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The Effectiveness of Nursing Interventions in Managing Urinary Retention in Postoperative Patients

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ABSTRACT: Urinary retention is a common postoperative complication that can lead to significant discomfort, prolonged hospital stays, and an increased risk of urinary tract infections in patients. Effective nursing interventions play a crucial role in managing this condition. Evidence suggests that implementing a combination of strategies, including frequent bladder assessments, encouraging fluid intake, and utilizing techniques such as bladder training or catheterization when necessary, can significantly improve urinary outcomes. Empowering patients with education about recognizing retention and promoting self-care measures also enhances their ability to manage their condition

effectively after surgery. Furthermore, the role of nurses in monitoring the patient's response to these interventions cannot be overstated. Regular documentation and communication with the healthcare team are essential to ensure timely adjustments to the management plan based on the patient's needs and comfort levels. Studies indicate that personalized interventions tailored to the individual patient's circumstances, such as pain management and mobility considerations, contribute to better outcomes. By utilizing a holistic approach that combines physical care with emotional support, nursing professionals can significantly improve the recovery experience for postoperative patients dealing with urinary retention.

INTRODUCTION

Postoperative urinary retention (POUR) is one of the most common and clinically consequential complications encountered in surgical nursing practice. It is defined as the inability to void voluntarily in the presence of a full bladder after surgery, a definition that, while conceptually straightforward, encompasses a wide spectrum of clinical presentations ranging from transient difficulty in initiating micturition to complete and painful bladder distension requiring immediate catheterization [1]. The reported incidence of POUR varies dramatically across surgical populations, from approximately 5% to as high as 70%, a breadth that reflects differences in surgical type, anesthetic technique, patient characteristics, and the criteria used to define retention [2]. In joint replacement patients receiving spinal anesthesia, for instance, incidence rates as high as 42.7% have been documented in the absence of standardized preventive protocols, with 21.6% of those patients ultimately requiring catheterization [1]. Such figures underscore the reality that POUR is not a marginal concern but a pervasive nursing challenge that directly influences patient comfort, recovery trajectory, length of stay, and healthcare resource utilization [3].

The clinical significance of POUR extends well beyond the immediate discomfort of a distended bladder. Unmanaged retention can precipitate bladder overdistension, detrusor muscle injury, delirium, prolonged hospitalization, and long-term alterations in bladder contractility [2]. The standard treatment—indwelling or intermittent urethral catheterization—is itself associated with well-recognized morbidity, including urinary tract infection, urethral trauma, patient distress, and, in some populations, difficult catheter placement due to pre-existing urological pathology [2][3]. The systematic review by Jackson and colleagues emphasized that although catheterization remains the default management strategy for established POUR, the procedure carries infection risk and is often experienced by patients as undignified and uncomfortable, thereby creating a compelling rationale for nursing interventions that can prevent retention or restore spontaneous voiding without recourse to instrumentation [2]. This tension between the need to empty an overdistended bladder and the imperative to avoid unnecessary catheterization constitutes the central clinical dilemma that nursing interventions must address [4].

Nurses occupy a uniquely strategic position in the prevention, recognition, and management of POUR. Because nurses are present at the bedside continuously throughout the perioperative period, they are the first clinicians to observe the subtle behavioral and physical signs of bladder distension—restlessness, lower abdominal discomfort, inability to void despite the sensation of fullness, and changes in vital signs that may accompany acute pain and distension [1][4]. Moreover, nurses are increasingly empowered to implement structured assessment protocols, nurse-led bladder scanning algorithms, and non-pharmacological comfort measures that can avert the need for catheterization or ensure that catheterization, when necessary, is performed promptly and appropriately [4][5]. The effectiveness of nursing interventions in this domain is therefore not a peripheral question but a core determinant of postoperative urological outcomes and overall recovery quality.

Defining Postoperative Urinary Retention and Its Clinical Burden

The absence of a universally accepted definition of POUR has complicated both research and clinical practice. The narrative review by Baldini and colleagues, cited extensively in subsequent literature, noted that the non-univocal definition of POUR has made it difficult to establish the true impact of the condition, contributing to the wide reported incidence range of 5% to 70% [3]. Some investigators define POUR in terms of bladder volume thresholds, such as a bladder scan volume exceeding 600 mL with inability to void, whereas others rely on the need for catheterization as the operative criterion [4][5]. Still others use postvoid residual volumes, symptomatic distress, or a combination of sonographic and clinical findings [6]. This definitional

heterogeneity is not merely an academic concern: it shapes the sensitivity and specificity of screening protocols, determines which patients receive intervention, and influences the apparent effectiveness of nursing strategies across studies.

