

## Pelvic Floor and Sexual Dysfunction After Vaginal Birth With Episiotomy in Vietnamese Women

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### ABSTRACT

**Introduction:** Episiotomy has been the most common procedure in obstetrical practice; however, its benefits remain controversial, especially in case of postpartum pelvic floor disorder and sexual dysfunction.

**Aim:** The aim of this study was to evaluate early complications, pelvic floor, and sexual dysfunction after delivery with episiotomy and their associated factors.

**Methods:** 158 healthy pregnant women at term (38 weeks 0 days to 41 weeks 6 days), aged above 18 years old, who vaginally delivered a singleton baby with cephalic presentation were recruited. The subjects were evaluated through 3 interviews at 1–3 days, 6 weeks, and 3 months after delivery, respectively.

**Main Outcome Measure:** The evaluations were accomplished primarily by administration of 2 validated questionnaires: the Pelvic Floor Distress Inventory Short-form 20 to evaluate symptoms of pelvic floor dysfunction, and the Female Sexual Function Index to evaluate effects on the women's sexual life.

**Results:** Among early complications, pain while sitting (30.4%) was the most prominent trouble, other pelvic disorders, such as urinary incontinence (11.4%), urinary retention (10.8%), or flatus incontinence (8.9%), were also observed in a remarkable number of participants. Average Pelvic Floor Distress Inventory Short-form 20 score was  $7.0 \pm 10.2$  after 3 months. At that time, the prevalence of sexual dysfunction was 40.7%. Trouble occurred commonly in the domains of desire (68.9%) and pain (58.5%). Associated factors of sexual dysfunction were maternal age over 30 years and parity. These factors, in combination with birth weight over 3,500 gram (g), were also associated factors of pelvic floor disorders.

**Conclusion:** Pelvic pain was the most popular postdelivery complication. Urinary and bowel dysfunction were self-limited complications. Despite being considered a simple technique, episiotomy and its repair must be performed rigorously in order to allow the best recovery of pelvic floor and sexual function. **Huy Quoc NV, Phuc An LS, Phuong LS, et al. Pelvic Floor and Sexual Dysfunction After Vaginal Birth With Episiotomy in Vietnamese Women. Sex Med 2019;XX:XXX–XXX.**

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**Key Words:** Episiotomy; Pelvic Floor Dysfunction; Sexual Dysfunction; Vaginal Delivery

### INTRODUCTION

Episiotomy is one of the most common procedures performed during vaginal birth in Vietnam and several countries.<sup>1,2</sup> Trinh et al<sup>3</sup> (2013) estimated an episiotomy rate of over 85% in

Vietnamese women who give birth vaginally, including almost 100% of primiparae. If properly and carefully performed, especially in cases of fetal macrosomia, breech delivery, shoulder dystocia, or operative vaginal delivery, it facilitates smooth delivery, improves women's quality of life, and protects women from urogenital complications during subsequent pregnancies.<sup>4–6</sup> In fact, episiotomy is indicated in cases of breech delivery, shoulder dystocia, fetal macrosomia, short perineal length, or operative vaginal delivery.<sup>7</sup> Perineal damage, which is not properly treated and healed, can produce long-term sequelae and complications, such as urinary incontinence, genital prolapse, and dysentery. Nevertheless, there is controversy about the benefits of episiotomy, and many studies produce contradictory results. Some international studies have shown that episiotomy

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negatively affects pelvic floor function and is related to the occurrence of perineal pain, painful intercourse, and vaginal dryness, all of which can lead to impaired sexual performance and reduced desire.<sup>8–11</sup>

In Vietnam, sexual health and its related issues, especially in postpartum women, have not been abundantly investigated yet. Studies about the prevalence of episiotomy are insufficient, although there has been a conception of its high prevalence in Vietnam, especially in primiparous women.<sup>1</sup> Furthermore, report and evidence of its effect on pelvic floor function and sexual function in Vietnamese women have not been published internationally. This study aimed to evaluate the association among pelvic floor and sexual dysfunction and episiotomy and other medical and demographic variables and to examine other early complications occurring after delivery with episiotomy at tertiary care settings.

