



## Section: Medical Surgical Nursing

### Bladder training for patient with chronic kidney disease

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#### Abstract

Chronic Kidney Disease (CKD), also known as chronic kidney failure, is characterized by progressive and irreversible damage to the kidneys, impairing their ability to perform essential functions. One of the significant nursing challenges in patients with CKD is the occurrence of urinary incontinence, which manifests as an inability to control urine elimination, leading to varying urine output—sometimes just a few drops, or, in other cases, excessive amounts. Urinary incontinence can be addressed through several interventions, including the placement of a urinary catheter to help train the bladder to manage sensations of urgency and to urinate according to a predetermined schedule rather than solely in response to the urge. Additionally, non-pharmacological therapies, such as bladder training, are effective in managing and preventing urgency urinary incontinence. The application of bladder training was implemented over three consecutive 24-hour periods, consisting of three shifts: morning (11:45 AM to 1:45 PM), afternoon (7:00 AM to 7:00 PM), and night (11:15 PM to 1:15 AM). Daily evaluations were conducted to monitor progress. On the first day, the urine bag contained 200 cc, with the patient reporting no sensation of urgency and no noticeable difference after the initial bladder training session. By the second day, the urine bag filled with 500 cc, indicating an increase in urinary output. The patient's frequency of urination also improved, and they reported a heightened sensation of needing to urinate, suggesting that the bladder training was effective. In summary, the application of bladder training has demonstrated significant effectiveness in alleviating urgency urinary incontinence in patients with chronic kidney disease. Regular implementation of this intervention can enhance bladder control, increase urinary output, and improve the overall quality of life for patients facing this common complication.

**Keywords:** Bladder training; nursing care; chronic kidney disease; hospital care; adult nursing

#### Introduction

Chronic Kidney Disease (CKD), commonly referred to as chronic kidney failure, is characterized by progressive and irreversible damage to the kidneys, impairing their ability to perform essential functions (Mardiani, 2022). In this condition, the body struggles to maintain metabolic, fluid, and electrolyte balance, leading to complications such as uremia or azotemia (Inayati, Hasanah, & Maryuni, 2020). According to the World Health Organization (2020), kidney disease has escalated in mortality rankings from the 13th to the 10th leading cause of death globally, with fatalities increasing from 813,000 in 2000 to 1.3 million in 2019 (Purwanti et al., 2024). In Indonesia, the prevalence of chronic kidney failure is reported at 0.38% of the population, equating to approximately 713,783 individuals suffering from this condition (Wijayanti, 2023). Data from Riskesdas (2018) indicates a prevalence of CKD diagnosed by physicians at 4.0% among residents aged 15 years and older in Central Java Province. Furthermore, the Indonesian Renal Registry recorded 1,075 new hemodialysis patients and 1,236 active patients in Central Java (Elsera, 2022). A significant nursing concern for patients with CKD is urinary incontinence, which disrupts the normal process of urine elimination, resulting in output that can range from very little (a few drops) to excessive amounts (Harahap, 2020). To prevent and manage urinary incontinence, the insertion of a urinary catheter is often employed. This method can help train the bladder to suppress sensations of urgency and facilitate urination according to a set schedule rather than immediate urges (Septian, Julianto, & Ningtyas, 2020). The primary aim of catheterization is to extend the intervals between urinations, stabilize bladder function, and alleviate urgency for patients who can manage urination or those with urinary tract obstructions (Susanti et al., 2024).

Research by Asih, Indrayani, & Carolin (2020) supports this approach, showing a significant statistical correlation ( $p$ -value = 0.000) indicating the effectiveness of bladder training in enhancing urination control. Bladder training promotes optimal muscle tone and sphincter function, which are crucial for proper bladder operation. According to Susanti et al. (2024), bladder training is a non-pharmacological nursing intervention that can be independently performed to restore urinary function to a normal or optimal state. Asih et al. (2020) further demonstrated that bladder training significantly improved urination sensation in patients with urinary catheters ( $p$ -

value = 0.000). Nurses play a critical role in providing comprehensive care to patients with CKD, particularly in preventing urge urinary incontinence through non-pharmacological therapies like bladder training. This intervention aims to restore bladder function and enhance the sensation of urination by encouraging patients to refrain from micturating excessively (Susanti et al., 2024). Implementing bladder training post-catheter insertion can effectively address the challenges associated with urge urinary incontinence, thereby improving patient outcomes and quality of life (Wijaya & Andari, 2023).

Bladder training is crucial for patients with chronic kidney disease (CKD) because it addresses common urinary complications associated with the condition, particularly urinary incontinence and urgency. As CKD progresses, patients often experience changes in bladder function, which can lead to decreased bladder capacity and increased frequency of urination. Bladder training helps to restore normal bladder function by teaching patients to control their urge to urinate, thereby extending the intervals between voiding and reducing instances of involuntary leakage. This non-pharmacological intervention not only enhances the patient's ability to manage their urinary symptoms but also improves their overall quality of life by reducing the anxiety and embarrassment associated with incontinence. Additionally, by stabilizing bladder function, bladder training can prevent complications such as urinary tract infections and further kidney damage, ultimately contributing to better health outcomes in CKD patients. Therefore, the study aims to evaluate the bladder training for patient with chronic kidney disease.