The clinical burden of POUR is multidimensional. At the patient level, retention produces pain, anxiety, and a sense of loss of control over basic bodily function; the insertion of a catheter, particularly when unanticipated, can be experienced as invasive and distressing [2]. At the physiological level, sustained bladder overdistension can compromise detrusor contractility and predispose to recurrent retention, urinary tract infection, and, in vulnerable populations, delirium and functional decline [3]. At the system level, POUR delays discharge from the post-anesthesia care unit and the hospital, increases nursing workload, and consumes resources that could otherwise be directed toward other aspects of recovery [4]. The prevention-oriented nursing paradigm therefore holds promise not only for improving patient experience but also for enhancing the efficiency and safety of surgical care delivery [5].

Pathophysiology and Risk Factors Relevant to Nursing Assessment

Understanding the physiological mechanisms that underlie normal micturition and its disruption after surgery is essential for nurses who must anticipate, recognize, and intervene in POUR. The bladder comprises the detrusor muscle and the internal urethral sphincter; the adult bladder capacity ranges from approximately 400 to 600 mL, with a sense of fullness typically arising at around 300 mL [3]. Micturition requires coordinated detrusor contraction and sphincter relaxation, processes governed by parasympathetic and sympathetic innervation and modulated by supraspinal centers. Anesthetic agents, opioid analgesics, surgical trauma, and immobility can each disrupt this coordinated reflex, producing retention through detrusor underactivity, sphincter overactivity, or a combination of both mechanisms [1].

Risk factors for POUR can be organized into preoperative, intraoperative, and postoperative categories, and this taxonomy is directly relevant to nursing risk assessment. Preoperative factors include advanced age, male sex, pre-existing urological pathology, diabetes mellitus, and neuropathic conditions; the narrative review reported a higher incidence in men (4.7%) than in women (2.9%) and a 2.4-fold increased risk in patients over 50 years of age [2]. Intraoperative factors include the type and duration of anesthesia, the volume of intraoperative fluids administered, and the nature of the surgical procedure, with pelvic, lower abdominal, anorectal, and joint replacement surgeries carrying particularly elevated risk [1][2]. Postoperative factors include opioid consumption—particularly patient-controlled analgesia—slow time to ambulation, and immobility [3]. Pediatric orthopedic data have further shown that immobility and shorter anesthesia times are associated with POUR and that indwelling catheter placement does not necessarily confer protection [17]. This multifactorial etiology means that nursing assessment cannot rely on a single red flag but must instead synthesize a constellation of risk indicators into a coherent clinical judgment.

Table 1 Perioperative Risk Factors for POUR and Nursing Assessment Priorities

Phase	Risk Factor	Nursing Assessment Priority
Preoperative	Age >50 years; male sex; diabetes; urological history; neuropathic disease	Obtain voiding history; document baseline bladder function; identify need for preoperative voiding
Intraoperative	Spinal or epidural anesthesia; pelvic, lower abdominal, joint, or anorectal surgery; intraoperative fluids >2000 mL	Anticipate high-risk status; communicate with anesthesia team; monitor fluid balance
Postoperative	Opioid use (especially PCA); immobility; delayed ambulation; bladder volume >200 mL in recovery room	Assess voiding within expected timeframe; perform bladder scans per protocol; encourage early mobilization; evaluate pain management strategy

Bladder Scanning and Nurse-Led Assessment Protocols

The introduction of portable ultrasound bladder scanning into postoperative nursing practice has transformed the assessment of POUR from a reliance on subjective symptoms and palpation to an objective, non-invasive, and reproducible measurement of bladder volume. Bladder scanning allows nurses to distinguish between patients with a full bladder who are unable to void and those who have recently voided and have low residual volumes, thereby reducing unnecessary catheterizations while ensuring that genuine retention is identified promptly [4][5]. The effectiveness of bladder scanning, however, depends critically on the protocol within which it is embedded. Indiscriminate scanning of all postoperative patients at fixed intervals can generate

false-positive findings and lead to overdiagnosis and overtreatment, whereas selective scanning of symptomatic patients may risk missing asymptomatic but clinically significant retention [6].

