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PREVALENCE, RISK FACTORS, AND IMPACT OF URINARY INCONTINENCE IN MALE AND FEMALE POPULATIONS IN PAKISTAN: A CROSS-SECTIONAL STUDY

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Abstract

Introduction: *Urinary incontinence is a common, but often underreported health issue that impacts both men and women, leading to physical discomfort, emotional distress, social avoidance and decreased quality of life.*

Objective: *To find out the prevalence of urinary incontinence, associated risk factors and effect of urinary incontinence among male and female patients attending a primary health care center in Sikanderabad, Karachi, Pakistan.*

Methods: *This cross-sectional study was conducted from March 2025 to August 2025 at a Primary Health Care Center, Sikanderabad, Karachi. The number of patients was 80; male and female, age 18 years and above, collected through consecutive sampling. A structured questionnaire was used to gather data on demographic information, urinary symptoms and risk factors, and quality-of-life impact.*

Results: *34 participants (42.5%) reported urinary incontinence. This was more prevalent in females than males. The following factors were identified as major risk factors: increasing age, obesity, multiparity, vaginal delivery, diabetes, hypertension, chronic cough and constipation. The effects were often emotional, sleep and social avoidance.*

Conclusion: *Urinary incontinence is common in both genders and requires routine screening, awareness, counseling, and early management at the primary care level.*

INTRODUCTION

Urinary incontinence is a common, but frequently unrecognized, public health issue defined as the unintentional loss of bladder control, and may involve dribbling urine or the loss of bladder control on a frequent basis that disrupts the individual's ability to function normally. It is not a life-threatening condition, but it can have significant physical, psychological, social and economic impact. Urinary incontinence is still shrouded in embarrassment, cultural hesitation and lack of awareness in Pakistan and is frequently not diagnosed, or treated, and managed, until long after it has occurred. Data from the Pakistani population indicates that urinary incontinence is particularly

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prevalent in females including pregnant women, where hormonal changes, intra-abdominal pressure and strain of the pelvic floor are responsible for bladder control issues, which affect quality of life (1). Young women are also affected and the stereotype that urinary incontinence is an old age disorder is not true. In Pakistan, studies of young female adults have reported urinary leakage associated with lifestyle, physical activity, BMI, constipation, and lack of pelvic floor awareness (2).

Urinary incontinence is common in women with reproductive or pelvic complaints in gynecology outpatient clinics, and routine screening in the outpatient department may be a way to identify hidden cases (3). Post-menopausal women are also a high-risk group due to the association of estrogen deficiency, pelvic floor weakness, aging-related changes in tissue and coexistent chronic conditions with urinary symptoms (4). Urinary incontinence does not only occur in everyday or clinical populations. Leakage can occur in athletes through repeated high impact movements, abdominal pressure and stress to the pelvic floor and gender-based analysis is crucial as both male and female athletes may be at risk for different patterns of leakage and symptom severity (5). Pregnancy-related factors are also relevant, as the parity, mode of delivery, fetal weight and the pressure on the pelvis during pregnancy can play a role in urinary leakage during and after pregnancy (6).

Stress urinary incontinence can be overlooked in young female university students, as they may become accustomed to the symptoms, not be aware of treatment options, or avoid talking about it because of embarrassment (7). Female LUTS in Pakistan further suggests that urinary symptoms do not occur in isolation, but are associated with other symptoms which are part of a broader population-based evidence (8). Marital status, reproductive history and childbirth are significant factors in urinary incontinence in females. Women who are married in Pakistan might be at greater risk because of their pregnancy, repeated delivery, pelvic trauma, household burden, and restricted access to preventive pelvic health education (9). Urinary incontinence can become more common during pregnancy due to the growing size of the uterus and the increased pressure it places on the bladder, as well as obesity and a history of urinary symptoms (10).

Clinical studies conducted in urology and gynecology have demonstrated that urinary incontinence has been undiagnosed in patients with other complaints, suggesting that many patients with urinary incontinence may be missed unless clinicians specifically ask about urinary symptoms (11). While most literature concentrates on the female experience, men are also affected by urinary incontinence and it should be considered as an aspect of the wider problem of adult health. There is epidemiological evidence from adults in other countries that suggest that urinary incontinence should be studied in both sexes, as age, chronic disease, obesity, smoking, neurological disease and urinary tract disease could affect the prevalence of urinary incontinence in men and women (12). For Pakistani women, urinary incontinence has been linked to a decrease in quality of life, such as emotional distress, sleep disturbances, decreased mobility, avoidance of social events, sexual issues, and withholding treatment (13). Older adults may be particularly vulnerable due to dependency, comorbid illness, hospitalization, and embarrassment, which may diminish help-seeking even when symptoms are quite pronounced (14).

