



## SELF-CARE FOR NEUROGENIC BLADDER IN PEOPLE WITH SPINAL CORD INJURY: INTEGRATIVE REVIEW

### AUTOCUIDADO PARA BEXIGA NEUROGÊNICA EM PESSOAS COM LESÃO MEDULAR: REVISÃO INTEGRATIVA

### AUTOCUIDADO PARA LA VEJIGA NEUROGÉNICA EN PERSONAS CON LESIÓN EN LA MÉDULA ESPINAL: REVISIÓN INTEGRADORA

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#### ABSTRACT

**Objective:** to identify nursing interventions to promote self-care of neurogenic bladder in people with spinal cord injury related to diagnoses Urge Urinary Incontinence, Risk of urge urinary incontinence and urinary retention. **Method:** an integrative review, conducted in 2012 on the basis SCOPUS, CINAHL, PubMed, LILACS, and Cochrane BDNF. The following research question was developed << *What are the nursing interventions to promote self-care of the neurogenic bladder in people with spinal cord injury?* >>. 12 articles were analyzed by means of Self-Care Deficit Theory. **Results:** interventions most cited guide the patient to write down the characteristics of urine; teach and encourage the patient to perform intermittent bladder catheterization, manipulate the device and perform personal hygiene, and teaching about the signs of a full bladder. **Conclusion:** nurses can promote self-care using the nursing technologies (integrating NANDA-I, NIC and Self-Care Deficit Theory). **Descriptors:** Nursing; Spinal Cord Injuries; Self Care; Urinary Bladder Neurogenic.

#### RESUMO

**Objetivo:** identificar intervenções de enfermagem para promoção do autocuidado da bexiga neurogênica em pessoas com lesão medular, relacionadas aos diagnósticos Incontinência urinária de urgência, Risco de incontinência urinária de urgência e Retenção urinária. **Método:** revisão integrativa, realizada em 2012 nas bases SCOPUS, CINAHL, PUBMED, LILACS, Cochrane e BDNF. A seguinte questão de pesquisa foi elaborada << *Quais as intervenções de enfermagem para promoção do autocuidado da bexiga neurogênica em pessoas com lesão medular?* >>. Foram analisados 12 artigos por meio da Teoria do Déficit de Autocuidado. **Resultados:** intervenções mais citadas: orientar o paciente para que anote as características da urina; ensinar e encorajar o paciente a realizar o autocateterismo vesical intermitente, manipular o dispositivo e realizar higiene íntima; e ensinar sobre os sinais de bexiga cheia. **Conclusão:** os enfermeiros podem promover o autocuidado utilizando tecnologias da Enfermagem (integração da NANDA-I, NIC e Teoria do Déficit de Autocuidado). **Descritores:** Enfermagem; Traumatismos da Medula Espinal; Autocuidado; Bexiga Urinária Neurogênica.

#### RESUMEN

**Objetivo:** identificar las intervenciones de enfermería para promover el autocuidado de la vejiga neurogénica en las personas con lesión de la médula espinal relacionadas con diagnósticos de incontinencia urinaria de urgencia, el riesgo de incontinencia urinaria y retención urinaria. **Método:** revisión integradora, realizado en 2012 sobre la base SCOPUS, CINAHL, PubMed, LILACS y BDNF Cochrane. La siguiente pregunta de investigación fue desarrollado << *¿Cuáles son las intervenciones de enfermería para promover el autocuidado de la vejiga neurogénica en las personas con lesión de la médula espinal?* >>. Fueron analizados 12 artículos por medio de la Teoría del Déficit de Autocuidado. **Resultados:** las intervenciones más citados guiar al paciente para anotar las características de la orina, enseñar y animar al paciente para realizar el cateterismo vesical intermitente, manipular el dispositivo y realizar la higiene personal, y la enseñanza acerca de los signos de la vejiga llena. **Conclusión:** las enfermeras pueden promover el autocuidado mediante las tecnologías de la enfermería (integrando NANDA-I, NIC y Autocuidado Teoría de Déficit). **Descriptores:** Enfermería, Lesiones de Médula Espinal; Cuidado Personal; La Vejiga Urinaria Neurogénica.

