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REVISIONES

Nursing interventions for patients with erectile dysfunction after radical prostatectomy: integrative review

Intervenções de enfermagem para pacientes com disfunção erétil após prostatectomia radical: revisão integrativa

Intervenciones de enfermería para pacientes con disfunción eréctil después de prostatectomía radical: una revisión integral

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Palavras chave: disfunção erétil; prostatectomia: cuidado de enfermagem; intervenção de enfermagem

Palabras clave: disfunción erécti; prostatectomía; cuidados de enfermería; intervención de enfermería.

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ABSTRACT

This study aimed to identify nursing interventions for patients undergoing radical prostatectomy. This is an integrative review, guided by the question “What are the nursing interventions directed to patients with erectile dysfunction after radical prostatectomy?”, held on the databases PubMed, Web of Science, CINAHL, SCOPUS, Cochrane Library, LILACS and on the list of references of selected articles. The final sample was comprised of 10 papers; 43 nursing interventions were identified and grouped in 10 categories. The nursing interventions for patients with erectile dysfunction after radical prostatectomy focused on the education regarding the nature of erectile dysfunction, treatment and sexuality; besides strengthening the involvement of partners during the process of coping with and treating the dysfunction. These interventions may be useful so that nurses can act during the follow-up of these patients, providing better quality of life and well-being.

RESUMO

Este estudo teve o **objetivo** de identificar intervenções de enfermagem para pacientes submetidos a prostatectomia radical. Trata-se de uma revisão integrativa norteada pela questão “Quais são as intervenções de enfermagem direcionadas aos pacientes com disfunção erétil após prostatectomia

radical?", realizada nas bases PubMed, Web of Science, CINAHL, SCOPUS, Biblioteca Cochrane, LILACS e na lista de referências a partir dos artigos selecionados. Compuseram a amostra final 10 artigos e 43 intervenções de enfermagem foram identificadas e agrupadas em 10 categorias. As intervenções de enfermagem para pacientes com disfunção erétil após prostatectomia radical concentraram-se na educação acerca da natureza da disfunção erétil, tratamento e sexualidade; além de fortalecerem o envolvimento das esposas durante o processo de enfrentamento e tratamento da disfunção. Estas intervenções poderão ser úteis para que enfermeiros possam atuar durante o acompanhamento destes pacientes, proporcionando melhora da qualidade de vida e bem-estar

RESUMEN

Este estudio tuvo como **objetivo** identificar las intervenciones de enfermería en pacientes sometidos a prostatectomía radical. Se trata de una revisión integradora guiada por la pregunta "¿Cuáles son las intervenciones de enfermería dirigidas a pacientes con disfunción eréctil después de una prostatectomía radical?" buscado en PubMed, Web of Science, CINAHL, Scopus, Cochrane Library, LILACS y en la lista de las referencias de los artículos seleccionados. Compusieron la muestra final 10 artículos y 43 intervenciones de enfermería fueron identificadas y agrupadas en 10 categorías. Las intervenciones de enfermería para pacientes con disfunción eréctil después de prostatectomía radical se centraron en la educación sobre la naturaleza de la disfunción eréctil, el tratamiento y la sexualidad; además de fortalecer el compromiso de las esposas durante el proceso de abordaje y tratamiento de la disfunción. Estas intervenciones puedan ser útiles para que las enfermeras pueden actuar durante el seguimiento de estos pacientes, proporcionando una mejor calidad de vida y bienestar.

INTRODUCTION

We estimate that in the years 2014 and 2015 prostate is the most frequent type of cancer in Brazilian population, with 69,000 new cases, excluding non-melanoma skin cancers. The data correspond to the occurrence of around 70 cases for each 100,000 men. However, if diagnosed and treated early, it presents good prognosis and high survival rate for the treated patient.[1]

Treatment for prostate cancer is based on the tumor's grade and stage, on the patient's life expectancy, on the patient and doctor's preferences, varying from radical prostatectomy, radiotherapy, brachytherapy, hormonal therapy and watchful waiting.[2-4] Radical prostatectomy (RP) is an effective therapeutic option for the treatment of clinically localized prostate cancer in early stages and for patients who have a life expectancy of around 10 years.[2,4-6] Long-term monitoring of patients undergoing this surgical approach showed progression-free survival rate of around 80% in the first five years after surgery and of 69% in 10 years.[4]

The main disadvantage of an RP is the occurrence of complications such as urinary incontinence and erectile dysfunction that significantly affect the quality of life of patients.[5-8] The onset of these complications during the postoperative of radical prostatectomies is correlated to patients' reports on regretting having undergone the procedure.[9]

Recent studies indicate the occurrence of urinary incontinence of around 70% and erectile dysfunction of 68%.[10, 11]

Erectile dysfunction refers to the persistent inability to have and/or maintain a penile erection for satisfactory sexual intercourse.[12] The development of erectile dysfunction after RP is related to injuries to nerve bundles, arterial injuries and

smooth muscle lesion[6,10,13]. It is noteworthy that the regression of erectile dysfunction after RP depends on the degree of reversibility of these lesions.[10]