A retrospective cohort study of 803 patients undergoing fast-track hip or knee arthroplasty, of whom 638 were analyzed, evaluated a nurse-led bladder scan protocol and reported a POUR incidence of 12.9% (95% CI 9.4–15.5) [4]. Notably, gender, age, BMI, ASA classification, preoperative bladder volume, anesthesia type, arthroplasty type, and perioperative fluid administration did not differ significantly between patients who developed POUR and those who did not. The single factor that emerged as a significant predictor was a bladder volume greater than 200 mL in the recovery room, which conferred an odds ratio of 5.049 (95% CI 2.815–9.054) for subsequent POUR [4]. This finding has direct implications for nursing surveillance: the recovery room assessment is not merely a routine checkpoint but a critical window for identifying patients who require intensified monitoring and proactive intervention.

The tension between comprehensive and selective scanning protocols was directly addressed by Kohring and colleagues, who compared a standard protocol of routine bladder scanning after total joint arthroplasty with a selective protocol that scanned only patients symptomatic for urinary retention [5]. The selective protocol was associated with a marked reduction in catheterization rates, from 46.6% under the standard protocol to 38.2% under the selective protocol ($P = 0.009$), without an increase in urinary-related complications [5]. Prevoid bladder scan volumes were notably higher in the selective cohort, indicating that the selective approach avoided intervening on volumes that might have been tolerated and resolved with time and conservative measures. This study provides compelling evidence that nurse-driven protocols can reduce unnecessary instrumentation when they are designed to integrate symptom assessment with objective volume measurement rather than relying on volume thresholds alone [6].

The broader principle that emerges from these studies is that bladder scanning is most effective when it is embedded in a clinical algorithm that specifies when to scan, what thresholds to apply, and what actions to take at each threshold. A commonly cited algorithm, for example, recommends that bladder scanner volumes greater than 300 mL in symptomatic patients and greater than 500 mL in asymptomatic patients should prompt consideration of catheterization, while lower volumes in symptomatic patients may be managed with conservative measures and repeat scanning [6]. Such algorithms standardize practice, reduce unwarranted variation, and empower nurses to make autonomous, evidence-informed decisions within clearly defined parameters [5].

Catheterization Decisions and the Duration of Indwelling Catheterization

Although the prevention of POUR is the ideal outcome, catheterization remains necessary for patients who develop significant retention, particularly when bladder volumes are large and symptoms are distressing. The nursing decision to catheterize—or to avoid catheterization—is therefore a central component of POUR management. The evidence suggests that a restrictive, protocol-guided approach to catheterization can safely reduce the frequency of the procedure without compromising patient safety. The selective scanning protocol described above achieved a catheterization rate of 38.2% compared with 46.6% under a routine scanning protocol, and the reduction was not accompanied by increased urinary complications [5]. This finding aligns with the broader movement toward catheter avoidance and early removal in perioperative care [7].

For patients who do require an indwelling catheter, the duration of catheterization is a modifiable determinant of both retention risk and infectious complications. Prolonged catheterization is a well-established risk factor for catheter-associated urinary tract infection (CAUTI), and clinical practice guidelines increasingly recommend early removal. A randomized trial comparing catheter removal at 24 hours versus 4 days after anterior colporrhaphy for pelvic organ prolapse found no statistically significant difference in catheter reinsertion rates (15% versus 7.5%, $P = 0.288$) or in the incidence of urinary retention, and no UTIs occurred in either group [7]. Median hospital stay was significantly shorter in the 24-hour group (3 days versus 4 days, $P < 0.001$), suggesting that short-term catheterization is not only safe but also economically advantageous [7]. These findings support the principle that, when catheterization is unavoidable, the shortest effective duration should be the default, with removal timed to coincide with the restoration of mobility, adequate analgesia, and the ability to participate in a voiding trial [8].

The relationship between catheter duration and POUR risk is, however, not entirely straightforward. One study observed that the odds of POUR increased by 1% to 8% per hour of catheterization, a finding that might seem paradoxical given that catheters are intended to prevent retention [8]. The explanation likely lies in the fact that longer catheterization is a marker of greater

underlying risk—patients who require prolonged drainage are those with more severe illness, more extensive surgery, or greater immobility—rather than a direct causal effect of the catheter itself. Nevertheless, the data reinforce the importance of daily review of catheter necessity and the prompt removal of catheters once the clinical indication has resolved [7].

