

Frequency of Urinary Incontinence in Reproductive Age Women and Its Relationship with BMI

Urinary
Incontinence in
Reproductive
Age Women

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ABSTRACT

Objective: To frequency of urinary incontinence in reproductive age women and to compare frequency urinary incontinence with BMI.

Study Design: cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology, Dr Ruth K. M. Pfau Civil Hospital, Karachi from May, 2021 to November, 2021.

Materials and Methods: A total of 344 women of reproductive age (18-49 years) who consented to be part of study having symptoms of painless frequency of urine were included. Patients with UTI, pregnant and menopausal women were excluded. Detailed history was interviewed, using pro forma by prime researcher. BMI was calculated using weight machine in kilogram and height measured by wall mounted scale in m², weighing machine is calibrated on daily basis used by experienced prime researcher to control bias. Urine sample was calculated in sterilized containers and was sent to Diagnostic and Research Laboratory of Civil Hospital Karachi.

Results: In my study, frequency of urinary incontinence in reproductive age women was found to be 42.15% with mixed urinary incontinence in 53.79%, stress urinary incontinence in 33.10% and urge urinary incontinence in 11.03% women. My study showed incidence of urinary incontinence is 35.08% with BMI of 23-27.4, 50.98% with BMI of greater than or equal to 27.5, this result has significantly showed the association of overweight and obesity with urinary incontinence.

Conclusion: This study concluded that initial screening and treatment of urinary incontinence and its causes must be managed in all patients to avoid this disabling condition and to enhance the day to day life of these women.

Key Words: urinary incontinence, obesity, stress urinary incontinence

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INTRODUCTION

Deficiency of estrogen is the reason of these symptoms of sexual dysfunction and atrophic changes in vagina. Similarly urinary symptoms are also due to decreased estrogen and prescription of estrogen in these patients can bring a change in these symptoms.

Urinary incontinence has been recognized as a leading cause of gynecological referrals worldwide, affecting not only the quality of woman's life but also has a great psychological impact on their lives^{1,2}, affecting 12-42% of women aged <60 years^{1,3}.

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Urinary incontinence characterized by any involuntary leakage of urine, comprises different types such as; stress urinary incontinence (any leakage of urine on physical exertion or any activities involving increases intra-abdominal pressure), urge urinary incontinence (any involuntary discharge of urine preceded by a sudden desire to void); mixed urinary incontinence (having characteristics of both the above mentioned types)^{4,5}.

Though many risk factors are associated with urinary incontinence like age, parity, any chronic illness (coughing, constipation), vaginal birth, obesity, body mass index, smoking, diet, family history, among which incidence of obesity is increasing worldwide in both developed and developing countries^{1,4}. Epidemiological studies have also shown the association between both overweight and obesity with different pelvic floor disorders to which urinary incontinence stands at the top^{6,7}. A study showed incidence of urinary incontinence is 46.7% with BMI of 18.5-22.9, 63.6% with BMI of greater than or equal to 27.5, this result has significantly showed the association of overweight and obesity with urinary incontinence⁵.

A great deal of work has been done worldwide to show the possible association of increasing incidence of

urinary incontinence with increasing BMI in women of all age group but a few studies have found to establish that link to which empirical evidences are scanty^{3,6}.

Many studies are available internationally on the above-mentioned association^{3,5,8}; but few data available for Asia. The purpose of this research is to conduct a study that can determine increasing BMI as a risk factor for urinary incontinence in women of reproductive age groups in this region.

The rationale of this study was to determine the frequency of urinary incontinence and its relation with increasing BMI in reproductive age women in local population, as this condition is associated with many social and psychological problems influencing the quality of life, so by addressing how common this problem in obese population so that their social life can be improved by optimization of weight.