When complete recovery of erectile dysfunction occurs, it is slow and has time as a decisive factor; authors state that recovery happens around 18 months after surgery.[6,8,13] Therefore, it is important to have close monitoring of patients who are in recovery from erectile dysfunction caused by radical prostatectomy. It is also important to implement strategies to establish early sexual rehabilitation, since responses to drug treatment and improvements of the psychological state contribute to spontaneous recovery from erectile dysfunction.[13]

Many are the efforts and studies that promote the complete recovery of erectile function today. The main current forms of treatment are grounded on oral therapy (phosphodiesterase type 5 inhibitors), intracavernous injections (vasoactive substances), intraurethral injections, vacuum erection devices, penile extenders, combined treatments, experimental treatments and surgeries.[7,10,13]

Incorporating these treatment modalities by themselves in rehabilitation may bring unsatisfactory results, since this stage requires strict guidance of patients and their partners on the treatment and its effects, as well as motivation, knowledge, confidence and involvement of both during rehabilitation.[7] Therefore, multidisciplinary monitoring of the couple, educational programs and guideline development are essential to the rehabilitation of the erectile function and to overcome the effects of this complication in the patients' lives.

Care and strategies for the treatment of erectile dysfunction are extremely necessary, because the sexuality related disorders are responsible for changes in quality of life, self-esteem, general health and psychological conditions of both the patients and their partners.[7]

Nurses should consider incorporating interventions for the rehabilitation of the erectile function during the follow-up or discharge of postoperative patients. These interventions may provide positive effects to this population, since it may fill possible gaps in the patients' hospital treatment and daily life.[14,15]

The identification of nursing diagnoses related to alterations of the erectile function directs individualized care focused on the specific needs of patients who undergo prostate surgery. In the classification of nursing diagnoses of NANDA-*International, Inc.*, this condition is represented by the diagnosis Sexual dysfunction (00059).[16] The Nursing Intervention Classification (NIC) proposes Sexual Counseling as the main intervention for the diagnosis. It refers to the "*use of an interactive helping process focusing on the need to make adjustments in sexual practice or to enhance coping with a sexual event/disorder*".[17] the activities presented in this intervention are not directly aimed at specific problems of erectile dysfunction, thus it is important to identify specific nursing actions for this complication of RP.

Therefore, this study aims to identify in scientific literature the nursing actions for patients with erectile dysfunction after radical prostatectomy.

MATERIAL AND METHOD

This is an integrative literature review to access the available evidence in the nursing literature regarding specific actions for patients with erectile dysfunction after RP. This review model is a research method that summarizes the evidence of a particular subject in order to obtain general conclusions about it. The review was developed in two distinct phases: elaboration of the research question, sampling, analysis of studies, evaluation of primary studies, analysis and synthesis of the review results, and presentation of the review.[18]

This review was developed while supported by the following question: "What are the nursing interventions to patients with erectile dysfunction after radical prostatectomy?"

The papers research was conducted online, in May 2015, on the electronic databases PubMed (National Library of Medicine and National Institutes of Health), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Scopus, Cochrane Library, and Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS). We also conducted manual research in articles from the list of references of the papers selected in the review.

We used the following controlled descriptors from the *U.S. National Library of Medicine's* (NLM) *MeSH* for the studies survey: *erectile dysfunction, prostatectomy, nursing care*, and *nursing intervention*. The Boolean operators AND and OR were employed as they allow the realization of combinations among the descriptors during the search for the studies – AND for restrictive combinations and OR for additive combinations. The descriptors related to nursing care were grouped using the operator OR; e.g. *nursing care* OR *nursing intervention*. The Boolean operator AND was used between the descriptors *erectile dysfunction*, *prostatectomy,* and grouping the other descriptors.

Articles that presented possible nursing interventions to patients with erectile dysfunction after radical prostatectomy were included. The articles that discussed results from care or treatment protocols, reviews, books, theses, and dissertations were excluded. We could not stipulate the year limit of publication or also the language in which they were written.

We read the titles and abstracts from each electronic base, according to the search strategies; if the summary was not available, we searched for the full article to continue the study. When the article met the established criteria, it was selected for the sample of analyzed articles.