## MATERIALS AND METHODS

A total of 158 healthy pregnant women at term (38 weeks 0 days to 41 weeks 6 days) aged >18 years, who vaginally delivered a term singleton baby with cephalic presentation were recruited into this conventional cross-sectional study at the Departments of Obstetrics and Gynecology, Hue University of Medicine and Pharmacy Hospital and Hue Central Hospital between March 2017 and February 2018. Based on the review of the American College of Obstetricians and Gynecologists, median episiotomy had a higher rate of anal sphincter and rectal mucosa injury compared to mediolateral episiotomy; therefore, in our study, all of the participants underwent mediolateral episiotomy (5-cm-long cut using Mayo scissors without additional tearing) and perineorrhaphy.<sup>12</sup>

Women excluded from the study were those who could not be contacted after discharge, those who complained of sexual and pelvic floor dysfunction problems prior to the study, and those who experienced pregnancy-related complications, such as postpartum hemorrhage, preeclampsia, hematoma, and operative vaginal delivery.

Our sample size was calculated using the prevalence of dyspareunia at 3 months, as determined in a study by Chayachinda et al<sup>8</sup> (2015;  $P = .656$ ). The equation for desired sample size was as follows:

$$n = z^2 \cdot p(1 - p) / d^2$$

where  $n$ ,  $z$ ,  $p$ , and  $d$  stand for desired sample size, standard normal deviate, estimated proportion, and degree of accuracy, respectively. In our study,  $d = 0.075$ , so the required sample size for analysis was 155. After 3 interviews, our final sample size was 158.

The protocol involved 3 interviews. The first was conducted at postpartum days 1–3, where data pertaining to demography, delivery characteristics, medical history, early complications of episiotomy, and pelvic floor dysfunction symptoms were collected. At the sixth postpartum week, each participant was

asked to complete a questionnaire to further investigate the symptoms described at the first interview and the status of her sexual activity. After 3 months, the degree of the participating patients' sexual and pelvic floor dysfunction and the extent to which such dysfunction affected the women's life were evaluated using the following 2 validated questionnaires: the Pelvic Floor Distress Inventory Short Form-20 (PFDI-20) and the Female Sexual Function Index (FSFI).

The PFDI-20 questionnaire consists of 20 questions along with 3 scales, including questions from the following 3 widely used toolkits: the Urinary Distress Inventory (6 questions), the Pelvic Organ Prolapse Distress Inventory (6 questions), and the Colorectal-Anal Distress Inventory (8 questions). Scores on each scale can vary from 0 (least impacted) to 100 (most influential). The scores for all 3 scales were added together to achieve a final (or total) score on the PFDI-20, varying from 0–300 points.

The FSFI is composed of 19 questions that cover 6 aspects of women's sexual function (desire, excitement, lubrication, orgasm, satisfaction, and pain). The scores for the 4 aspects represented by questions 1, 2, 15, and 16 can range from 1–5, and the scores for the remaining 2 aspects represented by questions 3–14 and 17–19 can range from 0–5. The final score is calculated by taking the sum of all elements' scores multiplied by their coefficients. The total score can vary from 2–36, where a higher score corresponds to a higher level of sexual function. Sexual dysfunction was defined, according to the Wiegel et al<sup>13</sup> study (2005), as having a cutoff total score of 26.55. Based on the published information on Asian women, the cutoff points in determining a disorder in each of the elements of desire, excitement, lubrication, orgasm, satisfaction, and pain are 4.28, 5.08, 5.45, 5.05, 5.04, and 5.51, respectively.<sup>14</sup>

The study protocol was approved by the Ethics Committee of Biomedical Research of Hue University of Medicine and Pharmacy, Vietnam. All study participants provided informed consent for inclusion in the study.

Data were entered and processed using the Statistical Package for the Social Sciences software version 23.0. Continuous variables were presented as mean  $\pm$  SD, and qualitative variables were presented as frequency and percentage. Comparisons between qualitative variables were performed using the  $\chi^2$  test, whereas student's  $t$ -test was used for comparisons between continuous variables. A  $P$  value  $< .05$  was considered statistically significant.

