

BMJ Open Protocol for a scoping review of skin self-care of people with spinal cord injury

Daniella Karine Souza Lima,¹ Soraia Dornelles Schoeller,¹ Neide da Silva Knihs,¹ Caroline Porcelis Vargas,¹ Adriana Dutra Tholl,¹ Soraia Geraldo Rozza Lopes,¹ Maria Manuela Martins,² Karina Silveira de Almeida Hammerschmidt¹

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ABSTRACT

Introduction In recent years, increasing methodological references have been used in scientific research; these are points of support in the search for evidence, formulation and elaboration of instruments, scales, guideline and protocols. However, significant variability currently exists in scoping review conduct and reporting, thus limiting the potential of the methodology to advance research and practice about skin self-care of people with spinal cord injury (SCI). Our objective was to perform a scoping review protocol within the health rehabilitation context of people with SCI, focusing on skin self-care.

Methods and analysis The protocol was developed by using the scoping review methodological framework proposed by Arksey and O'Malley and further refined by the Joanna Briggs Institute, incorporating insights from more recent innovations in scoping review methodology. Sensitive searches of 13 electronic databases from 2007 to 2017 will be supplemented by grey literature searches. Two reviewers using a tool developed for this scoping review will screen eligible studies.

Ethics and dissemination The scoping review will undertake a secondary analysis of previously collected data and does not require ethical approval; however, the ethical precepts of copyright will be respected. The results will facilitate a better understanding of the practical health rehabilitation context of people with SCI, the impacts of these rehabilitations and how to build an evidence base for this work in the future.

BACKGROUND

In recent years, scientific research has used more methodological references, which can support the search for evidence and the formulation and/or elaboration of instruments, scales, guides and protocols.

In the health area, the use of these methodological references has promoted and disseminated studies and research capable of adding new tools and evidence, which have subsidised behaviours and have provided quality, safety and effectiveness in the diagnosis, prognosis, care and therapy of patients. Evaluating healthcare from a patient-centred approach has promoted safe and quality care.^{1,2}

Strengths and limitations of this study

- This is a novel review approach to cover a vast volume of literature on a broad topic, thus offering a map of research about the skin self-care of people with spinal cord injury (SCI).
- The search strategy includes 10 electronic databases with peer-reviewed literature and a broad range of grey literature sources.
- Stakeholders will be consulted and engaged throughout the study review process. The experts in the area of rehabilitation will be responsible for analysing and judging the relevant references for the research. Patients and caregivers will provide information and clarification beyond what is reported in the literature about their daily skin care practices.
- The elaboration of this protocol will contribute to improvements in the planning and self-care of the people with SCI and will enable the scientific community to present concrete steps capable of presenting strong evidence related to the subject it is intended to investigate.

Scoping review methodology is particularly useful for examining a broadly covered topic to comprehensively and systematically map the literature and identify key concepts, theories, evidence or research gaps. Unlike systematic reviews or meta-analyses, scoping reviews do not narrow the parameters of the review to research trials or require quality assessment. Nonetheless, this type of review is rigorous and methodical in its approach to examining the extent, range and nature of research activity in a particular field while encompassing both empirical and conceptual research with broadly framed questions.¹⁻³ In this sense, it is understood that this reference methodology can subsidise the elaboration of an instrument/tool that is capable of assisting in the self-care of a patient with spinal cord injury (SCI).

WHO defines SCI as any injury to the structures of the spinal canal, medullary cone



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¹Department of Nursing, Center for Health Sciences, Federal University of Santa Catarina, Florianopolis, Santa Catarina, Brazil

²Porto Nursing School, Porto, Portugal

Correspondence to

Dr Daniella Karine Souza Lima; daniellaklima@gmail.com

and equine tail that causes motor, sensory, autonomic or psychoactive changes. Because of the injury, the functions performed by the spinal cord are interrupted, causing serious and significant disabilities in various aspects of life of the patient.⁴ Traumatic events usually cause the incidence levels of SCI, including increasing numbers of car and motorcycle accidents and urban violence. Epidemiological data have estimated an annual global incidence of 40 to 80 cases per million population.⁵ In Brazil, approximately 7000 occurrences of people with SCI per year were verified.⁶

Decreased physical mobility, sensitivity deficits, genitourinary and gastrointestinal repercussions and circulatory changes make the spinal cord vulnerable to a series of serious complications and further limit the rehabilitation and social insertion processes.⁷ Among the complications, the impairment of the skin structure, the limitation of active movement, the loss of tactile and/or thermal sensitivity and long-term permanence in the same position are highlighted.⁸

Recently, the prevalence of pressure injury in individuals with SCI has increased. The prevalence rates of pressure injury vary between 25% and 50% of veterans with SCI. Pressure injuries pose a significant medical burden and are associated with high costs of care. A value of \$1.3 billion was projected to be the annual cost of treating pressure injury in the SCI population.⁹

The preventive skin care activities taught to people with SCI during rehabilitation include daily skin inspection, wheelchair pressure relief every 30 min, establishing and adhering to turning and sitting tolerance, hygiene, nutrition and equipment maintenance.⁸

The search for new technologies for the care of the skin of people with SCI has been a challenge for health professionals. Krishnan *et al*¹⁰ evaluated the validity of the Spinal Cord Injury Pressure Ulcer Scale (SCIPUS) during acute care and inpatient rehabilitation following SCI by determining critical cut-off points and assessing the ability to predict risk of pressure ulceration. The authors demonstrated that SCIPUS can prevent the occurrence of pressure ulceration in the acute period (2 to 3 days); however, it was unable to predict over a longer term (5 to 21 days).

