Literature review

Nursing care for nephrostomy management: a scoping review

ABSTRACT

Objective This study aimed to define the concept of nephrostomy; map nursing care and interventions for patients with a nephrostomy; and identify outcomes associated with nursing interventions.

Methods A scoping review was conducted according to the Joanna Briggs Institute methodology. Databases were searched (PubMed, CINAHL, Scopus, RCAAP), 118 studies were identified. Of these, six met the inclusion criteria. Relevant grey literature identified by the authors was also included (n=8), resulting in a total of 14 articles included in the research.

Results A narrative synthesis revealed substantial methodological heterogeneity, predominantly narrative reviews, retrospective studies and expert consensus-based guidelines, across hospital and community settings. Evidence focused on direct care, self-care education, infection and complication prevention and care algorithms, with variation in practices and limited clinically validated outcomes.

Conclusion Available evidence is limited and does not support the identification of specific nursing interventions for patients with nephrostomy associated with reduced complications or improved quality of life. Most recommendations are based on expert consensus and best practice, highlighting the need for further clinical research.

Keywords urinary diversion, percutaneous nephrostomy, nephrostomy tube, nurse, care, education.

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INTRODUCTION

Percutaneous nephrostomy is a technique that involves the placement of a flexible catheter that directly connects the kidney to the exterior through a skin opening, with the first case described in 1955.[1] It is primarily indicated for individuals with urinary obstruction. Catheter permanence may be prolonged, requiring nursing care to ensure proper management across various care settings. A preliminary search in the CINAHL database (via EBSCOhost), using the terms *percutaneous nephrostomy* and *nursing care*, revealed a scarcity of research studies, with no literature reviews identified that map nursing interventions and the most relevant outcomes resulting from practice. Thus, the existing nursing knowledge is insufficient regarding nursing interventions in different contexts, despite their importance in the management of this patient population.

The objectives of this study were to define the concept of nephrostomy, map nursing care/interventions for patients with nephrostomy, and identify the existence of outcomes associated with these interventions.

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METHODS

Search strategy

This scoping review followed a search strategy based on the recommendations of the Joanna Briggs Institute and PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). All identified keywords and indexing terms were included and validated using MeSH descriptors: *urinary diversion*, *percutaneous nephrostomy*, *nephrostomy tube*, *care*, *education*, and *nurse*. Studies were identified through searches in the electronic databases CINAHL (via EBSCOhost), PubMed, Scopus, and RCAAP (Repositório Científico de Acesso Aberto de Portugal), using the Boolean operators OR and AND [("urinary diversion" OR nephrostom*) AND (care OR education) AND nurs*], searching in the title, abstract, and keywords fields. In addition, relevant studies from the grey literature, including Google Scholar and national thesis repositories, were included if deemed relevant by the investigators.

The research question: What nursing care and interventions are provided to patients with nephrostomy, and what outcomes have been reported in the literature regarding these interventions? was formulated based on the PCC acronym: P (Population): Patients with nephrostomy; C (Concept): Nursing care and interventions; C (Context): Clinical settings, including hospital and community care.

Inclusion criteria

Articles were included if they involved individuals aged over 18 years with a nephrostomy, in any care context (pre-, intra-, or post-operative; hospital, community, or home-based). Both primary and secondary studies, qualitative or quantitative, in any language, published between 1955 (the first case described in literature) and 2024, with full-text access available, were eligible.

Study selection

References retrieved from each database were exported to Rayyan Systems Inc®. The duplicates (n=37) were removed. Independent reviewers, who were trained on inclusion/exclusion criteria prior to study selection, conducted the screening in two phases. First, titles and abstracts were screened to exclude studies not meeting the inclusion criteria. Second, full texts of the selected publications were assessed in detail, and studies not meeting the criteria were excluded. Each article was independently reviewed by two reviewers; disagreements were resolved by a third reviewer. This process identified six eligible articles.

Additionally, eight relevant studies from the grey literature were included, following the same inclusion/exclusion criteria and review process. A flow diagram was developed to illustrate the review process, including study selection, duplicate removal, and evidence retrieved at each stage.