Male urinary incontinence is a topic of special interest in Pakistan due to its lesser degree of public discussion and the possibility of its being overlooked in primary care. Urinary leakage can be a problem for men with enlarged prostate, UTI, diabetes, neurological problems, pelvic surgery, obesity and post viral weakness. There is recent evidence that male populations can also be affected by post-COVID, and that urinary incontinence may be associated with systemic weakness or inflammatory effects or deterioration of health following infection (15). Normal vaginal delivery is still a significant risk factor for women, as the pelvic floor muscles and connective tissues may be stretched or injured during childbirth,

Frontier in Medical & Health Research

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resulting in different levels of severity of urinary incontinence after delivery (16).

Although there is growing evidence from Pakistan, there are significant gaps. Most of the studies are restricted to specific groups of females, such as pregnant women, married women, women after menopause, women at university, and women during the postpartum period; and fewer studies compare the male and female population of the same community. PHC is an important opportunity to detect urinary incontinence in common patients, not attending specialist urology or gynecology clinics. A cross-sectional study in primary health care center, Sikanderabad, Karachi, can therefore help to estimate the prevalence of urinary incontinence in both male and female patients, identify associated risk factors and evaluate the impact of urinary incontinence on daily life. This is required for better awareness, screening, counseling, pelvic floor education, referral pathway and culturally appropriate management strategies in Pakistan.

Objective: To determine the prevalence, associated risk factors, and impact of urinary incontinence among male and female patients attending a primary health care center in Sikanderabad, Karachi, Pakistan.

Materials And Methods

Study Design: Cross-sectional study.

Study Setting: Primary Health Care Center, Sikanderabad, Karachi.

Duration of the Study: March 2025 to August 2025.

Inclusion Criteria: All male and female patients aged 18 years and above who were attending the primary health care centre during the study period were included. Patients who were willing to participate and had given informed consent were recruited, irrespective of whether they had had complaints of urinary symptoms or other complaints of general health.

Exclusion Criteria: Patients who refused to participate, could not give reliable information, or had a severe cognitive impairment were excluded. Patients with acute critical illness or emergency conditions that require immediate referral were also excluded.

Methods

The number of patients enrolled in the study was 80 male and female patients who met the inclusion criteria and were selected through non-probability consecutive sampling technique. A structured questionnaire was used to collect data on informed consent, demographic information, medical history, obstetric history (in females), lifestyle factors, and urinary symptoms. Incontinence of urine was defined as any leakage of urine reported by the participant. Data was gathered on type of incontinence, urinary leakage frequency, potential risk factors, length of symptoms, seeking incontinence treatment, and effects on daily activities, social life, sleep and emotional health. Data were cross checked for completeness and entered for analysis. Categorical variables like gender, age group, urinary incontinence, risk factors and symptom severity were expressed as frequencies and percentages. Standard deviation and mean were calculated for continuous data if applicable. Results were reported in tables and descriptive format to emphasize prevalence, associated factors, and overall impact.

Results

In total 80 participants were involved in the study. Out of these, 48 were females and 32 were males. Overall, there was a urinary incontinence prevalence of 42.5%, with 34 participants reporting urinary incontinence. Females were more likely to have urinary incontinence than males (24 females vs. 10 males). The most common age was above 45 years.

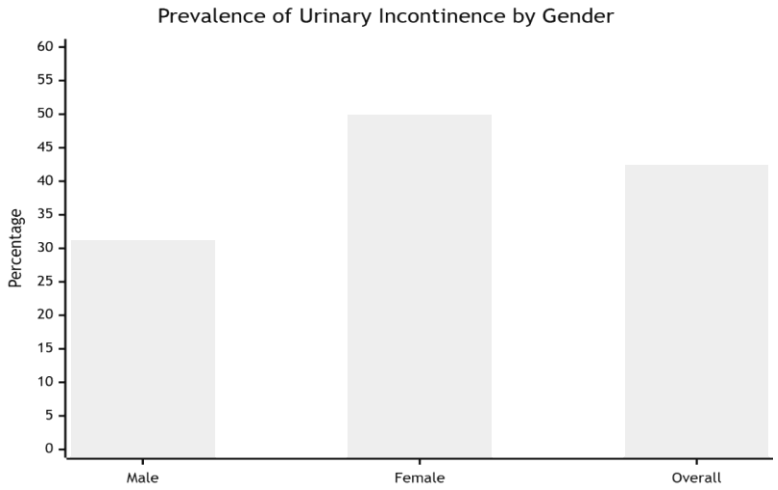
Variable	Total Participants	Urinary Incontinence Present	Percentage
Male	32	10	31.3%
Female	48	24	50.0%