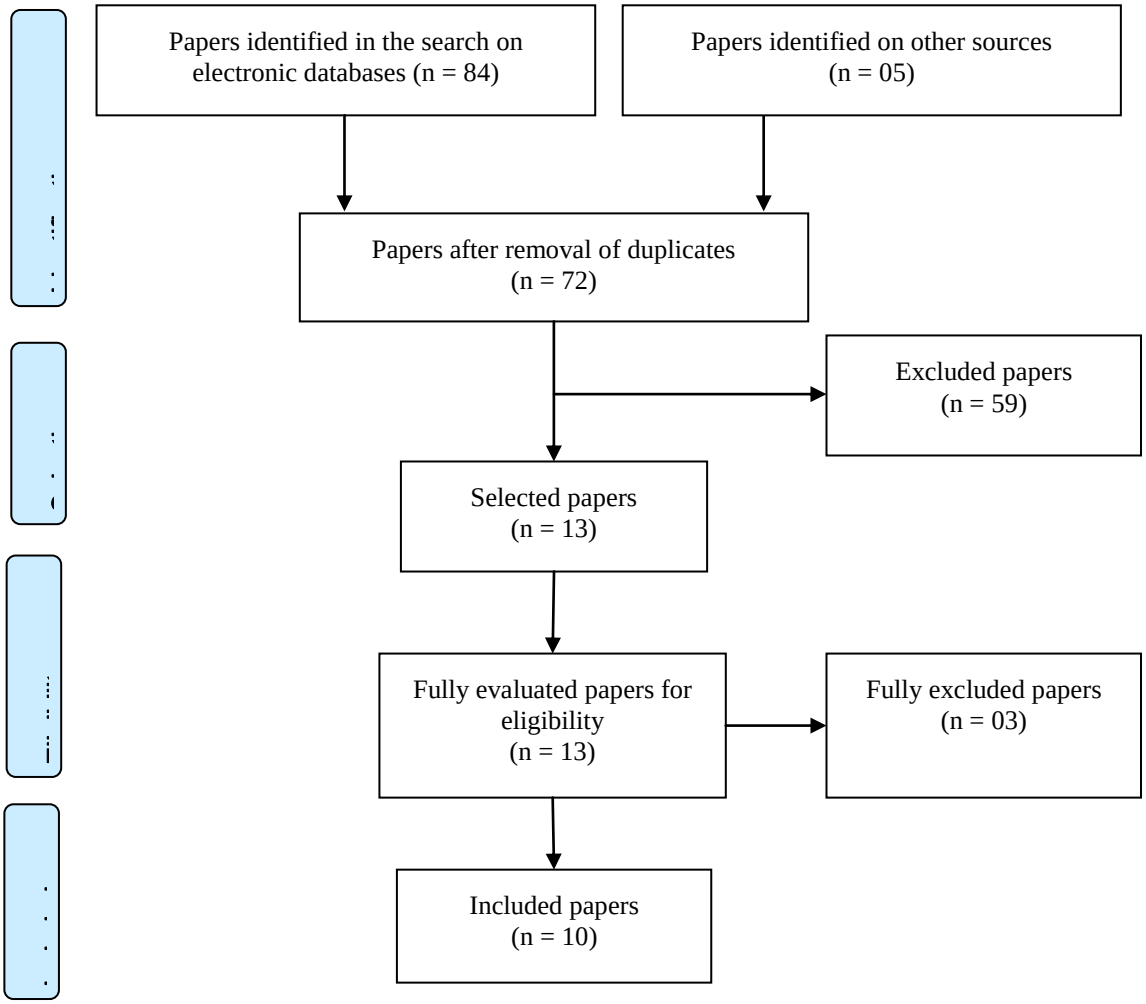
We found 84 research papers on the electronic databases: 48 from PubMed, 18 from Web of Science, 6 from Cochrane Library, 5 from CINAHL, 5 from SCOPUS, and 2 from LILACS. It is noteworthy that 5 papers were included in the review from the search in the list of references of the selected papers. This way, 89 papers were identified.

After removal of published papers (17), we were left with 72 that had their tiles and abstracts analyzed. Fifty-two were excluded at this stage for various reasons – because they were review studies (25), studies that explored the experience of patients and couples who experienced erectile dysfunction after radical

prostatectomy (10), studies that focused on quality of life after RD (05), studies that described the main complications after RD surgery (05), interventions that were not specifically related to nursing (04), interventions for urinary incontinence (03), description of frequency of erectile dysfunction after surgery (04), editorial (01), and interventions for erectile dysfunction after radiotherapy (02).

The remaining 13 papers were fully analyzed and 3 of them were excluded for not describing the intervention for rehabilitation of erectile dysfunction (03). The paper selection process is illustrated in Figure 1, which was adapted from PRISMA (*Preferred Reporting Items for Systematic reviews and Meta-Analyses*) guideline.[19]

Figure 1. Flowchart of the review papers selection process.



The selected papers were fully accessed for data extraction. We then proceeded to read and register data in a form built on *MS Word*, considering the paper's identification (reference, information about the first author and subject area, idiom and country where the study was conducted), study objective, methodological details (type of study, sampling strategies, data collection, sample size, method of data analysis), results and appointments on interventions for erectile dysfunction and main conclusions. In addition, we evaluated the levels of evidence for each study[20] and the quality of clinical trials specifically randomized using the Jadad scale[21].

