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Review Articles

Self care in neurogenic intestine in subjects with spinal cord injury: an integrative review

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ABSTRACT

Aim: To identify the nursing interventions that promote self-care in the neurogenic intestine in subjects with spinal cord injury, related to the nursing diagnoses listed as Risk of Constipation, Constipation and Intestinal Incontinence. **Method:** This study used the integrative review of electronic databases using descriptors. In the analysis of data, we used the Theory of Self-Care Deficit. **Results:** The most mentioned interventions of self-care were; nutritional orientation, consumption of liquids, going to the toilet at the same time every day, abdominal massage, decubitus change and Valsalva maneuver. **Discussion:** The gastrointestinal dysfunction can cause constraints and it can also harm interpersonal relationships. The nurse must evaluate the eliminatory standard of this clientele, prioritizing non-pharmacological and less invasive actions, considering dietary preferences, cultural habits and the economic resources of the subjects available to invest in a certain diet. **Conclusion:** Nurses can contribute to the promotion of self-care for patients with neurogenic intestine, and the Theory of Self-Care Deficit can be used as an important tool in this process.

Descriptors: Nursing; Spinal Cord Injuries; Self Care; Neurogenic Bowel.

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INTRODUCTION

Spinal cord injury (SCI) is a worldwide public health issue, as the number of people with disabilities generated by this aggravation has risen significantly in the last few decades. It is estimated that, in Brazil, around 6,000 new cases arise every year[1]. This number is related especially to traumatic lesions (80%) provoked by firearms, traffic accidents, shallow-water diving and falling. However, 20% of the SCI are associated with non-traumatic causes, such as viral and bacterial diseases, and also, schistosomiasis[2].

There are still some difficulties with official data about people with SCI, but there is an estimate that fifty new cases arise every day, for every one million inhabitants worldwide[3]. Every year, sixty million subjects acquire SCI in the United States of America alone[4]. In Brazil, the annual incidence is of, approximately, 6,000 cases[5].

The subjects with SCI are usually men, between the ages of eighteen and forty years, at the pinnacle of their productive life. Considering this matter, it is possible to deduce that SCI generates negative results for society. Despite evident developments in the area of rehabilitation, SCI produce alterations in organic functioning, which may result in sequels, many times irreversible ones, which generate the need for profound changes in the life of the subjects that are suffering from the injury, as well as their relatives[6].

The disabilities generated by SCI vary according to the level of the lesion; tetraplegia is found in people with lesions located above thoracic vertebra2 (T2) and, below this level, we find paraplegia. Researchers show that the occurrence of complications increases according to the level of the lesion, while the capacity of self-care decreases[7]. Hence, the difficulty in performing self-care follows the subject with SCI, which increases their chances of having complications, related to the main issue. For these patients and their relatives, nursing assistance needs to overcome the hospital paradigm, creating strategies for the promotion of health that also promotes the enjoyment of family life, besides the existing sequels.

Among the many consequences that can come with SCI, such as motor deficit, metabolic and hormonal alterations, the reduction of respiratory capacity and blood circulation, it also involves a lack of control over intestinal elimination[8]. Then, the occurrence of neurogenic intestine is quite common in people suffering from SCI, as due to the neurological damage, the nervous system cannot control intestinal functions as before, which may lead to constipation or fecal incontinence[7].

Intestinal problems present with variable incidence, reaching up to 75% of people with SCI[9]. An investigation, undertaken in the United Kingdom of a sample with above a thousand individuals with SCI , identified that 39% presented with constipation, 36% had hemorrhoids and 31% had abdominal distention[10].

Such complications can generate fear of intestinal accidents, and as a consequence, a fear of leaving home, besides the actual discomfort caused by the accumulation of hardened feces in the intestinal tube. This condition can lead to more difficult situations in for these subjects in their participation in social activities, and possibly, to harming their quality of life.

Within this context, it is important to mention that, with adequate nursing interventions, it is possible to prevent and treat possible complications, helping the person with SCI and their relatives in the process of rehabilitation and self-care to be performed at home, after leaving the hospital[2].

