.4%)[31]. However, it is lower than a Brazilian study reporting 79.7%[5], likely due to differences in study populations—our study included women with and without episiotomy, while the Brazilian study excluded those with episiotomy, which is known to reduce tear risk. A Swedish study[28] reported a 66.3% rate, possibly due to including only primiparous women, who are at higher risk of perineal tears. Variations in population characteristics, delivery protocols, and provider training may also explain these differences. The Swedish study included only primiparous women, and first-time mothers are at a greater risk of perineal tears than women who have had multiple vaginal births[14].

In contrast, our study's tear rate is higher than those reported in Portugal (31%)[27], Iran (16%)[15], Egypt (27%)[32], Cameroon (19.2%)[21], and South Africa (16.2%)[33]. These differences may stem from variations in participant selection. For example, the Egyptian study included only multiparous women with spontaneous vertex deliveries, excluding higher-risk cases. The Portuguese study excluded instrumental deliveries. In Iran, the high episiotomy rate—95% in primiparous and 43.9% in multiparous women—likely contributed to the lower tear rate compared to our study, where the episiotomy rate was lower.

In this study, fundal pressure was a strong factor that promoted the occurrence of spontaneous perineal tears. The odds of spontaneous perineal tears were 7.65 times greater for women who received fundal pressure than for those who did not. Studies done in Iran[15], Egypt[32], Ethiopia[31], and the 2017 Cochrane Review[23] reinforced these findings. Exerting pressure on the uterine fundus (Kristeller maneuver) may heighten the likelihood of a perineal tear. This is because the pressure applied can transfer to the perineum through fetal movement, causing it to stretch excessively beyond its capacity. On the basis of current evidence and the recommendations of obstetricians and gynecologists, avoiding the Kristeller maneuver during childbirth is advised to reduce the occurrence of spontaneous perineal tears.

Women who had FGC scars were more likely to experience spontaneous perineal tears, with a 5.23-fold greater chance than those who did not have FGC scars. These findings support those of a previous study conducted in Jigjiga, Ethiopia[34]. FGC scarring may decrease the elasticity and flexibility of the perineal skin and pelvic floor muscles, which can lead to a greater risk of tearing during labor and delivery.

Episiotomy was protective against spontaneous perineal tears. These findings concur with studies performed in Uganda[22], Ethiopia[31], and Sweden[28]. A possible explanation for this finding might be that the episiotomy incision in the tight perineum allows adequate space for the descending fetus, which could prevent further damage to the perineum. However, studies done in Cameroon[30] and Saudi Arabia[35] reported that making episiotomy incisions did not affect the magnitude of spontaneous tears. Another finding in Brazil[29] showed that episiotomy prevents only mild and moderate tears (first- and second-degree tears) but does not affect third- or fourth-degree tears. A similar finding was reported in studies performed in Iraq[30]. This increased risk of spontaneous tears in women undergoing episiotomy could be due to factors such as the small size of the incision, the timing of the procedure, or improper delivery technique.

Our research revealed that women who had second-stage labor lasting more than 60 minutes were 4.55 times more prone to perineal tears than those who had second-stage labor lasting 60 minutes or less. This finding agreed with studies performed in Uganda[22], Southampton[16], and Southeast England[14]. It is possible that women who labor for more than 60 minutes may have an increased likelihood of sustaining spontaneous perineal tears. This could be attributed to prolonged tension on the perineal tissue and resulting perineal edema, which can hinder the perineum's optimal elasticity as the fetus descends.

Assisted vaginal delivery (AVD), including instrumental and assisted breech delivery, significantly increases the risk of spontaneous perineal tears, with women undergoing AVD being 4.27 times more likely to experience tears than those with spontaneous vaginal delivery (SVD). This aligns with studies from Uganda[22], Sweden[28], and Southeast England[14]. The increased risk is likely due to mechanical pressure from instruments and maneuvers during fetal extraction. However, proper instrument selection, correct placement, and skilled use of instruments will decrease the risk.

Perineal support during the second stage of labor is a protective factor against spontaneous perineal tears, as supported by studies from Iran[15], Egypt[32], and the Cochrane Library[18]. This technique helps control fetal extension and slow expulsion, reducing perineal trauma. The WHO and ACOG recommend such techniques, which can be tailored to the woman's preference.

Women who delivered babies weighing over 3500 grams had a higher risk of spontaneous perineal tears compared to those with infants weighing 3500 grams or less. Similar findings were reported in studies from Uganda[22], Kenya[7], and Southeast England[14], likely due to fetopelvic disproportion causing perineal trauma. Estimating fetal weight before delivery may help prevent such tears, particularly in cases of macrosomia. However, studies from Brazil[29], Iran[15], and South Africa[33] found no such association, possibly due to lower birth weights or differing weight categorization.

Conclusions and Recommendations

The magnitude of spontaneous perineal tears in this study is notably high. Several contributing factors were identified, including assisted vaginal delivery, absence of episiotomy, fetal birth weight over 3500 grams, application of fundal pressure, presence of FGC scars, and lack of perineal support during fetal expulsion. To mitigate these risks, it is essential that midwives and obstetricians closely monitor women at high risk, implement evidence-based perineal tear prevention strategies, and avoid the use of fundal pressure. Moreover, evaluating the competency of birth attendants in vacuum-assisted and breech deliveries, and understanding their association with perineal trauma, is critical, as assisted deliveries were found to be a significant contributor to perineal tears in this setting.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising the article, gave final approval for the version to be published, and agreed to be accountable for all aspects of the work.

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