ABSTRACT

Objective: to analyze the available evidence on nursing care in Bowel Reeducation Programs for Neurogenic Bowel patients with constipation. Method: bibliographic, descriptive, integrative review type study of articles published between 2011 and 2021 in the LILACS, SciELO, BDENF, SCOPUS, and PubMed databases, using the descriptors “Neurogenic Bowel”; “Constipation”; “Nursing”; “Neurogenic Bowel”; “Constipation” and “Nursing”. The analysis was performed through reflective and careful reading about the theme of the study. Results: it was perceived that the most frequently performed nursing care in patients with neurogenic bowel included: bowel massage, abdominal press, vessel training, digit-anal stimulation, transanal irrigation, and use of suppositories, contributing positively to the institution of an effective and safe Bowel Re-education Program. Conclusion: the present study contributes to the nursing care actions of patients with NB and to the dissemination of findings on the benefits of the Bowel Reeducation Program.

DESCRIPTORS: Health Care; Nursing Care; Nursing; Neurogenic Bowel; Rehabilitation.

HOW TO REFERENCE THIS ARTICLE:
INTRODUCTION

The Neurogenic Bowel (NB), characterized as the interruption of bowel elimination control, regardless of the presence of feces in the rectal canal, occurs due to dysfunction of the colon in not having central nervous control. Moreover, it has important relevance by directly influencing the low quality of life of affected patients¹.

Among the main causes of NB are traumatic and non-traumatic spinal cord injury, multiple sclerosis, spina bifida, Parkinson’s disease, and stroke. Consequently, they are responsible for negatively impacting the social integration and personal independence of patients worldwide²-³.

Constipation and fecal incontinence are the most prevalent symptoms of NB, affecting about 95% and 75%, respectively, of patients with spinal cord injury and two-thirds of multiple sclerosis patients. Constipation affects over 25-63% of those with Parkinson's Disease, while fecal incontinence occurs in approximately 15% of patients with Stroke³. Other symptoms include abdominal pain and discomfort, feeling of fullness, and bowel dilation, since the process of storing and eliminating undigested food generates the need for help from family members or health care professionals to remove the feces⁴.

In this context, the nurse, as an agent in the multiplication of knowledge and educator in the process of health promotion, acts uniquely in the management of the patient with NB, considering the complexity and specificity of each case⁵. Such conducts are permeated from health promotion, perpetuating in the guidance on new habits of life, in the prevention of injuries, falls and new injuries to the rehabilitation process of the individual in all levels of health care⁶-⁷.

Considering this, the present review is in the field of studies that cover the care and educational actions performed by nurses and members of the interdisciplinary team, especially regarding the actions of fecal disimpaction against constipation, responsible for affecting almost all people with NB, aiming to offer adequate care to patients with NB, reflecting on a humanized and scientific assistance that brings biopsychosocial benefits to this population. Thus, it was assumed that patients with NB with constipation experience difficulties in the process of bowel emptying; that the adequate and well-guided management by a bowel re-education program can prevent biopsychosocial complications; and that nurses, as members of the health team, can intervene and provide actions of promotion, prevention, and rehabilitation⁵-⁶³⁴.

The present study is justified by the need to verify the findings available in the literature that contemplate the nursing care developed, encompassing the Bowel Reeducation Program, in patients with NB who present with constipation. The findings of this review can provide updated and relevant information in the systematization of nursing care for people with NB; assist the clinical evaluation of patients, subsiding decision-making and bowel emptying maneuvers appropriate for each case; and contribute to the development of techniques and skills of caregivers and patients in the home environment.

We aimed to analyze the available evidence on nursing care in Bowel Reeducation Programs for Neurogenic Bowel patients with constipation.

METHOD

Bibliographic, descriptive, integrative review type study based on what was published in national and international journals from 2011 to 2021. There were five phases: 1) identification of the problem and development of the guiding question; 2) search and selection of publications; 3) data evaluation; 4) data analysis; and 5) presentation of results⁸.
Initially, to answer the proposed objective, the following guiding question was elaborated, based on the PICOT strategy: In patients with Neurogenic Bowel (P), which nursing care (I), through a Bowel Reeducation Program (C), can contribute to the improvement in the pattern of bowel elimination? (O), based on what has been observed in publications over the last ten years (T).

In the second phase of the study, from April to June 2021, the following databases were searched: LILACS (Latin American and Caribbean Literature on Health Sciences), PubMed (Public/Publish Medline), Scopus Nursing Database (BDENF) and SciELO (Scientific Electronic Library Online). The searches were carried out by two blinded researchers with the aid of an instrument built and validated in content and semantics, being adapted to the theme of this study.