The manuscript has been prepared following the Strengthening the Reporting of Observational studies in Epidemiology checklist.

## RESULTS

In our study, 158 participants, whose ages ranged from 19–45 years, completed all 3 interviews. Of these, 109 participants were under 30 years old, and their mean age was  $30.0 \pm 4.5$  years. Moreover, 69.6% of participants had a normal body mass index. Furthermore, 50.6% of participants were

primiparous, and only a few women had delivered >3 times (1.6%; see Table 1). The mean weight was  $3,155.7 \pm 336.2$  grams (g), and most of the newborn babies weighed between 2,500 and 3,500 g (88.6%); however, the incidence of macrosomia, which was defined by birth weight greater than 3,500 g according to the Vietnamese's criteria, was significant (10.1%; see Table 2).<sup>15</sup> The second stage of labor mostly lasted between 30 and 60 minutes, and no cases of prolonged second-stage labor were recorded.

After delivery, the most prominent symptom was pain while sitting (30.4%; see Table 3). Pain while walking and urinating were similar, accounting for 25.3% and 22.8%, respectively. By the second interview, the prevalence of pain had decreased dramatically, and urinary incontinence was the most common problem, occurring in 11.4% of participants at the first interview and 7.6% of participants at the second interview. Urinary retention was also a relatively frequent symptom, with an incidence of 10.8% at days 1–3 and 7.6% at the 6-week postpartum interview. Urinary incontinence and retention were both self-limited conditions as their prevalence decreased between the 2 interviews.

During the patients' 3-month checkup, pelvic floor disorder was evaluated using the PFDI-20, and we found that most participants did not experience symptoms. For those who experienced symptoms, the most common disorder was colorectal-

**Table 2.** Neonatal birthweight

Weight at birth	No.	%
<2,500 g	2	1.3
2,500–3,500 g	140	88.6
>3,500 g	16	10.1
Total	158	100
Mean	$3,155.7 \pm 336.2$ g (2,100–3,800 g)	

anal dysfunction (Colorectal-Anal Distress Inventory-8; 18.3%), where 17.7% was mild and 0.6% was moderate. The second most common disorder was urinary dysfunction, which was presented in 15.2% of postdelivery women in our study. The incidence of pelvic organ prolapse was 6.3%. The average PFDI-20 score was  $7.0 \pm 10.2$  (Table 4). Among the 20 items of the questionnaire, the most common items noted in this interview were item 7 (the need to strain too hard to have bowel movements; 11.39%), item 15 (frequent urination; 9.49%), and item 17 (stress urinary incontinence). Symptoms for pelvic organ prolapse were rarely recorded.

A total of 135 women (85.4%) in our study had resumed sexual activity after 3 months. Using the FSFI, we found that 55 of these women (40.7%) experienced symptoms of sexual dysfunction as their FSFI score was <26.55. Chart 1 shows that disorders of desire (68.9%) and orgasm (67.4%) were the 2 most common problems. Pain during intercourse was also a frequent problem (58.5%). A total of 59.3% of the participants were dissatisfied with their sexual life.

**Table 1.** Demographic characteristics of study subjects

Age	No.	%
<20 y	2	1.3
20–29 y	107	67.7
30–39 y	46	29.1
≥40 y	3	1.9
Mean $30.0 \pm 4.5$ y		
Min = 19 y; max = 45 y		
Occupation	No.	%
Officer	32	20.3
Farmer	28	17.7
Worker	33	20.9
Trade	21	13.3
Housewife	35	22.2
Others	9	5.7
No. of births	No.	%
First	80	50.6
Second	54	34.2
Third	22	13.9
>Third	2	1.3
BMI	No.	%
<18.5	34	21.5
18.5–22.9	110	69.6
23–24.9	12	7.6
≥25	2	1.3
Total	158	100

BMI, body mass index.

