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A Comprehensive Review

Urinary Incontinence in Women in Pakistan: Prevalence, Awareness, Current Management, and the Case for Establishing Female Continence Clinics.

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Abstract

Background: Urinary incontinence (UI) is a common yet underdiagnosed condition in women, particularly in low- and middle-income countries (LMICs) like Pakistan. The lack of awareness, social stigma, and fragmented healthcare services contribute to limited access to appropriate diagnosis and management.

Purpose of the Review: This review aims to evaluate the prevalence, risk factors, awareness, and current management strategies for UI among women in Pakistan. It also seeks to propose a comprehensive framework for the establishment of specialized continence clinics, integrating community-based screening, district-level care, and tertiary urogynecology-functional urology centers.

Results: The prevalence of UI in Pakistan ranges from 11% to 45%, with postpartum women and those of higher parity being most affected. Awareness of UI as a treatable medical condition is very low, with fewer than 10% seeking care. Conservative treatments such as pelvic floor muscle training (PFMT) are inconsistently delivered, while pharmacologic and minimally invasive treatments are rarely accessible outside tertiary centers. Advanced treatments, such as polyacrylamide hydrogel (Bulkamid®) and botulinum toxin, are unavailable to most patients.

Conclusion: Establishing a tiered, cost-effective model for continence care, starting with community screening and education, followed by district-level continence clinics and tertiary care centers, can improve access to UI services in Pakistan. Policy reforms, training, and international partnerships are essential to expanding and sustaining these services.

Keywords: Urinary Incontinence, Women's Health, Urogynecology, Continence Clinics, Functional Urology

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INTRODUCTION

Urinary incontinence (UI) is the involuntary leakage of urine, a condition that can significantly impair a woman's quality of life. It is a prevalent yet underdiagnosed issue worldwide, particularly in low- and middle-income countries (LMICs) like Pakistan[1]. In these regions, UI is often overlooked, with many women suffering in silence due to cultural stigma, lack of awareness, and inadequate healthcare infrastructure. Despite its high prevalence, the condition remains poorly managed in Pakistan, where services are fragmented, and there is limited access to specialized care[2]. UI, though highly prevalent, is rarely discussed openly due to the social stigma surrounding it, especially in developing countries. The existing literature on UI in Pakistan indicates significant gaps in both awareness and treatment[3]. A lack of structured continence care services, coupled with barriers such as socioeconomic factors and insufficient healthcare policies, exacerbates the situation. This review aims to address these gaps by consolidating the current knowledge on UI prevalence, management, and patient attitudes in Pakistan, while proposing a framework for improving the delivery of care[4-5]. Addressing UI is crucial not only for improving the quality of life of affected individuals but also for reducing the broader health burden associated with the condition[6]. In Pakistan, where the healthcare system struggles with resource limitations and access issues, establishing efficient and sustainable continence care services could make a significant impact. Moreover, integrating UI management into women's health programs would help destigmatize the condition, encouraging more women to seek timely treatment[7-10]. The primary aim of this review is to assess the prevalence, risk factors, and management strategies for UI in Pakistani women. It will evaluate current care models, including conservative, pharmacologic, and surgical treatments, and propose a phased model for establishing specialized continence clinics at different levels of care. This model aims to provide equitable, accessible, and affordable UI services across Pakistan, from community screening to tertiary urogynecology-functional urology centers. The review also emphasizes the need for education, policy reform, and training to ensure the long-term success of these initiatives.

Material & Methods

A comprehensive narrative review was conducted at Department of Urology Whiston Hospital, Mersey and West Lancashire Teaching Hospitals NHS Trust, Prescot, Liverpool, UK from Jan 2021 to Jan 2025. gather relevant literature on urinary incontinence (UI) in women

in Pakistan and other comparable low- and middle-income countries (LMICs). The following electronic databases were searched: PubMed, Google Scholar, Scopus, and Web of Science. We also included relevant grey literature from official health organizations and reports from NGOs working in South Asia.

Inclusion and Exclusion Criteria

Studies included in the review were required to focus on female patients aged 18 and above with urinary incontinence. Only articles published in English and those specifically reporting prevalence, risk factors, or management strategies for UI were considered. We included studies from 2000 to 2025 to ensure the literature reflects contemporary issues and treatments. Exclusion criteria included:

- Studies focusing on male patients
- Articles that did not provide specific data on urinary incontinence
- Studies with a primary focus on UI related to neurological or complex conditions (e.g., spinal cord injuries)
- Studies published in languages other than English

Time Frame of Literature

The time frame for the literature search was from 2000 to 2025. This period was selected to capture both recent advances in UI management and data relevant to Pakistan and similar LMICs, while also reflecting contemporary practices in women's health care and medical advancements.

