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EPIDEMIOLOGY OF URINARY INCONTINENCE AMONG FEMALES OF AGE 20-65 YEARS

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Abstract

Background: *Urinary incontinence (UI) is said to be a condition in which there is involuntary urine loss. Around the world one third of female population are subjected to urinary incontinence (UI). The objective of this study is to calculate the prevalence of UI among pregnant females.* ***Methodology:*** *An observational cross-sectional study was conducted on 377 females of age 20-65 years. Which were selected by covenant sampling from currently non-pregnant female population of District Gujrat. Data collection took 4 month from August to December 2021 by using a standard questionnaire QUID then entered and analyzed in statistical software SPSS (version 24.00). Chi-square test was applied and p-value ≤0.05 was considered as significant.* ***Results:*** *Out of total 377, average age of pregnant females was noticed 38.49± year. Prevalence of UI was assessed 287(75.3%). And association of UI with age, parity, mode of delivery and menopause was not statistically significant.* ***Conclusion:*** *On the bases of results it is concluded that urinary incontinence is a very common issue in females, and it is not related with age, number of offspring, delivery method and menopause.*

Keywords: Menopause, Multiparous, Parity, Stress urinary incontinence, Urge urinary incontinence, Urinary incontinence

INTRODUCTION

Urinary incontinence (UI) is a condition in which urine is lost involuntarily (1). The most prevalent type of UI is stress or urge UI, which affects one out of every three women globally (2). The rate of rise in UI was found to be highest in those aged 50-59 and lowest in those aged 30-39 (3). With increasing age, the prevalence of the disease rises, and more than 20% of women over the age of 70 are afflicted (4). According to Ringa V et al., the frequency of SUI rises with age and hits a peak around the age of 50 (5).

As the parity increases, so does the UI. It ranges between 45 and 54 percent among multiparous women, but just 28 to 45 percent among nulliparous women (6, 7). The general prevalence of nulliparous is (17%) and multiparous (48%) women, respectively[4]. Only stress and mixed types of incontinence are linked with parity. However all of the effects parity seems to disappear in older age (8).

In case of mode of delivery, particularly vaginal delivery both SUI and UUI rise. UI can be increased by episiotomies; however the frequency of caesarean sections had no effect on UUI or SUI (9-12). According to Guri Rortveit and colleagues, the threat of urine incontinence is higher in women who have had caesarean sections than in nulliparous women simply because the body goes through physiological changes (13).

Urinary incontinence is more frequent in postmenopausal women 35% than in premenopausal women 47% (14). Urinary incontinence is becoming more common in postmenopausal women over 40. It's thought to be caused by detrusor instability as a result of fluctuating hormone levels throughout menopause (15). Urge incontinence was found to be strongly associated to menopause age, although stress incontinence

was not (16). It is proposed to be that UI could be caused by advancing age, parity, mode of delivery and menopause (17).

Purpose of the study was to calculate the prevalence of urinary incontinence in females concerned to age, status of parity, mode of delivery as well as association of menopause, because previous studies were not multifactor.

MATERIALS AND METHODS

A descriptive cross-sectional study was carried on the general population of Gujrat Pakistan. Study was completed from August to December 2021. Participants who have had any Childhood trauma or assault, unconsciousness, mentally disoriented, Neurological deficits (stroke, MS, GBS, cauda equina syndrome), GIT complications, Nocturnal micturition, Urinogenital complications, Urinary tract infection, Gynecological surgery, diagnosed malignancies, Pregnant females till 6 months postpartum were excluded from the study. Data were collected using standard questionnaire (QUID) from 377 currently non pregnant females by convenient non- probability sampling technique. Following formula was used to calculate sample size with a power of 80%and two sided confidence level of 95% with p-value <0.001 : -

$$n = \frac{Z^2 \left(1-\frac{\alpha}{s}\right) P\,(1-P)}{d^2}$$

DATA COLLECTION PROCEDURE

After the approval of study from ethical committee (IBR), University of Lahore written consent was taken from the eligible participants. Participants were assured that there was no harm or disadvantage of the study, their information is confidential and is only used for research purpose. They had the choice of withdrawing from the study any time. Data of the demographic variable (age, parity, mode of delivery and menopause) and UI were collected through a Performa and Questionnaire for Urinary incontinence Diagnosis (QUID), respectively. There is total six numbers of questions for urinary incontinence. Question number 1-3 accounts for SUI and question number 4-6 were related to UUI.