Therefore, from the assumption that the people with SCI experience intestinal problems

at home, we can state that; such complications are preventable, that nurses can intervene in this process, in order to promote health within primary care, and that adequate fecal elimination is a human necessity that must be supported[11] This study aimed to identify nursing interventions in the promotion of self-care for the neurogenic intestine of the subjects with SCI, related to the diagnoses of the Risk of Constipation, Constipation and Intestinal Incontinence[12].

We believe in the relevance of this study, due to its potential in offering information that can subsidize nursing praxis in the assistance of people with SCI. The interventions here identified can be used in units of primary health care, so that people with SCI can develop their abilities in self-care, becoming more independent. This study is also justified by a lack of research about strategies in the management of neurogenic intestinal dysfunction, besides the clinical importance of this population[9].

METHOD

This is a study of integrative review, performed between July and August 2011, through the database SciELO, LILACS, BDENF, MEDLINE, IBECS and PubMed, through an online search of scientific articles published in the last ten years.

In this study, to focus on the key question, we considered people with SCI and neurogenic bladder as the problem in focus; the interventions were related to the nursing diagnoses, of Emergency Urinary Incontinence, Risk of Emergency Urinary Incontinence and Urinary Retention, as interventions to be studied with the promotion of self-care as the expected outcome.

Based on this perspective, to accumulate a higher number of articles that could answer our key question, "Which nursing interventions can be implemented to promote self-care of people with SCI that have neurogenic intestine?", three search strategies were used: I. Search using controlled DeCS/MeSH descriptors: "Traumas in Spinal Cord", "Spinal Cord", "Neurogenic Intestine", "Intestinal Constipation", "Fecal Incontinence" and "Nursing"; II. Search using non-controlled descriptors: Spinal Cord Injury, Spinal Injury and Intestine; and III. Crossed reference, or in other words, identification of a bibliography of preselected articles.

The syntax of the descriptors was articulated, based upon the following search expressions; (Spinal Cord Injury OR Spinal Cord Trauma OR Spinal Cord OR Spinal Injury) AND Nursing AND Intestine; (Neurogenic Intestine OR Intestine Constipation OR Fecal Incontinence OR Intestine) AND Nursing.

The initial search identified 839 articles, considered as search limits; articles about human beings, written in Portuguese, English and Spanish, and published in the last ten years from the beginning of the research. As a continuation, there was the analysis of titles and abstracts, considering the following inclusion criteria; articles that dealt with nursing interventions (proposals or implementations in studies), to promote self-care of people with SCI that presented neurogenic intestine, with free and full versions available electronically. Studies that were excluded from the sample of articles mentioned nursing interventions with other neurological syndromes. Therefore, after removing the abstracts that were repeated in more than one database, being counted only once, the final sample was reduced to twelve papers.

The process of data collection and the evaluation of articles was performed by two independent and blinded reviewers who organized, stored and managed the articles analyzed, with support from the software JabRef Reference Manager, version 2.5.

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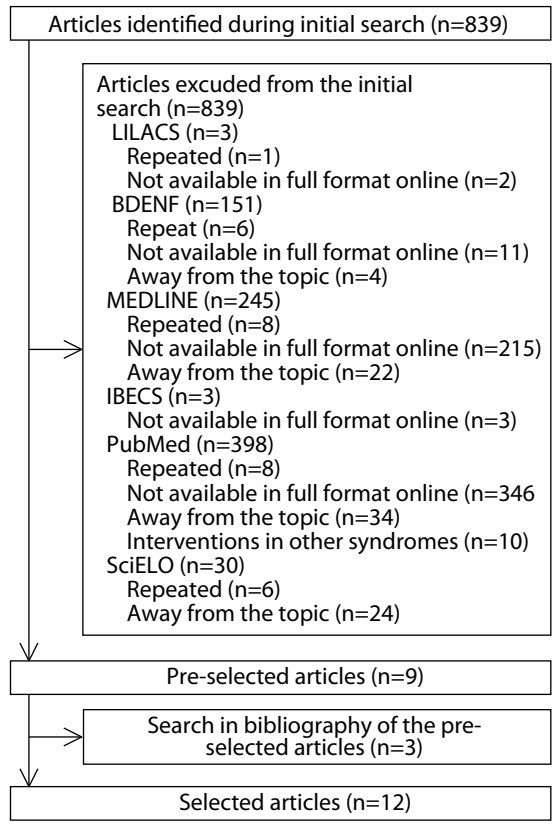
To analyze the study units, the interventions found were organized into spreadsheets and linked to the nursing diagnoses of Risk of Constipation, Constipation and Intestinal Incontinence, according to the North American Nursing Diagnosis Association International (NANDA-I)[12]. Besides that, the systems proposed by Dorothea Orem in the Theory of Self-Care Deficit were taken into consideration: I. Fully Compensated System: the nurse performs the self-care, compensating for the inability of the patient, who needs to be supported and protected; II. Partially Compensated System: the nurse supports the patient, performing some actions, but there is bilateral action; and III. Supporting System - Education: the nurse supports self-care, but the patient himself performs the actions[13].

