



PREVALENCE OF URINARY INCONTINENCE IN WOMEN; EXPERIENCE OF SINGLE TERTIARY REFERRAL CENTER IN SRI LANKA

Anurudda Udaya Bandara Pethiyagoda^{1*}, Kalyani Pethiyagoda² and Jinali Pabodha Manchanayake¹

¹Department of Surgery, Faculty of Medicine, University of Peradeniya, Sri Lanka.

²Department of Community Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka.

***Corresponding Author: Anurudda Udaya Bandara Pethiyagoda**

Department of Surgery, Faculty of Medicine, University of Peradeniya, Sri Lanka.

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ABSTRACT

Introduction: Urinary incontinence is a common problem among women around the world. This study was conducted to determine the prevalence, risk factors and the impact on quality of life in Sri Lankan women. **Materials and Methods:** This descriptive cross-sectional study was conducted among 289 women (24-67 years) at Gynaecology clinics at Teaching Hospital, Peradeniya, Sri Lanka. Modified questionnaire on urinary incontinence including the questions of International Consultation on Incontinence Questionnaire- Short Form was used to assess urinary incontinence symptoms. Multiple linear regression analysis was used to find the effects of potential risk factors and chi-square test was performed for further analysis. **Results:** The overall prevalence of urinary incontinence was 11.4% and according to its type was 4.8% urge incontinence, 4.8% mixed incontinence, 1.7% stress incontinence. Statistical significance at $p < 0.05$ was accepted for all analysis. Age, body mass index, birth weight of their children, parity and mode of delivery were the significant risk factors. Furthermore, there was a significant impact on quality of their lives. **Conclusions:** Both urge and mix urinary incontinence is more frequent among Sri Lankan women. The incidence is increased, highlighting the presence of the risk factors for urinary incontinence.

KEYWORDS: Urinary Incontinence, Women, Prevalence, Risk Factors, Quality of Life.

INTRODUCTION

Urinary incontinence can be known as a common problem among women that causes a serious reduction in their quality of life. The International Incontinence Society defines Urinary Incontinence as involuntary leakage of urine.^[1] Urinary function is controlled by the brain and bladder. The bladder stores urine until ready to empty it. The pelvic floor muscles help to hold the bladder in right place. Smooth muscles of the bladder are relaxed when it holds urine in the bladder and the neck of the bladder is closed. Urine does not leak when the sphincter muscles keep the urethra closed. In urination, the brain sends a signal to the bladder and the bladder muscles contract. This enforces the urine to pass through the urethra and the sphincters open up when the bladder contracts.^[2]

There are several types of urinary incontinence which are stress, urge, mixed and overflow incontinence. Stress incontinence is the most common type of urinary incontinence among females and it is less common in males. Here, weak pelvic floor muscles let urine escaped when there is increased intra abdominal pressure; eg: exercising, bending, walking, lifting, coughing or sneezing. This amount of urine leakage can be differed

from mild to severe.^[2] Urge incontinence is where leakage of urine occurs before patient is able to go to the toilet. These affected patients may restrict activities as they may fear; they will suddenly have a urine leak. Even they may not be able to have a good sleep because they have to urinate many times during the night and also the day time. It is more likely to occur in men with prostate problems and in women after menopause. Mixed incontinence is the combination of both stress and urge symptoms together.^[2] In overflow incontinence, there is frequent or constant dribbling of urine due to incomplete emptying of the bladder. It occurs when the bladder muscles are not able to contract properly to empty the bladder.^[3] Overflow incontinence is associated with symptoms of frequent urinating of small amounts, dribbling and bed wetting. This type is rare in women and more common in men who have prostate problems.^[2]

Older age, gender, race, obesity, constipation, smoking, alcohol, caffeine, hormonal condition (hypoestrogenemia), menopause, hysterectomy, pregnancy and child birth, early return to active and heavy work schedule after birth, diuretic use, urinary infection, diabetes, neurological diseases and lung diseases are the risk factors for urinary incontinence.

