

THE INFLUENCE OF THE FIRST CHILDBIRTH ON THE OCCURRENCE OF STRESS URINARY INCONTINENCE AND SEXUAL DYSFUNCTION

UTICAJ PRVOG POROĐAJA NA POJAVU STRES-URINARNE INKONTINENCIJE I SEKSUALNE DISFUNKCIJE

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Abstract

Introduction. Urinary incontinence is a very common pelvic floor disorder defined as the “complaint of involuntary loss of urine”. Sexual dysfunction prevents a person from experiencing pleasure during sexual activities. The research aimed to analyse the frequency of urinary incontinence and sexual dysfunction in female subjects 6 to 18 months after the first delivery and the association with factors at delivery. **Material and Methods.** The research included 69 respondents. The inclusion criteria was one previous term birth within 6-18 months. A survey created with Google Forms was used to collect data. **Results.** Sexual dysfunction was reported by 21/69 (30%) respondents, and urinary incontinence by 8/69 (12%). Urinary incontinence was significantly more common among subjects with obstetric soft tissue lacerations ($p < 0.01$). Negative emotional reactions during sexual intercourse were more frequent in respondents with a longer period since childbirth ($p < 0.001$). Only 3/21 (14%) subjects with sexual dysfunction and 3/8 (38%) with urinary incontinence reported the problem to their doctor. The doctor asked 16/69 (23%) about the problem of urinary incontinence during a regular visit, and about sexual dysfunction in 15/69 (22%) of the respondents. **Conclusion.** Sexual dysfunction and urinary incontinence are common conditions after the first childbirth. Trauma of the birth canal during childbirth may contribute to urinary incontinence after delivery. Negative emotional reactions increase during the time that passes after childbirth. Patients and doctors rarely discuss sexual dysfunction and urinary incontinence. **Key words:** Urinary Incontinence; Sexual Dysfunction, Physiological; Parturition; Delivery, Obstetric; Obstetric Labor Complications; Postpartum Period; Pelvic Floor Disorders; Psychological Distress; Emotions

Introduction

The pelvic floor is composed of muscles, ligaments, and fascia. The coordinated function of these structures is essential for maintaining pelvic girdle stability and muscle tone, as well as for continence and sexual

Sažetak

Uvod. Urinarna inkontinencija je veoma rasprostranjen poremećaj karličnog dna koji se definiše kao „žalba na nevoljni gubitak urina“. Seksualna disfunkcija sprečava osobu da doživi zadovoljstvo prilikom seksualne aktivnosti. Cilj ovog istraživanja bio je da se ispita učestalost urinarne inkontinencije i seksualne disfunkcije kod ženskih ispitanica šest do 18 meseci nakon prvog porođaja i povezanost sa faktorima na porođaju. **Materijal i metode.** Istraživanje je obuhvatilo 69 ispitanica. Kriterijumi za uključivanje ispitanica u istraživanje bili su da su imale jedan prethodni terminski porođaj pre 6–18 meseci. Korišćena je anketa kreirana u elektronskom obliku upotrebom aplikacije *Google forms*. **Rezultati.** Seksualnu disfunkciju je prijavilo 21/69 (30%) ispitanica, a urinarnu inkontinenciju 8/69 (12%). Urinarna inkontinencija je bila značajno češća među ispitanicama sa rascepom porođajnog kanala ($p < 0,01$). Negativne emocionalne reakcije tokom seksualnog odnosa bile su učestalije kod ispitanica kod kojih je prošlo više vremena od porođaja ($p < 0,001$). Samo 3/21 (14%) ispitanica sa seksualnom disfunkcijom i 3/8 (38%) sa urinarnom inkontinencijom su prijavile problem svom lekaru. Lekar je pitao o problemu urinarne inkontinencije tokom redovne posete kod 16/69 (23%), a o seksualnoj disfunkciji kod 15/69 (22%) ispitanica. **Zaključak.** Seksualna disfunkcija i urinarna inkontinencija su česta stanja posle prvog porođaja. Trauma medice tokom porođaja može uzrokovati urinarnu inkontinenciju posle porođaja. Negativne emotivne reakcije tokom seksualnog odnosa se povećavaju tokom vremena koje protekne od porođaja. Pacijenti i lekari retko razgovaraju o seksualnoj disfunkciji i urinarnoj inkontinenciji. **Ključne reči:** urinarna inkontinencija; fiziološka seksualna disfunkcija; porođaj; akušerski porođaj; komplikacije akušerskog porođaja; postporođajni period; poremećaji karličnog dna; psihološki stres; emocije

function. Damage to these structures leads to pelvic floor dysfunction, which includes various conditions such as urinary incontinence, pelvic organ prolapse, and sexual dysfunction [1,2].