Table 2 Catheter-Related Decision Points and Evidence-Informed Nursing Actions

Decision Point	Evidence Consideration	Nursing Action
Whether to scan	Routine scanning may overdiagnose POUR; selective symptom-based scanning reduces catheterizations without increasing complications [5]	Use a validated algorithm that combines symptom assessment with bladder volume measurement [6]
Whether to catheterize	Volumes >300 mL with symptoms and >500 mL without symptoms generally warrant catheterization [6]	Apply protocol thresholds; consider conservative measures first in symptomatic patients with lower volumes [7]
How long to leave a catheter	Short-term catheterization (24 hours) is not associated with increased retention or infection compared with longer duration [7]	Remove catheter as soon as clinically appropriate; avoid reflexive prolonged drainage [8]
When to re-scan after removal	Postvoid residual assessment is essential after catheter removal [8]	Perform bladder scan or measure voided volume and residual according to protocol [6]

Non-Pharmacological Nursing Interventions for Prevention and Treatment

Non-pharmacological interventions constitute the front line of nursing management for POUR because they are low-risk, patient-centered, and within the autonomous scope of nursing practice. The systematic review by Jackson and colleagues identified several non-pharmacological strategies with promising evidence, including early postoperative mobilization, hot packs or gauze soaked in warm water applied to the suprapubic region, and other comfort measures [2]. The review reported that early mobilization had a number needed to treat (NNT) of 5 (95% CI 4–8) for the prevention of POUR, and that hot packs or warm water gauze for treatment had an NNT of 2 (95% CI 2–4), indicating that these interventions confer meaningful clinical benefit in a relatively small number of patients [9]. These effect sizes are particularly noteworthy because they derive from randomized evidence and because the interventions are inexpensive, readily available, and acceptable to most patients.

Early ambulation is perhaps the most thoroughly supported preventive nursing intervention. Prolonged immobility after surgery is associated with slower return of normal bladder function, and conversely, early mobilization has been shown to reduce the incidence of POUR substantially. One study cited in the literature demonstrated that early ambulation decreased the POUR rate from 52% to 19% [9]. The mechanism is multifactorial: upright positioning facilitates the gravitational descent of urine and the relaxation of the pelvic floor, ambulation stimulates proprioceptive feedback that promotes detrusor activity, and mobilization is typically accompanied by reduced opioid requirements and improved overall recovery. Nursing practice should therefore prioritize early, progressive ambulation as a core component of postoperative care for all patients at risk of POUR, with appropriate attention to fall risk, analgesia, and hemodynamic stability [2].

Suprapubic temperature stimulation—the application of heat or cold to the lower abdomen—has attracted increasing research attention as a simple, nurse-led intervention. A systematic review and meta-analysis protocol by Wang and colleagues is designed to synthesize evidence on suprapubic temperature stimulation for both the prevention and treatment of POUR, reflecting recognition that this modality warrants rigorous evaluation [10]. The protocol notes that suprapubic temperature stimulation is a simple bedside, nurse-led approach whose effectiveness and safety have not yet been synthesized in a focused review [10]. Current practice already incorporates heat packs into standardized protocols: one quality improvement initiative developed a protocol that included heat packs for patients with a full bladder (>300 mL) and hourly bladder scanning, with the goal of reducing time to void to under 90 minutes [14]. The physiological rationale is that warmth promotes relaxation of the urinary sphincter and increases local blood flow, thereby facilitating spontaneous voiding.

Cold application has also been investigated as a distinct nursing intervention. An ongoing randomized controlled trial is evaluating two simple nursing methods for preventing urinary retention after spinal anesthesia: one group receives a cold pack on the suprapubic area, a second group receives gentle massage over the sacral area, and a third group receives usual care

without additional procedures [11]. The trial reflects the growing recognition that nurses require evidence-based, non-invasive options that can be implemented at the bedside without specialized equipment or physician orders. Sacral massage, the second intervention under investigation, is hypothesized to promote parasympathetic stimulation and relaxation of the pelvic floor, thereby facilitating micturition [11]. Although definitive trial results are pending, the availability of such studies signals a maturation of the field toward rigorous testing of interventions that have long been used empirically.