MATERIALS AND METHODS

It is a descriptive, cross-sectional study done in the Department of Obstetrics & Gynecology, Dr. Ruth K. M. Pfau Civil Hospital, Karachi from 26th May 2021 to 25th November 2021. The sample size of this study is 344⁵ with 95% confidence level, with 5.2% margin of error taking expected percentage of urinary incontinence with increasing BMI as 58.85%, calculated by using Openepi. The detail collection of sample size is given at the end of synopsis. It is a non-probability, Consecutive sampling. All the married/unmarried women of reproductive age (18-49 years), having BMI of ≥ 23 kg/m² who consented to be part of study having symptoms of painless frequency of urine were included. All pregnant, menopausal women and those who are having urinary tract infection at the time of participation were excluded. This study was started after approval of CPSP and Ethical review committee, after brief discussion of written informed consent was taken total 344 patient presenting in the Department of Obstetrics and Gynaecology, Dr. Ruth K. M. Pfau Civil Hospital Karachi, fulfilling the inclusion criteria were selected. Detailed history was interviewed, using pro forma by prime researcher. BMI was calculated using weight machine in kilogram and height measured by wall mounted scale in m², weighing machine is calibrated on daily basis used by experienced prime researcher to control bias. Urine sample was calculated in sterilized containers and was sent to Diagnostic and Research Laboratory of Civil Hospital Karachi to exclude any Urinary Tract Infection as per exclusion criteria, similarly all menopausal women, pregnant women were also excluded. All women were interviewed for demographic information like age, parity and their weight, height, urine sample was taken. The data was entered in predesigned proforma by the researchers.

This study was using SPSS version 20.0 or above for data entry and analysis. Quantitative variables like age,

BMI, parity, height, weight, socio-economic status were computed as mean and standard deviation or median(IQR) on the basis of normality. Normality of data was assessed by using Shapiro wilk.

Qualitative variables such as ethnicity, place of residence, type of urinary incontinence, co morbid were reported as frequency and percentage. Frequency of urinary incontinence was compared with BMI by using chi-square or Fishir exact.

Effect modified such as age, parity, BMI, ethnicity, socio-economic status, place of residence and co morbid were computed through stratification. Post stratification chi-square or Fishir exact was used taken p-value 0.05 as significant.

RESULTS

Age range in this study was from 18 to 49 years with mean age of 26.57 ± 5.19 years. Majority of the patients 278 (80.81%) were between 18 to 30 years of age a. Mean BMI was 27.92 ± 3.58 kg/m². Mean height was 162.53 ± 11.03 . Mean weight was 62.05 ± 7.80 kg. Distribution of patients with other confounding variables is shown in Table I.

Table No.1: Distribution of patients with confounding variables (n=95)

Confounding variables		Fre-quency	%age
BMI (kg/m ²)	23-27.4	191	55.52
	≥ 27.5	153	44.48
Parity	Nulliparous	50	14.53
	Multiparous	294	85.47
Ethnicity	Sindh	176	51.16
	Punjab	80	23.26
	KPK	46	13.37
	Balochistan	42	12.21
HTN	Yes	37	10.76
	No	307	89.24
DM	Yes	84	24.42
	No	260	75.58
Smoking	Yes	85	24.71
	No	259	75.29
Weight lifting	Yes	21	6.10
	No	323	93.90
Socioeconomic status	Poor	68	19.77
	Middle	177	51.45
	Upper	99	28.78
Place of living	Rural	160	46.51
	Urban	184	53.49

In my study, frequency of urinary incontinence in reproductive age women was found to be 42.15% (Figure I) with mixed urinary incontinence in 53.79%, stress urinary incontinence in 33.10% and urge urinary incontinence in 11.03% women. My study showed incidence of urinary incontinence is 35.08% with BMI of 23-27.4, 50.98% with BMI of greater than or equal

to 27.5, this result has significantly showed the association of overweight and obesity with urinary incontinence.

Table 2 shows distribution of patients according to type of urinary incontinence, showing mixed urinary incontinence as highest type of incontinence. Table 3 shows comparison of frequency of urinary incontinence with BMI, .showing significant relationship to BMI.

