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POST-PROSTATECTOMY INCONTINENCE AND NURSING CARE: AN INTEGRATIVE REVIEW

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ABSTRACT

Objective: To identify nursing actions corresponding to assistance in post-prostatectomy urinary incontinence (PPUI). **Method:** This is an integrative review conducted in PubMed Central, ScienceDirect, Scopus and Web of Science, using the English terms "post-prostatectomy incontinence" and "nursing care," combined with the Boolean operator AND. Articles published as full text or articles in press, within the open access system, without distinction of languages or year of publication, were included. **Results:** The initial search found 477 papers, but only six met the eligibility criteria. The five types of nursing actions identified were pelvic floor muscle training; urine stream interruption test with Unit Under Test timer; psychological nursing intervention program; telephone nursing support; and continuous post-prostatectomy nursing care, together with the previous interventions. Most studies showed good methodological quality and low risk of bias. **Conclusion:** The present review allowed the identification of different types of management of PPUI by nursing, even considering that the scenario of studies on the area is still scarce. It is expected that this review may be useful for the development of quality nursing care protocols for PPUI.

DESCRIPTORS: Enterostomal therapy; Nursing care; Evidence-based practice; Quality of life.

INCONTINÊNCIA PÓS-PROSTATECTOMIA E ASSISTÊNCIA DE ENFERMAGEM: UMA REVISÃO INTEGRATIVA

RESUMO

Objetivo: Identificar as ações de enfermagem correspondentes à assistência frente à incontinência urinária pós-prostatectomia (IUPP). **Método:** Trata-se de uma revisão integrativa realizada na PubMed Central, ScienceDirect, Scopus e Web of Science, mediante o uso dos termos em inglês "post-prostatectomy incontinence" e "nursing care", combinados com o operador booleano AND. Foram incluídos artigos publicados como texto completo ou em impressão, dentro do sistema acesso aberto, sem distinção de idiomas e ano de publicação. **Resultados:** A pesquisa inicial encontrou 477 trabalhos, mas apenas seis atenderam aos critérios de elegibilidade. Os cinco tipos de ações de enfermagem identificadas foram: treinamento muscular do assoalho pélvico; teste de interrupção do jato de urina com cronômetro unidade sob teste (UST); programa de intervenção de enfermagem psicológica; suporte telefônico de enfermagem; e cuidados contínuos de enfermagem pós-prostatectomia, unindo as intervenções anteriores. A maioria dos estudos demonstrou boa qualidade metodológica e baixo risco de viés. **Conclusão:** A presente revisão permitiu identificar diferentes tipos de manejo da IUPP pela enfermagem, mesmo considerando que o cenário de estudos sobre a área ainda é escasso. Espera-se que essa revisão possa ser útil para a elaboração de protocolos de assistência de enfermagem à IUPP de qualidade.

DESCRITORES: Estomaterapia; Assistência de enfermagem; Prática baseada em evidências; Qualidade de vida.

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INCONTINENCIA POSTPROSTATECTOMÍA Y CUIDADOS DE ENFERMERÍA: UNA REVISIÓN INTEGRADORA

RESUMEN

Objetivo: identificar las condiciones de enfermedad correspondientes a la asistencia frente a la incontinencia urinaria pós-prostatectomía (IUPP). **Método:** se trata de una revisión integradora realizada en PubMed Central, ScienceDirect, Scopus y Web of Science, mediante el uso de los términos en inglés "post-prostatectomy incontinence" y "nursing care", combinados con el operador booleano. Los artículos publicados como texto completo o artículos en prensa se incluyeron en el sistema de acceso abierto, sin distinción de idioma y año de publicación. **Resultados:** la búsqueda inicial incluyó 477 artículos, pero sólo seis cumplieron los criterios de elegibilidad. Los cinco tipos de tratamientos identificados fueron el tratamiento muscular del asno pélvico (PMFT); la prueba de interrupción de la micción con cronómetro Unidad en prueba; el programa de intervención de enfermería psicológica; el soporte telefónico de enfermería; y los cuidados continuos de enfermería posprostatectomía, sin contar con las intervenciones anteriores. La mayoría de los estudios mostraron una buena calidad metodológica y un bajo riesgo de sesgo. **Conclusion:** la presente revisión permitió identificar diferentes tipos de manejo de IUPP por parte de la enfermería, aún considerando que el escenario de estudios en esta área es aún escaso. Se espera que esta revisión pueda ser útil para el desarrollo de protocolos de cuidados de enfermería de calidad para la IUPP.