Vaginal delivery, large fetus, high numbers of pregnancies, episiotomy and assisted vaginal deliveries such as forceps delivery are the most apparent risk factors among women that cause urinary incontinence.^[4]

Epidemiological study conducted in black and white older adults has shown a prevalence of urinary incontinence of 26.5% in females between 35 and 64 years and 41% in women older than 65 years.^[5] But the prevalence in Asian countries has been reported to be about 14.6% in females and 6.8% in males.^[6] The prevalence of urinary incontinence is higher among Hispanic and white women than Asian and black women. Stress urinary incontinence has been shown to be more frequent among white women and urge incontinence among black women, with no significant differences between ethnic and racial groups being found for mixed incontinence. Regarding the quantity of urine loss, white and Asian women presented low quantities of urine loss, while black and Hispanic women presented higher quantities.^[7]

The aim of the study is to obtain the prevalence of urinary incontinence and risk factors among women in Sri Lanka. Understanding the causative factors is very important to minimize the incidence of urinary incontinence by introducing the methods of prevention such as behavioral changes.

MATERIALS AND METHODS

Methodology

This descriptive cross-sectional study was conducted among women attending Gynaecology clinics at teaching hospital, Peradeniya, Sri Lanka to obtain the prevalence of urinary incontinence among women and it was conducted over one month period. Pregnant women were excluded for the study sample and 289 subjects who had given written informed consent were asked questions of modified questionnaire on urinary incontinence including the questions of International Consultation on Incontinence Questionnaire- Short Form (ICIQ- SF) by using their mother-tongue. Ethical clearance was obtained from the Ethical Review Committee, Faculty of medicine, University of Peradeniya, Sri Lanka prior to the data collection.

Statistical analysis

Multiple regression analysis was used to consider the effects of potential risk factors and chi-square test was performed to discover whether there is a relationship between categorical variables. Statistical significance at $p < 0.05$ was accepted for all analysis. Data was analysed using Statistical Package for the Social Sciences (SPSS) version 22.

RESULTS AND DISCUSSION

A total of 289 women between 24 -67 years of age were surveyed during one month period showed the average body mass index of 22.3 kgm^{-2} among study participants who had a mean age of 38.55 years. The prevalence of urinary incontinence in the studied group was 11.4% and

the majority of them had a mild to moderate severity of it. The most frequent incontinence in this group was urge and mixed incontinence by showing an equal percentages of 4.8% for both types and prevalence of stress incontinence was 1.7%. "Fig. 1".

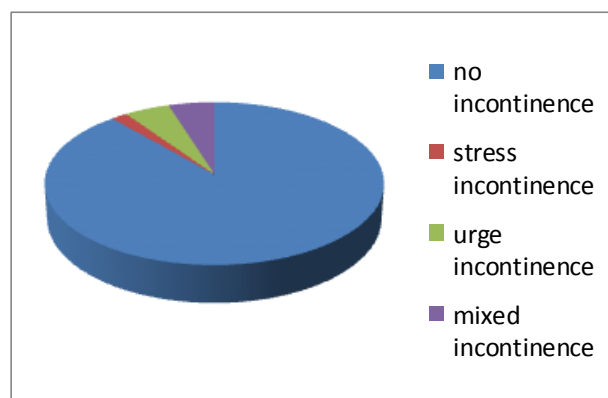


Figure. 1. most prevalent type of urinary incontinence.

Table 1 shows the relationship between the variables as possible risk factors and the presence of urinary incontinence. According to the results, there was a statistically significant association of parity and mode of delivery with presence of urinary incontinence. It was found that women who had experienced vaginal delivery 2.35 times more likely to develop urinary incontinence and multiparous women had an increased risk of experiencing urinary incontinence when compared with nulliparous women.

Table. 1: Risk factors for urinary incontinence.

variables	value	Asymptotic significance
Parity	28.796	<0.05
Mode of delivery	24.226	<0.05

Table 2 provides 0.603 of R value which represents a higher degree of correlation. In this study 36.3% of total variation in presence of urinary incontinence can be explained by body mass index, age and birth weight of their children. Furthermore, regression model statistically significantly predicts the presence of urinary incontinence. Age, body mass index and birth weight contribute statistically significantly to the model. Based on the results of Table 3, all five components used to assess the quality of life of the patients with urinary incontinence were affected by presence of urinary incontinence.