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## INTRODUCTION

Estimates show that each year in the United States, approximately 11.000 people are affected by spinal cord injury (SCI), indicating a serious public health problem. In Brazil, in 2007, the Unified Health System (SUS) served 832,858 users, who were hospitalized for external causes, one of the leading causes of SCI.<sup>1</sup> The LM is an assault to the spinal cord, in which the level and degree of damage determine the extent and severity of injuries and sensory, with an impact on respiratory function, urinary, sexual and bowel.<sup>2</sup>

People with SCI are vulnerable to complications such as bowel neurogenic, neuropathic pain, spasticity, pressure ulcers, and urinary tract problems associated with neurogenic bladder. These urological complications explain most of the morbidity and 10% to 15% of the deaths in this population. In this context, it is expected that the nurse has knowledge of urological complications in patients with LM and acts as an essential element in the health team during and after the rehabilitation process.<sup>3</sup>

Considering that only 1% of people with SCI achieve full recovery, the goal of rehabilitation is to promote maximum functional independence and preservation of quality of life.<sup>2</sup> Regarding the bladder, it is understood that the presence of LM predisposes the bladder neurogenic, which is due to a deficit in the central nervous system or peripheral nerves involved in the control of urination may be underactive or overactive neurogenic bladder. In the first condition, the bladder is unable to contract and not empty properly. In the second condition, the bladder empties by uncontrollable reflexes.<sup>4</sup> Under these conditions, the main points to be considered in the treatment of neurogenic bladder include the preservation of the upper urinary tract, control and prevention of urinary tract infections, social reintegration of the patient, improves the quality of life and promotes regression or stabilization of lesions present.<sup>5</sup>

Therefore, the difficulty in self-care accompanies the subject with SCI, including basic activities, such as control of eliminations bladder. Therefore, nursing care for these people and their families need to extend beyond the hospital setting strategies to promote health, to promote the prevention of harm to the health, comfort and enjoyment of family life, despite the existing sequels.<sup>6</sup>

Among the nursing diagnoses (DE) that are usually identified in a study directed to

people with SCI, the related neurogenic bladder have considerable frequency, such as: Urge Urinary Incontinence, Risk of urge urinary incontinence and urinary retention.<sup>7</sup> A comprehensive health care of the person with SCI encompasses several dimensions of care, from the care needs caused by physical injury, even those that concern the promotion and implementation of health policies that ensure the equal right to health and services. Self-care is in accordance with necessity that directs the actions of health professionals with a view to a better life for the individual with SCI before the damage sustained in the trauma and its consequences, such as neurogenic bladder, it is important to identify the interventions nursing to promote self-care under these conditions.

Assuming that people with SCI experience the problem of neurogenic bladder in their homes; 5 that nurses can intervene in this process in order to promote health in the context of primary care, 6 and that the elimination adequate bladder is a human need that must be met,<sup>8</sup> aimed to identify nursing interventions to promote self-care in persons with neurogenic bladder LM, related to diagnoses Urge Urinary Incontinence, risk for urge urinary incontinence and urinary retention.

The investigation is justified also by the existence of gaps in the literature on nursing care for people with SCI, despite the theme of people with disabilities to be research priority, according to the National Agenda of Priorities Research health.<sup>9</sup> For potential generation impact of this research through grants to implement the systematization of nursing care (SAE) the person with SCI and neurogenic bladder, with an emphasis on self-care as well as to institutions developing rehabilitation programs.

## METHOD

This is an integrative review, in which were analyzed the considerations of previous studies, summarizing them in order to make inferences about a specific topic. This type of study can provide insight to the implementation of changes to promote the quality of nursing care behaviors. Its preparation comprises the steps outlined below.<sup>10</sup>

### ♦ Establishment of the problem of revision

This step involves the formulation of hypotheses or questions for the integrative review. Building the research question must be related to a theoretical reasoning and

should be based on definitions already seized by the authors. This review has the question: What are the nursing interventions to promote self-care of the neurogenic bladder in people with SCI?