Also in this step, the search strategy for the articles was carried out using a combination of the Health Science Descriptors (DeCS): “Neurogenic Bowel”; “Constipation”, and “Nursing”; and the Medical Subject Headings (MESH): “Neurogenic Bowel”; “Constipation”, and “Nursing”, combined with the Boolean logical operator “AND”.

Full research articles published in Portuguese, English or Spanish in the last 10 years (2011-2021) addressing the study topic were included. Repeated works, review and opinion articles, course completion papers, theses, dissertations, and abstracts were excluded.

To help understand the selection process, the flow chart in Figure 1 was organized according to the recommendations of the Preferred Reporting Items for Systematic reviews and Meta-Analyses PRISMA Statement. 

Figure 1 - Flowchart of article selection. Recife, PE, Brazil, 2021
Source: The authors.
In the third phase, when evaluating the data, tables were prepared to extract the most relevant information from the articles included in this study. The first table included the following data: identification of the main author, year, journal, Qualis, level of evidence, and methodology used in the study, while the second table included the objective and the main results and conclusion found.

In the analysis of the articles, the classification of the findings according to the level of scientific evidence was performed; for this, the classification system composed of seven levels was used: level I - evidence derived from systematic reviews or meta-analysis of relevant clinical trials; level II - evidence derived from at least one well-designed randomized controlled trial; level III - well-designed clinical trials without randomization; level IV - cohort and case-control studies; level V - systematic review of descriptive and qualitative studies; level VI - evidence derived from a single descriptive or qualitative study; and level VII - opinion of authorities or expert committee report.

The analysis was performed through reflective and careful reading about the theme of the study, in an organized way through the visualization of the data in an Excel® table, being analyzed the convergences and divergences between the authors, the methods, and the maneuvers used, aiming, continuously, nursing care that can be performed in the Bowel Reeducation Programs. Finally, in phase five, the presentation of the data and the discussion of the articles were related to the bowel emptying practices, as well as their efficacy and their safety for the patients. A flow was organized focusing on the objectivity and clarity of the articles that implied their validation.

RESULTS

In the present review, 13 articles that met the eligibility criteria were analyzed, of which: six in PUBMED, two in LILACS, two in SciELO, two in Scopus, and one in BDENF. Regarding the predominance of publications in international journals, nine were published in English and four in Portuguese.

Information about the studies is shown in Chart 1. Regarding methodology, five of the publications were Randomized Clinical Trials. Regarding the rest of the sample, there was a heterogeneous distribution among the studies: phenomenological analysis (1); exploratory descriptive (1); prospective comparative (1); cohort (1); methodological (2); transversal (1); and deterministic (1).

It was noticed that the most frequently performed nursing care in patients with neurogenic bowel included: bowel massage, abdominal press, vessel training, anal digital stimulation, transanal irrigation, and use of suppositories. According to Chart 1, we also registered articles that contemplated a diet rich in fiber and adequate fluid intake for stool formation and emulsification, and health education to perform emptying techniques.

Chart 1 - Results found in the studies according to: main author, year of publication, country, journal, Qualis, type of study, level of evidence, objectives, results, and conclusion. Recife, PE, Brazil, 2021