**Table 3.** Postdelivery complications with episiotomy after 1–3 days and 6 weeks

Symptoms	N (%)	
	Days 1–3	Week 6
Perineal pain		
Pain while sitting	48 (30.4%)	0 (0.0%)
Pain while walking	40 (25.3%)	3 (1.9%)
Pain while urinating	36 (22.8%)	1 (0.6%)
Pain during bowel movement	14 (8.9%)	2 (1.3%)
Urinary dysfunction		
Frequent urination	7 (4.4%)	5 (3.2%)
Urinary incontinence	18 (11.4%)	12 (7.6%)
Urinary retention	17 (10.8%)	11 (7.0%)
Discomfort at the lower abdomen while urinating	8 (5.0%)	4 (2.5%)
Bowel dysfunction		
Constipation	0 (0.0%)	23 (14.6%)
Diarrhea	0 (0.0%)	5 (3.2%)
Fecal incontinence	5 (3.2%)	5 (3.2%)
Flatus incontinence	14 (8.9%)	7 (4.4%)

**Table 4.** Degree of pelvic floor disorder symptoms and PFDI-20 score

Severity	POPDI-6	CRADI-8	UDI-6
No symptoms	148 (93.7%)	129 (81.7%)	134 (84.8%)
Having symptoms	10 (6.3%)	29 (18.3%)	24 (15.2%)
Mild	10 (6.3%)	28 (17.7%)	23 (14.6%)
Moderate	0 (0.0%)	1 (0.6%)	1 (0.6%)
Severe	0 (0.0%)	0 (0.0%)	0 (0.0%)
Sum	158 (100%)	158 (100%)	158 (100%)
Average score	1.1 ± 4.5	2.9 ± 6.9	2.9 ± 7.5
Total average score of PFDI-20 = 7.0 ± 10.2			

CRADI-8 = Colorectal-Anal Distress Inventory-8; POPDI-6 = pelvic organ prolapse distress inventory; UDI-6 = Urinary Distress Inventory.

Comparing the PFDI-20 scores between groups based on demographic characteristics, we found that factors, such as maternal age ( $\leq 30$  years;  $P = .031$ ), multiparity ( $P = .027$ ), and birth weight  $> 3,500$  g ( $P = .025$ ) significantly affected the PFDI-20 scores (Table 5). Additionally, maternal age ( $P = .031$ ) and parity ( $P = .029$ ) were also associated with sexual dysfunction (Table 6).

## DISCUSSION

Perineal pain was the most prominent complication in women who underwent episiotomy. At the time of the first interview, the prevalence of perineal pain while sitting, walking, and urinating were 30.4%, 25.3%, and 22.8%, respectively (Table 3). Similar findings have been reported in the medical literature and studies worldwide, and episiotomy has been considered the main cause of postpartum perineal pain.<sup>8,9,16,17</sup> The prevalence varied between studies and in some studies was as high as 95% in the first 24 postpartum hours and 71% in the succeeding 7–10 days. Despite being a subjective complication (dependent on the participants' self-report of her subjective feeling), perineal pain has been considered the primary adverse effect of episiotomy.<sup>8,9,16,17</sup>

**Table 5.** Associated factors of pelvic floor disorders

Factor	No.	Average PFDI-20 score	t	P value
Maternal age			-2.181	.031
$< 30$ y	109	5.7 ± 10.3		
$\geq 30$ y	49	9.6 ± 9.6		
Parity			-2.240	.027
Primiparity	80	5.2 ± 9.2		
Multiparity	78	8.8 ± 10.9		
Birth weight			-2.268	.025
$\leq 3,500$ g	142	6.3 ± 9.9		
$> 3,500$ g	16	12.4 ± 11.4		
Sum	158	7.0 ± 10.2		

PFDI-20, Pelvic Floor Distress Inventory Short-form 20.

