



Epidemiological and Risk Factors for Perineal Trauma: An Observational Study, Baghdad -Iraq

Dr. Fatin Ibraheem Khudhar*

Corresponding Author: Dr. Fatin Ibraheem Khudhar, MBCHB. Higher Diploma in Obstetrics and Gynecology. Baghdad – Iraq.

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Abstract

Perineal trauma is common in vaginal delivery and can cause short- and long-term complications. This study aimed to assess the incidence of perineal trauma and its risk factors during childbirth in Baghdad during the study period so that through recognizing these factors, we can help to control and reduce the injuries. An observational study was carried out from the 1st of August to the end of December 2021. Complete information regarding maternal age, parity, gestational age, mode of vaginal delivery, time of admission, time of delivery, duration of the first and second stage and whether labor was spontaneous, induced or accelerated, cervical dilatation on admission birth weight of the baby, then the most important type and degree of maternal trauma or laceration, all this included in this study. Statistical analysis was done using SPSS version 23 computer software. The total number of patients who delivered vaginally within the period of this study were 721 ladies, 64 patients of them have different types of and degrees of genital tract trauma.

The number of primipara was 15 with an age range between 18 to 38 years and a mean of 26.3, while the number of multipara was 49 with an age range between 18 to 40 years with a mean of 29.7. The number of patients with episiotomy was 16. A higher proportion of multiparous women 59.2% had perineal tears (1st +2nd) degree compared to primiparous women 6.7%, this result with statistically significant differences. The perineal tears were the most frequent type of obstetrical injuries followed by vaginal wall tears and extension of episiotomy. We need further studies in different areas and an increase in the sample size to give us the correct statistical analysis.

Keyword: Perineal, Tear, Risk, Multipara, Primipara, Baghdad.

Introduction

Perineal trauma is common in vaginal delivery and can cause short- and long-term complications [1-2]. Soft tissue organs in the genital tract and the adjacent organs can be traumatized during childbirth due to an episiotomy, spontaneous laceration or both [3]. The morbidity related to perineal trauma is one of the major health problems that affect thousands of women. More than 60% of women suffer from perineal trauma following their spontaneous vaginal delivery, and about 1000 women every day need to have their perineum repaired after childbirth [4]. The incidence of perineal trauma varies in different studies. Eighty-five percent of British women and 91% of Spanish women have experienced degrees of birth trauma [5-6]. The number of incidences in Iraq is not clear, but in some studies, the episiotomy rate has been reported from 41.5% to 97% [7-9]. Perineal trauma during childbirth is accompanied by short-term and long-term complications such as bleeding, hematoma infection, an abscess, the need to suture, urine and faecal incontinence, weak pelvic floor muscles, dyspareunia and persistent perineal pain, which affect the interaction between the mother and baby, sexual activity, breastfeeding and the postpartum recovery feeling [10-11]. The factors related to perineal trauma in various studies are different. In some studies, the maternal age [12-13], parity [5,9,12,13], the maternal position during childbirth [4], induction of labor [13], the gestational age [13], the birth weight [14], the foetal malpresentation and malposition [4], the instrumental delivery [10], shoulder dystocia [15], precipitated labor [4], the duration of the second stage of labor [5], maternal education [14], the male infant [2,10], birth in a private hospital [2] and the race [10] have all been proposed as factors related to the perineal injury. However, other studies have found that the neonatal weight [8, 9, 15], obesity [16], maternal age [2,16], the duration of the second stage [9], the neonatal head circumference [9] and the maternal education [9] were not associated with perineal trauma. These differences could be due to differences in the study populations. In some studies, only episiotomy has been investigated [9] and in others, a perineal laceration [8]. Also in several studies, severe three and four degrees, perineal trauma has been examined [10]. Although the current approach

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in perineal management is reducing the episiotomy rate, the amount of perineal trauma due to an increase in the number of first and second-degree tears is still above [17]. As one of the important tasks in the management of vaginal delivery is the protection of the perineum and considering the findings on the factors associated with birth injuries are controversial, we are trying to assess the incidence of perineal trauma and its risk factors during childbirth in Baghdad during the study period so that through recognizing these factors, we can help to control and reduce the injuries