<table>
<thead>
<tr>
<th>Main Author Year/ Country</th>
<th>Journal/ Qualis/ Type of Study/ Level of Evidence</th>
<th>Objective</th>
<th>Results/ Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Journal</td>
<td>Year</td>
<td>Country</td>
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<tr>
<td>Engler⁹</td>
<td>Acta paul. enferm. (A2) Cohort / IV</td>
<td>2011/ Brazil</td>
<td>To know the prevalence of constipation in patients admitted for rehabilitation and to verify the results of two models of conduct instituted for bowel re-education during hospitalization.</td>
</tr>
<tr>
<td>McClurg¹⁰</td>
<td>Int. MS j. (C) Randomized Clinical Trial/ II</td>
<td>2011/ Ireland</td>
<td>To determine the feasibility of performing abdominal massage in people with Multiple Sclerosis.</td>
</tr>
<tr>
<td>Faleiros¹¹</td>
<td>Rev. Esc. Enferm. USP. (A2) Prospective and Comparative/ IV</td>
<td>2013/ Brazil</td>
<td>To evaluate outcomes of nursing interventions in the treatment of constipation associated with cerebral palsy.</td>
</tr>
<tr>
<td>Engkasan¹²</td>
<td>J. rehabilit. med. (A2) Transversal/ VI</td>
<td>2013/ Malaysia</td>
<td>To describe the bowel programs used by individuals with spinal cord injury; and to determine the association between the outcome of bowel programs and various interventions to facilitate defecation.</td>
</tr>
<tr>
<td>Ozisler¹³</td>
<td>Neural Regen Res (B1) Randomized Clinical Trial/ II</td>
<td>2015 Turkish</td>
<td>To determine gastrointestinal problems associated with neurogenic bowel and dysfunction in patients with spinal cord injury, and to evaluate the effectiveness of the bowel program on gastrointestinal problems and the severity of neurogenic bowel dysfunction.</td>
</tr>
<tr>
<td>Emmanuel²</td>
<td>PLoS One (A2) Deterministic Study/ IV</td>
<td>2016 England</td>
<td>Investigate the long-term cost-effectiveness of initiating transanal irrigation in patients with neurogenic bowel who have failed standard bowel treatment.</td>
</tr>
<tr>
<td>Campoy⁴</td>
<td>Rev. bras. enferm. (A2) Methodological study/ VII</td>
<td>2018 Brazil</td>
<td>Produce and validate an educational video on bowel emptying maneuvers to empower individuals with neurogenic bowel in the process of bowel rehabilitation.</td>
</tr>
<tr>
<td>Source</td>
<td>Year</td>
<td>Country</td>
<td>Journal/Publication</td>
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<tr>
<td>Burns</td>
<td>2018</td>
<td>Canada</td>
<td>Arch. phys. med. rehabil. (A1)</td>
</tr>
<tr>
<td>Todd</td>
<td>2018</td>
<td>England</td>
<td>J. wound ostomy cont. nurs. (A2)</td>
</tr>
<tr>
<td>Rodrigues</td>
<td>2018</td>
<td>Brazil</td>
<td>J. coloproctol. (Rio J., Impr.). (B3)</td>
</tr>
<tr>
<td>Zhang</td>
<td>2018</td>
<td>China</td>
<td>Journal of Clinic Nursing (B1)</td>
</tr>
<tr>
<td>Yin</td>
<td>2020</td>
<td>China</td>
<td>Medicine (A2)</td>
</tr>
<tr>
<td>Azevedo</td>
<td>2021</td>
<td>Brazil</td>
<td>Rev. Pesqui. Fisioter. (B5)</td>
</tr>
</tbody>
</table>

Source: The authors (2021).

**DISCUSSION**

Based on the results obtained in this review, it was observed that the nursing care of patients with NB should be a strategy based on scientific evidence, to then enable...
the stimulus to plan bowel re-education based on programs that allow a better quality of life for affected individuals. Thus, nurses can establish flexible behaviors for patients and caregivers, encouraging self-care and routine bowel movements practices, ensuring respect and individuality for their physiological freedom.\textsuperscript{15,17-18}

The findings revealed that there is a favorable relationship between the institution of a bowel re-education program and patient acceptability. Thus, the development of a program that favors bowel movements routine helps the removal of feces and provides a higher standard of bowel function.\textsuperscript{9,12-13,15,17-19} A longitudinal and analytical study conducted in Brazil with 98 constipated patients found that the implementation of a bowel re-education program, consisting of practices such as increased fluid intake, laxative diet, respect for the gastrocolic reflex, abdominal massage, and stimulation of daily bowel movements after breakfast, contributed positively to increased bowel frequency and decreased difficulty of bowel movements\textsuperscript{9}.

Among the main maneuvers considered positive for improving fecal elimination, abdominal massage performed about 15 to 20 minutes after meals, clockwise, respecting the gastrocolic reflex, was highlighted.\textsuperscript{9-10,12-13,17-19} A randomized controlled clinical trial conducted with 30 constipated patients in Northern Ireland, guided them to practice abdominal maneuvers for four weeks. The study found that the massage group showed significant improvements, with a decrease in evacuation time from 10 to six minutes, reduced use of oral laxatives, improved stool consistency, and increased frequency of elimination\textsuperscript{10}.

Accordingly, the association of abdominal massage with Valsalva maneuver, abdominal press, and vessel training optimized the time and reduction of constipation symptoms.\textsuperscript{10,17-18} A randomized controlled trial conducted in China evaluated the effect of a bowel re-education program including abdominal massage, potty training, laxative diet, and abdominal press, performed by nurses on 184 patients with NB. The findings of this study revealed that bowel function scores including bloating, constipation, prolonged defecation, drug dependence on defecation, and fecal incontinence in the observation group were significantly lower than in the control group consisting of 92 patients (p < 0.05).\textsuperscript{17}

Regarding digital rectal stimulation and the use of suppository to promote fecal disimpaction, evidence was found in five of the studies evaluated. It was observed the meticulous care when describing the approach to perform the digital stimulation, contemplating the respect for the emotions and anguish experienced by the patients.\textsuperscript{9,12-15} It is noteworthy that in qualitative research carried out in London with nurses who provided bowel care to patients in the hospital environment, the findings revealed the feeling of dissatisfaction in performing bowel care due to difficulties in the systematization of the techniques adopted and the need for appropriate training to perform the care offered\textsuperscript{15}.