RESULTS

Regarding the types of studies included in this review (Table 1), considerable heterogeneity was observed, with a predominance of narrative reviews and retrospective studies. Grey literature primarily included clinical reviews and guidelines based on expert consensus. The contexts varied across hospital and home care settings in different countries worldwide.

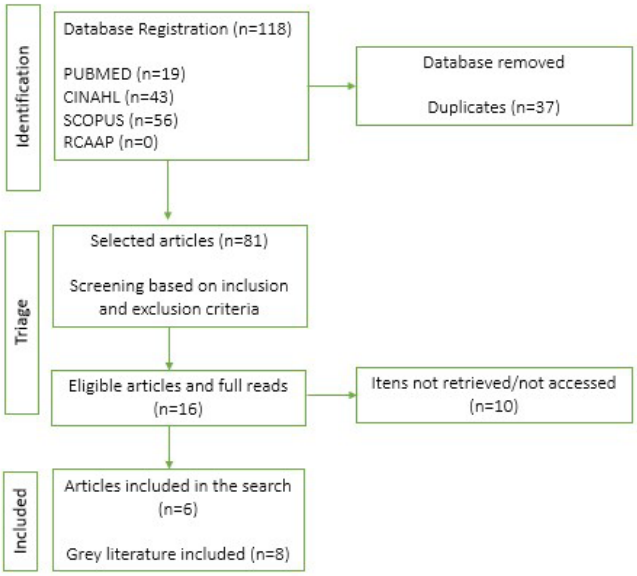

Figure 1. Flowchart of the screening process and study selection built

The evidence is mainly focused on direct patient care, health education, self-care empowerment, infection and complication prevention, and the structuring of care algorithms. To facilitate analysis, results were organised according to the study objectives: the concept of nephrostomy (Table 2), nursing interventions (Table 3), and outcomes (Table 4).

From a conceptual perspective, some terminological and conceptual discrepancies were noted (Table 2). Overall, percutaneous nephrostomy is defined as the creation of an artificial access between the renal collecting system and the exterior, typically through catheter insertion in the lumbar region, to allow urinary drainage in cases of urinary tract obstruction.[2,5] It is frequently associated with malignant conditions.[3,14] This procedure is often image-guided—via ultrasound, fluoroscopy, or computed tomography—and performed under local anesthesia. It is considered minimally invasive, well tolerated, and may be temporary or permanent depending on the clinical context.[10,11] Importantly, nephrostomy is classified in the literature as a type of ostomy—a surgically created opening for physiological diversion—with clinical, psychological, social, and care-related implications.[1,2]

Nursing interventions (Table 3) for individuals with a nephrostomy occur at different stages, including pre-procedural preparation, immediate postoperative care with early identification and management of complications, discharge planning, and home care focusing on infection control, early complication detection, and proper device handling.

Table 1. Methodological and contextual profile of the articles

Article ID code/ Author/s(year)	Study design	Country	Healthcare context
P1. Fernández-Cacho LM, Ayesa-Arriola R (2019)[2]	Longitudinal descriptive	Spain	Radiology Department, University Hospital Marques de Valdecilla (HUMV), Santander (Cantabria)
P2. Rose PG (1996)[3]	Case study	USA	Hospital and university setting
P3. Jihad RR, Reda JJ[4]	Quasi-experimental study	Iraq (Baghdad)	University hospitals
P4. Cain L & Bigongiari LR (1982)[5]	Case study	USA	Hospital setting
P5. Ganter Ritz V, Speroni KG, Walbridge D[6]	Retrospective study	USA	Interventional radiology department, Mid-Atlantic regional hospital
P6. Lewis S & Patel U (2004)[7]	Retrospective study	England (London)	University hospital interventional radiology service
LC1. CADTH (2014)[8]	Narrative review	Canada	–
LC2. Pabon-Ramos WM et al (2016)[9]	Consensus-based review	USA	Hospital setting, International Society of Radiology
LC3. Martin R, Baker H (2019)[10]	Consensus-based review	England (London)	Hospital setting – NHS
LC4. Yoo MJ, Bridwell RE et al (2021)[11]	Narrative review	USA	Emergency department
LC5. NHS (2021)[12]	Consensus/guideline review	England	University hospitals – Nottingham NHS Trust
LC6. Pagliarini AM et al (2021)[1]	Experience report	Brazil (South)	Hospital outpatient consultation
LC7. NSW Agency for Clinical Innovation (2022)[13]	Narrative review	Australia (Sydney)	–
LC8. Szvalb AD et al (2023)[14]	Retrospective study	USA	–