Methodology

An observational study was carried out from the 1st of August to the end of December 2021. Deliveries performed at a single institution were included in this study. The pregnant patients who delivered vaginally after completing 37 weeks of gestation primigravida or multigravida. Complete information regarding maternal age, parity, gestational age, mode of vaginal delivery, time of admission, time of delivery, duration of the first and second stage and whether labor was spontaneous, induced, or accelerated, cervical dilatation on admission birth weight of the baby, then the most important type and degree of maternal trauma or laceration, all this included in this study. The studied patients were either admitted to the hospital in spontaneous labor or referred from the antenatal care units or private clinics. The gestational age was recorded according to the last menstrual period, early pregnancy ultrasound and clinical examination and by pediatric assessment of the newborn after birth. The behavior of the patient during labor was assessed as cooperative or uncooperative according to the patient's observed reaction during labor and also the patient's cooperation with the attendants at various stages of labor. Data were translated into codes using a specially designed coding sheet and then interred into a computer system. An expert statistical advice was sought for it. Statistical analysis was done using SPSS version 23 computer software. Frequency distribution for selected variables was done first. The statistical significance of differences between 2 proportions was assessed by fisher's exact test. The statistical significance of the difference between the 2 means was assessed by independent samples of students' tests. Multiple logistic models were constructed to study the neat and independent effect of parity, episiotomy and birth weight of the baby on the risk of having a perineal tear in patients with obstetrical injuries.

Results

The total number of patients who delivered vaginally within the period of this study were 721 ladies, 64 patients of them have different types of and degrees of genital tract trauma. As shown in figure 1: The total number of vaginal deliveries for this period was 721, with only 64 of them with obstetrical injuries with incidence = 8.8%. As shown in Table 1: the number of primipara was 15 with an age range between 18 to 38 years and a mean of 26.3, while the number of multiparas was 49 with an age range between 18 to 40 years with a mean of 29.7. Also, we show the mean birth weight for babies in primipara and multipara was 3.7. The mean duration of 2nd

stage of labor in primipara was 29.7, and in multipara were 13.1. As shown in figure 2 the percentage of our patients, primipara =15 with percentage =24.6%, while multipara =49 with percentage=75.4%. As shown in figure 3, only 3 of the patients with induction of labor, 25 patients with acceleration, the rest of patients delivered spontaneously. As shown in table2, the number and incidence of each obstetrical trauma and according to the patients if she episiotomy or not. The number of patients with episiotomy was 16. As shown in table 3, a higher proportion of multiparous women 59.2% had perineal tears (1st +2nd) degree compared to primiparous women 6.7%, this result with statistically significant differences. While a higher proportion of primiparous women 53.3% had vaginal wall tears compared to multiparous 26.5% these differences failed to reach the level of statistical significance. There was no statistically significant difference in the relative frequency of periurethral injuries and vulval lacerations between primiparous and multiparous women. Multiple logistic models considering the development of perineal tear as the dependent variable was constructed. It was shown that neglecting to do episiotomy increased the risk of having perineal tear by 9 times after adjusting for the effect of parity and birth weight of baby which is higher than the risk 6.2 associated with multiparity compared to primipara. It's worthy to mention here that women who are multipara without episiotomy have 15.2 times the risk of having a perineal tear compared to primipara with episiotomy. The model was statistically significant and predicted 70% of patients with perineal tear accurately.

Table 1: Mean and SD of variables in primipara compared to multipara

Variables	Primipara (n=15)	Multipara (n=49)	P. value
	Mean ± Sd	Mean ± Sd	
Age in year	26.3±6.1	29.7±5.1	0.03
Birth weight kg	3.7±0.3	3.7±0.5	0.72
Duration of 2nd stage of labour (minutes)	29.7±9.2	13.1±6.8	0.34