DATA ANALYSIS

Data were entered and analyzed in Statistical Package for Social Sciences (SPSS) version 24.00. Categorical data were displayed in frequencies and percentages. Shapiro wilk test was applied to assess the normality of numerical data. If data were normal mean and S.D. were calculated for numerical normal data while for non-normal data median and inter quartile range were calculated. For the significance, p-value ≤0.05 was considered as significant value. All data were analyzed at 95% confidence interval.

RESULTS

Data of 377 participants were analyzed to assess the prevalence of UI among non-pregnant females. Table I clearly shows the average of participants was 38.49±19 years. 73 (19.4%) women took part in the study had up to 2 number of children. While participants who had 2 to 4 children were 89 (23.6%) out of total. Out of 377 participants only 64 (17.2%) had upto 6 number of children. 10 (2.7%) females' parity count was more than 6. Rests of 141 (37.4%) participants were supposedly nulliparous. Women who gave birth via vaginal delivery mode 21 of them were asymptomatic whereas 101 participants were subjected to UI. 8 of the women were asymptomatic to UI but 12 of them have UI, were the women who have had episiotomy. Females having cesarian as a delivery option includes 23 of the asymptomatic and 50 of them showed symptoms. Among women who have had mixed deliveries 2 were asymptomatic while 19 of them reportedly have had UI. Among participants who have menopause 25 participants were asymptomatic to UI whereas 93 of them have UI. Of women who do not have menopause 69 of them showed no symptoms but 190 participants complained of UI. Table II shows that out of 377 participants169 (44.8%) women were asymptomatic to SUI whereas 149 (37.1%) showed mild symptoms. 54 (14.3%) and 14 (3.7%) women presented with moderate and severe SUI respectively. 125 (33.20%) females were asymptomatic to UUI.

Highest frequency of the participants was subjected to mild urinary incontinence which is 188 (49.9%) females, and apparently severe UUI has the lowest number of participants which was 9 (2.7%) females. Overall UI in spite of SUI or UUI, 93 (24.7%) women appeared to be asymptomatic. 206 (54.6%) women complained of mild symptoms, on the other hand only 71 (18.8%) women were subjected to moderate UI, whereas lowest frequency of participants appeared in severe UI which is just 7 (1.9%) women.

The prevalence of urinary incontinence among 377 females was observed to be 75.33% and 24.67% were not representing any symptoms (Fig. 1).

Table I. Variables of the participants selected for urinary incontinence

Variables	Category	n (%)	Mean ± standard
Age	-	-	38.5±13.9 years.
Parity (no. of children)	0 to 2	73(19.4%)	-
	2 to 4	89(23.6%)	
	4 to 6	64(17.2%)	
	more than 6	10(2.7%)	
	not applicable	141(37.4%)	
Mode of delivery	vaginal delivery	101(82%)	-
	episiotomy	12(60%)	
	cesarean	50(68.5%)	
	mix	19(90.5%)	
	not applicable	101(71.6%)	
Menopause	yes	93(78.8%)	-
	not applicable	190(73.4(%)	

Table II. Types of urinary incontinence and their varying intensities

Variables		n (%)
Stress urinary incontinence	no	169(44.8%)
	mild	140(37.1%)
	moderate	54(14.3%)
	severe	14(3.7%)
Urge urinary incontinence	no	125(33.2%)
	mild	188(499%)
	moderate	55(14.9%)
	severe	9(2.7%)
Overall urinary incontinence	no	93(24.7%)
	mild	206(54.6%)
	moderate	71(18.8%)
	severe	7(1.9%)