The Jadad scale allows the analysis of methodological quality of clinical trials; a point is assigned to each of these features in the study: randomization, blinding and description of exclusions and losses of the sample; if randomization and blinding are considered adequate, another point is summed up; if they are considered inadequate, a point is subtracted from each item. The Jadad scale varies from 0 to 5, the scores that are ≥ 3 represent adequate methodological quality of the studies.[21]

The synthesis of review results was established descriptively, since we adopted results from various research outlines. This approach made it possible to categorize the intervention themes and their directions (specific to patients or couples).

RESULTS

The 10 papers we analyzed were published in English language, in foreign journals – nine of them in the USA[22-30] and one in Europe[31]. Most researches were conducted in the USA (07)[25-31], followed by Taiwan[22], Spain[23] and Italy[24], with one publication each. Nurses were the first authors in six papers[22,23,26,27,29,30], psychologists were the first authors in three papers [25,28,31], and a doctor is the first author in one paper[24]. However, in all studies the identified interventions were performed by nurses. The publication period of the papers varied from the years 2001 and 2012.

Regarding the analyzed studies' methodological outline, six of them were randomized controlled clinical trials[22,24,26-28,31], one of them was a qualitative study[29], two of them were descriptive studies[23,25], and one of them was an experience report of experts in the area of urological nursing[30].

The level of evidence identified in the studies varied from II (evidence from well-designed randomized controlled trials), VI (evidence from descriptive or qualitative studies) and VII (expert committee reports).[20] Thus, six studies showed level of evidence II, three studies show level of evidence VI, and one shows a level of evidence VII. Two of the clinical trials studies presented a Jadad score of 5, and two studies presented score 3, which features studies of good methodological quality; two studies showed Jadad score of 1, which means that it has compromised methodological quality.[21]

Chart I illustrates the main information from the analyzed papers in this review, regarding methodological issues, interventions for erectile dysfunction applied in each study, main results, conclusions, and limitations.

Chart I. Methodological characteristics nursing interventions for erectile dysfunction, main results, conclusions and limitations of the analyzed studies.

Characteristics of studies	Sample	Main results	Conclusions and Limitations
• Weber et al., 2004 • Randomized controlled clinical trial • EL II • J* 1	• 30 radically prostatectomized men • Intervention group (IG): meetings with patients submitted to the same treatment for discussion (N=15). • Control group (CG): usual care (N=15).	• Intervention provided improvement in sexual discomfort at the end (p≤0,05). • Intervention had strong effect on depression in 4 weeks (Effect Size = 0,99), but it was weak for self-efficacy (0,20) and social support (0,30).	• The support provided by patients who had gone through prostate surgery showed satisfactory effects, especially in reducing depression and raising self-efficacy. • Limitations: small sample size, data collection tool may have confused the patients' answers.
•Maliski; Heilemann; McCorkle, 2001 • Qualitative research • EL VI	• 20 couples • Analysis of discourses based on the Grounded Theory.	• Identified issues related to the specific man's role, to regain control of the situation, the partner's role, to help him coping with the problem, and the couple's work in the situation.	• Nursing interventions that promote knowledge, self-care skills, emotional support and anxiety reduction after RP are fundamental to the nurses who assist prostatectomized patients and their partners. • No limitations were mentioned in this study.
• Lombraña et al., 2012 • Descriptive study • EL VI	• 114 radically prostatectomized men. • Implementation of an educational/treatment program for patients with erectile dysfunction, active listening and consultation with a health care team.	• Patient's evaluation in four moments (before surgery, before discharge, one month after catheter removal and 12 months after surgery) allowed the identification of improvement progress of the erectile function and satisfaction among treated patients.	• Education provided by nurse plays fundamental role in detection, monitoring and treatment adherence of erectile dysfunction. • Nursing care program may help minimizing erectile dysfunction and allow the patient to adapt to the new situation. • No limitations were mentioned in this study.
• Monturo et al., 2001 • Experience report of expert committee •EL VII	• Five experts described their experiences in treating patients with erectile dysfunction after RP.	• Experts described the key steps of the protocol designed and implemented by themselves, as well as lessons learned during the process.	• Sexual counseling offered by professionals such as nurses, can provide the couple conditions to rebuild their relationship. • No limitations were mentioned in this study.
• Lin et al., 2012 • Randomized controlled clinical trial • EL II • J* 3	• 62 radically prostatectomized men. • IG: training program for the pelvic floor muscles (N=35) • CG: prostate anatomy class, RP, and relation between surgery and erectile dysfunction (N=27).	• All participants presented severe sexual dysfunction in the first month after surgery. At 3, 6, 9, and 12 months, prevalence rates for sexual dysfunction were 94.3%, 88.6%, 82.9%, and 65.7% in GI, and 100%, 100%, 96.3%, and 92.6% in control group. • GI presented improvement ($p < 0.05$) for erectile function after 6 and 12 months, while the control group did not ($p > 0.05$).	• Intervention is effective for sexual dysfunction on patients submitted to prostatectomy. • Limitations: sample from a single center, four surgeons have performed the RP, the effects of other treatments for erectile dysfunction were not compared, short follow-up, the patients were only asked whether they were performing the exercises, and key aspects of male sexual function were not considered.
• Lepore et al., 2003 • Randomized controlled clinical trial • EL II • J* 5	• 250 radically prostatectomized men. • IG 1: group educational intervention (N=84). • IG 2: group educational intervention with facilitators to discuss doubts and knowledge (N=86). • CG: standard care (N=80).	• Intervention in GI 1 and 2 raised the knowledge of patients compared to patients in control group ($p<0.01$). • GI2 presented better levels of healthy behavior ($p<0.01$), at 6 months patients from GP showed less healthy habits than other groups. • Identified positive effect of interventions in urinary functioning ($p<0.01$) and sexual functioning ($p<0.05$).	• Group educational intervention were successful in improving quality of life of men treated for localized prostate cancer. • Specific benefits of interventions included raise of knowledge about prostate cancer, adoption of healthy behaviors, improvements on general physical functioning and sexual dysfunction. • Limitations: relatively small effects on the analyzed variables.

