

# Frequency of Urinary Stress Incontinence in Women after Vaginal Delivery

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## ABSTRACT

**Introduction:** Stress urinary incontinence is defined as involuntary loss of urine on physical exertion like coughing, sneezing, laughing or jumping. This condition in women is very distressing and it is usually kept disguised, so women remain untreated. This condition also causes feeling of inferiority and depression. There are different risk factors identified in causing urinary stress incontinence like constipation, traumatic and operative vaginal births, pelvic organ prolapse, abdominal mass, smoking, obesity, old age and menopause. The present study is design to know the actual magnitude of stress incontinence. There by strategies could be devised to reduce this morbidity.

**Objective:** To determine the frequency of urinary stress incontinence in women after vaginal delivery

**Setting:** This study was conducted at ISRA University Hospital, Hyderabad.

**Duration:** Six months from Jan 2020 to June 2020.

**Design:** Descriptive cross sectional.

**Subject and Methods:** There were 141 women with history of urinary incontinence within 40 days of vaginal delivery were included in this study. Patient who fulfill the inclusion and exclusion criteria and came within forty days after vaginal delivery. The final outcome that is urinary stress incontinence was labeled as positive or negative on approved proforma.

**Results:** The average age of the patients was 26.75±5.72 years. Frequency of urinary stress incontinence in women after vaginal delivery was observed in 14.18% (20/141).

**Conclusion:** Results of this study suggest that the mechanical strain during labor may add to the risk associated with pregnancy itself. Prenatal counseling about routes of delivery should provide a balanced account of the advantages and disadvantages for mother and child. The information from this study provides important information for clinicians, patients, and policymakers regarding childbirth and incontinence.

**Keywords:** Stress Urinary Incontinence, Vaginal Delivery, Operative Vaginal Births

## INTRODUCTION

Stress urinary incontinence is the involuntary leakage of pee brought on by physical activity such as coughing, sneezing, laughing, or jumping [1]. This condition is also known as urgency urinary incontinence.

Because this ailment in women is typically kept hidden, so women get untreated for it despite the fact that it is exceedingly distressing. [2] Despite the fact that this condition does not pose a threat to a woman's life, it is still an important disease that can cause a variety of health issues, including skin irritation and urinary tract infections, as well as problems in a woman's social life, economic life, sexual life, and mental health, as well as a restriction on her lifestyle [3-4]. A feeling of inferiority and sadness are also caused by this illness [5]. Because it makes it extremely difficult for women to participate in frequent prayers, particularly during the Hajj or other forms of pilgrimage, stress urine incontinence also has a religious meaning for women. [6]

The prevalence of urine stress incontinence ranged from 4.7% to 17.2% according to a study conducted in Pakistan [8], and multivariate analysis did not find any differences with regard to the mode of delivery. It is significantly lower than the incidence rate of 36.4% that is seen in Jeddah, Saudi Arabia [9]. According to the findings of a survey that was carried out in four different countries in Europe, 35% of women suffered from incontinence, with 50% of those women suffering from pure stress urine incontinence [10-11]. The prevalence of stress urine incontinence was found to be 49% across the world [12].

Constipation, traumatic and surgical vaginal deliveries, pelvic organ prolapse, abdominal mass, smoking, obesity, old age, and menopause are all known risk factors for urinary stress incontinence [13]. Other risk factors include prolapsed pelvic organs, pelvic organ prolapse, and pelvic organ prolapse. The muscles of the pelvic floor, which are responsible for supporting the urethra, can become injured or weak over time, which can lead to stress urine incontinence. In addition to this, it can be brought on by dysfunction of the urethral sphincter [12].

The majority of research on urinary stress incontinence has been carried out in nations with higher incomes, whereas only a small number of studies have been carried out in countries with

lower incomes. There is a large amount of diversity in the severity of post-delivery stress incontinence, which is why the purpose of the current study is to design the true severity of stress incontinence. The frequency of urinary stress incontinence ranges from 4.7% to 17.2% across local studies. Therefore, methods could be developed to lessen the severity of this morbidity.

