



Urinary Incontinence and Its Social Burden - A Comprehensive Review on Risk Factors, Prevalence and Opportunistic Screening Approach

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(Received: 25 October 2025 Revised: 27 November 2025 Accepted: 16 December 2025)

KEYWORDS

Urinary incontinence,
Quality of life
Treatment, Pelvic
floor muscle training,
Opportunistic
screening, Age-
related changes,
Vaginal delivery,
Obesity

ABSTRACT:

Urinary incontinence, defined as involuntary urine leakage, affects millions of women worldwide, compromising quality of life. Prevalence increases with age: 25% of young women, 44-57% of middle-aged women, and 75% of elderly women are affected. Risk factors include vaginal delivery, obesity, and age-related changes. Comprehensive evaluation involves medical history, physical examination, and diagnostic tests. Treatment options range from lifestyle changes and physical therapy to medications and surgery. Nonsurgical approaches, such as pelvic floor muscle training, can effectively manage symptoms. Urinary incontinence significantly impacts physical, emotional, and social well-being. Opportunistic screening is crucial to identify and address this condition. Raising awareness and understanding can empower healthcare providers to address urinary incontinence, improving women's lives and overall well-being.

1. Introduction

In 1998, the World Health Organization (WHO) officially recognized Urinary Incontinence as a disease, marking a significant milestone in raising awareness about this prevalent condition that affects millions of people worldwide [1]. This acknowledgment underscored the need for increased understanding and attention to this often-stigmatized issue.

According to the International Continence Society (ICS), Urinary Incontinence is defined as a storage symptom characterized by the complaint of any involuntary loss of urine, regardless of whether it causes social or hygienic problems [2]. This comprehensive definition emphasizes the involuntary nature of urine leakage, highlighting the impact on a person's quality of life. The ICS definition encompasses various types of urinary incontinence, including stress incontinence, urge incontinence, and mixed incontinence.

A joint report from the International Urogynaecological Association (IUGA) and the International Continence Society (ICS) provides recommendations on terminology for female pelvic floor dysfunction. Notably, the report

defines "Incontinence" as the complaint of any involuntary leakage of urine, providing a clear and concise description of this symptom [1,2].

Urinary incontinence is a complex issue with significant implications for individuals and society as a whole. Its prevalence is substantial, affecting people of all ages, though it is more common among older adults and women. The causes of urinary incontinence are diverse, including age, gender, pregnancy, childbirth, menopause, and certain medical conditions.

The impact of urinary incontinence on quality of life can be profound, leading to social isolation, emotional distress, and decreased overall well-being. Despite its prevalence and impact, urinary incontinence remains an underdiscussed topic, often due to feelings of shame or embarrassment among those affected.

The adoption of standardized terminology, as recommended by the IUGA and ICS, is crucial for improving diagnosis and treatment. By using clear and consistent language, healthcare professionals can better understand and address the needs of individuals affected by urinary incontinence.



Urinary incontinence is a complex issue that affects millions of people worldwide, and understanding its various types is crucial for effective management. There are several types of urinary incontinence, each with distinct characteristics and causes.

Stress urinary incontinence is the most common type, affecting people of all ages. It occurs when the muscles that support the bladder are weakened, causing involuntary leakage of urine during increased intra-abdominal pressure, such as when sneezing, coughing, exercising, or lifting heavy objects. This type of incontinence is often seen in women who have undergone childbirth or have experienced pelvic floor trauma.

Urge urinary incontinence, on the other hand, is more common in older adults. It is characterized by a sudden, intense urge to urinate, often accompanied by involuntary leakage of urine. This type of incontinence is often associated with overactive bladder syndrome, which is a urodynamic diagnosis marked by involuntary detrusor contractions during the filling phase, accompanied by frequency and nocturia.

Mixed incontinence is a combination of stress and urge urinary incontinence, and it can be challenging to treat. Overactive bladder syndrome is a condition that affects millions of people worldwide, causing significant distress and impacting quality of life.

In addition to these types of incontinence, there are several reversible causes that can contribute to urinary incontinence. These include delirium, infection, atrophic urethritis and vaginitis, restricted mobility, excessive urine production, and certain medications. Identifying and addressing these underlying causes can often resolve the incontinence.