◆ **Search and selection of the sample**

A search was conducted in the databases SCOPUS, CINAHL (Cumulative Index to Nursing and Allied Health Literature), PUBMED (National Library of Medicine and Institute of Health National), LILACS (Latin American and Caribbean Health Sciences) Cochrane and BDNF (database of Nursing).

We used the Health Sciences Descriptors (DeCs): Nursing; Neurogenic Urinary Bladder, Spinal Cord Injuries, and their counterparts in the Medical Subject Headings (MeSH): Nursing; Urinary Bladder, Neurogenic; Spinal Cord Injuries. To search for articles were considered the last five years, a survey conducted in April 2012.

The search terms used were as follows: Nursing AND Urinary Bladder, Neurogenic Spinal Cord Injuries; Nursing AND Urinary Bladder, Neurogenic; Nursing AND Spinal Cord Injuries, Spinal Cord Injuries AND Neurogenic Urinary Bladder.

Inclusion criteria were: articles of primary studies published in English, Spanish or Portuguese, - levels available in full in the selected databases, and to provide nursing interventions for self-care of the neurogenic bladder in people with SCI. Exclusion criteria were not relevant to the thematic scope of the purpose of review, repeating the same basis or in more than one database, and not electronic availability in full text format and free.

After the search and identification of articles, proceeded to read the titles and abstracts, and selected those that met the defined limits. Thus, the sample consisted of 12 articles, which were read in their entirety.

◆ **Data collection**

The collection process was performed by two independent reviewers who cataloged, stored and managed the articles analyzed. For this, we used an adaptation of an already validated instrument,<sup>10</sup> as well as JabRef Software Reference Manager version 2.5.

**Analysis and presentation of results**

For data analysis, the interventions identified were summarized in tables and related the following OF NANDA-I: Urge Urinary Incontinence, Risk of urge urinary incontinence and urinary retention.<sup>11-12</sup> In addition, we considered the proposed systems Dorothea Orem's Theory of Self-Care Deficit, which is suitable for nursing care for people with spinal cord injury: I. Fully Compensatory System: The nurse performs self-care, compensating for the inability of the patient, which must be supported and protected; II. Partially Compensatory System: The nurse supports the patient, performing some actions, but there is bilateral action, and III. Support System-Education: The nurse supports self-care, but it is the patient himself who performs the actions.<sup>13-14</sup>

**RESULTS**

According to the flowchart shown in Figure 1 there were identified 451 articles, and selected 12. The manuscripts were excluded as justification: themes not relevant to achieving the objective of the review (n = 254), repeating the same basis or in more than one database (n = 11) and non-availability in electronic format and full text free (n = 174).

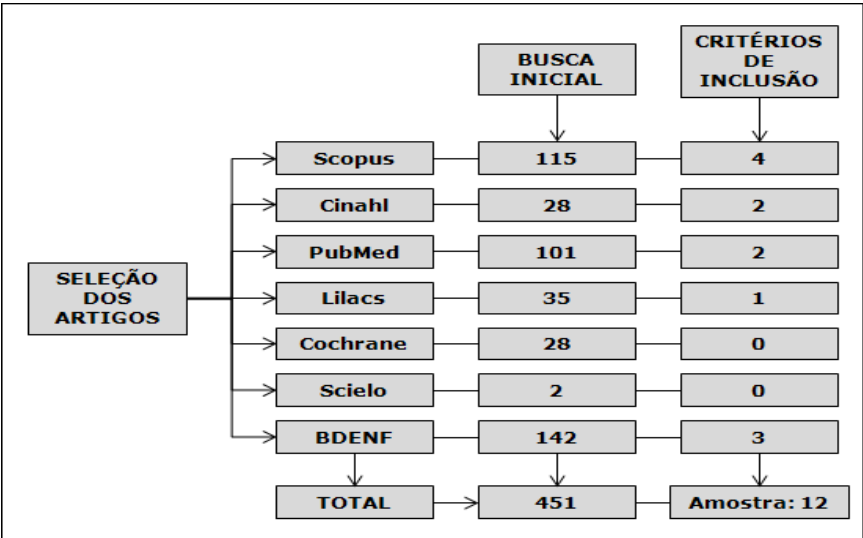


Figure 1. Flowchart of article selection.