Table 2. Nephrostomy concept

Article ID code	Nephrostomy concept
P1[2]	An image-guided urinary diversion technique involving the placement of a flexible pigtail catheter that creates direct communication between the kidney and the external environment through a percutaneous tract
P2[3]	No definition
P3[4]	A tube placed percutaneously into the kidney under image guidance and local anesthesia in patients with acute urinary obstruction, connected to an external drainage bag
P4[5]	A catheter inserted percutaneously, usually via the lumbar region, directly into the kidney to allow urine drainage in cases of urinary tract obstruction. It is a minimally invasive technique performed under image guidance using local anesthesia
P5[6]	An external catheter used for urinary drainage in cases of obstruction secondary to oncological or traumatic conditions
P6[7]	No definition
LC1[8]	A temporary or permanent catheter inserted into the renal collecting system
LC2[9]	Image-guided placement of a catheter into the renal collecting system for the management of urinary obstruction
LC3[10]	An image-guided pigtail drainage catheter inserted into the renal pelvis to divert urine externally from the ureter on a temporary or permanent basis. The procedure may be performed under general anesthesia or sedation
LC4[11]	A minimally invasive procedure that connects the renal pelvis or calyx to the skin via a drainage catheter in cases of urinary obstruction
LC5[12]	A tube introduced through the lumbar region directly into the renal pelvis under imaging guidance for the treatment of lower urinary tract obstruction
LC6[1]	Direct communication between the kidney and the external environment achieved through the insertion of a flexible catheter via a percutaneous tract under image guidance
LC7[13]	Insertion of an image-guided catheter through the flank into the renal pelvis, performed in the operating room or radiology department for urinary obstruction. The catheter may be temporary or permanent
LC8[14]	Catheters used for intrinsic or extrinsic urinary tract obstruction

Table 3. Nursing interventions

Article ID code	Pre-procedure	Immediate care	Post-discharge care
P1[2]	A pre-procedure nursing consultation with the patient and caregiver is essential for anxiety reduction	Not specified	Not specified
P2[3]	Not specified	Not specified	Not specified
P3[4]	Not specified	Not specified	Not specified
P4[5]	Provide emotional support and explanation of the procedure	Post-procedural monitoring. Early detection of complications, including signs of hemorrhage, organ perforation and sepsis Patient and family empowerment for self-care, including supervised training in dressing replacement (technique not specified) Education on post-discharge management: weekly replacement of the occlusive dressing; bathing instructions; avoidance of tight clothing that may compress the catheter	Referral and coordination of care with the community nursing team Provided with a telephone contact to enable early recognition of complications, such as signs of infection and/or catheter dislodgement
P5[6]	Not specified	A closed drainage system with a protective dressing at the catheter skin insertion site. Clean technique during care, including disinfection of the skin and catheter insertion site with an antiseptic solution (applied for 30 seconds), followed by application of a moisture-resistant dressing once the area is dry. Discharge care includes supervised caregiver training by the nurse and provision of a written leaflet with instructions on when to contact the healthcare team and information on the main potential complications	Telephone contact line for the clinical team Follow-up appointments (first visit after one week) for long-term catheters (>2 weeks): Assess the insertion site for signs or symptoms of infection and bleeding Replace the protective dressing and drainage bag as needed Perform catheter flush with 5mL of normal saline (without aspiration; if resistance is encountered, do not force and refer accordingly) Evaluate skin integrity Supervised caregiver training Assess the patient's and caregiver's ability to manage self-care Determine the frequency of subsequent follow-up visits
P6[7]	Not specified	Not specified	Not specified
LC1[8]	Not specified	Assess the function of the nephrostomy tube. Monitor for pain, leakage, bleeding, and fever The nephrostomy tube insertion site should be kept dry for 48 hours; use of hot tubs or swimming pools is not recommended Maintain daily fluid intake of 1.5–2.5 liters to ensure tube patency and prevent infection Assess the peristomal skin Monitor nephrostomy output	Early identification and management of complications: Collect an aseptic urine sample if signs of infection are present (flank pain, fever, chills, vomiting, foul-smelling or hematuric urine) Assess for signs of catheter obstruction. If obstructed, flush with 2–20 mL of normal saline or sterile water (depending on catheter function) using sterile technique Disinfect the catheter tip with chlorhexidine or an alcohol-moistened wipe Aspiration is controversial due to the risk of trauma and bleeding Routine catheter flushing is not recommended; it should be performed only in cases of recurrent obstruction, with a maximum frequency of twice per week Patient and caregiver education Empty the drainage bag when it is half full or two-thirds full to reduce the risk of catheter dislodgement Replace the drainage system 1–3 times per week If a dressing is used, it should be replaced whenever it is visibly soiled or at a scheduled frequency of every other day or twice per week. Recommended dressings for nephrostomy tubes include Drainfix®, Comfeel®, Opsite®, dry dressings, Uresil® adhesive dressing, 3M™ No Sting Barrier Film, and waterproof dressings for bathing.