RESULTS

According to the flowchart to be presented later, 839 articles were identified, but only twelve were selected. The papers excluded had the following issues; escape from the topic (n=84), repetition on the same database or in more than one database (n=29), nursing interventions for other neurological syndromes (n=10) and the electronic unavailability of the full and free text (n=707).

On Table 1, the bibliometric data of the twelve chosen papers are presented, indicating the distribution of the articles according to a reference number, then the name of the first author, title of the article in the language found in the journal, year of publication, country and journal of origin. It was seen that 41.7% (n=5) of the articles come from Brazilian nursing publications and that 58.3% (n=7) of them are from medical publications from other countries.

Figure 1: Flowchart of the selection of articles



Source: Designed by the authors, 2011

In Table 2, the data regarding the language, any financial support, the conflict of interests and ethical appreciation of the papers are presented, according to the review. There were articles in English and Portuguese, four of them being sponsored and five having proof of ethical appreciation. No article mentioned any conflict of interest of any type.

In Table 3, there is a presentation of possible nursing interventions for people with SCI and neurogenic intestine, according to the parameters of the Theory of Self-Care Deficit. The interventions most frequently mentioned were for the diagnosis of Risk of Constipation; Nutritional Orientation (n=10), Encouraging the consumption of liquids (n=7) and Going to the toilet at the same time every day (n=5). For the diagnosis of Constipation; Use of Medication (n=11), Nutritional Orientation (n=10), Encour-

Table 1 – Bibliometric distribution of the selected articles

S*	FA**	Title of the article	Year	Country	Journal
A	Lynch	Bowel dysfunction following spinal cord injury	2001	New Zealand	Spinal Cord
B	Beneventoi	Neurogenic bladder, neurogenic bowel, and sexual dysfunction in people with spinal cord injury	2002	United States	Phys Ther
C	Bruni	Aspectos fisiopatológicos e assistenciais de enfermagem na reabilitação da pessoa com lesão medular	2004	Brazil	Rev Esc Enferm USP
D	Goetz	Provider adherence to implementation of clinical practice guidelines for neurogenic bowel in adults with spinal cord injury	2005	United States	J Spinal Cord Med
E	Leite	O cuidar do enfermeiro especialista em reabilitação físico-motora	2005	Brazil	Rev Esc Enferm USP
F	Cafer	Diagnósticos de enfermagem e proposta de intervenções para pacientes com lesão medular	2005	Brazil	Acta Paul Enferm
G	Coggrave	Management of fecal incontinence and constipation in adults with central neurological diseases	2006	United Kingdom	Cochrane Database Syst Rev
H	Scramin	Cuidar de pessoas com tetraplegia no ambiente domiciliário: intervenções de enfermagem na dependência de longo prazo	2006	Brazil	Esc. Anna Nery Rev. Enferm
I	Korsten	Anorectal stimulation auses increased colonic motor activity in subjects with spinal cord injury	2007	United States	J Spinal Cord Med
J	Christensen	Outcome of transanal irrigation for bowel dysfunction in patients with spinal cord injury	2008	Europe	J Spinal Cord Med
L	Krassioukov	Neurogenic bowel management after spinal cord injury: a systematic review of the evidence	2010	Canada	Spinal Cord
M	Vasconcelos	Nursing interventions on the needs of people with spinal cord injury: an integrative review	2010	Brazil	Online braz. j. nurs.