• Canada et al., 2005. • Descriptive study • EL VI	• 84 subjects (35 of them were accompanied by their partners) • Group 1: sexual counseling only for men (N=46) • Group 2: sexual counseling for couples (N=35)	• changes were not identified in analyzed measures between both groups, however, authors observed improvement along the evaluation period (6 months). • Improvement on adhesion to drug treatment was also observed in both groups (p=0.003).	• Intervention produced positive changes in participants' sexual function and satisfaction, as well as significant raise of medical care and surgical treatment for erectile dysfunction. • The presence of the wife in counseling sessions did not seem to affect the results. • Limitations: losses during the follow-up.
• Giesler et al., 2005. • Randomized controlled clinical trial • EL II • J* 5	• 99 couples • IG: program of orientation and discussion about prostate cancer at home (N=48) • CG: standard care (N=51).	• Couples from IG presented improvement of sexual function, reported lower effects of sexual problems on performance and higher satisfaction with their partners.	• Monitoring interventions oriented by nurses may improve quality of life of men who undergo prostate cancer treatment. • Limitations: small sample size, control steps were not specified for errors type II, placebo effect on patients who knew they were participating in the intervention and low compliance of subjects.
• Titta et al., 2006 • Randomized controlled clinical trial • EL II • J* 1	• 56 couples • IG: treatment with intracavernous prostaglandin E1 injections and sexual counseling (N=29) • CG: only intracavernous prostaglandin E1 injections (N=27)	•Adherence to proposed treatments was higher among patients from IG (p<0,05); the same happened to erectile function, during all the study period (18 months) (p<0.05). • Patients from IG showed improvement on sexuality (p<0.05).	• Intervention showed the best results in terms of erection quality, sexuality, satisfaction of couples and adherence to treatment. • No limitations were mentioned in this study.
• Molton et al., 2008 • Randomized controlled clinical trial • EL II • J* 3	• 101 radically prostatectomized men. • IG: advice on erectile dysfunction (10 weeks) (N=60). • CG: orientations on erectile function in lecture format (N=41).	• Individuals with higher interpersonal sensitivity were more likely to see sexual dysfunction as a threat to male identity (r = 0,29, p <0,05). • IG showed improvement of 37.4% in sexual functioning, while those from CG had an improvement of 11.5%.	• Intervention was effective in promoting recovery of sexual function for all participants. • Limitations: partners were not evaluated; measures were not taken during the intervention period; little contact with information from participants in the control group.

*J= Jadad Score

In half of the papers (5), only the patients were the focus of nursing interventions[22,27,28,31]; in the other papers, interventions were directed to the couple, that is, interventions involved the wives or partners in the studies[24-26,29,30].

In three of the analyzed papers, the definition of erectile dysfunction adopted was described[22,24]. That definition was common for all three works.

In total, 43 nursing interventions were identified in the study sample and grouped according to common themes, in categories aimed both at the patient and the couple, and predominantly directed to support and teaching. The interventions grouped in the respective themes are shown in Chart II.

Chart II. Nursing interventions for patients with erectile dysfunction after radical prostatectomy.

Nursing interventions	Authors, Year and NE
Patient support	
Promote discussion of problems of erectile dysfunction with other patients who have experienced the same problems through individual meetings.	• Weber et al., 2004; Lepore et al., 2003. • EL II (J1, 5)
Stimulate the patients to share their concerns regarding the rectile function with other people, whether relatives, friends, or health professionals.	• Maliski; Heilemann; McCorkle, 2001 • EL VI