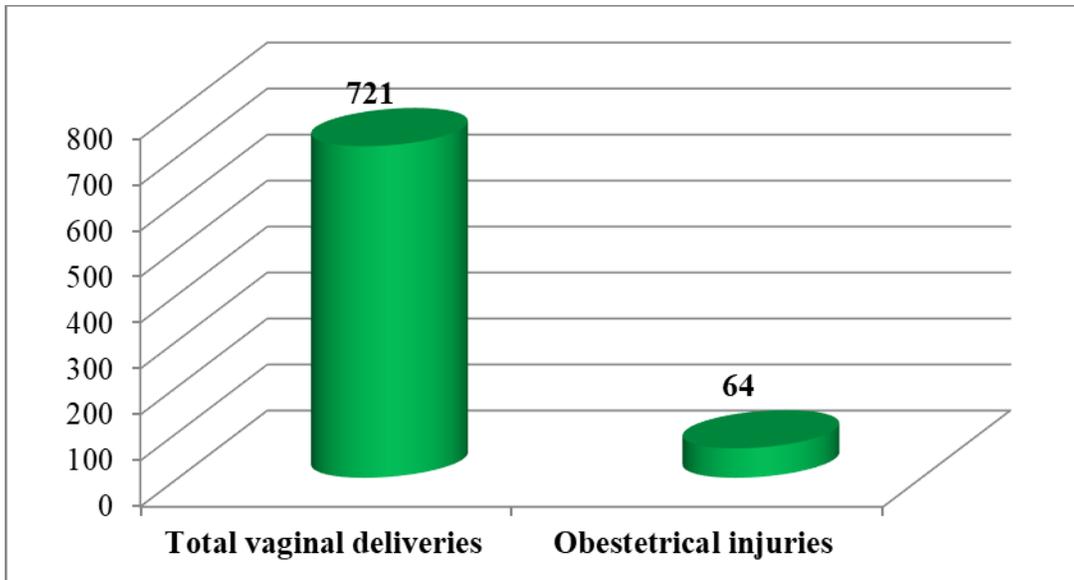


Figure 1: Bar chart showing the frequency distribution of study sample by obstetrical injuries