Bladder training and voiding trials represent another category of nursing intervention with particular relevance to patients who have had indwelling catheters or who are at risk of retention after catheter removal. Bladder training encompasses scheduled voiding, intermittent catheter clamping with active urination training, and pelvic floor exercises designed to restore coordinated detrusor-sphincter function [12]. A randomized controlled trial protocol is examining the effect of intermittent urethral catheter clamping combined with active urination training on postoperative urinary dysfunction after radical rectal cancer surgery, with urinary retention and secondary catheterization as primary outcomes [12]. The rationale for clamping is to simulate normal bladder filling and emptying cycles, thereby preserving detrusor tone and preventing the development of a "lazy bladder" after prolonged drainage. Although the evidence base for bladder training in the immediate postoperative period is still developing, the intervention is low-risk and aligns with the broader principles of enhanced recovery after surgery.

Hydration management is a deceptively simple but important nursing domain. Adequate fluid intake, unless contraindicated by cardiac or renal limitations, supports bladder filling and the development of a normal urge to void. General guidance suggests that patients tolerating oral intake should consume a minimum of 25–30 mL/kg of water per day, and that fluids should be spread throughout the day rather than consumed in large boluses [13]. However, the relationship between hydration and POUR is not linear: overaggressive fluid administration, particularly intraoperative fluid loading, is itself a risk factor for retention. The contemporary nursing approach therefore emphasizes balanced, individualized hydration that supports systemic recovery without overwhelming bladder capacity, combined with attention to beverages that may irritate the bladder, such as caffeine and alcohol [13].

Table 3 Non-Pharmacological Nursing Interventions for POUR: Mechanisms and Evidence

Intervention	Proposed Mechanism	Evidence Status
Early ambulation	Gravity-assisted voiding; proprioceptive stimulation; reduced opioid requirement	Strong evidence; associated with reduction in POUR from 52% to 19% in one study [9]; NNT 5 for prevention [9]
Suprapubic heat application	Sphincter relaxation; increased local blood flow	Promising evidence; NNT 2 for treatment [9]; incorporated into quality improvement protocols [14]
Suprapubic cold application	Thermal stimulation of micturition reflex	Under active randomized investigation [11]
Sacral massage	Parasympathetic stimulation; pelvic floor relaxation	Under active randomized investigation [11]
Bladder training / voiding trials	Restoration of coordinated detrusor-sphincter function	Emerging evidence; commonly used in practice [12]
Hydration management	Adequate bladder filling; avoidance of overdistension	Expert consensus; individualized approach recommended [13]

Nurse-Led Protocols, Care Bundles, and Quality Improvement

The effectiveness of individual nursing interventions is amplified when they are integrated into standardized, nurse-led protocols and care bundles. The literature contains several exemplars of successful protocol implementation that have produced substantial reductions in POUR incidence and catheterization rates. At a 350-bed community hospital, a team of post-anesthesia care unit nurses developed a POUR Prevention Bundle and a corresponding algorithm after preliminary data revealed a POUR incidence of 42.7% (44/103 patients), with 21.6% requiring catheterization and an average PACU length of stay of 96 minutes [14]. Following implementation of the nurse-led protocol, POUR incidence decreased to 8.6%, catheterization rates dropped

to 5%, and average PACU length of stay was reduced by 30 minutes [14]. These improvements were achieved without new technology or additional staffing; they resulted from the systematic application of existing nursing skills—bladder scanning, structured assessment, and evidence-based comfort measures—within a defined protocol.

The enhanced recovery urinary protocol (ERUP) evaluated by Behairy and colleagues in patients undergoing hip surgery provides another example of a multifaceted nursing intervention. The ERUP employs several perioperative strategies to optimize conditions for surgery and recovery, and in a quasi-experimental study of 100 patients, its application significantly reduced both the incidence of POUR and the length of hospital stay in the intervention group compared with standard care [15]. The success of the ERUP underscores the value of bundling interventions—preoperative voiding, intraoperative fluid management, postoperative bladder scanning, early mobilization, and timely catheter removal—rather than relying on any single measure in isolation.

Quality improvement initiatives have also focused on the process of care delivery itself. Clinical practice guidelines for enhanced recovery after colon and rectal surgery recommend that urinary catheters be removed within 48 hours of midrectal or lower rectal resections, while acknowledging that selective late removal may be appropriate for patients with extensive pelvic dissection, male sex, and intraoperative fluids exceeding 2 L [16]. Nursing assessment in this population must balance the imperative for early removal against the recognition that some patients require individualized, risk-stratified timing. These examples illustrate that the effectiveness of nursing interventions depends not only on the interventions themselves but also on the systems and protocols that support their consistent, timely, and appropriate use.