Stimulate the patients' participation in support networks for patients with erectile dysfunction or sexual function problems.	• Lepore et al., 2003; Maliski; Heilemann; McCorkle, 2001; Monturo et al., 2001 • EL II (J5), VI, VII
Reinforce the importance of concerns about sexuality during prostate surgery recovery.	• Monturo et al., 2001. • EL VII
Treatment to erectile dysfunction	
Teach about the correct use of medications prescribed by the doctor for the treatment of erectile dysfunction.	• Lombraña et al., 2012. • EL IV
Teach about the treatment options for erectile dysfunction.	• Lombraña et al., 2012; Molton et al., 2008; Canada et al., 2005; Giesler et al., 2005. • EL II (J5, 3), IV
Teach about side effects of the treatment for erectile dysfunction.	• Lombraña et al., 2012; Canada et al., 2005. • EL IV
Perform patient and partner training, when possible, to administration of intracavernous injections, when prescribed by a doctor.	• Lombraña et al., 2012; Titta et al., 2006. • EL II (J1), IV
Preparation of environment to treat patients with erectile dysfunction	
Promote support environment for discussion of problems related to erectile dysfunction.	• Weber et al., 2004. • EL II (J1)
Keep relaxed atmosphere during dialog with patient.	• Lombraña et al., 2012. • EL IV
Create comfortable, respectful, and private environment to start the conversation about problems related to erectile dysfunction.	• Molton et al., 2008; Lepore et al., 2003; Monturo et al., 2001 • EL II (J5, 3), VII
Respect for the patient's individuality	
Determine the focus of conversation according to the patient's needs.	• Weber et al., 2004. • EL II (J1)
Understand the personal circumstances of each patient and then propose specific solutions and treatments for each case.	• Lombraña et al., 2012. • EL IV
Obtain patients' consent to discuss sexual function.	• Monturo et al., 2001. • EL VII
Understand personal values, cultural influences and myths presented by patients or couples, because they can be obstacles to initiate discussion about sexuality.	• Monturo et al., 2001. • EL VII
Specific care for the couple	
Involve wives/partners in interventions aimed at erectile dysfunction.	• Titta et al., 2006; Giesler et al., 2005; Canada et al., 2005; Lepore et al., 2003, Maliski; Heilemann; McCorkle, 2001; Monturo et al., 2001. • EL II (J5, 1), VI, VII
Promote participation of wives/partners in support networks to deal with anxiety and help solve issues related to erectile dysfunction.	• Maliski; Heilemann; McCorkle, 2001 • EL VI
Provide information to patients and wives about erectile dysfunction being a surgery complication and not being related to loss of desire for the partner.	• Maliski; Heilemann; McCorkle, 2001 • EL VI
Teach patients and partners about the importance of keeping the couple's intimacy even in the face of erectile dysfunction.	• Canada et al., 2005; Monturo et al., 2001; Maliski; Heilemann; McCorkle, 2001. • EL VI, VII
Stimulate couples to talk about feelings and perspectives regarding erectile dysfunction.	• Titta et al., 2006; Giesler et al., 2005; Canada et al., 2005; Monturo et al., 2001; Maliski; Heilemann; McCorkle, 2001 • EL II (J5, 1), VI, VII
Stimulate verbalization of couples regarding issues that affect intimacy.	• Giesler et al., 2005; Canada et al., 2005; Monturo et al., 2001; Maliski; Heilemann; McCorkle, 2001. • EL II (J5), VI, VII
Involve the wife, whenever possible, on taking the decision to consult an expert.	• Lombraña et al., 2012. • EL IV
Obtain a brief background from the couple regarding their sexual function, to realistic treatment options for each condition.	• Lin et al., 2012; Titta et al., 2006; Canada et al., 2005; Monturo et al., 2001. • EL II (J3,1), VI VII