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Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Variable	Total Participants	Urinary Incontinence Present	Percentage
Total	80	34	42.5%



With respect to age distribution, urinary incontinence was less common in younger participants and was more common with age. The burden of symptoms was greater in participants aged 46-60 years and those aged >60 years. Leakage during coughing, sneezing, lifting weight or exertion was more commonly reported by female participants, and urgency-related leakage and post-void dribbling were more commonly reported by male participants.

Type of Urinary Incontinence	Frequency	Percentage among UI Cases
Stress urinary incontinence	13	38.2%
Urge urinary incontinence	9	26.5%
Mixed urinary incontinence	8	23.5%
Overflow/functional incontinence	4	11.8%
Total	34	100%

Common associated risk factors included increasing age, multiparity or previous vaginal delivery in females, obesity, diabetes, chronic cough, constipation and post-menopausal status. In males, urinary symptoms were more common in older men and men who had diabetes or suspected complaints that were related to the prostate. A high proportion of participants had more than one risk factor, indicating that urinary incontinence is typically multifactorial and not caused by a single factor.

Risk Factor	Frequency among UI Cases	Percentage
Age above 45 years	19	55.9%
Obesity/overweight	15	44.1%
Multiparity/vaginal delivery	14	41.2%

Frontier in Medical & Health Research

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Risk Factor	Frequency among UI Cases	Percentage
Diabetes or hypertension	11	32.4%
Chronic cough/constipation	10	29.4%

Urinary incontinence had a negative impact on several aspects of life. The most frequently reported effects were emotional distress and problems with day-to-day activities, followed by avoiding social events. Sleep disturbance was also reported, particularly for participants who had urgency and night-time symptoms. Low treatment-seeking behavior was observed with only 9 participants having sought medical attention before.

Impact of Urinary Incontinence	Frequency	Percentage among UI Cases
Emotional distress/embarrassment	20	58.8%
Difficulty in daily activities	18	52.9%
Social avoidance	15	44.1%
Sleep disturbance	12	35.3%
Sought medical treatment	9	26.5%

Discussion

The present cross sectional study revealed that health problem of urinary incontinence was common among the patients visiting primary health care centre in Sikanderabad, Karachi. In all, 34 (42.5%) participants reported involuntary leakage of urine. This discovery indicates that urinary incontinence is not a rare occurrence in the local population, and can go undiagnosed unless the patient is directly asked if they have symptoms. The same has been observed in pregnant women in Pakistan in which urinary incontinence was linked with physical discomfort, emotional distress and diminished quality of life (1). Urinary incontinence was more common in females than males in the present study, with 50.0% of females having urinary incontinence and 31.3% of males. This increased burden in the female may be attributed to the effects of pregnancy and childbirth, hormonal fluctuations, the weakening of the pelvic floor and the post-menopausal changes.

But young and middle-aged participants were also incontinent of urine, indicating that urinary incontinence does not just occur in old age. Other Pakistani studies of young female adults also identified urinary incontinence in younger age groups, suggesting that urinary incontinence can start earlier than thought (2). The results of this research are also in line with the evidence-based findings from hospital-based gynecology outpatient departments which have reported urinary incontinence in women in various reproductive and pelvic health complaints (3). Many of the female subjects in our study said they experienced leakage when coughing, sneezing, lifting weights or being active, a common symptom of stress urinary incontinence. The importance of post-menopausal status as an associated factor was also confirmed, consistent with previous studies showing a link between ageing and hormonal decline with a decline in bladder control and pelvic support (4).