Delirium, or acute confusion, can cause incontinence due to the person's inability to communicate their needs or respond to the urge to urinate. Infections, such as urinary tract infections, can also cause incontinence, and treating the underlying infection can resolve the issue.

Atrophic urethritis and vaginitis, often caused by hormonal changes, can lead to incontinence, and treating the underlying hormonal imbalance can help alleviate symptoms. Restricted mobility, whether due to injury, illness, or disability, can make it difficult for individuals to reach the bathroom in time, leading to incontinence.

Excessive urine production, often seen in conditions such as diabetes or heart failure, can also contribute to incontinence. Managing the underlying condition and adjusting fluid intake can help alleviate symptoms.

By understanding the different types of urinary incontinence and identifying reversible causes, healthcare professionals can develop effective treatment plans to improve the quality of life for individuals affected by this condition.

2. Prevalence

Urinary incontinence is a widespread issue affecting women across various age groups. Studies suggest that approximately 25% of young women between 14 and 21 years old experience involuntary loss of urine. This prevalence increases significantly with age, affecting 44% to 57% of middle-aged and postmenopausal women between 40 and 60 years old. In elderly women aged 75 and above, the prevalence is even higher, affecting around 75% of this population.

The types of urinary incontinence affecting women vary, with stress urinary incontinence (SUI) being the most common, accounting for approximately 50% of cases. Mixed urinary incontinence (MUI) follows, representing around 32% of cases. Urge urinary incontinence (UUI) affects about 14% of women, while other types of incontinence make up the remaining 4%.

These statistics highlight the significant impact of urinary incontinence on women's quality of life, emphasizing the need for awareness, education, and effective management strategies. The increasing prevalence with age suggests that hormonal changes, pelvic floor trauma, and other age-related factors contribute to the development of urinary incontinence.

3. Methodology

A comprehensive literature search was conducted to gather all relevant published articles on urinary incontinence. This involved searching multiple databases, including PubMed (Medline), Google Scholar, Scopus, Cochrane Database of Systematic Reviews, and Cochrane Library.

To ensure a thorough search, specific keywords were used in combination with "urinary incontinence", such as classification, assessment, physiotherapy, pharmacotherapy, complementary alternative treatment,



non-surgical treatment, and female or women. This approach aimed to capture a wide range of studies focusing on various aspects of urinary incontinence in women.

The search was limited to English-language full publications and English-published abstracts, including case reports, prospective studies, clinical trials, and scientific guidelines. This ensured that the review focused on high-quality, relevant studies that could provide valuable insights into the subject.

The extracted data were then reviewed and presented in a manner that provides a comprehensive overview of urinary incontinence, covering its classification, assessment, and various treatment options, including physiotherapy, pharmacotherapy, and complementary alternative treatments. The goal was to provide a thorough understanding of the current state of knowledge on urinary incontinence in women, highlighting areas for further research and clinical application.

4. Risk factors for incontinence

The relationship between mode of delivery and parity is strongly associated with incontinence in younger women, with research suggesting that vaginal delivery is a significant risk factor [7-10]. Studies have consistently shown that women who have had vaginal deliveries are at a higher risk of developing urinary incontinence, particularly stress urinary incontinence.

Interestingly, however, this association changes with age. In women 60 years and older, parity is no longer an independent risk factor for incontinence [8]. This suggests that other factors, such as age-related changes, become more significant contributors to incontinence in older women.

Our research, consistent with other studies, identified a history of vaginal delivery as a significant correlate of a heightened risk of urinary incontinence [3,4,5]. This highlights the importance of considering obstetric history when assessing a woman's risk of developing incontinence.

In addition to mode of delivery and parity, other factors contribute to incontinence severity. Obesity, for example, is a significant risk factor, as it increases pressure on the pelvic floor muscles. Levator ani muscle strength is also an important factor, with 20% of women developing a

visible defect in these muscles after vaginal delivery. Age and cognitive impairment are also associated with incontinence severity, highlighting the complex interplay of factors contributing to this condition.

These findings emphasize the need for a comprehensive approach to assessing and managing urinary incontinence in women, taking into account their obstetric history, lifestyle factors, and overall health status.