Referrals to other health professionals	
Assist during the patient's decision to seek a specialist to evaluate and treat the erectile dysfunction.	• Lombraña et al., 2012 • EL IV
Refer to a specialist when the intention of treatment for erectile dysfunction is identified.	• Lombraña et al., 2012 • EL IV
Refer to sexual therapy, when the need and interest of the patient/couple is identified.	• Canada et al., 2005. • EL VI
Teaching about erectile dysfunction	
Clarify misconceptions regarding erectile dysfunction.	• Monturo et al., 2001; Molton et al., 2008; Maliski; Heilemann; McCorkle, 2001 • EL II (J3), VI, VII
Teach about the development of erectile dysfunction after radical prostatectomy.	• Lombraña et al., 2012; Lin et al., 2012; Molton et al., 2008; Canada et al., 2005; Monturo et al., 2001. • EL II (J3), IV, VI, VII
Clarify doubts the patient might have about general aspects of erectile dysfunction (such as: causes, duration, treatment and consequences).	• Lombraña et al., 2012; Molton et al., 2008; Canada et al., 2005; Giesler et al., 2005; Monturo et al., 2001. • EL II (J5, 3), IV,VI,VII
Teach about erectile functioning.	• Lin et al., 2012. • EL II (J3)
Provide access to educational materials about sexual function and erectile dysfunction.	• Canada et al., 2005; Monturo et al., 2001. • EL VI, VII
Teach alternative forms of sexual activity to obtain pleasure.	• Canada et al., 2005; Monturo et al., 2001. • EL VI, VII
Teach about general aspects of prostate cancer (such as: nutrition, coping strategies, relationships and sexuality, follow-up and future health concerns).	• Lepore et al., 2003. • EL II (J5)
Provide access to information through individual reading, group reading and reading with relatives.	• Lepore et al., 2003 Canada et al., 2005.• EL II (J5), VI
Professional's interpersonal skills	
Maintain clear and direct communication with patient and wife, founded on theoretical knowledge about the erectile function, respect, confidentiality, free of judgements.	• Monturo et al., 2001 • EL VII
Establish therapeutic alliance with patients and couples to stimulate adherence to drug treatment for erectile dysfunction.	• Molton et al., 2008; Titta et al., 2006. • EL II (J3, 1)
Specific aspects of sexuality	
Follow the evolution of erectile function through interviews with the patient and use of specific instruments on sexual function and sexual activity.	• Lombraña et al., 2012 • EL IV
Stimulate the return of sexual activity after cancer, considering strategies such as: enjoying sex without erection, or without firm erection; regaining sexual desire; enjoying sensations of pleasure despite the erectile dysfunction; using touch to achieve orgasms without necessarily having sexual intercourse; coping with urinary incontinence; vaginal dryness of partners because of menopause.	• Canada et al., 2005. • EL VI
Encourage changes in sexual behavior to stimulate sexuality and desire (such as: planning sexual encounters, promotion of feelings of passion, love, and play during sex, stimulating sexual fantasies and variations).	• Canada et al., 2005. • EL VI
Teach about the scope of sexuality definitions with the objective of including other activities to promote pleasure beyond sexual intercourse.	• Molton et al., 2008. • EL II (J3)
Exercise for the pelvic floor muscles	
Teach exercises for the pelvic floor muscles.	• Lin et al., 2012. • EL II (J3)
Teach the implementation of exercises for the pelvic floor muscles immediately after removing the urinary catheter.	• Lin et al., 2012. • EL II (J3)
Teach the implementation of exercises for the pelvic floor muscles daily, twice a day, in supine position, sitting and standing. Do 3 repetitions at each position, contracting the pelvic muscles for 10 seconds and then relaxing for 10 seconds more. After that, strongly contract the pelvic floor after urinating and whenever having sexual intercourse.	• Lin et al., 2012. • EL II (J3)

EL= Evidence Level, J= Jadad Scale

Part of the studies described nursing interventions implemented in samples comprising patients who underwent radical prostatectomy (six papers)[22,23,27,29-31]; in the other papers, samples were comprised of patients who underwent surgery but also other types of treatment, such as radiotherapy, brachytherapy, joint radiation and brachytherapy, and cryotherapy[26,28]; radical prostatectomy with radiotherapy[25]. In one study patients who underwent cystectomy were also included in the sample.[24]

DISCUSSION

Erectile dysfunction triggered by RP is a frequent problem for the patients who have undergone this type of prostate cancer treatment. The maintenance of sexual function is an important aspect of quality of life and well-being for men and couples. The RP is currently being conducted in even younger patients who wish to keep their sexual activities. Because of that, care aimed at contributing to this function is necessary and require special attention.[7,32]

The United States Institute of Medicine recommends that strategies aimed at complications related to cancer treatment to be a priority for health professionals, since a large portion of treated patients has high life expectancy.[32] The analyzed studies present the relevance and benefits of those interventions for patients with erectile dysfunction, since the studied interventions are somehow effective in improving sexual satisfaction, erectile function and sexual function.[22,24-29,31]

This analysis provides a survey of 43 nursing interventions for patients with erectile dysfunction who had underwent RP. These interventions were grouped in 10 categories, according to the biological, psychosocial, educational and behavioral aspects of the condition and according to the nurses who will address these intimate and delicate issues such as sexuality. Thus, we consider that the aspects of the identified interventions meet the dimensions of human sexuality, which is a multidimensional, complex phenomenon that includes biological, psychological, interpersonal and behavioral dimensions.[30]

Much of the identified interventions are aimed at results in the psychosocial dimensions of erectile dysfunction, such as social support, self-efficacy[27], depressive symptoms[26,27], sexual satisfaction[23,27,28], knowledge[23,28], quality of life related to health[25,26,28], stress[25] and interpersonal sensitivity[31]. : This feature supports the review conducted by Latini et al.[32], in regard to the intervention focus. The researchers analyzed studies about interventions for erectile dysfunction, since the interventions aiming at psychosocial outcomes were unanimous.

The psychosocial interventions are of great importance for the rehabilitation of patients with prostate cancer in general, since they have a positive effect in the form of addressing problems experienced by patients due to prostate cancer treatment, such as sexual dysfunction.[15]

Interventions focused on the physical dimensions of erectile dysfunction were also identified in this study, as they involve aspects related to restoring the sexual function, response to treatment and treatment adherence.[22,24, 25,31]

Interventions focused on education of patient and partner were in some way proposed in all of the analyzed studies; the themes of these educational interventions involved general aspects of erectile dysfunction (causes, relation with surgery, treatment)[22-26,30,31], general aspects of sexuality[28,30,31], general aspects of prostate cancer[25,28,31]; and clarification of misconceptions regarding erectile dysfunction[29,31].