DESCRIPTORES: Estomaterapia; cuidados de enfermería; práctica basada en la evidencia; calidad de vida.

INTRODUCTION

Worldwide, prostate cancer is the second most recurrent type of cancer among men (the first being lung cancer) and the fifth in the ranking of causes of mortality[1].

The Global Cancer Observatory's 2020 data revealed that 1,414,259 new cases of prostate cancer were identified, which equaled 7.3% of all cancer cases overall, among both sexes and at all ages. The number of deaths, in the same year, reached 375,304, 3.8% of all cancer deaths, following the same previous parametric criteria[2].

In the Brazilian scenario, the estimated incidence of new cases in 2020 was 65,840 (29.2% in relation to all neoplasms that affect men, except nonmelanoma skin cancer). There were 15,983 deaths (13.1% of all cancer deaths)[3].

Considering the treatment of prostate cancer, radical prostatectomy is considered an important procedure and consists in the prostate and seminal vesicles removal[4]. However, as with any surgery, there are several complications associated with radical prostatectomy that can impact the quality of life, even temporarily[5].

Postprostatectomy urinary incontinence (PPUI), one of the main examples of postoperative complications, is a result of the lesions caused to the sphincter region due to prostate removal, where the geometry of the ureterovesical junction loses the ability to maintain urinary continence and the urinary sphincter becomes the structure responsible for maintaining continence. In this case, urinary continence has as determinant factors: the integrity of the internal sphincter in the bladder neck; the passive urethral mechanism formed by the prostatic and membranous segment; and the external sphincter in the pelvic floor which, on its turn, depends on the integrity and strength of the striated muscle fibers of voluntary rapid contractions[6].

Nursing has a fundamental role in the field of urinary incontinence treatment, both in the identification of the problem and in the implementation of therapies aimed at strengthening the pelvic floor muscles, promoting health and quality of life. However, it is necessary that nurses are adequately informed in order to develop their role[7].

Therefore, thinking about the importance that the scientific basis has on clinical practice, the evidence in the literature can guide nursing in the construction of promising care plans. Therefore, the present review aimed to consider the context of PPUI and identify corresponding nursing actions.

MATERIAL AND METHODS

Study design

The integrative literature review method was chosen because it allows a broad, but synthesized and ordered, gathering of aspects on a certain area of interest, with the purpose of incorporating scientific evidence as key pieces for the substantiation of clinical practice[8].

Thus, six steps were followed: (1) definition of the problem and formulation of the guiding question; (2) database search using descriptors combined with Boolean operators and application of eligibility criteria; (3) data extraction and organization; (4) critical analysis of the included findings; (5) interpretation and discussion of results; (6) presentation of the review[9].

In addition, it should be noted that the construction of this review also relied on the application of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines[10] with some adaptations, using the flowchart for reviews that included only database searches and registries[11].

Definition of guiding questions, databases and search strategies

Considering the objective of the study, the following guiding question was formulated: What is the state of the art on postprostatectomy incontinence and nursing care?

The search for the materials was done in PubMed Central, ScienceDirect (Elsevier), Scopus (Elsevier) e Web of Science (Clarivate Analytics). Queries were performed using the terms "*post-prostatectomy incontinence*" and "*nursing care*" combined with the Boolean operator AND.

Understanding that each base operates with its own commands, the search strategies and the way the search is translated on the different platforms may vary. In view of this, Table 1 presents the specifications of each collection field and the research commands used, in order to obtain a greater range of results, while preserving the rigor in the collections.

Table 1. Specification of the databases chosen for data collection. Crato, Ceará, 2021.