5. Evaluation and assessment of the condition

The initial evaluation of a patient with urinary incontinence involves a comprehensive approach to understand the nature and severity of the symptoms, as well as their impact on the patient's quality of life. A thorough medical history is taken to identify any underlying medical conditions, previous surgeries, or medications that may be contributing to the incontinence.

To assess the patient's quality of life, standardized questionnaires are often used, such as the I-QOL (Incontinence Quality of Life Questionnaire), ICIQ-UI (International Consultation on Incontinence Questionnaire - Urinary Incontinence), ISI (Incontinence Stress Index), RUIS (Revised Urinary Incontinence Scale), LSA (Life Space Assessment), UDI-6 (Urogenital Distress Inventory), EPI (Estimated Percent Improvement), and PSQ (Patient Satisfaction Question). These tools help healthcare providers understand the patient's symptoms, their impact on daily life, and the patient's goals and expectations for treatment.

In addition to questionnaires, simple tests are often performed at the primary care level to assess the patient's symptoms and identify potential underlying causes. These tests may include a voiding diary, urinalysis, and postvoid residual volume measurement. Urodynamics, including uroflowmetry and filling cystometry, may also be performed to assess bladder function and identify any abnormalities.

To assess urethral competence and the mobility of the urethrovesical junction, other tests may be used, such as the Q-tip test, POP-Q (Pelvic Organ Prolapse Quantification), Bonney test, Marshall test, and Fluid-Bridge test. These tests help healthcare providers evaluate the patient's urethral support and identify any potential issues with bladder neck mobility.



Imaging tests, such as ultrasound or MRI, may be used to evaluate the pelvic floor muscles and identify any structural abnormalities. Neurophysiologic tests, such as pudendal nerve terminal motor latency and electromyography (EMG), are occasionally used to assess the nerve function and muscle activity of the pelvic floor.

Overall, the initial evaluation of a patient with urinary incontinence involves a comprehensive approach that incorporates questionnaires, physical examination, and diagnostic tests to understand the underlying causes of the symptoms and develop an effective treatment plan.

6. Treatment : Non-surgical and Surgical

Nonsurgical treatment options for urinary incontinence focus on addressing lifestyle factors, strengthening pelvic floor muscles, and using medications to manage symptoms.

Lifestyle changes play a crucial role in managing urinary incontinence. Decreasing caffeine intake, quitting smoking, and maintaining a healthy weight can help alleviate symptoms. These changes can be effective in reducing the frequency and severity of incontinence episodes.

Physical therapy is another key component of nonsurgical treatment. Pelvic floor muscle training, also known as Kegel exercises, can help strengthen the muscles that support the bladder and urethra. Behavioral therapy, including bladder training and scheduled toileting programs, can also help patients manage their symptoms. Vaginal devices, such as pessaries, and urethral inserts are available for treating stress urinary incontinence.

Medications can also be used to manage urinary incontinence. For stress incontinence, medications like imipramine, ephedrine, phenylpropanolamine, and norepinephrine may be prescribed. However, conjugated estrogen with or without progestin should not be prescribed for the prevention or relief of urinary incontinence.

For urge incontinence, medications like oxybutynin, solifenacin, and darifenacin are commonly used. These medications work by relaxing the bladder muscle and increasing bladder capacity.

When nonsurgical treatments are ineffective, surgical options may be considered. For stress incontinence, retropubic urethropexy, also known as colposuspension, is a surgical procedure that involves suspending the urethra to the pubic bone. The Burch procedure and

Marshall-Marchetti-Krantz (MMK) procedure are examples of retropubic urethropexy.

Minimally invasive sling surgery is another surgical option for stress incontinence. The transobturator tape procedure, also known as TOT, involves placing a sling under the urethra to provide support. This procedure is often performed on an outpatient basis and has a shorter recovery time compared to traditional surgery.

These treatment options highlight the range of choices available for managing urinary incontinence. By working with a healthcare provider, patients can determine the best course of treatment to address their individual needs and improve their quality of life.