**Table 6.** Associated factors of sexual dysfunction

Factor	Sexual dysfunction			$\chi^2$	P value
	No (n)	Yes (n)	Sum (n)		
Maternal age				4.316	.031
$< 30$ y	65	36	101		
$\geq 30$ y	15	19	34		
Parity				4.242	.029
Primiparity	38	36	74		
Multiparity	42	19	61		
Sum	80	55	135		

Urinary and bowel dysfunction have been reported with lower prevalence. Nevertheless, these complications still had negative effects on patients' daily lives. Using the PFDI-20 questionnaires, Yohay et al<sup>18</sup> found that up to 65% of women in their third trimester of pregnancy and postpartum period had urinary symptoms during pregnancy, whereas Bertozzi et al<sup>19</sup> found that women who underwent episiotomy had better quality of life at 6 months' postpartum than those who did not undergo episiotomy. In our study, urinary incontinence was the most prevalent urinary symptom, followed by urinary retention, although the prevalence of these 2 symptoms decreased significantly during the sixth week of the interview (Table 3). Dietz<sup>20</sup> evaluated perineal muscle strength during pregnancy and after delivery. They concluded that the perineal muscles were remarkably weaker in the first 3–8 postpartum days, but gradually recovered over the next 2 months. Urinary dysfunction resolved in 6 months in most of the cases.

Bowel dysfunction was also a concern for postdelivery women with episiotomy as previous studies cited that its prevalence increased according to the degree of perineal laceration. Women with third- or fourth-degree lacerations had a significantly higher likelihood of dysfunction compared to those with no tear (7.8%–2.9%).<sup>21</sup> Handa et al<sup>22</sup> reported an association between episiotomy and fourth-degree perineal laceration. Memon and Handa<sup>23</sup> concluded that medial episiotomy resulted to a 2-time increase in the prevalence of severe perineal laceration, after the adjustment of other risk factors (birth weight and parity). However, evaluation of this disorder remains difficult as it is dependent on the patients' subjective experience and confounding factors, such as nutrition and activity.

A long-term study was conducted in France to compare the complications between routine episiotomy and restrictive episiotomy after 4 postpartum years.<sup>24</sup> The rates of perineal pain and urinary incontinence were lower in the restrictive group, with prevalence of 6% vs 8% and 32% vs 25%, compared to that of the routine episiotomy group; however, no significant difference was observed. The bowel incontinence rate was also lower in the restrictive group than that of the routine episiotomy group, and a

statistical significance was reported only for flatus incontinence ( $P = .028$ ).

Investigation of pelvic floor dysfunction using the PFDI-20 at the third interview provided useful information about this disorder. The overall score was fairly low:  $7.0 \pm 10.2$ , with almost all symptoms classified as mild (Table 4).

The most common items checked in the questionnaire were items 7, 15, and 17, which were about constipation and urinary incontinence. For item 7, which represented the symptom of constipation, it could be due to the patients' lifestyle after childbirth because constipation associated with vaginal delivery and episiotomy was rarely reported. Urinary incontinence symptoms might be due to the loss of support and suspension of the pelvic organ resulting in pelvic fascia connective tissue and pelvic floor muscle damage during vaginal delivery, although episiotomy seemed to have no protective effect against the onset of this disorder in other studies.<sup>20,24,25</sup> Because the difference between the episiotomy group and the non-episiotomy group was not our focus in this study, further study needs to be conducted to draw a detailed conclusion about the effect of this procedure on urinary incontinence. On the contrary, episiotomy might be a protective factor against anterior wall trauma, which is considered the reason why symptoms of pelvic organ prolapse were rarely recorded in our study.<sup>26</sup>

We compared the average PFDI-20 score between the subgroups of women having various characteristics to determine if associations existed between the scores and these characteristics. In our study, there were significant differences in the average PFDI-20 score between the groups based on maternal age ( $<30$  and  $\geq 30$  years old), parity (primiparity and multiparity), and birth weight ( $\leq 3,500$  g and  $>3,500$  g).

In our study, the age distribution was disproportionate. Therefore, to avoid an incorrect statistical conclusion, a cutoff age of 30 years was chosen to subdivide the participants into 2 groups. Our results suggested an association between maternal age above 30 years and pelvic floor dysfunction ( $P = .031$ ). Multiparity and birth weight above 3,500 g were also found to be risk factors for this disorder in our study ( $P = .027$  and  $P = .025$ , respectively). Occupation and body mass index were not associated with these disorders in our study ( $P > .05$ ).