## MATERIALS AND METHODS

This descriptive/cross-sectional study was conducted at ISRA University Hospital, Hyderabad during from Jan 2020 to June 2020. A total 141 primiparous and multiparous women in reproductive age group that is 18-45 years, with history of urinary incontinence within 40 days of vaginal delivery were included. Patients who suffered from urge, over flow, or mixed incontinence, urogenital fistulae, women who did not consent to take part in the trial, and patients who suffered from co-morbidities such as diabetes or hypertension were not included in the study. Following the acquisition of signed informed consent, detailed demographic information was recorded.

Patients who met both the inclusion and exclusion criteria and who presented themselves within the first forty days after having a vaginal delivery were evaluated. On the proforma, the end outcome, which was defined as urine stress incontinence based on the operational definition, was categorized as either positive or negative.

SPSS version 17.0 was used to conduct the analysis on the data. For numerical factors such as age and body mass index (BMI), the mean and standard deviation were computed. Frequencies and percentages for categorical factors such as socioeconomic status, manner of vaginal delivery, urine incontinence, and the number of children in a family. A bar chart and a pie chart were utilized for the presentation's graphics. The use of stratification allowed for the control of effect modifiers, and stratification was carried out with regard to age, BMI, socioeconomic level, length of symptoms, parity, and mode of vaginal delivery. The Chi-square test and Significance was performed, and the p value needed to be less than 0.05.

**RESULTS**

The average age of the patients was 26.75±5.72 years similarly mean BMI and duration of symptoms are also shown in table 1. There were 60.99% women with multiparous and 39.01% were primiparous as presented in figure 1. Out of 141, 67.38% were spontaneous vaginal delivery and 32.62% were instrumental (Figure 2).

Table 1: Descriptive Statistics of Study Patients n=141

Statistics	Age (Years)	BMI (kg/m <sup>2</sup> )	Duration of Symptoms (days)
Mean	26.75	27.99	19.38
Std. Deviation	5.72	3.19	8.45
95% Confidence Interval for Mean	Lower Bound	25.8	17.98
	Upper Bound	27.7	20.79
Median	25	28.26	20
Inter quartile Range	8	4.90	14
Minimum	18	22.36	2
Maximum	42	37.77	36

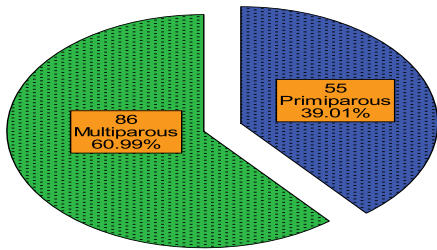


Figure 1: Parity Distribution n=114

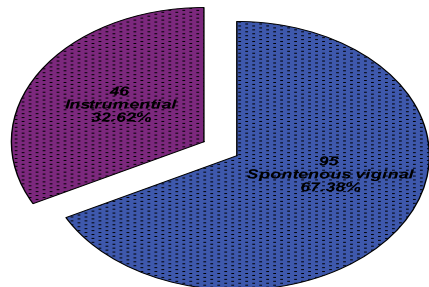


Figure 2: Mode of Delivery n=141

Frequency of urinary stress incontinence in women after vaginal delivery was observed in 14.18% (20/141) as presented in figure 3.

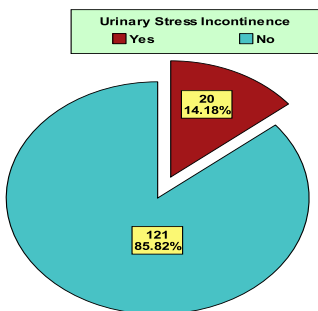


Figure 3: Frequency of Urinary Stress Incontinence in Women After Vaginal Delivery n=141

Rate of urinary stress incontinence was significantly high in above 35 years of age women (p=0.018) as shown in table 2.