(SELECTION OF THE ARTICLES; INITIAL SEARCH; INCLUSION CRITERIA; SAMPLE 12)

Figure 2 presents the bibliometric data of 12 manuscripts considered for the study, which shows the distribution of articles by letters A through M, first author, manuscript title, year of publication, country and

periodic. It is found that 33.3% (n = 4) of the articles are from nursing journals and 66.7% (n = 8) of medical journals. With respect to the country, 25% (n = 3) are Brazilian studies and 75% (n = 9) from other countries, mostly American (58.4%).

PA	Title of the article	Year	Country	Magazine
Fonte	Urological care of the spinal cord-injured patient	2008	Estados Unidos	JWOCN
Bauer	Neurogenic bladder: etiology and assessment	2008	Estados Unidos	Pediatr Nephrol.
Vasconcelos	Intervenções de enfermagem nas necessidades básicas da pessoa com lesão medular: revisão integrativa	2010	Brasil	OBJN
O’Leary	Botulinum toxin type A for the treatment of urinary tract dysfunction in neurological disorders	2010	Estados Unidos	Urologic Nursing
Chartier-Kastler	Intermittent catheterization with hydrophilic catheters as a treatment of chronic neurogenic urinary retention	2010	Estados Unidos	Neurourology and Urodynamics
Alvares	Botulinum Toxin A in the Treatment of Spinal Cord Injury Patients with Refractory Neurogenic Detrusor Overactivity	2010	Brasil	International Braz J Urol
Assis	Autocateterismo vesical intermitente na lesão medular	2011	Brasil	Rev Esc Enferm USP
Rundquist	Nursing bedside education and care management time during inpatient spinal cord injury rehabilitation	2011	Estados Unidos	J Spinal Cord Med
Wilde	A qualitative descriptive study of self-management issues in people with long-term intermittent urinary catheters	2011	Estados Unidos	J Advanced Nursing
Manack	Epidemiology utilization of neurogenic bladder patients in a US claims database	2011	Estados Unidos	Neurourol Urodyn
El-Masri	Long-term follow-up study of outcomes of bladder management in spinal cord injury patients under the care of The Midlands Centre for Spinal Injuries in Oswestry	2012	Reino Unido	Spinal Cord
Di Benedetto	Clean intermittent self-catheterization in neuro-urology	2012	Itália	Europ J Physical Reab Med

Figure 2. Bibliometric distribution of selected articles. \* E = Study, PA = First author.

Figure 3 shows the nursing interventions for people with SCI with neurogenic bladder, as parameters of the Theory of Self-Care Deficit. The most cited general interventions that have the potential to promote self-care were: Advise the patient to note the appearance and approximate quantity of urine (n = 4); Encourage the patient to perform intermittent bladder catheterization (AVI), manipulate the device and conduct hygiene (n = 4); Teaching about the signs of a full bladder (n = 3);

Orient the patient to empty the collector, when in use of bladder catheter (CV) (n = 3); Encourage use diaper parrot / bedpan, or go to the toilet, to assist in the elimination bladder at least every two hours, using suprapubic massage if necessary (n = 3); Teaching perform AVI and hygiene genitourinary, helping in the first attempts (n = 3), and advice on the need to install large door in the bathroom (n = 3).