Several explanations have been proposed for these associations. Pregnancy is responsible for certain physiological and anatomic changes, especially in hormone and collagen structure, which can negatively alter pelvic floor's muscles and tissues, and, as a result, it weakens the supportive system in this region. The delivery process can also damage the perineal structure, one of the most severe complications that might lead to anal sphincter damage. Simultaneously, nerve injury may occur because of an overstretched perineum, which is very common in macrosomia.

These results have also been reported in the other previous studies. Advanced maternal age was found to be a risk factor for

postpartum urinary incontinence according to Groutz et al,<sup>27</sup> who showed that its prevalence in women with average ages of 40 and 26 years are 38.5% and 9.8%, respectively. Another study published in 2011 also formulated a similar conclusion and found that pregnancy at a younger age seemed to be a protective factor against the risk of developing pelvic floor disorder.<sup>17</sup> Memon and Handa<sup>23</sup> noted that postpartum stress urinary incontinence was very common in over 30-year-old primiparous women. Viktrup et al<sup>28</sup> conducted a long-term study in 305 primiparous women. They reported that parity, head circumference, episiotomy, and birth weight were risk factors for stress urinary incontinence. Women who previously experienced this disorder had a higher risk of developing earlier, more severe, and more persistent incontinence in their next pregnancy than women who did not previously experience this disorder. In the study conducted by Eftekhar et al,<sup>21</sup> birth weight  $>3,000$  g was also found to be a significant risk factor for stress urinary incontinence. On the contrary, caesarian delivery has been shown to be a protective factor.<sup>21</sup>

Data on bowel and urinary dysfunction after postpartum time are essential for further conclusions as to whether these complications persist or resolve later. Unfortunately, these were not recorded in our study as we encountered difficulties in following up after 6 weeks in Vietnamese women due to time constraints.

In our study, where the FSFI cutoff score for sexual dysfunction was 26.55,<sup>13</sup> 40.7% of postpartum women with episiotomy showed symptoms of sexual dysfunction. In the other previous studies, it varied from 22% to 50%; however, it could be higher during the 3-month checkup.<sup>17</sup> Recently, many studies regarding postpartum sexual dysfunction have been conducted using the FSFI.<sup>8</sup> Signorello et al<sup>29</sup> studied postnatal sexual dysfunction and its association with pelvic floor trauma during delivery and reported dyspareunia prevalence of 41% at 3 months postpartum and 22% at 6 months postpartum. Safarinejad et al<sup>30</sup> (2009) reported that women who underwent forceps or vacuum extractor delivery or had an episiotomy had a higher risk of developing postpartum sexual dysfunction than those who underwent cesarean section, especially in the area of impaired sexual desire. Using the FSFI questionnaire with a cutoff score of 26.5, Chayachinda et al<sup>8</sup> reported a postpartum sexual dysfunction rate of 66.7%; a study by Khajehei et al<sup>31</sup> in Australia had a similar rate of 64.3% at 12 months postpartum.

Among the 6 aspects of sexual dysfunction, desire disorder (68.9%) was the most commonly reported problem. It has likewise been reported with the highest prevalence in the other previous studies.<sup>31</sup> Pain disorder also accounted for a large proportion: 58.5% of the studied postpartum women who experienced pain during sexual intercourse. Most of our participants had resumed sexual activity between 6 weeks and 3 months, which was very close to the time of the third interview, and most women experienced dyspareunia at the first intercourse after delivery.<sup>10</sup> A study that included 921 primiparous participants reported 25% rate of sexual desire decrease at the sixth

postpartum month.<sup>10</sup> In a similar investigation, it was reported that women with a second-degree perineal trauma had 80% more dyspareunia symptoms and those who had third-degree perineal trauma had 3 times higher rate compared to that of women who had no perineal trauma.

Perineal pain and dyspareunia, as a result of perineal trauma, laceration, and episiotomy during delivery, according to Abdool et al,<sup>32</sup> are considered the main factors that negatively affect postpartum sexual activity.