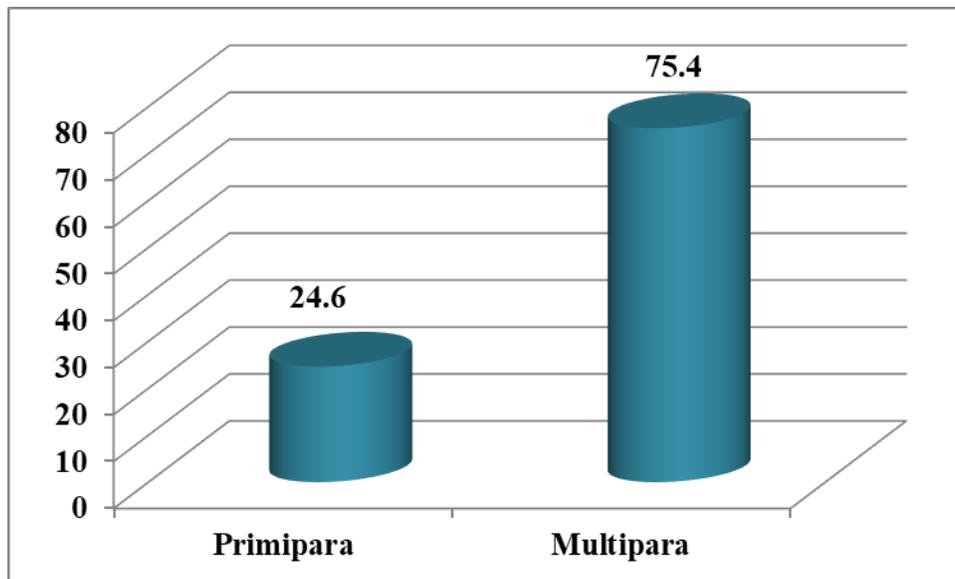


Figure 2: Pie chart showing the frequency distribution of study sample by parity

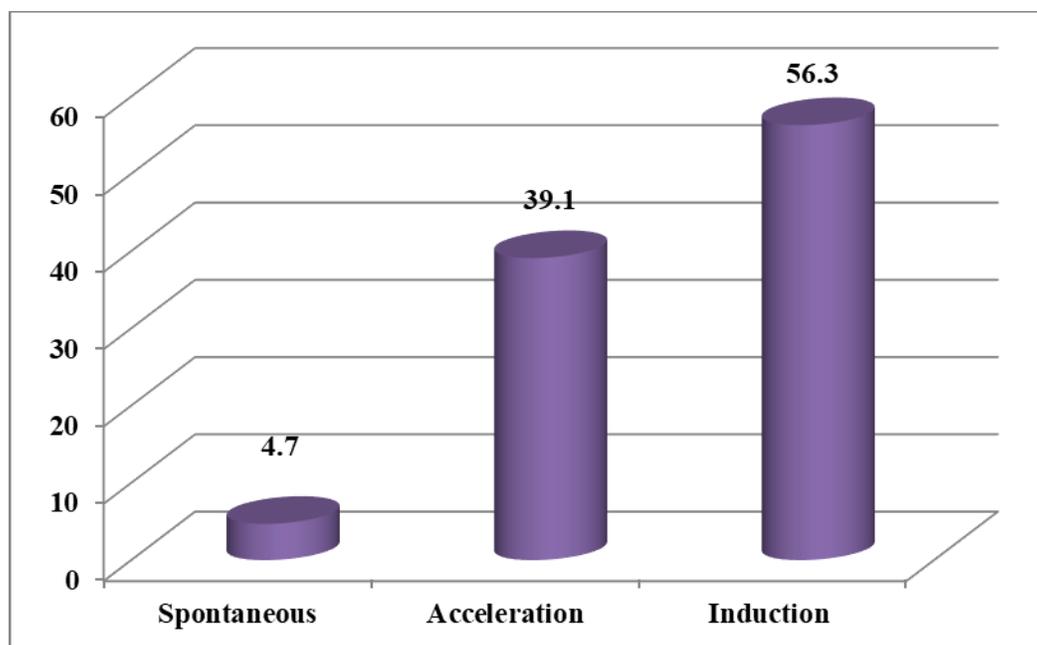


Figure 3: Pie chart showing the frequency distribution of the study sample by mode of delivery

Table 2: Comparison of the relative frequency of different types of obstetrical injuries in patients with and without episiotomy

Types of obstetrical injuries	Without episiotomy (n=48)		With episiotomy (n=16)		P (Fisher's exact test)
	N	%	N	%	
First and second degree perineal tear	28	60.4	1	6.3	<0.001
Extension of episiotomy	0	0	14	87.5	<0.001
Vaginal wall tear	12	25.0	9	56.3	0.025
Periurethral laceration	6	12.5	2	12.5	0.68
Vulval laceration	1	2.1	1	6.3	0.44
Cervical tear	4	8.3	2	12.5	0.47
Infralevator hematoma	0	0	1	6.3	0.25

Table 3: Comparison of the relative frequency of different types of obstetrical injuries in primipara and multipara

Types of obstetrical injuries	Primipara(n=15)		Multipara (n=49)		P (Fishers exact test)
	N	%	N	%	
First and second degree perineal tear	1	6.7	29	59.2	<0.001
Extension of episiotomy	12	80.0	2	4.1	<0.001
Vaginal wall tear	8	53.3	13	26.5	0.05
Periurethral laceration	1	6.7	7	14.3	0.39
Vulval laceration	0	0	2	4.1	0.58
Cervical tear	3	20.0	3	6.1	0.13
Infralevator hematoma	1	6.7	0	0	0.23

Table 4: Multiple logistic model for the risk of having perineal by 3 independent variables

Variables	OR	P
Multipara (compared to primipara)	6.2	0.03
Episiotomy not done	9	

*Adjusting for birth weight of baby

Predictive power of the model =70%

Discussion

This study aimed to assess the incidence of perineal trauma and its risk factors during childbirth. The total number of vaginal deliveries for this period was 721, only 64 of them with obstetrical injuries with incidence = 8.8%. For all patients repair was done in the delivery room, only one was sutured in the theatre under general anesthesia. This is in contrast to several previous studies in which an incidence of less than 3% has been reported, however an incidence of up to 24% was reported by other authors, the reason for an increasing number