Database	Database type	Strategy used
PubMed Central/PMC	Sites with free access to journals	**PMC Advanced Search Builder - All Fields** (post-prostatectomy incontinence) AND nursing care
ScienceDirect (Elsevier)	Full texts	**Advanced Search** post-prostatectomy incontinence and nursing care
Scopus (Elsevier)	References with abstracts	**Advanced Search** TITLE-ABS-KEY(post-prostatectomy incontinence and nursing care)
Web of Science (Clarivate Analytics).	References with abstracts	**Advanced Search Query Builder** ALL=(post-prostatectomy incontinence and nursing care)

Source: Elaborated by the authors.

Data collection, eligibility criteria, organization and analysis

Data collection took place between the months of July and August 2021 by two separate researchers, without any form of contact between them during the process. The final sample was established by comparing the results and establishing agreement between the two.

Articles published in full text or in print, within the open access system, without distinction of languages and year of publication, were included. Articles that were incomplete and did not answer the questions of the integrative review, papers published in the proceedings of events (abstracts or full papers), book chapters, encyclopedias, reviews of any nature, and editorials were discarded.

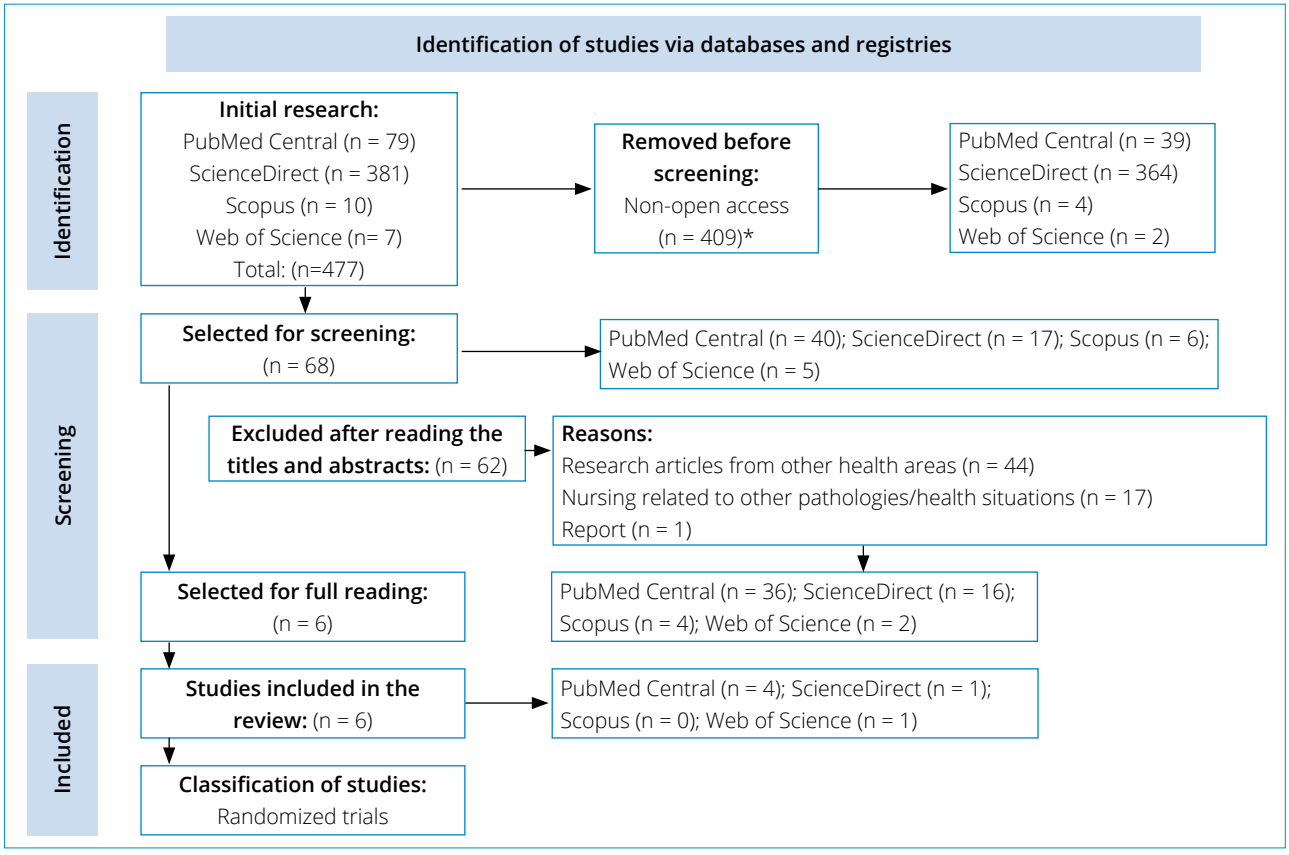
The selection of articles was conducted using an eligibility criteria evaluation form, followed initially by checking the open access articles and reading the titles and abstracts. Subsequently, the selected ones were read in their entirety in order to confirm complete readability. For the exclusion of duplicate papers, the results lists of the databases were observed, highlighting the article according to the order of first appearance.