Source: Designed by the authors, 2011
S=Study; FA=First Author.*

Table 2 – Classification of the articles based on language, sponsorship, conflicts of interest and ethical appreciation

S*	Language	Sponsorship	Conflict of Interest	Ethical appreciation
A	English	Not informed	Not informed	Present
B	English	National Institutes of Health to Dr Sipski	Not informed	Not informed
C	Portuguese	Not informed	Not informed	Not informed
D	English	Department of Veterans Affairs	Not informed	Present
E	Portuguese	Not informed	Not informed	Not informed
F	Portuguese	Not informed	Not informed	Present
G	English	Not informed	Not informed	Not informed
H	Portuguese	Not informed	Not informed	Not informed
I	English	Not informed	Not informed	Present
J	English	Coloplast A/S, Kokkedel	Not informed	Present
L	English	Ontario Neurotrauma Foundation	Not informed	Not informed
M	Portuguese	Not informed	Not informed	Not informed

Source: Designed by the authors, 2011

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aging the consumption of liquids (n=7), Enema (n=6), Manual Removal (n=6) and Going to the toilet at the same time every day (n=5). Lastly, for the diagnosis of Intestinal Incontinence;: Nutritional Orientation (n=10) and Going to the toilet at the same time every day (n=5). However, general interventions that presented the potential for promoting self-care were: Nutritional Orientation (n=10); Encouraging the consumption of liquids (n=7); Going to the toilet at the same time every day (n=5); Abdominal massage (n=4); Indicate the changes in decubitus and avoid lying down (n=3); Indicate how to perform the Valsalva maneuver (n=2); Indicate the stimulus to coughing (n=1); Encourage the practice of physical activities (n=1); Educate relatives who are also caregivers (n=1); and Give instructions about the necessity to install larger doors in the bathrooms (n=1).

DISCUSSION

Nursing diagnoses are titles given to human reactions that require the presence of a nurse so that health assistance takes place. They help to build effective communication between the members of a nursing team, and then, they are considered an important requisite for the application of nursing interventions, based on clinical evidence. The North American Nursing Diagnosis Association International is one of the most traditional nursing associations to validate these diagnoses[12]. Today, there is a necessity to connect the nursing diagnoses to the interventions, aiming to use clinical thinking during this consultation. From this perspective, the most frequent nursing diagnoses are presented to people with SCI and neurogenic intestine, as well as the respective interventions identified in the selected studies. We call attention to the fact that the discussion is based upon the interventions related to the systems, Partially Compensatory and Support System – Education, as they enable the promotion of self-care.

Risk of constipation

People with SCI are at risk of presenting with intestinal constipation and fecal impaction because, due to the severance of the nerves of the spinal cord, the messages that arrive from the rectum do not reach the brain and this can generate insufficient intestinal movement. The Risk of Constipation is a condition in which the person has an elevated risk of presenting with stasis in the large intestine, resulting in a low frequency of elimination and/or hard and dry feces[14].

To start the process of nursing assistance to achieve minimum eliminatory standards, it is necessary to undertake a collection of data, the first stage of which is the nursing consultation[15], composed of a physical exam and interview[9,11]. Therefore, it is recommended to interview the subject about the functioning of the eliminatory standard before the SCI. After that, a correlation must be performed with the actual eliminatory standard, followed by a search for signs of abdominal distention that can lead the nurse to suspect of impaction of flatulence; listening carefully to the hydro-aerial noises to determine intestinal motility; to percuss in search of the characteristic swelling of flatulence and touching of the abdomen, searching for bumps that can demonstrate difficulties in the elimination of feces[14].