of reported cases and the differences between the studies is unclear, probably due to the efficiency of the staff in the delivery room and also who is conducting labor. The overall rate of 6.6% of nulliparae, and 2.3% of multiparae falls within estimates for anal sphincter trauma in the UK [18-20]. obstetric anal sphincter injury was highest among women with a planned hospital delivery; a setting that is associated with more intrapartum interventions such as operative vaginal delivery is associated with a greater risk of perineal trauma [21]. In the univariate analysis and sphincter, tears were significantly associated with nulliparity, pathological duration of labor oxytocin augmentation and fetal weight, maternal age. Episiotomy is a widely performed intervention in childbirth despite poor scientific evidence for it [22]. The number of primipara was 15 with an age range between 18 to 38 years and a mean of 26.3, while the number of multiparas was 49 with an age range between 18 to 40 years with a mean of 29.7. Also, we show the mean birth weight for babies in primipara and multipara was 3.7. The mean duration of 2nd stage of labor in primipara was 29.7, and in multipara were 13.1. Anal incontinence is reported by 4.3% (95% confidence interval (CI): 3.5 to 5.9) of women aged 15 to 60 years [23]. In this study, we found that only 3 of the patients with induction of labor, 25 patients with acceleration, the rest of the patients delivered spontaneously. A systematic review has estimated the prevalence of any post-partum urinary incontinence with a vaginal delivery as 31% (95% CI: 30 to 33%), and weekly or daily incontinence as 12% (95% CI: 11 to 13%) and 3% (95% CI: 3 to 4%), respectively [24]. Sexual dysfunction [25-27], and post-partum perineal pain may also occur [28-29]. A large prospective survey of Swedish postpartum women reported that 8% (167/2,154) of women had not had sexual intercourse within six months after childbirth; of those with an anal sphincter injury, the proportion was higher at 13.6% [30]. In this study, we found a higher proportion of multiparous women 59.2% had perineal tears (1st +2nd) degree compared to primiparous women 6.7%, this result with statistically significant differences. While a higher proportion of primiparous women 53.3% had vaginal wall tears compared to multiparous 26.5% these differences failed to reach the level of statistical significance. There was no statistically significant difference in the relative frequency of periurethral injuries and vulval lacerations between primiparous and multiparous women. Factors consistently shown to be associated with perineal tears involving the anal sphincter are instrumental delivery, [31-36] with forceps associated with a higher risk than ventouse, [31-34] longer duration of the second stage of labor, [37-40] nulliparity, [32-33] large for gestational age or birth weight [34-36], and occipito posterior (OP) position [32,39].

Multiple logistic models considering the development of perineal tear as the dependent variable was constructed. It was shown that neglecting to do episiotomy increased the risk of having perineal tear by 9 times after adjusting for the effect of parity and birth weight of baby which is higher than the risk 6.2 associated with multiparity compared to primipara. It's worthy to mention here that a woman who is multipara without episiotomy has 15.2 times the risk of having perineal tear compared to primipara with episiotomy. Episiotomy as a risk or protective factor for OASIS is controversial: some studies report a reduced risk with a mediolateral incision, [5, 21, 22] and others are either inconclusive, [7, 24, 26] or report increased risk [31]. However, randomized controlled trials (RCTs) have failed to demonstrate a significant reduction in OASIS in women who received an episiotomy compared with women who did not [32, 33]. The role ethnicity plays as a risk factor for OASIS is also unclear [34-36]. All episiotomies involved a mediolateral incision, which is recommended practice

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in the UK [41]. The impact of episiotomy on OASIS is not conclusive, with many of the existing studies which reported a protective effect being of a retrospective design, thus at risk of bias due to non-standardized and incomplete data collection methods.

Conclusion

We concluded that the perineal tears were the most frequent type of obstetrical injuries followed by vaginal wall tears and extension of episiotomy. Neglecting the episiotomy and multiparity increased the risk of having perineal tears while the big size of the newborn had no association with the type of injury.

Recommendation

We need further studies in different areas and increase the sample size to give us the correct statistical analysis.