Table 2: Frequency of Urinary Stress Incontinence in Women After Vaginal Delivery with Respect to Age Groups

Age Groups (Years)	Urinary Stress Incontinence		Total
	Yes	No	
18 to 25 Years	5(7.1%)	65(92.9%)	70
26 to 35 Years	10(17.9%)	46(82.1%)	56
>35 Years	5(33.3%)	10(66.7%)	15

Chi-Square=7.99; p=0.018

Rate of urinary stress incontinence was significantly high in instrument delivery as compare to spontaneous (p=0.021) as shown in table 3.

Table 3: Frequency of Urinary Stress Incontinence in Women After Vaginal Delivery with Respect to Mode of Delivery

Mode of Delivery	Urinary Stress Incontinence		Total
	Yes	No	
Spontaneous	9(9.5%)	86(90.5%)	95
Instrumental	11(23.9%)	35(76.1%)	46

Chi-Square=5.31; p=0.021

**DISCUSSION**

Approximately 20% of women experience urinary incontinence or pelvic organ prolapse during their lifetimes [14]. Giving delivery is a well-known contributor to the development of stress incontinence [15]. Delivery damage to the neuromuscular function and morphology of the pelvic organs can lead to functional abnormalities of the lower urinary tract and the pelvic floor [16, 17]. According to the results of several epidemiologic research [18, 19], the likelihood of experiencing postpartum urinary incontinence is greatly reduced following a caesarean birth. Despite the fact that relatively little is understood about the consequences of caesarean sections, they continue to be the most common method of giving birth.

Urinary incontinence seems to increase with the number of births, peaking around the third delivery on average [20]. Our study found that 60.99% of the 141 women who experienced urinary incontinence after 40 days of a vaginal delivery had given birth multiple times, while 39.01% had given birth only once. This result is consistent with previous findings from Swedish nationwide cohort studies[21] that found a dose-response connection between the number of vaginal births and the incidence of SIU. This is a citation-needed paraphrase from: This is a citation-needed paraphrase from: [Insert citation here] It's important to cite this phrase. This is a citation-needed paraphrase from: [C Patients with a history of one or more pregnancies have an approximately tenfold increased risk of SIU compared to women who have never given birth [22].

The following are the findings from our investigation: Of the 141 births, 67.38 percent occurred without medical assistance during the vaginal phase. Most studies have found that the pudendal nerve is negatively impacted by the use of tools during delivery [23]. Forceps have been associated to an increase in perineal and anal sphincter lacerations. Magnetic resonance imaging has shown that the risk of levator muscle injury is much higher when using forceps as opposed to a vacuum extractor [24]. However, this was not the case when vacuum extractors were used.

Urinary stress incontinence was found to be significantly more common in women older than 35 (p=0.018). The risk of urine incontinence is higher for women who give birth after the age of 40, as shown by research by Foldspang et al. [25]. It has been found by Persson et al. [18] that older mothers at the time of their first delivery have a higher risk of undergoing surgery for urine incontinence in the future. It would be great to know if pregnancy

has the same effect on pelvic connective tissue and the support supplied by the urethra regardless of age.

Our research included 141 women who had experienced urinary incontinence within the first 40 days after a vaginal delivery. Subject ages range from 18 to 45 years old, with a mean and standard deviation of 26.75 and 5.72 years, respectively. 14.18 percent of women who have given birth vaginally experience urinary stress incontinence. According to the meta-analysis [26], there is a nearly twofold increase in the likelihood of vaginal birth when compared to caesarean section due to the risk of stress urinary incontinence, with an absolute risk increase of 8%. Younger mothers feel the effect more strongly, whereas it gradually disappears with time. Vaginal birth is associated with a higher risk of urgent incontinence than caesarean section. However, vaginal birth carries only a 3% increased absolute risk. In other words, Riikka and company. No statistically significant difference was seen between natural vaginal birth and vaginal delivery assisted by medical technology (vacuum, forceps) [26]. In their study, Rortveit et al. [27] compared the caesarean delivery procedures of 669 women to those of 11,299 women who gave birth naturally (1 to 4 times). SUI was significantly linked to having a vaginal birth (OR = 2.4).