Type of Studies Included

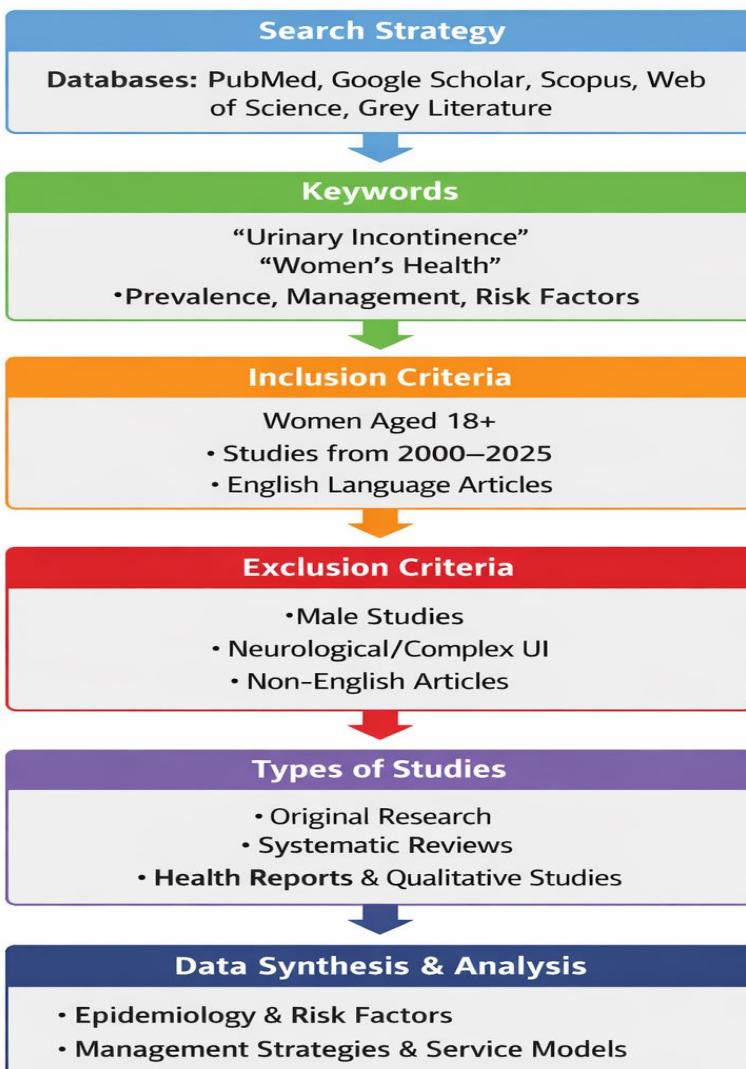
We included peer-reviewed original research articles, systematic reviews, and national health reports that addressed the epidemiology, risk factors, management strategies, or healthcare access regarding urinary incontinence in women. Only studies that reported empirical data, clinical trials, cohort studies, and comparative studies were included. Qualitative studies providing insights into the societal impact of UI and patient attitudes were also considered valuable in this review.

Results

Prevalence of Urinary Incontinence in Pakistan

UI prevalence in Pakistan varies across regions and populations (Table 1; Figure 1). Community studies report lower rates, with Khan et al. (2013) finding 11% prevalence in Karachi. However, higher rates were observed in postpartum women, with Rehman et al. (2019) reporting 32%. The highest prevalence, 45%, was noted in a tertiary gynecological setting in Lahore (Qureshi et al., 2021). SUI is the most common type, followed by MUI and UUI. Awareness of UI as a medical condition is low, with only 15-20% recognizing it as treatable. Fewer than 10% of women seek medical care. Jafri et al. (2018) found 18% of urban women were aware of treatments, and Saeed et al. (2020) reported only 7% of rural women sought help (Table 2). Stigma, embarrassment, and normalization of UI post-childbirth are key barriers to care-seeking.

Figure 1: Research Methodology Flowchart for Urinary Incontinence Review in Pakistan



This flowchart outlines the methodology for the review study on urinary incontinence (UI) in Pakistani women, illustrating key steps including the search strategy, criteria for inclusion and exclusion, study types, and the synthesis of data. The flowchart is designed to demonstrate the structured process followed in identifying, reviewing, and synthesizing relevant literature to develop a comprehensive understanding of UI management and prevalence.

Table 1. Prevalence of Urinary Incontinence in Pakistan (Selected Studies)

Study	Population Setting	Prevalence (%)	Predominant Type
Khan et al., 2013	Karachi (community)	11	SUI
Javed et al., 2016	Rural Punjab	28	MUI
Rehman et al., 2019	Khyber Pakhtunkhwa (postpartum)	32	SUI
Qureshi et al., 2021	Lahore (tertiary gynae)	45	SUI/UUI

Table 2. Knowledge and Attitudes toward Urinary Incontinence

Study	Sample	Key Finding
Jafri et al., 2018	Urban women (n=300)	18% knew UI is treatable
Saeed et al., 2020	Rural women (n=500)	7% sought medical care
Akhtar et al., 2021	Interviews (n=40)	Stigma primary barrier

Risk Factors in Pakistani Women Key risk factors for UI include parity, vaginal/instrumental deliveries, pelvic floor trauma, menopause, obesity, and aging [14–18]. Rising BMI and a sedentary lifestyle further compound risk, especially among women with limited access to pelvic floor rehabilitation.