References

1. Renfrew MJ, Hannah W, Albers L, Floyd E. 1998. Practices that minimize trauma to the genital tract in childbirth: a systematic review of the literature. *Birth* (Berkeley, CA) 25:143–160.
2. Abedzadeh-Kalahroudi M, Talebian A, Sadat Z, Mesdaghinia E. Perineal trauma: incidence and its risk factors. *Journal of Obstetrics and Gynaecology*. 2019 Feb 17;39(2):206-11.
3. Wilson R. 2004. *Obstetrics and gynecology*. Philadelphia: Mosby.
4. Fernando RJ. 2007. Risk factors and management of obstetric perineal injury. *Obstetrics, Gynaecology and Reproductive Medicine* 17:238–243.
5. Smith L, Price N, Simonite V, Burns E. 2013. Incidence of and risk factors for perineal trauma: a prospective observational study. *BMC Pregnancy and Childbirth* 13:1–9.
6. Mora-Hervas I, Sanchez E, Carmona F, Espuna-Pons M. 2015. Perineal ~ trauma in primiparous women with spontaneous vaginal delivery: episiotomy or second degree perineal tear? *International Journal of Women's Health and Reproduction Sciences* 3:84–88.
7. Khajavi Shojae K, Dawati A, Zayeri F. 2009. Frequency and side effect of episiotomy in primiparous women: a three-month longitudinal survey. *Qom University of Medical Sciences Journal* 3:47–50.

8. Mesdaghinia E, Abbaszadeh F, Mesdaghinia A. 2011. Incidence of perineal trauma in normal spontaneous vaginal delivery in Shabih-khani Maternity Hospital of Kashan during 2007–9. *KAUMS Journal (FEYZ)* 14:533–538.
9. Khani S, Zare K, Ramezannejad E. 2012. The frequency of episiotomy and its related factors. *Iran Journal of Nursing* 24:45–52
10. Dahlen H, Priddis H, Schmied V, Sneddon A, Kettle C, Brown C. 2013. Trends and risk factors for severe perineal trauma during childbirth in New South Wales between 2000 and 2008: a population-based data study. *BMJ Open* 3:e002824. doi:10.1136/bmjopen-2013-002824.
11. Robinson JN, Norwitz ER, Cohen AP, Lieberman E. 2000. Predictors of episiotomy use at first spontaneous vaginal delivery. *Obstetrics and Gynecology* 96:214–218.
12. da Silva FMB, de Oliveira SMJV, Bick D, Osava RH, Tuesta EF, Riesco MLG. 2012. Risk factors for birth-related perineal trauma: a cross-sectional study in a birth centre. *Journal of Clinical Nursing* 21:2209–2218
13. Niguse K, Gidey G, Gebrehiwot H, Mebrahtu A, Darie G, Temesgen W. 2016. Episiotomy practice and its associated factors among mothers who gave birth vaginally at public health institutions of Shire Town, Northern Ethiopia. *Research and Reviews: Journal of Health Professions* 6:1–7
14. Albers LL, Sedler KD, Bedrick EJ, Teaf D, Peralta P. 2006. Factors related to genital tract trauma in normal spontaneous vaginal births. *Birth (Berkeley, CA)* 33:94–100
15. Gauthaman N, Walters S, Tribe I-A, Goldsmith L, Doumouchtsis SK. 2016. Shoulder dystocia and associated manoeuvres as risk factors for perineal trauma. *International Urogynecology Journal* 27:571–577.
16. Amorim MMR, Franca Neto AH, Katz L, Coutinho I, Melo I, Leal NV. 2015. Selective episiotomy compared with implementation of a nonepisiotomy protocol: a randomized clinical trial. *Obstetrics and Gynecology* 125:41S–42S.
17. Chehab M, Courjon M, Eckman-Lacroix A, Ramanah R, Maillet R, Riethmuller D. 2014. Impact of a major decrease in the use of episiotomy on perineal tears in a level III maternity ward. *Journal de Gyn ecologie Obst etrique et Biologie de la Reproduction (Paris)* 43:463–469
18. Kettle C, Tohill S: Perineal care. *Clin Evid (Online)*. 2008.
19. Dudding TC, Vaizey CJ, Kamm MA: Obstetric anal sphincter injury: incidence, risk factors, and management. *Ann Surg.* 2008, 247: 224-237.
20. Royal College of Obstetricians and Gynaecologists: The management of third and fourth degree perineal tears. *Green Top Guideline*. 2007, no 29.