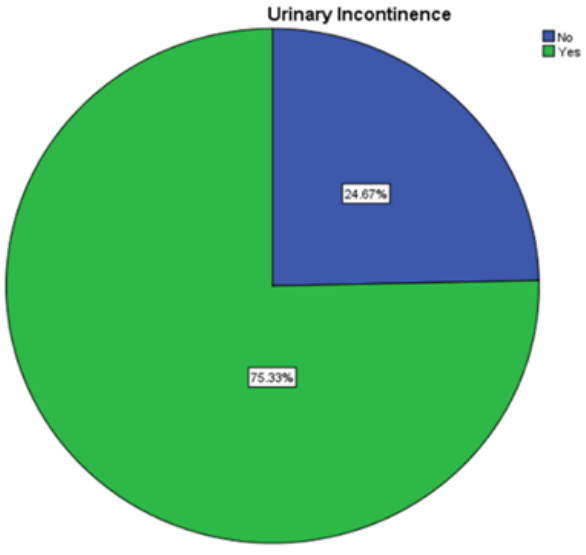

Fig. 1. The prevalence of urinary incontinence among currently non-pregnant females

Table III. Association of urinary incontinence with demographic characteristics

Urinary incontinence V/S risk factors	chi-square	d.f	p-value	spearman correlation
Age	73.772	12	0.000*	0.275
parity	14.449	4	0.006*	0.21
mode of delivery	11.549	1	0.021*	0.085
menopause	1.289	4	0.256	0.058

Table III elaborates the association of urinary incontinence with age (p<0.001), parity (p<0.006) and mode of delivery (p<0.021) was found statistically significant, whereas menopause in females was not associated with p-value.

DISCUSSION

UI is summed up as involuntary loss of urine, leading to social or hygienic Problem. Age, number of offspring, delivery method and menopause are considerate risk factor (1, 2). According to previous research by Xavier Fritel and colleagues, the prevalence of UI rises with age and tops around the age of 50, and is also influenced by hormone variations.[7] On the other hand current study shows(p<0.001) quite low positive correlation (0.275) between age and UI.

When it comes to parity, particularly vaginal birth, both SUI and UUI go up. Because it impairs the pelvic floor musculature, it's a strong risk threat for stress UI.[14], while present study (p-value<0.006) shows weak positive association (0.21) between UI and parity. Vaginal delivery technique is thought to be a powerful factor of SUI. Episiotomies itself is a potent risk factor causing both SUI and UUI, according to Roger P. Goldberget and colleagues.[14]Mean while current study (p<0.021) shows poor positive correlation (0.085) with the influence of mode of delivery on UI.

Hormone shortage after complete cessation of menstrual cycle is unlikely to play a large role in urine incontinence, according to a study by Gerda Trutnovsky and colleagues. Although menopause has been linked to urine incontinence, there is no evidence that it is a potent factor in the occurrence of urinary incontinence.[18] However the present study presented (p<0.256) very fragile correlation (0.058) of menopausal status with UI.

CONCLUSION

The outcome of this study showed that Urinary incontinence is a very usual clinical condition. It is vaguely influenced by age, parity, mode of delivery and effects of menopause on females.

Recommendations and Limitations:

Considering the given limitations, study setting and samples size, future studies could be conducted on greater samples size. Instead of general population data could be collected from few designated hospitals either from gynecological ward or urological ward.

Furthermore, diagnosed patients could be selected and pad test could be performed.

Abbreviations:

UI,	Urinary Incontinence
SUI	Stress Urinary incontinence
UUI	Urge Urinary Incontinence
MUI	Mixed Urinary Incontinence
BN	Bladder Neck
SPSS	Statistical Package for the Social Sciences
QUID	Questionnaire Urinary Incontinence Diagnosis
PFM	Pelvic Floor Muscles
BMI	Body Mass Index

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