Urinary incontinence (UI) is a highly prevalent pelvic floor disorder, defined as a “complaint of involuntary loss

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Abbreviations

- UI – urinary incontinence
- SD – sexual dysfunction
- CIS – Clinical Information System
- PISQ-12 – Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire
- ICIQ-UI SF – International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form
- UCCV – University Clinical Center of Vojvodina

of urine” [3,4]. It commonly affects women and can impact multiple aspects of life, including social, psychological, occupational, and sexual domains. UI is associated with feelings of shame and a significant reduction in quality of life [5–7]. Risk factors may include pregnancy, mode of delivery, obesity, and maternal age [8]. The prevalence of urinary incontinence following childbirth is approximately 31% among primiparous women [9]. Management strategies range from conservative approaches, such as lifestyle modifications, pelvic floor muscle training, and biofeedback, to surgical interventions [10,11].

Women’s sexual health is a vital aspect of life at any age and is influenced by multiple factors. In particular, pregnancy and childbirth bring about biological, psychological, and social changes that may impact sexual health. Evidence suggests that sexual function declines during pregnancy and may not return to baseline levels during the postpartum period [12]. The American Psychiatric Association defines female sexual dysfunction (SD) as a condition that prevents an individual from experiencing satisfaction during sexual activity [13]. It has been reported that the rate of sexual dysfunction can reach up to 64% six months postpartum, and approximately 6.4% of women did not experience physical satisfaction in their sexual relationships 18 months after childbirth. Between 80% and 93% of women resume sexual activity within the first three months postpartum. During this period, two-thirds of women experience some form of sexual dysfunction, such as vaginal dryness, pain, reduced libido, or inability to achieve orgasm [14]. An important factor that may influence sexual dysfunction is the mode of delivery, which can be categorised as spontaneous vaginal delivery, episiotomy, assisted vaginal delivery, or caesarean section [15]. Management of sexual problems in women is typically individualised and multidisciplinary [16].

Material and Methods

The cross sectional study was conducted as a cross-sectional study at the Clinic of Gynaecology

and Obstetrics, University Clinical Center of Vojvodina (UCCV) in Novi Sad. A total of 69 women participated in the study. Inclusion criteria were primiparous women, 6 to 18 months postpartum, with a term pregnancy. Data were collected from the Clinical Information System (CIS) and via a questionnaire. The questionnaire was designed electronically using Google Forms. Participants were recruited by telephone, and the questionnaire was sent to them online via a link.

The questionnaire was developed for this study and included both customised questions designed by the authors and questions from the Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire (PISQ-12) and the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF). The questionnaire contained 31 questions, all of which were closed-ended except for one open-ended question. The questionnaire is available via the following link: <https://forms.office.com/Pages/ResponsePage.aspx?id=DQSIkWdsW0yxEjajBLZtrQAAAAAAAAAAAAAAAAAANAARtZWPUQTdOWE-JYWDQyRVhWTlc1TEI3OVlKM1lEMy4u>

Data were statistically analysed using IBM SPSS v27.0, with measures of central tendency and variability determined. The Kolmogorov–Smirnov test was used to assess the normality of data distribution. Chi-square test, Fisher’s exact test, Student’s t-test, one-way ANOVA, Mann–Whitney U test, and Kruskal–Wallis test were applied to determine statistical significance at a level of $p < 0.05$.

The study was approved by the Ethics Committee of the UCCV under approval number 00-471.

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Results

Of the total number of participants, 38/69 (55%) delivered vaginally, while 31/69 (45%) underwent caesarean section. Among the women who had a caesarean delivery, 18/31 (58%) were elective, and 13/31 (42%) were emergency caesarean sections.

Among women who delivered vaginally, an episiotomy was performed in 31/38 (82%), whereas 19/38 (50%) experienced obstetric soft tissue lacerations (cervical and/or perineal tears). In 2/38 (5.3%), the birth canal was intact. During vaginal delivery, fundal pres-

Table 1. Presence of specific factors during vaginal delivery

	Episiotomy N (%)	Kristeller maneuvr N (%)	Soft tissue lacerations N (%)
Yes	31 (82)	15 (39)	19 (50)
No	7 (18)	23 (61)	19 (50)

Table 2. Frequency of various delivery-related factors among patients with urinary incontinence and sexual dysfunction

	Mode of delivery		Laceration		Episiotomy		Kristeller maneuver	
	Vaginal	Caesarean section	Yes	No	Yes	No	Yes	No
Urinary incontinence	18.4%	3.2%	32%	10.5%	16%	43%	13%	26%
	p = 0.066		p = 0.004		p = 0.457		p = 1.000	
Sexual dysfunction	32%	29%	37%	47%	29%	43%	33%	30%
	p = 0.606		p = 0.151		p = 0.755		p = 1.000	

sure (Kristeller manoeuvre) was applied in 15/38 participants (39%) (Table 1).