The data were organized in a database, extracting the relevant information to answer the guiding question (author, year of publication, place where the research was conducted, type of study, journal where it was published, results found, etc.). In order to assess methodological quality, the included studies were analyzed according to the scale of Jadad et al.[12], which contains five questions that are intended to identify the presence of items considered important in describing clinical trials and allow for the classification of risks of bias. Finally, the articles in the final sample were interpreted and discussed based on the literature.

RESULTS AND DISCUSSION

General aspects of the review

Figure 1 shows the flowchart of the PRISMA model, with all the details of the step-by-step integrative review. In the initial search, 477 papers were found, with the majority coming from ScienceDirect (n = 381). Prior to screening, 409 articles were removed for not being open access and 68 were selected for screening. After reading the titles and abstracts, 62 were excluded: 44 research articles from other health areas, 17 from nursing related to other pathologies/health situations, and 1 report. The studies selected for reading in full were confirmed for complete readability, and thus the final review sample comprised six articles, of which PubMed accounted for the largest number (n = 4). ScienceDirect and Web of Science had 1 article selected each and Scopus did not obtain any studies at the end of the steps



*Verification done according to the automatic tools of each database.

Figure 1. Flowchart of the integrative review steps, adapted according to the PRISMA 2020 model for database and registries searches. Crato, Ceará, 2021.

Table 2 describes the main aspects of the included studies: authors, year of publication, study title, country of origin, methodological design, sample size, and the results.

Table 2. Characteristics of the articles included in the IR on post-prostatectomy incontinence and nursing care. Crato, Ceará, 2021.

Author	Year	Title	Objective	Country of origin	Methodological design	Sample size	Results
Jalalinia et al[13].	2020	The effect of pelvic floor muscle strengthening exercise on urinary incontinence and quality of life in patients after prostatectomy: A randomized clinical trial	To evaluate the effects of pelvic floor muscle exercises on urinary incontinence and quality of life in postprostatectomy patients.	Iran	Randomized clinical trial	60 participants	The group that received nursing interventions (pelvic floor muscle exercise training) had significantly better incontinence improvement and quality of life scores, compared to the control group.
Moore et al.[14]	2008	Return to continence after radical retropubic prostatectomy: A randomized trial of verbal and written instructions versus therapist-directed pelvic floor muscle therapy	Compare the effectiveness of the weekly postoperative Pelvic Floor Muscle Training (PFMT) Program versus telephone nursing support.	Canada	Randomized clinical trial	205 participants	Statistically there were no significant differences in the pattern of PPUI improvement in the comparison between the groups that received PFMT training and those that were followed by verbal instruction and written information with telephone support.
Robinson et al.[15]	2008	Systematic pelvic floor training for lower urinary tract symptoms post-prostatectomy: A randomized clinical trial	To investigate the effects of systematic postoperative PMFT on intensity and distress of LUTS and HRQL in the face of radical PPUI.	United States	Randomized clinical trial	126 participants	PMFT performed by nursing can reduce the negative impact of LUTS on HRQL, considering the long-term period.

continue...

Table 2. Continuation...