Our study found that the prevalence of urine stress incontinence was unrelated to factors including socioeconomic level, symptom duration, or body mass index. Given these results, it seems reasonable to conclude that the process of giving birth is more important than the act of childbearing itself, which has been associated to the onset of pelvic floor disorders[27]. Epidemiological and experimental studies [17, 18] support and provide credibility to this notion.

We are very aware of the limitations of our investigation. Lifestyle and behavioural factors, such as strenuous work, that may increase the risk of SUI were not included. The role of employment is among these elements. Women with more severe symptoms are also more likely to seek medical attention [28, 29]. Therefore, our results clearly understate the actual prevalence of these disorders and the current crisis.

## CONCLUSION

Our research shows that roughly 1 in every 16 women who give birth vaginally also experiences urine incontinence. The findings point to the possibility that the mechanical stress of labour increases the dangers of pregnancy. Prenatal counselling should include a thorough discussion of the benefits and risks associated with each possible method of birth. Clinicians, patients, and policymakers can all benefit from this study's data on incontinence and childbirth.

## REFERENCES

1. Haylen BT, Deridder D, Freeman RM, Swift SE, Berghmans B, Lee J, et al. International Urogynaecol Association (IUGA)/International Continence Society(ICS) joint report on the terminology for female pelvic floor dys function. *Int Urogynaecol J.* 2010;21:5-26.
2. Norton P, Brubaker L. Urinary incontinence in women *lancet* 2006;367:57-67.
3. Kocaoz S, Bilgili N, Eroglu K. Prevalence and risk factors of urinary incontinence in Turkish Nursing Homes. *Pak J Med Sci.* 2009;25(1):18-25.
4. Kocak I, Okyay P, Dunder M, Erol H, Beser E. Female urinary incontinence in the west of Turkey prevalence, risk factors and impact on quality of life. *Eur Urol.* 2005;48(4):634-641.
5. Dellu MC, Zacaro PMD, Schmit ABC. Prevalence of urinary symptoms and associated obstetric factors in adult women. *Rev Bras Fisioter* 2008;12:482-7.
6. Rizvi RM, Nazim MH. Frequency of urinary symptoms in women attending gynaecol clinics at Aga Khan University Hospital Karachi, Pakistan. *JPMA.* 2005;55:489-492.