Of the total number of participants, 66/69 (96%) reported resuming sexual activity postpartum. The mean time from delivery to the first sexual intercourse in our sample was 2.3 ± 1.1 months.

Among the participants who resumed sexual activity, 45/66 (68%) did not report any form of sexual dysfunction.

The remaining 21/66 (32%) reported sexual dysfunction, specifically: all 21/21 (100%) experienced pain in the genital area during or immediately after sexual activity, and 6/21 (29%) additionally reported negative emotional responses such as fear, disgust, shame, or guilt during sexual activity.

Uncontrolled urinary leakage postpartum was reported by 8/69 (12%) participants, of whom 7/8 (87.5%) had delivered vaginally.

In 6/8 (75%) participants, urinary incontinence occurred during sneezing or coughing, in 1/8 (12%) it occurred before reaching the toilet, and in 1/8 (12%) it occurred without a specific trigger (Figure 1).

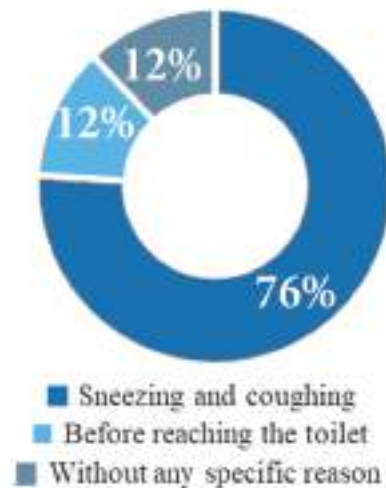
During routine postpartum check-ups, 16/69 (23%) participants were asked about urinary incontinence, and 15/69 (22%) were asked about sexual dysfunction.

Only 3/21 (14%) of women with sexual dysfunction spontaneously reported the problem to their physician, and 3/8 (38%) of women with urinary incontinence did so.

Postpartum pelvic floor rehabilitation in the form of Kegel exercises was performed by 7/69 (10%) participants, of whom 2/7 (29%) had urinary incontinence and 1/7 (14%) had sexual dysfunction (pain in the genital area).

Table 2 shows the influence of various delivery-related factors on the prevalence of urinary incontinence (UI) and sexual dysfunction (SD), as assessed using Fisher's exact test.

According to the Kruskal-Wallis test, there was a statistically significant difference ($p < 0.001$) in the mean time from delivery to the resumption of sexual activity in relation to the occurrence of negative emotional responses during sexual intercourse. Negative emotional responses during sexual activity increased with the time elapsed since delivery.

**Figure 1.** Prevalence of different situations in which involuntary urination occurred

Discussion

Although pregnancy and childbirth are physiological processes, they may be associated with potential physical complications. It is well established that up to 42% of postpartum women experience urinary incontinence (UI). Another important issue during and after pregnancy is changes in sexual life [17].

A 2022 study reported that the rate of episiotomy during spontaneous vaginal delivery in countries of the former Yugoslavia ranged from 30.9% in Slovenia to 62.8% in Serbia [18]. In our sample, the episiotomy rate among vaginal deliveries in primiparas was 82%.

According to a study by Farrington et al., which included 76 studies from 22 countries, the prevalence of the Kristeller manoeuvre ranged from 0.6% to 69.2% across studies, with a pooled prevalence of 23.2% [19]. In our study, the prevalence was 39%.

Perineal injury is a common event during childbirth, occurring in 30–80% of women [20]. Intrapartum cervical laceration is an obstetric complication that may occur in all modes of delivery. Clinically significant cervical lacerations are rare and complicate 0.1–5% of deliveries [21]. In our study, perineal and cervical injuries were classified as “obstetric soft tissue lacerations”, which were present in 50% of women who delivered vaginally.

Current research indicates that the prevalence of resumption of sexual activity after childbirth ranges from 30% to 60% within the first three months postpartum, decreasing to 17–31% six months after delivery [22]. In our study, 96% of participants reported resuming sexual activity after childbirth, with a mean time to resumption of 2.3 months postpartum.

Nearly two-thirds of women (64.3%) have reported experiencing sexual dysfunction during the first year postpartum. The most commonly reported types of sexual dysfunction include disorders of sexual desire (81.2%) [23]. In our study, 21/66 (32%) participants reported sexual dysfunction in the form of pain in the genital area during and immediately after sexual intercourse, with 6 participants additionally reporting negative emotional responses. However, this result might be influenced by the relatively small sample.