Author	Year	Title	Objective	Country of origin	Methodological design	Sample size	Results
Robinson et al.[16]	2012	Validity testing of the stopwatch urine stream interruption test in radical prostatectomy patients	To evaluate the convergent validity of the urine stream interruption test with a stopwatch.	United States	Randomized clinical trial	47 participants	Use of stopwatch as a promising strategy for the assessment of pelvic floor muscle strength in patients with PPUI.
Wang et al.[17]	2018	Extended nursing for the recovery of urinary functions and quality of life after robot-assisted laparoscopic radical prostatectomy: A randomized controlled trial.	To explore the effects of continued nursing care intervention on postoperative urinary control and quality of life in patients with prostate cancer.	China	Randomized clinical trial	74 participants	The postprostatectomy continuous nursing care group had better scores than the control group in the improvement of urinary incontinence and quality of life.
Yuan et al.[18]	2019	Psychological nursing approach on anxiety and depression of patients with severe urinary incontinence after radical prostatectomy – a pilot study.	To implement a psychological nursing intervention program and explore the effects on anxiety and depression in patients with severe urinary incontinence after radical prostatectomy.	China	Randomized clinical trial	35 participants	Participants in the postprostatectomy psychoeducation group had lower scores on the anxiety and depression assessment scales; and they had better scores on the quality-of-life assessment, when compared to the group that received conventional nursing care

LUTS: Lower urinary tract symptoms; PFMT: Pelvic floor muscle training; HRQL: Health-related quality of life. Source: Elaborated by the authors.

All articles in the sample were published in English and classified as randomized clinical trials. Randomization allows both the evaluation of existing treatment technologies and the discovery of new valid, efficient, effective and safe interventions, whether they are drug-based or not, providing subsidies to assist the decision making of professionals, in the face of numerous health situations, aiming at improving people's quality of life[19–22].

China and the United States were the two countries with the highest prevalence of essays (2 each) and publication years ranged from 2008 to 2020. Overall, five types of nursing care were evaluated: pelvic floor muscle training (PMFT); urine stream interruption test with a stopwatch; psychological nursing intervention program; telephone nursing support; and continuous post-prostatectomy nursing care, uniting the previous interventions. The aspects and results of each assistance will be discussed below.

Nursing care for PPUI

The male sphincter complex has two units: the proximal unit, consisting of the bladder, prostate, and prostatic urethra up to the verumontanum segment, and the distal unit, which comprises the rhabdosphincter, the skeletal paraurethral muscles, and the fasciae[2].

Considered a conservative treatment method, PMFT has the purpose of helping in the urinary continence process, strengthening the pelvic floor muscles through intense contraction of the muscles[23]. PMFT was addressed in three of the clinical trials, and is the most widely studied type of intervention in nursing care for PPUI.

The results of Robinson et al.[15] with participants in the US showed that muscle training incorporated into nursing practice has positive potential in reducing the negative impacts of LUTS and improving long-term HRQL.

Just as important as promoting muscle training is to look for strategies that can allow the measurement of muscle strength. In this regard, years later, Robinson et al.[16], used a stopwatch in the urine stream interruption test. Although preliminary, the results pointed out that the use of the stopwatch can be a practical, economical and promising reference for nursing in the evaluation of the evolution of patients in PFMT.

Moore et al.[14], meanwhile, tested the effectiveness of postoperative PFMT versus telephone nursing support, with verbal instruction and written information about the training, and found that telephone follow-up was as significant as in-person follow-up in improving PPUI.

Looking at the previous evidence, it was possible to note that PMFT is a therapy that remains useful in the roster of nonpharmacological measures of PPUI from a nursing perspective. Sayner and Nahon[24] suggest that attention should be paid to the importance of individualized prescription in the training clinic, according to the uniqueness and particularities of each patient.

The results of Moore et al.[14] and Robinson et al.[15] corroborated more recent findings seen in the research of Jalalinia et al.[13], in which the group that received nursing training for PMFT had better rates in improving incontinence and quality of life than the control group.

Telephone support, a strategy described by Moore et al.[14], can be considered a relevant tool in the monitoring of PPUI by nursing—and the scientific evidence is positive—as expressed in the systematic review by Mata et al.[25].

It is worth noting that the context unleashed by the pandemic of COVID-19 has led to the need to rethink how to offer safe and effective health care services. For this reason, telehealth services have expanded, coupled with increasingly innovative information technology, allowing patients to be followed up effectively, even at a distance[26].