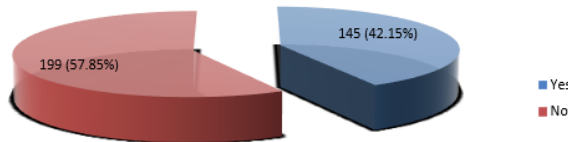


Figure No.1: Frequency of urinary incontinence in reproductive age women (n=344)

Table No.2: Distribution of patients according to type of urinary incontinence (n=145)

Types	No. of Patients	%age
Stress	48	33.10
Urge	16	11.03
Mixed	78	53.79

Table No.3: Comparison of the frequency of urinary incontinence with BMI

BMI (kg/m ²)	urinary incontinence		P-value
	Yes	No	
23-27.4	67 (35.08%)	124 (64.92%)	0.003
≥27.5	78 (50.98%)	75 (49.02%)	

DISCUSSION

Leakage of urine is a day to day issue and mostly a symptom of women after menopause. Patients are increasing yearly and lack of exercise may be a contributing factor.⁹ Epidemiological studies conducted on UI show that the condition is 2-3 times more common in women⁹, Urinary incontinence is observed in women of all ages.⁹⁻¹¹ Studies have shown that the range of its prevalence is high.¹² Similar conclusion has been given by studies conducted in Turkey.⁹ Patients with this complaint usually present late as this condition is considered as a social stigma¹³⁻¹⁴

I have conducted this study to determine the frequency of urinary incontinence in reproductive age women and to compare frequency urinary incontinence with BMI. Age range in this study was from 18 to 49 years with mean age of 26.57 ± 5.19 years. Majority of the patients 278 (80.81%) were between 18 to 30 years of age. In my study, frequency of urinary incontinence in reproductive age women was found to be 42.15% with mixed urinary incontinence in 53.79%, stress urinary incontinence in 33.10% and urge urinary incontinence in 11.03% women. My study showed incidence of

urinary incontinence is 35.08% with BMI of 23-27.4, 50.98% with BMI of greater than or equal to 27.5, this result has significantly showed the association of overweight and obesity with urinary incontinence. A study showed incidence of urinary incontinence is 46.7% with BMI of 18.5-22.9, 63.6% with BMI of greater than or equal to 27.5, this result has significantly showed the association of overweight and obesity with urinary incontinence⁵.

Several studies have reported the association of age with prevalence of UI.¹⁴⁻¹⁹ In another study risk of Stress urinary incontinence was far higher than Urge urinary incontinence.¹³ According to this study urinary incontinence gets higher with increasing age. According to different studies risk factors for incontinence is related to increased Body mass index, increasing parity, miscarriages, younger age at first pregnancy, removal of uterus, menopause, previous infections of urine, precipitating factors such as cough, straining at stool and certain medical condition such as DM.¹⁴⁻¹⁸ Other studies reported mixed impact of these risk factors on urinary incontinence.¹⁹⁻²³

Considering the height weight ratio irrespective of age and deliveries, according to one study showed that the stress urinary incontinence is two times more as compared to women with lesser BMI. The Study also concluded that stress incontinence has led to other psychological issue as well such as lack of interest, loss of sleep and other similar problems.²⁴

Cummings JM²⁵ had similar conclusion regarding Body mass index as a contributing factor for stress incontinence.

CONCLUSION

This study concluded obesity has strong association with urinary incontinence. Sowe recommend optimization of BMI for prevention of incontinence in at risk patients as well as first strategy for management.

Author's Contribution:

Concept & Design of Study: Namia Nazir
 Drafting: Gulfishan Haq, Farah Kareem
 Data Analysis: Daniya Khan, Erum Nawaz, Anum Farhan
 Revisiting Critically: Namia Nazir, Gulfishan Haq
 Final Approval of version: Namia Nazir

Conflict of Interest: The study has no conflict of interest to declare by any author.

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