During this investigation, the nurse must observe and identify factors that increase the possibility of reaching a diagnosis of constipation. These factors are: the use of pharmacological agents, such as the indiscriminate use of laxatives and the use of antidepressants; changes in the physiological functioning,

Table 3 - Nursing interventions for the diagnoses of Risk of Constipation, Constipation and Intestinal Incontinence, according to systems proposed in the Theory of Self-Care Deficit

Diagnoses	Fully Compensatory System	Partially Compensatory System	Support System – Education
Risk of constipation	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Abdominal massage (A,B,C,L); 8. Encourage the consumption of liquids (A,B,C,D,E,L,M); 9. Encourage the practice of physical activities (H); 10. Indicate changes in decubitus and avoid laying down (B,C,H); 11. Discourage the use of pharmacological laxatives (M); 12. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 13. Educate family caregivers (D); 14. Register the program of intestinal care (D).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Give guidelines to the Valsalva maneuver (A,B); 8. Abdominal massage (A,B,C,L); 9. Encourage the consumption of liquids (A,B,C,D,E,L,M); 10. Stimulate coughing (B); 11. Encourage the practice of physical activities (H); 12. Indicate changes in decubitus and avoid laying down (B,C,H); 13. Discourage the use of pharmacological laxatives (M); 14. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 15. Educate family caregivers (D); 16. Register the program of intestinal care (D).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F,H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Give guidelines to the Valsalva maneuver (A,B); 8. Encourage the consumption of liquids (A,B,C,D,E,L,M); 9. Stimulate coughing (B); 10. Encourage the practice of physical activities (H); 11. Indicate changes in decubitus and avoid laying down (B,C,H); 12. Discourage the use of pharmacological laxatives (M); 13. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 14. Educate family caregivers (D).

such as inadequate dentition, dehydration, deficient dietary habits, insufficient ingestion of fiber and liquids, reduced gastrointestinal motility and changes in dietary standards; functional changes, such as insufficient physical activity, weakened abdominal muscles; mechanics, such as the level of neurological lesion and psychological, for example, depression and emotional tension[12]. After the evaluation of a subject with SCI, and after confirming the diagnosis of Risk of Constipation, or the recognition of a certain risk for this issue, other interventions are suggested for the treatment and/or prevention.

The adoption of healthy habits regarding the diet must be indicated[2,9,11,16-18]. It can guide the construction of balanced meals, with dishes full of fiber. These meals must be evenly distributed, at least three times throughout the day, following the routine of a pre-established schedule. In cases where the digestive process is slower, it is necessary to deliver the diet in six meals of smaller portions. This routine helps to generate intestinal movements that will assist defecation. It is important to mention that the orientation regarding dietary habits must take into consideration the economic resources that the subjects have to invest in their own diet, as

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Diagnoses	Fully Compensatory System	Partially Compensatory System	Support System – Education
Constipation	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Abdominal massage (A,B,C,L); 8. Encourage the consumption of liquids (A,B,C,D,E,L,M); 9. Digital rectal examination (B,L); 10. Digital stimulation (A,C); 11. Enema (A,D,H,J,L,M); 12. Manual removal (A,B,D,G,H,L); 13. Encourage the practice of physical activities (H); 14. Control of impaction (F); 15. Indicate changes in decubitus and avoid laying down (B,C,H); 16. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 17. Educate family caregivers (D); 18. Evaluate the possibility and/or the presence of hemorrhoids (A,B,D); 19. Register the program of intestinal care (D); 20. Administration of drugs (A,B,C,D,E,G,H,I,J,L,M).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Give guidelines to the Valsalva maneuver (A,B); 8. Abdominal massage (A,B,C,L); 9. Encourage the consumption of liquids (A,B,C,D,E,L,M); 10. Stimulate coughing (B); 11. Digital rectal examination (B,L); 12. Digital stimulation (A,C); 13. Enema (A,D,H,J,L,M); 14. Manual removal (A,B,D,G,H,L); 15. Encourage the practice of physical activities (H); 16. Control of impaction (F); 17. Indicate changes in decubitus and avoid laying down (B,C,H); 18. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 19. Educate family caregivers (D); 20. Evaluate the possibility and/or the presence of hemorrhoids (A,B,D); 21. Register the program of intestinal care (D); 22. Administration of drugs (A,B,C,D,E,G,H,I,J,L,M).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F,H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Give guidelines to the Valsalva maneuver (A,B); 8. Encourage the consumption of liquids (A,B,C,D,E,L,M); 9. Stimulate coughing (B); 10. Encourage the practice of physical activities (H); 11. Indicate changes in decubitus and avoid laying down (B,C,H); 12. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 13. Educate family caregivers (D); 14. Evaluate the possibility and/or the presence of hemorrhoids (A,B,D).
Intestinal Incontinence	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Encourage the practice of physical activities (H); 8. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 9. Educate family caregivers (D); 10. Register the program of intestinal care (D).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F, H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Encourage the practice of physical activities (H); 8. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E); 9. Educate family caregivers (D); 10. Register the program of intestinal care (D).	1. Anamnesis (A,B,D,E); 2. Physical exam (A,D,E); 3. Nutritional orientation (A,B,C,D,E,F,H,I,L,M); 4. Going to the bathroom at the same time every day (A,C,H,L,M); 5. Show the necessity to install a larger door in the bathroom (A); 6. Evaluate socioeconomic, cultural and sexual conditions of the users (A,B); 7. Encourage the practice of physical activities (H); 8. Manage eliminations: observe, evaluate and register aspect, approximate quantity of feces (C,D,E,M); 9. Educate family caregivers (D).