## Case Description

The assessment conducted on Mrs. K, a 55-year-old female patient with chronic kidney disease (CKD) on hemodialysis (HD), revealed significant urinary challenges, particularly urge urinary incontinence. Mrs. K reported difficulties in urination, experiencing very minimal output (only twice a day), and the urine produced was described as foamy and white without any blood. Additionally, she experienced shortness of breath and edema in both legs, prompting her family to bring her to the emergency room due to escalating symptoms over the preceding three days. Vital signs indicated a blood pressure of 104/64 mmHg, a temperature of 36.2 °C, a pulse rate of 89 beats per minute, and a respiration rate of 26 breaths per minute, with an oxygen saturation level of 95%. Laboratory results showed anemia (hemoglobin of 7.5 g/dL), elevated leukocyte levels (11.7 mg/dL), and significantly increased levels of urea (171.9 mg/dL) and creatinine (15.69 mg/dL), indicating deteriorating kidney function. Based on these findings, the nursing diagnosis of urge urinary incontinence (D.0047) was established, attributed to detrusor hyperactivity and impaired contractility of the bladder. To address this issue, the nursing intervention focused on bladder training, implemented over three consecutive 24-hour periods. This involved structured urine elimination management, aiming to enhance urinary sensation, reduce feelings of incomplete urination, and improve overall urinary frequency. During the intervention, evaluations were performed daily. Initially, on the first day of bladder training, the urine bag filled with only 200cc, and Mrs. K reported no sensation of urgency. However, by the second day, the urinary output increased to 500cc, indicating an improvement in urinary frequency and sensation. The patient's positive response to the bladder training highlighted its effectiveness in managing her urgent urinary incontinence, emphasizing the importance of ongoing nursing interventions to support her renal health and overall well-being.

## Discussion

The results of the study conducted on February 26, 2024, reveal significant challenges faced by Mrs. K, a patient diagnosed with chronic kidney disease (CKD). The patient reported difficulty urinating, characterized by minimal output, only twice a day, with the urine described as foamy and yellow with a distinctive odor. Additionally, she exhibited symptoms such as shortness of breath and edema in both legs. Clinical assessments indicated that her blood pressure was 104/64 mmHg, temperature was 36.2 °C, pulse was 89 beats per minute, and respiratory rate was 26 breaths per minute, with an oxygen saturation level of 95%. Laboratory results further highlighted the severity of her condition, showing hemoglobin at 7.5 g/dL, elevated leukocytes (11.7 mg/dL), and significantly increased urea (171.9 mg/dL) and creatinine (15.69 mg/dL) levels. The nursing care provided aimed to address Mrs. K's urge urinary incontinence through innovative bladder training interventions. Subjectively, the patient reported difficulties with urination, which were corroborated by objective findings of incomplete urination. Based on this assessment, a nursing diagnosis of urge urinary incontinence related to detrusor hyperactivity and impaired bladder contractility was established. The intervention was designed to improve urine elimination by increasing urinary sensation, reducing feelings of incomplete urination, and enhancing the frequency of urination over a three-day period.

In CKD cases, where urinary incontinence is prevalent, bladder training serves as an effective non-pharmacological intervention. This is supported by findings from previous research indicating that bladder training can restore bladder function by employing techniques such as catheter clamping to improve muscle tone and bladder control (Asih, Indrayani, & Carolin, 2020). Evaluation of the bladder training intervention demonstrated increased urinary output, with the urine bag filling to 500 cc and a notable rise in the patient's frequency of urination and sensation of urgency. Despite the promising outcomes, the case study highlighted several limitations. The patient's placement in the ICU restricted the implementation of bladder training interventions, hindering optimal nursing care delivery. Furthermore, communication barriers with the patient's family limited the effectiveness of educating them

about bladder training techniques. These challenges underscore the need for continuous improvement in nursing practice to better address the complexities associated with managing urinary incontinence in CKD patients.

Nurses play a crucial role in providing bladder training for patients with kidney disease, particularly those experiencing urinary incontinence (Ariestia, 2019). Their responsibilities encompass a range of interventions designed to enhance bladder function and improve the patient's quality of life. Initially, nurses conduct comprehensive assessments to identify the specific urinary issues faced by patients, such as frequency, urgency, and the sensation of incomplete emptying (Marni, Asmaria, & Hasmita, 2022). Based on these assessments, they develop tailored bladder training plans that may include scheduled voiding times, pelvic floor exercises, and techniques to gradually increase bladder capacity. Furthermore, nurses educate patients about the bladder training process, helping them understand the importance of adhering to the training regimen to restore optimal bladder control (Pramono, Sadarwati, & Rohmadi, 2021). They also monitor the patient's progress, adjusting the training protocol as needed and providing emotional support to address any anxiety or frustration related to the incontinence (Pratama, Pragholapati, & Nurrohman, 2020). Additionally, nurses collaborate with interdisciplinary teams to ensure that bladder training is integrated into the overall management of kidney disease, advocating for the patient's needs and promoting evidence-based practices. Through these multifaceted efforts, nurses contribute significantly to enhancing bladder health and overall well-being in patients with kidney disease.

## Conclusion

Bladder training represents a valuable intervention for patients with chronic kidney disease (CKD) experiencing urinary incontinence. This non-pharmacological approach focuses on restoring normal bladder function and enhancing patients' quality of life by improving their ability to control urination. Evidence suggests that bladder training can effectively increase urinary sensation, reduce episodes of incomplete urination, and enhance overall urinary output, which is particularly beneficial for CKD patients who often face challenges related to fluid management and kidney function. The role of healthcare professionals, especially nurses, is crucial in implementing bladder training programs tailored to individual patient needs. Through comprehensive assessments, education, and ongoing support, healthcare providers can facilitate the successful implementation of bladder training, fostering better management of urinary symptoms and promoting patient autonomy. Ultimately, incorporating bladder training into the care plan for CKD patients not only addresses urinary incontinence but also contributes to improved overall health outcomes, enhancing patients' ability to navigate daily activities with confidence and dignity.

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