Another evidence identified in this review was the laxative diet as an important factor for prevention of constipation and increased bowel transit, highlighting the socioeconomic and cultural conditions of the patient and his family in studies that oriented the insertion of fruits, leafy vegetables, 1.5 to two liters of water per day, and vegetable oils in the diet, daily.\textsuperscript{9,11,17-18} In this sense, a prospective and comparative research, when evaluating the results of nursing interventions in the treatment of 50 patients with quadriplegic cerebral palsy and bowel constipation revealed that the orientations for daily consumption of laxative foods and vegetable oils, increased water intake, and execution of daily bowel maneuvers favored the total or partial relief of constipation symptoms in 90% of the participants. In addition, they contributed to the aspects of quality of life, such as sleep, stress, appetite, rectal bleeding, rectal fissure, voluntary retention of stool, crying, and pain when defecating\textsuperscript{11}.

With respect to the Transanal Irrigation technique, this has proven to be an important maneuver that facilitates bowel elimination. In the studies analyzed, the reader was advised to be careful when performing the technique after the failure of maneuvers considered conservative, such as: massage and abdominal press; potty training; laxative diet and manual fecal disimpaction; vigilance in maintaining water temperature around
37°C; training of patients and family members to perform the technique at home; and the consent of the patient or guardian to start the TI\textsuperscript{2,14,16}.

A Brazilian methodological study, developed with patients and caregivers seen at the Evacuation Disorders Clinic at the Clinics Hospital of the Federal University of Minas Gerais, standardized the transanal irrigation technique in four steps: preparation of the patient before treatment; interdisciplinary approach; training of the patient or family member responsible for the patient; and the step-by-step technique itself guided by a nurse. The TI technique was considered effective and safe to be performed in the bowel re-education of patients with evacuation disorders\textsuperscript{16}.

Also, in relation to health guidelines for patients with NB, the role of nurses as multipliers of knowledge is fundamental to the process of adherence and success of the bowel re-education program. The actions begin, covering from the physiopathology of NB, in which the management options for fecal elimination are included, to the limits that extend beyond the physical body, considered the object of care\textsuperscript{19}.

To this end, we have relied on the construction of educational technologies capable of favoring the teaching-learning process of patients and families, creating a link between the clarity of information and the construction of knowledge. Among the findings of this review, we analyzed a methodological study that produced and validated an educational video on bowel emptying maneuvers for the training of individuals with NB. The video had the purpose of contributing to the education of patients, the improvement of nursing care and greater effectiveness and efficiency of the activities performed by nurses\textsuperscript{4}.

From this perspective, it is believed that nurses have the potential to understand the health-disease process and collaborate to the development of self-confidence, self-care, and improvement in the quality of life of individuals, preparing them to return to their residence and social activities\textsuperscript{20-21}. It is noted, then, that the studies found in this review indicate positive indicators for the implementation of nursing care in bowel re-education programs in patients with NB. However, it is observed the lack of use of nursing theories to support the practice in a systematized way, to highlight scientific knowledge and the consolidation of nursing as a science.

However, the major limitation of the study may be related to the fact that only the Health Science Descriptors (DeCS and MeSH) were used in the search to retrieve articles related to constipation from the electronic databases, which may have contributed to the fact that some studies on fecal incontinence were not accessed.

The findings found in this review from levels of evidence ranging from II to VII identified that nursing care guided by actions of promotion, prevention, re-education, and rehabilitation performed in a Bowel Re-education Program for patients with NB can improve their autonomy and reduce discomfort during bowel movements. The maneuvers performed in the Bowel Re-education Programs can be recommended by nurses from primary to specialized care, with low cost and little risk of negligence, carelessness, and imprudence, since it will favor an assistance based on clinical evidence. Many are the factors that influence the results of the analyzed studies, namely: association of maneuvers with greater chances of positive results, health education with patients and families, patient acceptance, and adaptation to the orientations. However, as a limitation of this review, we list the heterogeneity of the sample, methods, instruments, and techniques used in the different articles analyzed.

Therefore, the need for new studies addressing the importance of this theme
is evident, strengthening the assistance provided by nurses to patients with NB in the Brazilian and global contexts. Moreover, this study contributes to the actions of nursing care to patients with NB and to the dissemination of findings on the benefits of the Bowel Reeducation Program.

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Nursing care in bowel re-education programs for patients with neurogenic bowel

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - Albuquerque GPM de, Faleiros F, França ISX de, Carneiro TTA, Lima MAM de, Coura AS; Drafting the work or revising it critically for important intellectual content - Faleiros F, França ISX de, Coura AS; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - Albuquerque GPM de, Coura AS. All authors approved the final version of the text.

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