Source: Designed by the authors, 2011

well as their food preferences and cultural habits.

The consumption of liquids should also be encouraged[2,9,11,16,18], as the maintenance of an adequate fluid intake provides help with the hydration of feces and facilitates the passing of feces through the intestine. Also, to go to the toilet at the same time every day[2,16,18], in order to establish a routine. Information must be given about the necessity of installing a larger door to the bathroom, to permit easier access for a wheelchair, together with a caregiver, who also needs to be well informed about how to proceed[9]. They must indicate changes of decubitus and avoid laying down[16]. They need to give information about the Valsalva maneuver, (to inhale deeply and force down the abdominal and diaphragm muscles) and indicate the stimulation of coughing and abdominal massage[18]. In the Rovising Massage, the patient or the caregiver should lightly touch the colon, from right to left, from the bottom up, for a period of twenty minutes. This intervention can be associated with intestinal training, which consists of placing the patient on a toilet seat, if the person can stay by him/herself for thirty minutes, even if the patient does not have the need to evacuate.

The practice of physical activities is also encouraged and indicated[16], in order to help the mobility of feces; the use of pharmacological laxatives is not advised[2], to avoid possible drug dependency. The nurse needs to control the assistance provided and manage the eliminations; to observe, evaluate and register the aspect and approximate quantity of feces[2,9,11], as well as registering the intestine caring program[9].

Constipation

Constipation is the state in which the person presents stasis in the large intestine, resulting in a low frequency of elimination and/or hard and dry feces. The suspicion of intestinal constipation occurs when the number of eliminations is below three times a week, overstraining to defecate and the elimination of hard feces. When the mobility of the intestine is reduced, the feces stay longer in the large intestine, and then there is a higher absorption of water, which makes them harder to be eliminated. The fecal impaction results in constipation and is characterized by hardened feces the person cannot expel. The signs of fecal impaction are the lack of elimination of feces for days, or when there is elimination of fecal exudation fluids[14].

The intervention indicated for the Risk of Constipation can also be applied to the diagnosis of Constipation, which is also pertinent to show other nursing interventions, such as the administration of drugs[2,9-18]. In some cases, under medical supervision, it is the nurse who will administer oral laxatives or suppositories, which are indicated as necessary when other non-pharmacological therapies have been unsuccessful. Without evacuation, it is possible to use the glycerin suppository, but if the problem persists for more than three days after these trials, the physician must be consulted. The nurse must evaluate the risk-benefit of the use of natural laxatives which are culturally accepted by the subjects and their relatives, discouraging the use of self-prescribed pharmacological laxatives, because they perpetuate the maintenance of the diagnosis of constipation.

When the diagnosis of constipation is confirmed, a rise of hydric ingestion is indicated, to about 2.5 to 3 liters of liquid on a daily basis. This includes the consumption of water and fruit juices. The consumption of milk and its derivatives must be observed and recorded by the subject and his/her relatives, because these elements can generate flatulence in some people and, therefore, their consumption must be limited. The extra consumption of coffees, teas and sodas are not indicated because they

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have constipating properties and promote flatulence[2,11,16,18].