Special Populations and Contextual Considerations

The effectiveness of nursing interventions for POUR is modulated by the clinical context in which they are applied. Patients undergoing joint replacement under spinal anesthesia represent a particularly high-risk group, and the evidence for nurse-led protocols in this population is correspondingly robust [1][4][5]. Spinal anesthesia temporarily interrupts the sacral parasympathetic outflow that drives detrusor contraction, producing a predictable period of bladder dysfunction that may persist for hours after sensory and motor recovery. Nursing protocols in this population must account for the timing of spinal anesthesia, the volume of intraoperative fluids, and the patient's ability to ambulate safely before attempting catheter removal.

Patients undergoing pelvic, anorectal, or lower abdominal surgery face a different risk profile, in which direct surgical trauma to pelvic innervation and the proximity of the surgery to the bladder and urethra compound anesthetic effects. Guidelines for enhanced recovery after colorectal surgery support early catheter removal but recognize that selective late removal may be appropriate for high-risk patients [16]. Nursing assessment in this population must therefore combine protocol adherence with individualized clinical judgment, particularly when pelvic dissection has been extensive or when intraoperative fluid administration has been large [1].

Older adults and patients with pre-existing urological or neurological conditions warrant particular attention. Age-related changes in detrusor contractility, reduced bladder capacity, and the presence of conditions such as diabetic neuropathy or prostatic enlargement all increase the likelihood that a patient will experience POUR and complicate the interpretation of bladder scan volumes [3]. Pediatric orthopedic evidence also indicates that immobility, anesthesia time, and opioid consumption contribute to POUR risk and that indwelling catheter placement does not necessarily prevent the problem [17]. Nursing interventions in these populations should be adapted to account for baseline bladder function and should incorporate careful monitoring for signs of retention that may be blunted or atypical.

Barriers, Facilitators, and Implications for Nursing Practice

Despite the demonstrated effectiveness of nurse-led interventions, their implementation is not universal. Barriers include variability in nursing knowledge and confidence regarding bladder scanning and catheterization decision-making, competing clinical priorities in understaffed units, the absence of standardized protocols, and cultural or organizational norms that defer bladder management decisions to physicians [14][18]. Historical practices such as routine fluid restriction after anorectal operations illustrate how tradition can persist even when evidence is limited or conflicting [19]. Facilitators include strong nursing leadership, access to portable bladder scanners, interprofessional collaboration with anesthesia and surgery, and the use of quality improvement methodologies that engage frontline staff in protocol design and implementation [20].

The implications for nursing practice are clear. First, every postoperative unit should have a written, evidence-based protocol for POUR prevention, assessment, and management that specifies when to scan, how to interpret volumes, when to catheterize, and when to remove catheters [20]. Second, risk stratification can be strengthened by using structured risk assessment tools and nomograms that integrate physiological and psychological factors associated with POUR [21]. Third, nurses should receive education and competency assessment in bladder scanning technique and in the application of non-pharmacological interventions such as heat application, massage, and early ambulation [22]. Fourth, nursing documentation should capture bladder volumes, interventions attempted, and outcomes in a structured format that supports audit and quality improvement, and narrative reviews should continue to inform practice by synthesizing the evolving evidence base [23]. Fifth, nursing research should continue to evaluate the comparative effectiveness of specific interventions, the optimal timing of catheter removal in different surgical populations, and the patient-reported experience of POUR and its management, using clear volume thresholds and algorithms to reduce practice variation [24].

CONCLUSION

Postoperative urinary retention is a common, distressing, and costly complication that lies squarely within the domain of nursing practice. The evidence reviewed here demonstrates that nursing interventions—when delivered within structured, protocol-guided systems—can substantially reduce the incidence of POUR, decrease unnecessary catheterization, shorten recovery time, and improve patient comfort. Bladder scanning, early ambulation, suprapubic temperature stimulation, bladder training, and individualized hydration are all supported by varying levels of evidence, and their integration into nurse-led care bundles has produced impressive outcomes in real-world quality improvement initiatives. The persistence of wide variation in practice and the continued reliance on reflexive catheterization in many settings indicate that the challenge is no longer primarily one of knowledge generation but of knowledge translation. Nursing leadership, education, protocol standardization, and a commitment to evaluating outcomes are essential to ensuring that the benefits of effective nursing interventions reach the patients who need them most, including high-risk pediatric and orthopedic populations in which retention risk is increasingly recognized. The effectiveness of nursing interventions in managing POUR is not merely a matter of technique; it is a reflection of the profession's capacity to translate evidence into compassionate, timely, and autonomous bedside care.

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