The prevalence of urinary incontinence in the postpartum period ranges from 3% to 40% [24]. Stress urinary incontinence is characterised by sudden involuntary leakage of urine during activities that increase intra-abdominal pressure [25]. In our study, 12% of participants experienced urinary incontinence, which occurred during sneezing and coughing in 75% of cases.

Patient-related barriers to discussing sexual function include fear of embarrassment or concern that their problems may be dismissed. In addition, healthcare providers rarely ask about or initiate discussions regarding sexual function. Clinician-related barriers to discussing sexual function include feelings of embarrassment, lack of communication skills, and insufficient knowledge and training regarding available treatment options [26]. In our study, 23% of participants were asked about urinary incontinence during medical visits, while 22% were asked about sexual dysfunction. Of the participants who experienced urinary incontinence, 38% reported the problem to their physician, whereas only 14% of those with sexual dysfunction did so.

Kegel exercises are a therapeutic intervention aimed at improving pelvic floor muscle function. Current evidence suggests that this therapy is suitable for routine postpartum exercise and has beneficial effects in improving urinary incontinence, vaginitis, and puerperal symptoms [27,28]. In our study, 10% of participants performed Kegel exercises after childbirth.

Numerous epidemiological studies have supported a causal relationship between vaginal delivery and urinary incontinence [29]. A study by McArthur et al. demonstrated that caesarean section does protect against subsequent urinary incontinence, with 40% of women reporting urinary incontinence even after caesarean delivery [30]. In our study, we found no statistically significant association between mode of delivery and the occurrence of urinary incontinence (7/38 [18.4%] vagi-

nal delivery vs 1/31 [3.2%] caesarean section); however this result might be influenced by the relatively small sample. Cattani et al. reported that caesarean section, compared with vaginal delivery, reduces the risk of dyspareunia but not sexual dysfunction [31]. Similarly, in our study, no statistically significant association was observed between mode of delivery and sexual dysfunction or urinary incontinence.

In a study by Gommesen et al., the proportion of women reporting urinary incontinence after perineal tears ranged from 15% to 25% among women with third- or fourth-degree tears, and from 5% to 15% among women with first- or second-degree tears [32]. Another study by Gommesen et al. showed that more than half of women who sustained anal sphincter rupture also experienced dyspareunia [33]. In our study, a statistically significant association was found between obstetric soft tissue lacerations and urinary incontinence, but no association was observed with sexual dysfunction.

No significant associations were found between episiotomy and urinary incontinence, consistent with the majority of studies examining different types of episiotomy [34]. These findings are consistent with our results, which showed no statistically significant association between episiotomy and urinary incontinence. According to a study from Vietnam, 40.7% of women who underwent episiotomy reported symptoms of sexual dysfunction postpartum [35]. In our study, no statistically significant association was found between episiotomy and sexual dysfunction.

Sartore et al. showed that dyspareunia was significantly more frequent among women who underwent Kristeller manoeuvre, whereas urinary incontinence did not differ significantly between groups [36]. In our study, no statistically significant association was found between the Kristeller manoeuvre and urinary incontinence or sexual dysfunction.

The absence of a statistically significant association between episiotomy and the Kristeller manoeuvre and the occurrence of SD and UI suggests that these interventions were not associated with an increased risk of pelvic floor dysfunction; however, this finding alone does not provide evidence of a protective effect.

Among postpartum women in the United States and Australia, approximately 26–41% resumed sexual activity within six weeks after childbirth, with the majority resuming within the first 12 weeks. Women may require time to feel both physically and emotionally comfortable before resuming sexual activity after childbirth [37]. In our study, no statistically significant difference was observed in the mean time from delivery to resumption of sexual activity in relation to the presence of genital pain during or after sexual inter-

course; however, negative emotional responses during sexual activity were found to increase with the time elapsed since delivery.

Addressing these issues requires efforts from healthcare providers, patients, and society as a whole. Greater education regarding the management of these patients, increased research engagement, and improved knowledge of available treatment options are needed. Efforts should also be directed towards reducing stigma surrounding urinary incontinence and sexual dysfunction among women and within society to promote more open communication between physicians and patients and to reduce feelings of shame and embarrassment on both sides.

Conclusion

The conclusions drawn from the results should be interpreted with caution owing to the small sample size

- Sexual dysfunction and urinary incontinence are common conditions associated with childbirth
- Perineal trauma during childbirth may contribute to the development of postpartum urinary incontinence.
- Negative emotional responses during sexual intercourse increase with the time elapsed since childbirth.
- Discussions about sexual dysfunction and urinary incontinence between patients and healthcare providers are infrequent and should be encouraged.

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