Another perspective of nursing performance in the face of PPUI was addressed by Yuan et al.18. In a pilot study on the implementation of a psychological nursing intervention program, 16 participants received conventional nursing care and 19 were followed by the psychological intervention, relying on lectures, informal discussions, telephone support, relaxation training, etc. A very relevant point to be highlighted is that the researchers also sought to integrate the family of the participants in all the processes. The results showed that psychological nursing intervention proved effective in improving anxiety and depression symptoms, as well as quality of life in patients with severe PPUI.

It is possible to realize, in view of the above results, the importance of the nursing look beyond the physical dimension of the patients' health, as well as the extension of care. In the study by Wang et al.[17], the group (n = 35) that received continuous nursing care for six months (telephone assistance, group classes including family, domiciliary visits, PMFT guidance/supervision, and assessment of psychological conditions) showed better results in improving incontinence and quality of life, compared to the control group; showing that continued care is fundamental to improving post-prostatectomy urinary function, as well as promoting health, in a holistic manner.

Analysis of the methodological quality of the studies

Table 3, in turn, refers to the analysis of the quality of the studies done according to the scale of Jadad et al.[12].

Table 3. Evaluation of randomized clinical trials. Crato, Ceará, 2021.

Questions	Yes		No		Not described	
	N	%	N	%	N	%
Described as randomized?	6	100	0	0	Na	Na
Described as double-blind?	0	0	6	100	Na	Na
Is there a description of losses?	5	83.4	1	16.4	Na	Na
Appropriate randomization?	6	100	0	0	0	0
Appropriate blinding?	0	0	0	0	6	100
Final score	**Classification**				**No. of trials**	
< 3	High risk of bias				1	
≥ 3	Low risk of bias				5	

Na: not applicable. Source: Elaborated by the authors.

All the trials were described as randomized trials; however, none expressed the use of the double-blind method, where the observed and the observer do not know the intervention applied to the researched groups, except for the article by Robinson et al.[15].

All six studies demonstrated appropriate randomization, but it was not clear from the methodology whether there was adequate blinding. This point can be justified because in some studies involving intervention, such as those whose treatment effects or adverse events are very specific to identify allocation, blinding is not possible.

Regarding the final scores, most of the studies demonstrated good methodological quality and low risk of bias, as they scored positively on at least three of the five questions in the scale.

CONCLUSION

The present review allowed us to identify different types of management of PPUI by nursing, even considering that the scenario of studies about the area is still scarce. Randomized clinical trials predominated in the integrative review sample, and the information obtained from the analyses was relevant and provided an overview of the different strategies that can be implemented in nursing care to the population in question.

The evidence showed that PFMT is a conservative nonpharmacological therapy that remains effective in strengthening pelvic floor muscles and should therefore be incorporated into nursing interventions. The results on telephone support, on the other hand, provide subsidies for strengthening telenursing, especially when considering the still prevalent circumstances of the new coronavirus pandemic. Even at a distance it is possible to supervise the PFMT, as well as follow the patients' needs and developments.

Another very relevant point concerns the importance of psychological care in the face of PPUI, in which nursing can also act, whether in person or at a distance. Given these considerations, it is valid to reflect that nursing care for incontinence, in general, must contemplate the different aspects that involve the dimensions of health and integrality, especially paying attention to family participation throughout the course of treatment.

The data obtained in this work also showed that all the previously mentioned interventions can be added to a complete care plan, and that the continuity of care can enable better and more satisfactory results, with a view to quality of life and health promotion.

As for the methodological aspects, the included studies were mostly considered to have a low risk of bias. Finally, it is hoped that this review can be useful for the development of quality PPUI nursing care protocols.

AUTHORS' CONTRIBUTION

Conceptualization: EEufrasio VBS and Romualdo IML; **Methodology:** Macedo LFR and Amorim IGR; **Investigation:** Romualdo IML; Amorim IGR and De Assis SFB; **Writing – First draft:** Pita EJV; Macedo LFR; Eufrasio VBS and De Assis SFB; **Writing – Review & Editing:** Macedo LFR; Romualdo IML and Pita EJV; **Supervision:** Eufrasio VBS and Macedo LFR.

AVAILABILITY OF RESEARCH DATA

All data sets were generated or analyzed in the current study.

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