D E	Fully Compensatory System	Partially Compensatory System	Support System - Education
Of Urge Urinary Incontinence	<div>1. Perform history (C, G);</div> <div>2. Perform physical examination (C, G);</div> <div>3. Changing diapers or empty collection bag catheter (H, I);</div> <div>4. Assess sexual conditions (C, H);</div> <div>5. Observe, assess and record the appearance and quantity of urine (B, C, H);</div> <div>6. Educating caregivers (A, C, G, J);</div> <div>7. Install urinary catheter (A, B, C, E, M);</div> <div>8. Administering botulinum toxin type A (D, E);</div> <div>9. Register by writing the nursing process (G);</div> <div>10. Administer drugs (B).</div>	<div>1. Teaching about the signs of a full bladder (A, C, G);</div> <div>2. Advise on the need to install large door in the bathroom (H, I);</div> <div>3. Teach when emptying the bladder CV, observe the patient / family running in the first attempts (A, G, J);</div> <div>4. Guidance regarding the use of diapers, kite / bedpan, observe the patient / family running in the first attempts (A, G, J);</div> <div>5. Teach perform AVI and genitourinary hygiene, assisting in early attempts (G, I, M);</div> <div>6. Educating caregivers (A, C, G, J).</div>	<div>1. Guide the patient to recognize the signs of a full bladder (A, C, G);</div> <div>2. Guide the patient to empty the catcher, when using CV (A, G, J);</div> <div>3. Guide the patient to use diapers, kite / midwife to assist with eliminations bladder at least every two hours (A, G, J);</div> <div>4. Encouraging the patient to perform AVI, manipulate and carry out personal hygiene device (A, G, J, M);</div> <div>5. Guide the patient to note the appearance, frequency and approximate volume of eliminations bladder (B, C, G, H);</div> <div>6. Educating caregivers (A, C, G, J).</div>
Risk of urge urinary incontinence	<div>1. Perform history (C, G);</div> <div>2. Perform physical examination (C, G);</div> <div>3. Changing diapers (H, I);</div> <div>4. Assess sexual conditions (C, H);</div> <div>5. Observe, assess and record the appearance and approximate quantity of the urine (B, C, G);</div> <div>6. Educating caregivers (A, C, G, J);</div> <div>7. Register by writing the nursing process (G);</div> <div>8. Administer drugs (B).</div>	<div>1. Teaching about the signs of a full bladder (A, C, G);</div> <div>2. Advise on the need to install large door in the bathroom (H, I);</div> <div>3. Guidance regarding the use of diaper parrot / bedpan, observe the patient / family running in the first attempts (A, G, J);</div> <div>4. Educating caregivers (A, C, G, J).</div>	<div>1. Guide the patient to recognize the signs of a full bladder (A, C, G);</div> <div>2. Guide the patient to use diapers, kite / midwife to assist with eliminations bladder at least every two hours (A, G, J);</div> <div>3. Guide the patient to note the appearance, frequency and approximate volume of eliminations bladder (B, C, G, H);</div> <div>4. Educating caregivers (A, C, G, J);</div>
Urinary Retention	<div>1. Installing CVI (A, G, H, M);</div> <div>2. Install CVD (B, C, D, E, H);</div> <div>3. Driving the toilet or bedpan use / Parrot at least every two hours, using suprapubic massage if necessary (M);</div> <div>4. Provide facility wide door in the bathroom (H, I, M);</div> <div>5. Offer fluids within the body needs (D);</div> <div>6. Administer drug (B);</div> <div>7. Educating caregivers (A, C, G, J);</div>	<div>1. Teach perform AVI and genitourinary hygiene running in the first attempts (A, G, J, M);</div> <div>2. Observe, assess and record the appearance and approximate quantity of the urine, through direct observation and reporting by the patient (A, C, H, J);</div> <div>3. Advise on the need to install large door in the bathroom (H, I, M);</div> <div>4. Guide fluid intake as needed body (D);</div> <div>5. Educating caregivers (A, C, G, J).</div>	<div>1. Guide the conduct of AVI, genitourinary hygiene, conservation catheter, noting the first trials (A, G, J);</div> <div>2. Guiding the patient to note the appearance and approximate quantity of urine (B, C, G, H);</div> <div>3. Encourage use diapers, kite / bedpan, or go to the toilet, to assist in the elimination bladder at least every two hours, using suprapubic massage if necessary (A, G, J);</div> <div>4. Stimulate fluid intake, according to the bodily needs (D);</div> <div>5. Educating cagivers (A, C, G, J).</div>

Figure 3. Interventions for nursing diagnoses related to neurogenic bladder in patients with spinal cord injury. Legend: bladder catheter (CV), catheterization urinary catheter (CVD), intermittent catheterization (CVI), intermittent bladder catheterization (AVI).