7. Opportunistic screening approach

Urinary incontinence is a significant health issue affecting women across all age groups, with a substantial impact on their quality of life. Despite its prevalence, urinary incontinence remains an underreported condition, largely due to social stigma and embarrassment. As a result, opportunistic screening approaches are necessary to identify and address this debilitating condition.

The prevalence of urinary incontinence, including stress, mixed, and urge incontinence, is likely higher than reported, highlighting the need for increased awareness and proactive screening. The wide variation in disease burden can be attributed to differences in definitions used, study populations, and methodologies employed.

Research has shown that the quality of life (QOL) in women with urinary incontinence is significantly worse than those without the condition. All aspects of life, including physical activity, travel, social relationships, and emotional health, are negatively affected. These findings are consistent with studies conducted in other parts of the world, emphasizing the universal impact of urinary incontinence on women's lives. (6)

The effects of urinary incontinence on QOL are far-reaching, affecting not only physical health but also emotional and social well-being. Women with urinary incontinence may experience feelings of shame, anxiety, and depression, leading to social isolation and decreased participation in daily activities. By acknowledging the significance of urinary incontinence and its impact on QOL, healthcare providers can take proactive steps to identify and address this condition, improving the lives of women affected by it.

APPENDIX 1



QUESTIONNAIRE FOR URINARY INCONTINENCE

Date of filling questionnaire.....
Filled by Dr.....
Name.....Age.... Sex.... Reg No.....
Address.....
Parity..... Type of delivery

Menopause.....
Weight (kg).....Height (cm).....
BMI (kg/m²)

Ph. No..... e-mail.....
Occupation.....

1. Do you have complaint of urinary leakage/N
2. How long have you leaked urine?.....Years/months
3. How often do you leak urine?
 - a. Several times a day
 - b. Once a day
 - c. 2-3 times a week
 - d. Once a week
 - e. Occasional
4. Which of the following activates leakage?
 - a. Exercise
 - b. coughing
 - c. sneezing
 - d. laughing
 - e. lifting
5. Do you wake up in night to urinate more than once?
Y/N
6. Check anything that has occurred when you urinate
 - a) Difficulty in getting urine started Y/N
 - b) Very low stream/ dribbling/ discomfort, burning/pain Y/N
 - c) Blood in urine Y/N
 - d) Feeling of incomplete emptying Y/N
 - e) Loss of urine in sudden / large amounts Y/N
 - f) Stopping and starting urine stream Y/N
7. Have you undergone hysterectomy or any surgery for prolapsed? Y/N
8. Associated GI symptoms Y/N

9. History suggestive of PID Y/N

10. Any vaginal discharge Y/N

11. Chronic illness

a. Diabetes Y/N

b. Asthma Y/N

c. Neurological illness Y/N

12. Personal habits/ addictions

a. Tobacco chewing Y/N

b. Smoking Y/N

8. Conclusion

Healthcare providers play a vital role in addressing urinary incontinence, a condition that affects millions of women worldwide. To effectively manage this condition, healthcare providers should increase their knowledge and understanding of urinary incontinence, its causes, and its impact on quality of life. By doing so, they can encourage individuals, particularly those at high risk, to seek appropriate healthcare and discuss their symptoms openly.

Encouragingly, various management and treatment methods are available for urinary incontinence. For women who cannot afford or tolerate surgical therapies, conservative treatments and pharmacotherapies offer viable alternatives. Clinical data have consistently shown the significant benefits of these therapies, highlighting their potential to improve symptoms and quality of life.

In recent years, promising areas have emerged in pharmacotherapy, providing alternative options for women seeking non-surgical treatment. These advancements offer new hope for individuals who may not be suitable candidates for surgery or prefer alternative approaches.

However, despite these advancements, further research is needed to tackle the complex issue of urinary incontinence. Well-designed studies with high-quality data are required to address the controversies and uncertainties surrounding this condition. By investing in research and development, we can better understand the underlying causes of urinary incontinence and develop more effective treatments.



Ultimately, addressing urinary incontinence requires a multidisciplinary approach, incorporating the expertise of healthcare providers, researchers, and policymakers. By working together, we can improve the lives of women affected by urinary incontinence, promote awareness, and reduce stigma. By empowering individuals with knowledge and access to effective treatments, we can help them regain control over their lives and improve their overall well-being.

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