Educational interventions aimed at restoring erectile function were identified in a systematic review as an effective strategy for the discomfort caused by RP in patients' sexual function, since these interventions, when successful, proved to be able to provide improved physical consequences after surgery and on the quality of life of patients and partners.[15]

A relevant aspect identified in the analyzed studies concerns the inception and duration of interventions for erectile function. Interventions that started early (around a month after surgery), during the postoperative period, produced positive, statistically significant effect on sexual function, when compared to their control groups.[22,24, 26,28,31] We identified that the time of intervention and the monitoring of patients who participated in the studies was long, around 12 months after the start of intervention. However, the best effects on erectile dysfunction occurred after the fourth month.[22,24,26,27]

Exact time for the start of nursing interventions aimed at erectile dysfunction is not established in the literature. We note the same for the duration of these interventions throughout the postoperative period. However, the analysis of papers that comprised the sample of this review suggested that when the interventions started early after surgery, it was possible to obtain better effects on the sexual function, satisfaction and erectile dysfunction.

The required duration of interventions for erectile dysfunction should take the evidences pointing to the delay in recovery of erectile function after RP (18 months)[6] and the start of drug treatment into consideration. Studies that follow the evolution of erectile function in patients who underwent surgery reinforce the importance of implementing these interventions in long-term, since most patients showed some level of sexual dysfunction or sexual dissatisfaction two years after surgery.[33,34]

Another important aspect identified in the analyzed studies that deserves to be considered is the involvement of partners or wives of patients who underwent radical prostatectomy. Four of the ten papers in the sample involved the patients' partners in the tested interventions[24-26,29]; this way, it was possible to bring up eight nursing interventions specifically for couples.

It is known that RP has an impact on the sexuality and sexual function levels of couples.[9,24] thus, partners have a strong influence on the patients' ability to cope and adapt to the disease, to prostate cancer treatment and to erectile dysfunction, besides influencing patients to adhere to treatment.[9] An educational intervention, developed during four meetings, directed to couples whose men had undergone prostate cancer treatment, presented significant adherence to erectile dysfunction treatment.[25]

Although the importance of partners/wives in coping with erectile dysfunction is well understood in the literature, we emphasize that they also need emotional support and education on the issues involving prostate cancer, RP and its complications[29]. In order for wives and partners to exercise this important support role, they also need to understand the situations their partners are going through.[9,29]

Wives and partners experience a considerable stress load during prostate cancer treatment, initially in fear for the life and health of their partners, but also for exercising the role of caretakers during the entire postoperative period, and for sometimes feeling rejected by their husbands/partners during erectile dysfunction. Because of that, interventions aimed at these wives/partners are also fundamental. Davison et al. [9] point to the need of consulting wives/partners on the desire of participating in specific activities for the treatment of erectile dysfunction with their husbands/partners.

In this review, we pointed out the aspects related to the preparation and specific skills of nurses who are going to address patients with erectile dysfunction. The interventions related to sexuality are important for patients who will be assisted by nurses, although they are not significantly addressed or taught in nursing school.
It is important that nurses have sound theoretical knowledge on sexual function and erectile dysfunction, self-confidence, communication skills and respect to deal with couples and patients' issues on sexual dysfunction.[30]

CONCLUSIONS

Final analysis of this review's studies sample allowed us to identify 43 nursing interventions for patients with erectile dysfunction after radical prostatectomy. These interventions were grouped in ten categories, according to common themes. Among the analyzed interventions in each study, it was possible to point their positive effects on the patients' general sexual function, erectile dysfunction and sexual satisfaction; they also satisfactorily contribute to the adherence to erectile dysfunction treatment, marital relationships and the patients' adaptation to the new situation.

Given the complexity involving the effect of erectile dysfunction in the patients and their partners' lives, the care should not only aim at the dysfunction's curative aspects, but also at sexuality as a whole, knowledge about sexual function and respect for the patient. The analyzed papers described nursing interventions that possibly meet that complexity perceived by the intervention themes that emerged from the analysis of each study.

The development of this integrative review allowed us to gather fundamental interventions for nurses to monitor patients with erectile dysfunction. With the early detection of prostatic carcinoma, whose treatment of choice is the radical prostatectomy, a large number of sexually active, young adult patients are exposed to the development of erectile dysfunction. Thus, these interventions may be useful for nurses to act during the monitoring of these patients, providing better quality of life and well-being.

This review was limited by the identification of a small number of studies with high evidence level – only six of them were randomized controlled clinical studies, and

only two among them showed maximum score in Jadad scale. Moreover, it was not possible to identify any systematic review with meta-analysis about nursing interventions for patients with erectile dysfunction after radical prostatectomy until now. These gaps suggest the need for further development of studies to test specific interventions for this situation.

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