Table. 2: Regression analysis for potential risk factors.

variables	Model Summary		ANOVA			
			df		F value	significance
	R	R ²	regression	residual		
BMI, age & birth weight	0.603	0.363	3	161	30.645	<0.05

Table. 3: Components of quality of life of women with urinary incontinence.

variables	Model Summary		ANOVA				Co-efficients	
			Degree of freedom		F value	significance	t value	significance
	R value	R ² value	regression	residual				
Social	0.981	0.962	1	287	7302.30	<0.05	85.45	<0.05
Work	0.981	0.962	1	287	1333.49	<0.05	85.45	<0.05
Sexual	0.933	0.962	1	287	1937.23	<0.05	44.01	<0.05
Financial	0.903	0.816	1	287	1273.76	<0.05	35.69	<0.05
Family	0.954	0.909	1	287	2881.86	<0.05	53.683	<0.05
Overall	0.964	0.929	1	287	3746.23	<0.05	61.206	<0.05

The overall prevalence of urinary incontinence among this group of women was 11.4% and the prevalence of urinary incontinence according to its type was 4.8% mixed urinary incontinence, 4.8% urge urinary incontinence and 1.7% stress incontinence. It was found that age, body mass index, mode of delivery, parity, large baby (birth weight) were significant risk factors and associated with an increased risk of urinary incontinence. Compared with pregnant women, non pregnant women showed less prevalence of urinary incontinence in Sri Lanka.^[8]

It has been concluded that different studies which were reviewed had a wide variability according to the ethnic groups. A cohort study^[9, 10] has found women aged 37 to 54 years and 40 to 69 years experienced frequent loss of urine was more prevalent among white women (26% and 30%) and Hispanic women (26% and 36%) than among black (22% and 25%) and Asian women (18% and 19%). Present study was done in Sri Lanka which is an Asian country. It shows less prevalence (11.4%) of urinary incontinence among women aged between 24 and 67 years compared with previous studies. Among stress, urge and mixed types of incontinence, some are more common in certain ethnic groups than in others. Sears et al^[11] has found a significantly higher prevalence of stress incontinence among Hispanic women, followed by white, black and Asian women and a higher prevalence of urge incontinence among black women, followed by Hispanic, white and Asian women.

Another cohort study^[9] indicated that the amount of urine lost sufficient to wet the underwear appeared more frequently (62%) among black women (37 to 54 years) and Hispanic women (58%) than among white (53%) and Asian women (49%). This present study reveals that the amount of urine lost per day enough to wet underwear appeared more frequently among study population by showing a 60.6%, a few drops 27.3% and enough to wet outer clothes 12.1%. Majority (42.4%) of incontinent women wore sanitary pads for managing incontinence and making it more feasible to maintain a normal day to day life while 36.4% were using facial or

toilet tissues and 21.2% were changing their underwear with each episode.

Based on the results of this study, there was an impact of urinary incontinence on five components of quality of life including social life, domestic work, sexual life, financial wellbeing and family relationship. When the severity of urinary incontinence is high, there is a greater negative impact on the quality of life. A study done with 2109 women aged 40 to 69 years of different races (white, black, Hispanic and Asian) aimed to investigate the effects of urinary incontinence on general health and incontinence specific quality of life outcome scores. No variation was found in the association of urinary incontinence and quality of life by race or ethnicity.^[12] However, regarding moderate urinary incontinence, black women had higher levels of discomfort than white women, and black women with urge urinary incontinence presented higher levels of discomfort than white women with the same type of urinary incontinence.^[13]

This study can be considered as an initial step to start the plans for early detection and treatments for urinary incontinence in Sri Lanka. Further studies should be continued in order to develop and establish the validity of interventions for prevention and treatments.

CONCLUSIONS

The prevalence of urinary incontinence in general is 11.4% and mix and urge urinary incontinence has been shown to be more frequent among Sri Lankan women. Age, body mass index, mode of delivery, parity, large baby (birth weight) were significant risk factors and associated with an increased risk of urinary incontinence. Furthermore, the impact on quality of life is more related to the severity of urine loss.

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