Article ID code	Pre-procedure	Immediate care	Post-discharge care
LC2[9]	Not specified	Not specified	Not specified
LC3[10]	Not specified	Check catheter permeability; monitor urine output (if urine production is <30mL/hour, notify the medical team); ensure secure fixation of the nephrostomy catheter to the skin with suture and drain fixation dressing; apply a transparent film dressing over the site for added security and water resistance, and connect a closed drainage system at waist level. Monitor the catheter insertion site and dressing; assess vital signs; advise bed rest for 4–6 hours. Provide patient and/or caregiver education for discharge, including: emptying the drainage system, early detection of complications, weekly replacement of the protective dressing and drainage bag, obtaining necessary supplies, adjusting the night drainage bag to larger volume if needed, providing an informational leaflet and clinical contact, and coordinating care with the community nursing team	Early identification and management of complications: Changes at the pericatheter skin site: replace the dressing every 7 days, monitor for any changes, and collect a swab if exudate is present Infection: assess temperature, urine characteristics, and presence of flank pain; use aseptic technique during care Catheter obstruction: ensure there are no kinks in the tubing; if obstructed, flush with 5 mL of 0.9% normal saline using sterile technique High urine output: monitor body weight and vital signs, and ensure the patient does not develop signs of dehydration
LC4[11]	Not specified	Post-procedure care: Ensure the insertion site remains dry Oral hydration: at least 2 litres of water per day Daily inspection of the dressing and catheter Bleeding: monitor during the immediate post-procedure period (first 48 hours). Assess for anemia and hematoma (particularly in obstructive uropathy). Refer to the physician if necessary Closed drainage system with protective dressing; change the dressing every 2 days or immediately if soiled Provide patient and caregiver education regarding nephrostomy care	Ensure replacement of drainage bags at least three times per week, emptying the bag whenever it reaches two-thirds full Prevention and early identification of complications: Pericatheter skin changes: identify the cause and consider topical skin protectants or antibiotic ointments Urine leakage at the catheter insertion site and/or drainage bag: check device integrity and replace if necessary; perform hair removal (trimming) as needed Catheter obstruction: Assess for kinks or twists in the catheter Using aseptic technique, disconnect the drainage bag from the nephrostomy tube, disinfect the catheter tip with chlorhexidine or an alcohol-moistened wipe, and perform gentle irrigation with 10 mL of normal saline or sterile water. If resistance is encountered, aspirate gently Simultaneously evaluate for other complications such as infection, catheter displacement, or hematoma, and refer to the medical team if necessary Catheter exteriorisation or kink: Assess for flank or lumbar pain, decreased urine output, systemic symptoms, and leakage or bleeding around the nephrostomy tube site Infection and sepsis: Indications for laboratory assessment include complete blood count to evaluate leukocytosis and collection of an aseptic urine sample Urine collection: using aseptic technique, disconnect the drainage bag and collect urine by gravity into a sterile collection tube. Do not collect urine directly from the drainage bag to avoid contamination Pediatric population: Indications and complications are similar to those in adults