In this study, stress urinary incontinence was the most frequent followed by urge and mixed urinary incontinence. This pattern could be associated with recurrent intra-abdominal pressure rises, pelvic floor strain, obesity, and pelvic weakness due to childbirth. Among athletes, evidence has also suggested that there may be a risk for urinary leakage with physical exercise and high-impact movement, albeit potentially different in males and females (5). The physiological changes during pregnancy, such as the pressure of the uterus on the bladder and the stretching of the tissues in the pelvis,

Frontier in Medical & Health Research

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could also contribute to urinary incontinence in women (6). One of the other important findings was that urinary incontinence had an impact on daily functioning and emotional well-being. The participants expressed embarrassment, social avoidance, sleep disturbance, and inability to do daily work. The effects of urinary incontinence are significant as urinary incontinence is often regarded as a minor symptom and the impact on personal confidence and social life can be significant.

Previous studies conducted with young female university students have also revealed that there is low awareness about treatment and many affected individuals are reluctant to seek treatment due to a belief that the symptoms are normal and embarrassment to discuss them (7). This is further supported by population-based evidence of female lower urinary tract symptoms in Pakistan, which indicates that LUTS are common and need to be addressed in the public health arena (8). Factors such as marital and reproductive status seemed to be associated with urinary incontinence in female participants. In the current study, multiparity and history of vaginal delivery were common among the affected women. The same has been found in married females of Pakistan, where reproductive history, childbirth and stress on pelvic floor were found to be associated with urinary leakage (9). Pregnant women are also at risk because of the pressure on the bladder, hormonal changes and weakening of pelvic tissues during pregnancy (10). Thus, antenatal and postnatal counseling should include information on awareness of pelvic floor exercises, early reporting of symptoms and treatment options available.

The present study also revealed that urinary incontinence was present not only in patients who presented to the health center for urinary symptoms, but also for general complaints. This is in line with earlier clinical studies that urinary incontinence can be detected in patients who attend urology and gynecology clinics for other complaints (11). Other epidemiological evidence in adults further indicates that urinary incontinence is a multifactorial condition influenced by age, sex, obesity, chronic disease and lifestyle (12). In this study, obesity, diabetes, hypertension, chronic cough and constipation were associated risk factors and it was concluded that urinary incontinence should be evaluated in the context of general medical conditions. The effects on quality of life that were seen in this study were significant. Many affected participants reported emotional distress and embarrassment and this may contribute to silence and delayed treatment.

Pakistani evidence has also confirmed that urinary incontinence has a negative impact on quality of life and many women refrain from seeking help even though they have symptoms (13). Only a few participants who were affected had sought help from a physician in the past, which was low in the present study. This is similar to studies conducted among older adults, who had decreased treatment-seeking behavior due to shame, dependency, awareness issues, and poor communication with health care providers (14). In the present study, symptoms of urinary incontinence were also found among males, although this is a topic that has received less research attention than in females. Male urinary incontinence can be associated with age, diabetes, urinary tract issues, prostate related symptoms, neurological weakness or post-infectious health changes. In recent years, there have been similar findings in Pakistan in post-COVID males that urinary incontinence can also be a problem in males and should not be overlooked (15).

An important risk factor for females is normal vaginal delivery due to the potential for stretching and/or damage to the pelvic floor muscles and connective tissues during childbirth, which can exacerbate urinary incontinence after delivery (16). In summary, the results show the importance of screening urinary incontinence at the primary care level on a regular basis. Early detection can be achieved through simple questions on urine leakage, urgency, frequency, childbirth history, chronic disease and impact on daily life. Health education should include reducing stigma, seeking early advice, performing exercises for the pelvic floor, maintaining a healthy weight, diabetes control, and constipation/chronic cough treatment. Despite

Frontier in Medical & Health Research

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the small number of patients and single centre design, the findings of this study offer local evidence of the prevalence of urinary incontinence in both males and females and its impact on daily life.

Conclusion

The study revealed that urinary incontinence was a common health problem among the patients attending Primary Health Care Center, Sikanderabad, Karachi, and 42.5% of the 80 patients were found to have urinary incontinence. The condition was more common in females than males, primarily because of pregnancy, multiparity, vaginal delivery, weakness of the pelvic floor, and post-menopausal changes. Male urinary incontinence was also noted, however, indicating that this is not just a female disorder. Associated risk factors were important such as increased age, obesity, diabetes, hypertension, chronic cough and constipation. Urinary incontinence was a significant factor affecting the quality of life, leading to embarrassment, emotional distress, sleep problems, restriction of activities and social avoidance. Low treatment seeking behavior pointed to the need for increased awareness. The burden of urinary incontinence can be reduced in Pakistan if screening, early counselling, pelvic floor education, lifestyle modification and timely referral at primary care level is done.

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