Other interventions that can be implemented are; to evaluate the possibility and/or the presence of hemorrhoids[9], because the defecation of hard and dry feces can cause bleeding and secondary complications, besides increasing the difficulty in eliminations; the control of impaction, by digital stimulus, (which consists of the introduction of the gloved and lubricated finger in the rectum, moving in and out for five minutes), digital rectal examination[18], enema[2,9,16,18] and/or manual removal[9,16,18] when the situation is considered critical. After medical prescription, enemas and clysters can be administered. The heating of the liquid to be used in these proceedings improves the emollient capacity. Another important factor is the position of the subject with SCI in left-side decubitus, permitting the liquid to penetrate deeply into the descending colon, and then helping in intestinal eliminations. Other viable alternatives for subjects with SCI are the techniques of body mobilization. It is necessary to determine if this mobility will be active or passive, and the level of participation of the caregivers. The person with SCI can be placed in an orthostatic position, with the lower limbs flexed over the abdomen, as these mobilizations help intestinal movement and reduce flatulence[14].

Intestinal incontinence

Intestinal incontinence is the state in which the individual presents with the incapacity to control the elimination of feces. For this diagnosis, the previously mentioned interventions are used, except those that aim to promote and/or facilitate the elimination of feces.

With regard to nutritional orientation[2,9,11,16-18], the consumption of a fiber-rich diet to grow the fecal matter must be encouraged, whilst at the same time, alcoholic beverages and caffeine should be avoided. Concerning the administration of medication, substances that can reduce the frequency of incontinence and modify the consistency of the feces produced can be indicated.

It is important to give guidance and information regarding the necessity of installing a larger door to the bathroom, because with incontinence, it is essential that the path to the bathroom is clear, especially when dealing with a person with SCI on a wheelchair.

Another important issue is an evaluation of the cultural and sexual condition of the users, as a gastrointestinal dysfunction can cause embarrassment and can also harm social relationships. Within this perspective, sexual counseling is an integral and fundamental part of the process of rehabilitation, and it is the role of the nurse to transmit the correct information about possible alternatives, to minimize changes in relationships, due to the complications of SCI[16].

The nurse that assists the person with SCI must observe the evaluation of the eliminatory standard of this clientele, and should also prioritize non-pharmacological, less invasive actions. It would be the ideal to promote self-care for the neurogenic intestine in such a way that the people could watch over themselves, or have reduced support from caregivers.

Besides the pertinent interventions seen in the selected articles, a limitation of this study is to consider only the articles freely available and in full format on electronic databases. This methodological proceeding can, in some cases, make sure that some important studies in the area of investigation, and that have the potential to answer the questions raised in this research, are not included in the sample.

FINAL CONSIDERATIONS

It was observed that there are many nursing interventions that can be implemented in the treatment and promotion of the health of people with SCI and neurogenic intestine, especially in the assistance of people with the nursing diagnoses of Risk of Constipation, Constipation and Intestinal Incontinence. The identification of these interventions offers a set of information with easy access to the nurses that work with this clientele in hospitals, clinics and homes, and is seen as especially relevant to those nurses who support patients with SCI located away from the largest rehabilitation centers.

Sharing the nursing diagnostics and interventions indicated by nurses that support patients with SCI that present neurogenic intestine, offers subsidies that can help to answer two questions. The first is the fostering of assistance with lower risks of malpractice, negligence and recklessness. The second is the overcoming of nursing assistance based on individual experiences for the nursing practice, based on clinical evidence.

In this context, it was seen that nurses can contribute to the promotion of self-care for the neurogenic intestine in subjects with SCI, and that the Theory of Self-Care Deficit can be used as an important tool in this process, once it permits the use of many resources to promote the independence needed to develop the bonds of responsibility and fraternity between caregivers and subjects with SCI. Moreover, it permits the use of the systems, Partially Compensatory and Support – Education, which supports the process of education in health, to live with neurogenic intestine, besides preventing and treating the nursing diagnoses of Risk of Constipation, Constipation and Intestinal Incontinence.

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