Preoperative nursing care should address both physical and emotional preparation. Literature highlights the importance of psychological support, clear explanation of the procedure, and obtaining informed consent, which facilitate adherence and collaboration with the therapeutic plan.[5] Preoperative management also involves following institutional protocols, including withholding anticoagulants or other specific medications, ensuring a minimum six-hour fast, administering prescribed premedication or analgesia, and monitoring blood glucose in patients with diabetes.[13]

Article ID code	Pre-procedure	Immediate care	Post-discharge care
LC5[12]	Not specified	Hospital discharge considerations: Referral to a stoma care team Provide sufficient supplies until they are available through community services Assessment of the patient's and caregiver's ability to handle the devices Referral to a community nurse or instruction to the caregiver on device replacement Provide an informational leaflet with contact details and guidelines for nephrostomy care	Use one-piece urostomy device: Drainage system replacement: Position the patient in a seated or lateral decubitus position. Wear sterile gloves and a gown. Empty the bag before removal Use an alcohol-free adhesive remover while supporting the skin with the other hand to prevent skin damage or pulling the catheter Non-touch technique: clean the pericatheter skin and nephrostomy tube with normal saline or sterile water and dry with a sterile gauze Once the skin is dry, insert the tube through the ostomy bag opening (the opening should not be cut or enlarged) Device management recommendations: Empty the bag when it reaches one-third of its capacity to prevent tension on the device When connecting the ostomy device to a night or leg bag, do not empty; allow urine to flow into the night/leg bag to avoid vacuum formation between the two devices Encourage oral intake of 2–2.5 liters of fluids daily to reduce the risk of urinary tract infections, primarily water, though tea, coffee, and fruit juices are acceptable The ostomy device should be replaced three times per week, every 2–3 days Complication management: Obstruction: Assess for kinking or externalisation of the catheter. Perform flushing using aseptic technique Clean the catheter tip with an alcohol swab and allow it to dry for 30 seconds to prevent ascending infection Check for kinks or removed Luer-lock caps Flush the catheter slowly with 5mL of sterile water, ideally allowing it to drain without aspiration to avoid bleeding. Encourage fluid intake to promote diuresis and maintain tube patency Pericatheter skin injury: Ensure there is no urine leakage Replace the device more frequently if needed Consider ostomy accessories (skin barrier or catheter isolate). Refer persistent lesions or granuloma formation to a stoma care team Urine leakage: Assess device adhesion to the skin and replace as needed. Consider hair removal if necessary Pain: Assess nephrostomy catheter function, urine output, and urinary tract infection Urine sample collection: Using aseptic technique, clean the catheter tip with alcohol or chlorhexidine and allow it to dry for 30 seconds. Without touching the catheter tip, allow urine to drip into a sterile collection cup to avoid contamination Apply a new device, wash hands, and send the sample for culture. A urine culture is recommended 7–14 days prior to nephrostomy catheter replacement
LC6[1]	Nurse education should begin during this period	Assess and identify the patient's support	Roles of the stoma nurse: Assessment and care of the stoma and pericatheter skin, specifics not detailed Prescription of ostomy devices Coordination of care with the community nursing team