7. Jokhio A, Rizvi R, Rizvi J, Mc Arthur C. Urinary incontinence in women in rural Pakistan prevalence, severity, associated factors and impact on life. *BJOG* 2013;120:180-186.
8. Rizvi RM, Nazim MH. Frequency of urinary symptoms in women attending Gynaecol clinics at Aga khan university hospital Karachi. *JPMA.*2005;55(11):489-92
9. Al-Badr A, Brasha H, Al-Raddadi R, Noorwali F, Ross s. Prevalence of urinary in continence among Saudi women. *Int J. Gynaecol Obstet* 2012;117:160-63.
10. Hunskaar S, Lose G, Sykes D, Voss S. The prevalence of urinary in continence in women in four European countries. *BJU Int.* 2004;93:324-30.
11. Harding CK, Thorpe AC. Surgical treatment for urinary stress in continence. *Int J. Urol* 2008;15:27-34.
12. Peyrat L, Hallot F, Bruyer F, Boutin JM, Bertrand P, Larson Y. Prevalence and risk factors of urinary incontinence in young and middle aged women. *Br J Urol Int.* 2002;89:61-6.
13. Tahir s, Abdullah A. frequency of urinary incontinence and associated obstetric and gynaecol risk factors. *J Surg Pak.* 2012;17(2):1-4.
14. Nygaard I, Barber MD, Burgio KL. Prevalence of symptomatic pelvic floor disorders in US women. *JAMA.* 2008;300:1311-6.
15. Abrams P, Cardozo L, Khoury S, Wein A, eds. Fourth International Consultation on Incontinence. Paris 2009.
16. Snooks SJ, Setchell M, Swash M, Henry MM. Injury to innervation of pelvic floor sphincter musculature in childbirth. *Lancet* 1984;2:546-50
17. Sultan AH, Kamm MA, Hudson CN, Thomas JM, Bartram CI. Anal-sphincter disruption during vaginal delivery. *N Eng J Med* 1993;329:1905-11
18. Persson J, Wolner-Hanssen P, Rydstroem H. Obstetric risk factors for stress urinary incontinence: a population-based study. *Obstet Gynecol* 2000;96:440-5.
19. Larsson C, Kallen K, Andolf E. Cesarean section and risk of pelvic organ prolapse: a nested case-control study. *Am J Obstet Gynecol* 2009;200:243.e241-4.
20. Borges JBR, Guarisi T, Camargo ACM, Gollop TR, Machado RB, Borges PCG. Incontinência urinária após parto vaginal ocesáreo Jundiaí Faculdade de Medicina Jundiaí. 2010; 8(2 Pt 1):192-6
21. Altman D, Granath F, Cnattingius S, Falconer C. Hysterectomy and risk of stressurinary— incontinence surgery: nationwide cohort study. *Lancet* 2007;370:1494-9.
22. Praun OHJ, Busato WFS, Praun LH. Epidemiologia da incontinência urinária. In Rubinstein Incontinência urinária mulher. São Paulo Atheneu 2001;p59-65.
23. Snooks SJ, Swash M, Henry MM, Setchell M. Risk factors in childbirth causing damage to the pelvic floor innervation. *Int J Colorect Dis* 1986;1:20-4.
24. Kearney R, Miller JM, Ashton-Miller JA, DeLancey JO. Obstetric factors associated with levatorani muscle injury after vaginal birth. *Obstet Gynecol.* 2006;107:144-9.
25. Foldspang A, Mommsen S, Djurhuus JC. Prevalent urinary incontinence as a correlate of pregnancy, vaginal childbirth, and obstetric techniques. *Am J Public Health.* 1999;89:209–12.
26. Riikka M, Tähtinen, Rufus Cartwright, Johnson F, Tsui, Riikka L. Aaltonen, Yoshitaka Aoki, Jovita L. Cárdenas, Regina El Dib, Kirsi M. Joronen, Sumayyah Al Juaid, Sabreen Kalantan, Michal Kochana, MalgorzataKopec, Luciane C. Lopes, Enaya Mirza, Sanna M. Oksjoki, Jori S. Pesonen, AnttiValpas, Li Wang, Yuqing Zhang, Diane Heels-Ansdell, Gordon H. Guyatt, Kari A.O. Tikkinen. Long-term Impact of Mode of Delivery on Stress Urinary Incontinence and Urgency Urinary Incontinence: A Systematic Review and Meta-analysis. *European Urology,* 2016;
27. Rortveit G, Daltveit AK, Hannestad YS, Hunskaar S. Urinary incontinence after vaginal delivery or cesarean section *N Engl J Med.* 2003;348:900–7.
28. Hannestad YS, Rortveit G, Hunskaar S. Help-seeking and associated factors in female urinary incontinence the Norwegian EPINCONT Study. Epidemiology of Incontinence in the County of Nord-Trøndelag. *Scand J Prim Health Care* 2002;20:102-7.
29. Wennberg AL, Molander U, Fall M, Edlund C, Peeker R, Milsom I. Lower urinary tract symptoms: lack of change in prevalence and help seeking behaviour in two population based surveys of women in 1991 and 2007. *BJU Int* 2009;104(7):954-9