From the literature, accumulating evidence suggested the influence of mode of delivery on postpartum sexuality. In their prospective study on 452 nulliparous women, using a Turkish version of the FSFI questionnaire, Kahramanoglu et al<sup>33</sup> (2017) found that the group who underwent cesarean section had significantly lower desire, lubrication, satisfaction, and pain scores at 3 months postpartum compared to their initial scores, and compared to the group having vaginal birth and mediolateral episiotomy, none of the FSFI domain scores differed after 6 months compared to the predelivery scores. The authors concluded that caesarean section is not superior to vaginal birth in preserving normal sexual function.<sup>33</sup> However, based on his own group's data, Laganà et al<sup>34</sup> (2016) even found a protective effect of vaginal delivery with episiotomy on sexual function instead of cesarean section; therefore, postpartum sexuality is a complex phenomenon that cannot be evaluated only with FSFI, and additional questionnaires should be used in further studies to compare the social, emotional, and psychosocial factors involved. Additionally, the baseline FSFI score should be recorded before pregnancy, rather than during the first trimester, for accuracy.<sup>34</sup>

Due to the disproportionate age distribution, we subdivided the participants into 2 age-defined groups with a cutoff point of 30 years old to investigate its association to sexual dysfunction. Our findings show that patients of maternal age >30 years had a higher chance of manifesting this disorder than patients of maternal age <30 years, which may be due to the hormonal changes occurring as women grow older, especially their decreasing estrogen level. Because estrogen is essential for sexual response and lubrication, a reduction in its level may result in reduced desire, reduced lubrication, and consequent pain.<sup>35</sup> Additionally, ambivalence regarding additional pregnancy is also a reason why older women might not fully enjoy the sexual experience.

Postpartum sexual dysfunction was associated with primiparity in our study ( $P = .029$ ). This association has also been observed in the previous studies. In a study conducted by Khajehei et al,<sup>31</sup> primiparity was found to be a risk factor for this disorder: they showed that primigravid women had a higher risk of operative delivery or perineal damage than multigravid women. Similarly, Rathfisch et al<sup>36</sup> reported an increased risk of perineal laceration in primiparous women, leading to sexual dysfunction.

In our study, maternal age and parity were also associated with sexual dysfunction. We suggest that this condition might also be affected by factors not related to pregnancy. We considered that

psychological factors might play an important role. According to Rao and Demaris,<sup>37</sup> the reduction in sexual activity and high frequency of sexual dysfunction in postpartum primiparous women might be related to the loss of privacy and the need for sufficient time for newborn care. In the extent of our study, we did not study the difference between episiotomy and non-episiotomy patients, as routine episiotomy was indicated for primiparous women.

Grades 3–4 perineal tears are often associated with postpartum perineal dysfunction. Simic et al<sup>38</sup> (2017) found that the risk of severe perineal laceration increases with the duration until the third hour of the second stage of labor, and instrumental delivery is the most significant risk factor for severe lacerations, followed by the duration of the second stage of labor, fetal size, and occiput posterior fetal position. According to Laganà et al<sup>39</sup> (2015), advanced maternal age, higher parity occipitoposterior presentation, and fetal macrosomia can cause lacerations during vaginal birth, and episiotomy can significantly reduce the number of genital lacerations. Therefore, selective episiotomy should be considered by obstetricians in these high-risk women to prevent severe perineal tears.

To the best of our knowledge, this is the first study on pelvic floor and sexual dysfunction after vaginal birth with episiotomy on Vietnamese patients available to international medical literature. This study has the following limitations. This study used a subjective investigation approach, only cases with severe conditions reported during interviews performed by medical staff were clinically examined, the number of participants involved was still limited, and the study was only conducted at 2 tertiary care centers in Central Vietnam.

## CONCLUSIONS

Perineal pain was the most common postdelivery complication, but its prevalence decreased dramatically after 6 weeks. Urinary and bowel dysfunction were also self-limited complications. Sexual dysfunction was fairly common at 3 months postpartum in women having episiotomy during delivery. Evaluation of these conditions requires follow-up for at least 6–12 months after delivery with frequent interviews to observe its progression. Despite being considered a simple technique, episiotomy and its repair must be performed rigorously for the optimum recovery of pelvic floor and sexual function.

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