Article ID code	Pre-procedure	Immediate care	Post-discharge care
LC7[13]	Obtain informed consent Verification of institutional protocol compliance, including suspension of anticoagulants and other specific medications, a minimum fasting period of six hours, administration of prescribed premedication or analgesia, and blood glucose monitoring in patients with diabetes mellitus	Assess fluid balance, vital signs, catheter patency, urine characteristics, the dressing at the catheter insertion site (closed drainage system), and signs of early complications Administer prescribed analgesia Provide individualised education to the patient and caregiver regarding nephrostomy tube care in advance of hospital discharge Provide drainage supplies for device replacement Give an informational leaflet with telephone numbers for contact in case of any issues Refer to the community nursing team	<u>Drainage device management recommendations:</u> Dressings at the catheter fixation site may require a specialised catheter fixation device, such as Drain-Fix, or a thin, flexible hydrocolloid dressing placed around the exit site, or a transparent occlusive dressing. The dressing should be waterproofed prior to bathing It is recommended that the dressing and drainage bag be replaced at least every 7 days or according to the manufacturer's instructions Pericatheter skin hygiene should be performed using an antiseptic solution and sterile normal saline <u>Catheter removal:</u> For a pigtail catheter, remove the skin suture if present. Gently pull the tube until it is completely removed. If resistance is felt, stop the procedure and consult a physician For a large-bore catheter (such as Foley), deflate the balloon prior to removal Apply an absorbent compressive dressing after removal <u>Complication management:</u> Obstruction: Assess for kinking or externalisation of the catheter. Perform flushing using aseptic technique Clean the catheter tip with a 70% alcohol swab and allow it to dry; check for kinks. Slowly flush the catheter with up to 10 mL of sterile 0.9% normal saline and allow free drainage without aspiration. Encourage fluid intake to promote diuresis and maintain tube patency Granulation tissue: Secure the tube to prevent pressure or movement-related injury Urine leakage: Assess device adhesion to the skin and replace if needed. Evaluate the need for hair removal (trimming) Pain: Assess nephrostomy catheter function, urine output, and urinary tract infection Pericatheter skin injury: Ensure there is no urine leakage Replace the device more frequently if needed. Consider using ostomy accessories (skin barrier or catheter isolate). Refer persistent lesions or granuloma formation to a stoma nurse Urine sample collection: Perform an aseptic collection by allowing free-flowing urine into a sterile container Do not collect urine directly from the drainage bag to avoid contamination
LC8[14]	Not specified	Not specified	Urine sample collection: perform an aseptic collection by allowing free-flowing urine to drain into a sterile container or a new sterile drainage collection bag

Immediate postoperative care focuses on monitoring vital signs and early detection of complications such as bleeding, organ perforation, or infection.[5] Bed rest for 4–6 hours is recommended, with attention to proper positioning and catheter stability.[10] The nephrostomy should remain on free drainage, with continuous monitoring of catheter patency, urine output (≥30mL/hour), and signs of infection. Securing the catheter at the insertion site and careful site surveillance are essential to prevent dislodgement and infection.[10]

Literature reports variations in catheter fixation and protection practices, which may impact post-discharge care. Ostomy devices or occlusive dressings with closed drainage systems may be used.[8,11] Recommended devices should include anti-reflux valves, drainage valves, and adaptability for nighttime use. No comparative studies between different fixation systems or associated outcomes were identified.

Prophylactic catheter irrigation remains controversial. Some authors warn of potential renal trauma with systematic irrigation, recommending it only in cases of decreased urine output.[8] When performed, irrigation with 5mL of 0.9% saline under aseptic technique is suggested.[10,11] One grey literature source[12] suggested a potential risk of precipitation and stone formation with saline use; however, no scientific evidence supports this claim.

Urine collection for microbiological analysis should not be performed directly from the drainage bag. Collection must be gravity-assisted and aseptic to ensure sample reliability and