DISCUSSION

The DE is drawn by nurses through a clinical trial of the responses of individual, family and community health problems / life processes or potential.<sup>12</sup> It is a step of singular importance for efficient care, it may interfere with the success of the other steps of the nursing process.

To establish a DE it is necessary to use a support system. The Rating System for Nursing Diagnoses the North American Nursing Diagnosis Association (NANDA) is one of the classification systems of nursing diagnoses more disseminated and applied worldwide.<sup>15</sup>

The DE is the interpretations of scientific data collected, used to guide nursing planning, implementation and evaluation. E stands today, both in care practice and in teaching and research, being recognized as a source of expertise in the area.<sup>12</sup>

In this perspective, we present the ED in people with SCI and neurogenic bladder (urinary urgency incontinence, Risk urge urinary incontinence and urinary retention), entered into three domain (elimination and exchange) and class 1 (Function urinary) of NANDA Taxonomy II-I. 11-12 As well, their interventions identified in the selected studies. Note also, that the discussion is guided interventions related to systems and Partially Compensatory Support System - Education, as they enable the promotion of self-care.<sup>14</sup>

◆ Urge Urinary Incontinence

The urge urinary incontinence is the involuntary loss of urine that occurs immediately after a strong sense of urgency to urinate.<sup>12</sup> Soon, people with SCI are likely to have this response due to interruption of the nerves of the spinal cord, because the

messages coming from the bladder cannot reach the brain.<sup>4</sup>

For this DE, nursing interventions in relation to the partly compensatory system and support system - education Orem<sup>14</sup> were found in the analyzed articles, which were related to the orientation / teaching measures to be executed by the person and / or family with LM.

One of the first actions should be to teach about the signs of a full bladder.<sup>3,6,16</sup> As the information will not reach the brain due to injury, you can manage your bladder by controlling the amount of liquid ingested and abdominal palpation. However, as accidents may occur with urination, it should be guided the installation of a large door in the bathroom,<sup>2,17</sup> to facilitate mobility and allow access for wheelchair.

For an understanding of the benefits of intermittent catheterization in persons with SCI should be in nursing consultation, advise the patient, considering their level of understanding, lifestyle, social and economic conditions, regarding the physiology of micturition and changes resulting LM. Explain about the care and hygiene of the hands, and exemplify the material handling sterile and clean and the steps of the procedure.<sup>5</sup>

Teachings on hygiene measures such as frequent replacement condom catheters, intermittent catheters consistent cleaning and regular changes in urine containment devices should be explained to patients with spinal cord injury and / or their caregivers.<sup>3</sup>

The Nursing Interventions Classification (NIC) suggests to DE Urge Urinary Incontinence, the following interventions: control urine elimination, water control, drug control, environmental control, urinary incontinence care, monitoring water and urinary habit training.<sup>18</sup>

Thus, we can see the similarity of nursing care found in the articles analyzed with those proposed by the NIC. And that it comes from Orem Theory, intervention suggested by NIC, urinary habit training is the intervention that includes more activities in relation to the guidance and teachings to promote self-care.

#### **Risk of urge urinary incontinence**

The DE Risk of urge urinary incontinence is defined as the risk of involuntary loss of urine associated with a sudden and strong sensation of urinary urgency.<sup>12</sup>

A risk diagnosis is one that describes human responses to health conditions / life processes that may develop in individual, family or community. Thus, the defining characteristics

not present, or the signs and symptoms. Just present the risk factors.<sup>12</sup>

The Risk of urge urinary incontinence may be present in people with SCI, and therefore, nursing activities concerning this DE should be planned. In the articles analyzed, before the partially compensatory systems and support - education Orem,<sup>14</sup> nursing interventions were found at about education to the patient and / or carer.