21. Anim-Somuah M, Smyth R, Jones L: Epidural versus non-epidural or no analgesia in labour. Cochrane Database Syst Rev. Issue 4 Art No: CD000331-10.1002/14651858.CD000331.pub2. (Accessed 20th June 2012).
22. Zetterström J, Lopez A, Anzen BO, Norman M, Holmström B, Mellgren A. Anal sphincter tears at vaginal delivery: risk factors and clinical outcome of primary repair. *Obstetrics & Gynecology*. 1999 Jul 1;94(1):21-8.
23. Pretlove SJ, Thompson PJ, Tooze-Hobson PM, Radley S, Khan KS: Does the mode of delivery predispose women to anal incontinence in the first year postpartum? A comparative systematic review. *BJOG*. 2008, 115: 421-434.
24. Thom DH, Rortveit G: Prevalence of postpartum urinary incontinence: a systematic review. *Acta Obstet Gynecol Scand*. 2010, 89: 1511-1522.
25. Brubaker L, Handa VL, Bradley CS, Connolly A, Moalli P, Brown MB, Weber A: Sexual function 6 months after first delivery. *Obstet Gynecol*. 2008, 111: 1040-1044.
26. Signorello LB, Harlow BL, Chekos AK, Repke JT: Postpartum sexual functioning and its relationship to perineal trauma: a retrospective cohort study of primiparous women. *Am J Obstet Gynecol*. 2001, 184: 881-888.
27. Barrett G, Pendry E, Peacock J, Victor C, Thakar R, Manyonda I: Women's sexual health after childbirth. *BJOG*. 2000, 107: 186-195.
28. Mous M, Muller SA, de Leeuw JW: Long-term effects of anal sphincter rupture during vaginal delivery: faecal incontinence and sexual complaints. *BJOG*. 2008, 115: 234-238.
29. Andrews V, Thakar R, Sultan AH, Jones PW: Evaluation of postpartum perineal pain and dyspareunia-a prospective study. *Eur J Obstet Gynecol Reprod Biol*. 2008, 137: 152-156.
30. Radestad I, Olsson A, Nissen E, Rubertsson C: Tears in the vagina, perineum, sphincter ani, and rectum and first sexual intercourse after childbirth: a nationwide follow-up. *Birth*. 2008, 35: 98-106.
31. Revicky V, Nirmal D, Mukhopadhyay S, Morris EP, Nieto JJ: Could a mediolateral episiotomy prevent obstetric anal sphincter injury?. *Eur J Obstet Gynecol Reprod Biol*. 2010, 150: 142-146.
32. Sultan AH, Kamm MA, Hudson CN, Bartram CI: Third degree obstetric anal sphincter tears: risk factors and outcome of primary repair. *BMJ*. 1994, 308: 887-891.
33. de Leeuw JW, Struijk PC, Vierhout ME, Wallenburg HC: Risk factors for third degree perineal ruptures during delivery. *BJOG*. 2001, 108: 383-387.
34. Dahl C, Kjolhede P: Obstetric anal sphincter rupture in older primiparous women: a case-control study. *Acta Obstet Gynecol Scand*. 2006, 85: 1252-1258.

- 35.Voldner N, Froslic KF, Haakstad LA, Bo K, Henriksen T: Birth complications, overweight, and physical inactivity. *Acta Obstet Gynecol Scand.* 2009, 88: 550-555.
- 36.Prager M, Andersson KL, Stephansson O, Marchionni M, Marions L: The incidence of obstetric anal sphincter rupture in primiparous women: a comparison between two European delivery settings. *Acta Obstet Gynecol Scand.* 2008, 87: 209-215.
- 37.Lowder JL, Burrows LJ, Krohn MA, Weber AM: Risk factors for primary and subsequent anal sphincter lacerations: a comparison of cohorts by parity and prior mode of delivery. *Am J Obstet Gynecol.* 2007, 196 (344): e341-345.
- 38.Kalis V, Chaloupka P, Turek J, Rokyta Z: [Risk factors for 3rd and 4th degree perineal ruptures during delivery]. *Ceska Gynekol.* 2005, 70: 30-36.
- 39.Rognant S, Benoist G, Creveuil C, Dreyfus M: Obstetrical situations with a high risk of anal sphincter laceration in vacuum-assisted deliveries. *Acta Obstet Gynecol Scand.* 2012, 91: 862-868.
- 40.Shorten A, Donsante J, Shorten B: Birth position, accoucheur, and perineal outcomes: informing women about choices for vaginal birth. *Birth.* 2002, 29: 18-27. 10.
- 41.National Institute for Health and Clinical Excellence: Intrapartum care of healthy women and babies during childbirth 2007.