Current Management and Available Options
Conservative treatments like pelvic floor muscle training (PFMT) are underutilized, and pharmacologic therapies (e.g., antimuscarinics) face accessibility and affordability challenges. Advanced treatments such as polyacrylamide hydrogel (Bulkamid®) and botulinum toxin are generally unavailable outside tertiary centers. Surgical options like mid-urethral slings offer effective treatment for SUI but are concentrated in specialized centers.

Table 3. Summary of Management Options for Female UI

Category	Examples	Typical Indications	Notes/Access in Pakistan
Conservative	PFMT, bladder training, life-style	SUI, MUI, UUI/OAB	Limited physio capacity; leverage tele-PFMT
Pharmacologic	Antimuscarinics, β_3 -agonists, vaginal estrogen	UUI/OAB, postmenopausal atrophy	Cost & side effects constrain use
Minimally invasive	Bulkamid®, Botox A, PTNS, SNM	SUI, refractory OAB/UUI	Available in tertiary centers (mainly Karachi)
Surgical	MUS (TVT/TOT), Burch, fascial sling	Moderate–severe SUI	Concentrated expertise

Urinary incontinence (UI) is a prevalent condition among women globally, with substantial variation in its prevalence across different regions, especially in low- and middle-income countries (LMICs) like Pakistan. In Pakistan, the prevalence of UI among women ranges from 11% to 45%, depending on factors like region, healthcare setting, and demographic characteristics. This variation is consistent with findings from studies conducted in other LMICs, such as India and Nigeria, where UI prevalence also varies significantly between community and hospital-based populations [11–13]. In Pakistan, community-based studies report lower prevalence, with Khan et al. (2013) documenting an 11% prevalence in urban Karachi [11], whereas higher rates are observed in rural and postpartum populations, as seen in studies by Rehman et al. (2019) and Qureshi et al. (2021), which reported prevalence rates of 32% and 45%, respectively [14, 13]. These discrepancies suggest that women in clinical settings or those with postpartum UI may present more severe or persistent forms of the condition. One of the major challenges in addressing UI in Pakistan is the low level of awareness among both the general population and healthcare providers. Studies indicate that only 15–20% of women recognize UI as a treatable condition, and less than 10% actively seek medical care [15, 16]. This is compounded by sociocultural factors, including stigma, shame, and normalization of the condition, especially after childbirth. Qualitative research highlights that many women at-

tribute UI to aging, spiritual causes, or postpartum recovery, leading to underreporting and reliance on non-medical interventions like home remedies or spiritual healing practices [17, 18]. These barriers contribute to delays in seeking evidence-based care and hinder effective treatment. In terms of management, conservative therapies, including pelvic floor muscle training (PFMT) and bladder training, are the first-line treatment for UI, particularly for stress urinary incontinence (SUI) and mixed urinary incontinence (MUI). However, these treatments are inconsistently delivered in Pakistan, with limited access to trained physiotherapists and rehabilitation services [19]. While pharmacologic treatments, such as antimuscarinics and β_3 -agonists, are available, their use is constrained by cost and side effects, limiting their accessibility in many regions [20]. Advanced therapies, such as urethral bulking (Bulk amid®) and botulinum toxin injections, are rarely available outside of tertiary care centers, and neuromodulation therapies like percutaneous tibial nerve stimulation (PTNS) are only available in select hospitals [21, 22]. A key finding of our review is that UI care in Pakistan is highly concentrated in tertiary centers, with minimal services available at the primary or district care levels. This highlights the need for a structured, tiered approach to UI management that includes community screening, district continence clinics, and tertiary care centers with specialized urogynecology–functional urology services. A phased model, as proposed in this review, would allow for more widespread access to care, especially in rural and underserved areas. Such a model would leverage existing infrastructure, such as Lady Health Workers (LHWs) and primary care clinics, to provide initial screening and education, followed by referrals to higher-level facilities as needed [23, 24]. Despite the limitations of our study, including its reliance on secondary data from existing studies, the evidence supports the need for comprehensive national policy reforms and educational campaigns to improve awareness, reduce stigma, and enhance healthcare provider knowledge. Training programs for primary care providers, integration of UI education into medical curricula, and public health campaigns could significantly improve the diagnosis and management of UI in Pakistan.

Conclusion

UI is prevalent yet undertreated among Pakistani women. A realistic, staged plan—community screening and PFMT; district continence clinics; tertiary hybrid urogynecology–functional urology centers; and enabling policy, financing, and education—can close gaps swiftly and equitably. Embedding continence into

women's health programs and medical curricula will normalize care-seeking and sustain improvements.

Authors Contribution

Begum N: Conceptualization, Methodology, Software
Ishfaq M: Data curation, Writing- Original draft preparation.
Omar A & Qadeer R: Visualization, Investigation.
Ishaq T: Writing- Reviewing and Editing.

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