Therefore, teaching and guidance on hygiene measures, frequent exchanges of catheters, diaper use and Parrot / bedpan annotation aspect, frequency and approximate volume of eliminations bladder and recognition of the signs of a full bladder,<sup>3,5-6,8</sup> have reported for DE Urge Urinary Incontinence, are also present in DE, but with a focus on preventing this problem.

Nursing interventions in the NIC proposal in relation to DE Risk urge urinary incontinence are: assistance in self-care: use of toilet, control of urinary elimination, water control, drug control, environmental control, water monitoring and training habits urine.<sup>18</sup>

Focusing on the Theory of Self Care in Patients with SCI realizes that, like DE Urge Urinary Incontinence, the intervention that is most applicable to the diagnosis of risk for this problem is urinary habit training.

Defined as training urinary habits, setting a predictable pattern to prevent emptying in people with incontinence limited cognitive abilities that functional urinary incontinence, urgency or pressure.<sup>18</sup> Thus, nursing activities are developed to achieve this goal.

Moreover, intervention, urinary habit training, activities focusing on education for preventive measures of urge urinary incontinence are mentioned in accordance with existing interventions relates the articles analyzed.

#### **♦ Urinary retention**

OF urinary retention is defined as the incomplete emptying. One of the factors related to this problem is the inhibition of the reflex arc.<sup>12</sup> It is known that patients with LM system is inhibited reflex arc, or are likely to have a disorder in bladder emptying.<sup>4</sup>

For DE Urinary retention, the following are suggested by NIC nursing interventions: bladder catheterization, intermittent catheterization, urinary elimination control, water control, and drug control, care probes: urinary retention care in the urinary bladder irrigation and monitoring water.<sup>18</sup>

Nursing interventions for people with SCI presented in the articles selected in relation to the systems and support partially

compensatory-education Orem<sup>15</sup> were targeted in the strategy of teaching, guidance notes and procedures to patients and / or caregivers.

In patients with SCI, nursing activities as observing, assessing and recording the appearance and approximate quantity of the urine, through direct observation and reporting patient,<sup>2-3,6,19</sup> besides guiding it to note the characteristics of urine such as appearance and quantity.<sup>2,5-6,20</sup>

The articles also emphasize analyzed for encouraging the use of diapers, kite / bedpan, or go to the toilet, to assist in the elimination bladder at least every two hours, using suprapubic massage if necessary.<sup>3,5,20</sup> In addition to establishing a water intake around 1.5 to 2 liters of fluid per day for patients with SCI.<sup>4</sup>

In this context, it is clear that nursing activities in articles are selected according to the nursing interventions proposed by the NIC. And that among the interventions suggested by NIC, intervention, urinary retention in care is the most features for self-care. Thus, activities within this intervention are performed by nursing staff in order to promote self-care, focusing mainly on the patient.

## CONCLUSION

There are several potential nursing interventions to promote self-care for neurogenic bladder in people with SCI, related to diagnoses Urge Urinary Incontinence, Risk of urge urinary incontinence and urinary retention. Among them the educational / preventive people with SCI and their families, as well as guidance on handling caters bladder and clean were the most suitable.

In this perspective, the main practical implication of the present study is to point out that nurses can promote self-care of persons with SCI using technologies of Nursing. Thus, one should consider the integration of NANDA-I, NIC and Self-Care Deficit Theory as an important strategy to promote care for people with SCI.

A limitation of the study lies in the procedure for identifying the items, because they could only be part of the investigation from the crossing of those descriptors that are available and so free and full internet. In this context, some important article to answer the question raised may not have been identified, which suggested replication of research with other search strategies.

In the Coordination of Improvement of Higher Education Personnel - CAPES /

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