Table 4. Outcomes

Article ID code	Outcomes
P1[2]	Low-complication technique. Improved quality of life and reduced anxiety reported when adequate patient or caregiver education is provided
P2[3]	Low morbidity and mortality. Most frequent complications: local abscess, insertion site discomfort, catheter obstruction (requiring replacement in 24.5–44% of patients), and high long-term infection rates
P3[4]	Nurse training showed positive effects on the management of percutaneous nephrostomy catheter care
P4[5]	Most frequent complications: hemorrhage, organ perforation, infection, pericatheter urine leakage due to obstruction, accidental catheter exteriorisation
P5[6]	A patient and caregiver education program with nursing follow-up resulted in reduced hospitalisations (only 4.3% required admission), decreased associated costs, and fewer emergency visits and admissions
P6[7]	Complications identified (n=318): 10 patients (3.1%, male, aged 35–72) had severe complications: five isolated sepsis, two severe hemorrhages (one with concomitant sepsis), and three severe renal pelvic injuries with associated sepsis
LC1[8]	Recommendations for interventions to prevent urinary tract infection (UTI). Screening for MRSA and pre-insertion urine culture suggested to ensure absence of urinary infection. Literature review did not show scientific evidence that a specific technique reduces complication risk
LC2[9]	Most frequent complications: septic shock, hemorrhage, pleural complications, vascular injury. Prophylactic antibiotic use for the procedure described
LC3[10]	Most frequent complications: hemorrhage, vascular injury requiring nephrectomy or embolisation (3 in 100); infection, catheter obstruction, catheter exteriorisation (1 in 100); increased diuresis
LC4[11]	Minor complications: local skin irritation, urine leakage at catheter insertion site and/or drainage bag, pain, granulation tissue. Catheter displacement or torsion: incidence 5%; risk factor: BMI >35 Infection and sepsis: prophylactic antibiotics are controversial; infection rates occur in 14% despite prophylaxis; asymptomatic bacteriuria 7.5%. Symptoms: flank pain, leukocytosis, altered vital signs, fever, urine changes (odor, hematuria, decreased output). Infectious complications usually appear 42 days post-procedure Hemorrhage: occurs in 1–4.3% of patients; preoperative renal insufficiency is the only statistically significant predictive factor. Pleural injury incidence: 0.3%. Pediatric population: urine leakage (6.7%), infection (5.4–17%), hemorrhage with transfusion (0.8–3%), sepsis (0.8–3%), pleural injury (0.2%) Patients who received specific education on care, dietary modifications, and preventive lifestyle changes had fewer unscheduled medical visits
LC5[12]	Not specified
LC6[1]	Patients with an established family support network had fewer complications and unscheduled visits Lack of support associated with higher rates of complications, such as irritative dermatitis from urine leakage due to device detachment Most frequent skin lesions in patients with nephrostomy seen in stoma care: granulomas and peristomal dermatitis
LC7[13]	Most frequent immediate complications: hemorrhage, infection, adjacent organ injury Other frequent complications: granulation tissue, hemorrhage and/or hematuria, increased diuresis, obstruction, urine leakage, localised pain, skin changes, catheter exteriorisation, infection
LC8[14]	Most frequent complications: pyelonephritis, renal abscess, bacterial infection Risk factors for recurrent infection: prior infection in the last year with the same microorganism, radiotherapy, and a communicating fistula Criteria for nephrostomy-related UTI: clinical symptoms suggestive of urinary tract infection or sepsis (fever, chills, dysuria, costovertebral angle tenderness, hemodynamic instability, cellulitis at the nephrostomy site), and bacterial growth $\geq 10^4$ CFU/mL in urine culture

avoid contamination, which could lead to misdiagnosis and antimicrobial resistance.[11, 14]

Post-discharge follow-up is critical. Health education targeting both the patient and informal caregivers is essential for preventing complications and promoting autonomy. Structured educational interventions have been shown to reduce complication rates by approximately 10% and mitigate the physical and emotional impact of catheter presence.[2]

The literature recommends individualised self-care education plans, ideally initiated in the hospital setting, including informative leaflets, telephone access to healthcare professionals, and scheduled follow-up consultations for patients requiring prolonged nephrostomy.[6] Continuous follow-up allows gradual adaptation to the new condition and contributes to improved quality of life.[1]

Training nurses in nephrostomy care positively impacts care quality by significantly improving knowledge levels.[4]

The incidence of complications associated with nephrostomy (Table 4) is generally low, with reported low morbidity and mortality[3]; however, continuous nursing care remains essential. Various authors report that most complications are related to inadequate care or improper use of devices. Preventive strategies and facilitating measures to reduce complications have also been described in the literature.

CONCLUSION

The findings of this scoping review reveal a lack of robust clinical evidence or evidence-based guidelines demonstrating that a specific nursing care technique for patients with nephrostomy has a greater impact on quality of life or on reducing the risk of complications. Most existing recommendations are based on expert consensus and best practice principles related to wound care, catheter management and the pathophysiology of the urinary system.

Despite variations in recommendations, common themes in nursing care aimed at preventing infectious complications include maintaining adequate fluid intake, performing hand hygiene, using aseptic and/or non-touch techniques during dressing and drainage device changes, and ensuring appropriate peristomal skin care.

Further clinical research is required to evaluate the effectiveness of nursing interventions in reducing complications and improving the quality of life of people living with a nephrostomy.

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ETHICAL APPROVAL

As a scoping review, this study did not require ethical approval.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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