Of note, individual with SCI usually presents a deficit of self-care and is considered dependent for basic daily activities.^{6,11} Thus, continuing efforts to develop new technologies that support self-managed care are an important prevention strategy.

We believe that a scoping review may contribute to the development of a self-care tool for patients with SCI, because the method will help us map the evidence from the available research and relevant literature to inform the development of new technologies in health aimed at supporting the management of self-care practices, thereby improving participation in daily life for individuals.

Protocol development is an important component of the standard construction of scoping reviews because it increases the transparency of the method and allows readers to judge the validity and reliability and use the

research appropriately.² Our objective is to perform a scoping review protocol within the health rehabilitation context of people with SCI, focusing on skin self-care.

METHODS

The scoping review is an ideal methodology for mapping key concepts within a research area, identifying main sources and types of evidence available and identifying gaps in the existing research. Scoping reviews are different from systematic reviews, which attempt to answer a specific research question by collating all empirical evidence that fits prespecified eligibility criteria.¹²

This methodological study aims to present a protocol for a scoping review about self-care practices with the skin of people with SCI. Our protocol was developed using the scoping review methodological framework proposed by Arksey and O'Malley¹² and further refined by the Joanna Briggs Institute.¹³ The approach describes six methodological stages: (1) identification of the research question, (2) identification of relevant studies (search for relevant studies), (3) selection of studies, (4) data extraction, (5) interpretation, summarisation and dissemination of results and (6) consultation with stakeholders (optional).

Stage 1: Identifying the research questions

The first stage of this study is the development of one or more research questions. Thus, to construct the guiding research question, we used an adaptation of the PICO strategy (P: patient, I: intervention, C: comparison, O: outcomes), with 'P' being the population (people with SCI), 'I' the phenomenon of interest (self-care; skin injury) and 'C' the context (rehabilitation) (figure 1). The PICO strategy can provide potential readers with a significant amount of information about the focus, scope and applicability of a review to fit their needs.¹⁴

In the sequence, using an interactive process that involved team discussions as we became more familiar with the literature, new issues were established. The research questions developed were defined according to box.

Stage 2: Identifying relevant studies

At this stage, team discussions established the eligibility criteria, electronic databases, descriptors and keywords and search strategies.

Eligibility criteria

Inclusion will meet the following criteria: empirical and theoretical studies, published in English, Spanish or Portuguese, in the period from January 2007 to January 2017. Original articles about qualitative (eg, case-control studies, prospective or retrospective cohort studies or quasi-experimental studies) and quantitative research, experience reports, literature reviews, integrative, systematic with or without meta-analysis and scope review; guidelines, booklets, protocols, theses and dissertations published in the databases selected for the study; and

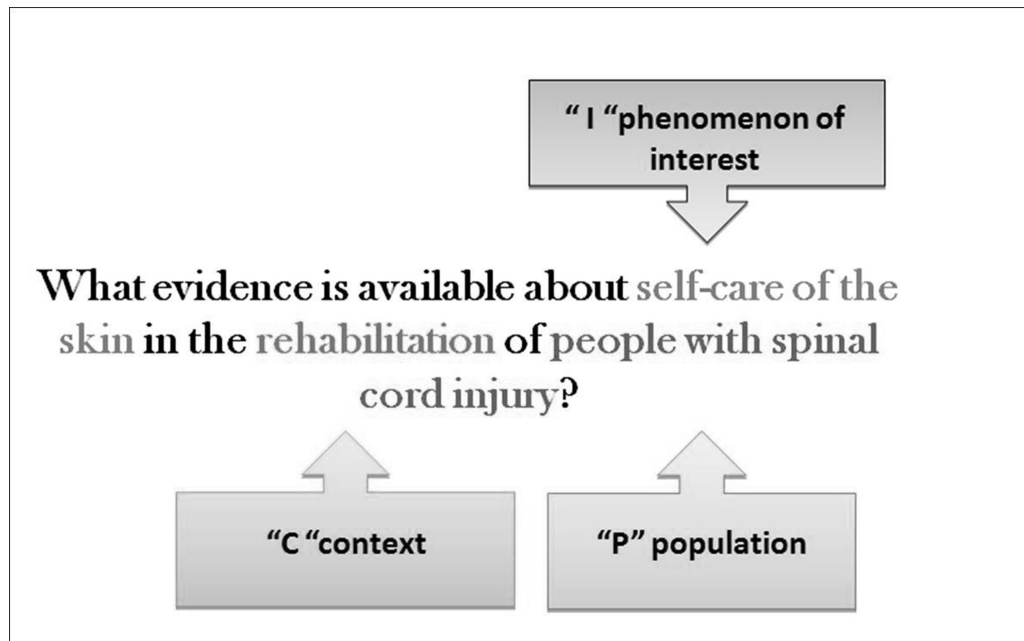


Figure 1 Guiding research question—PICO (P: patient, I: intervention, C: comparison, O: outcomes) strategy (adapted from Joanna Briggs Institute¹⁴).

relevant studies on the subject that are in the list of references of the publications will be included.

Databases

The identification of studies relevant to this review will be achieved by searching electronic databases of the published literature, which will include the following: Latin American and Caribbean Health Sciences; Spanish Bibliographic Index on Health Sciences; BDENF (Nursing Database); Cumulative Index to Nursing and Allied; SCOPUS; Medical Literature Analysis and Retrieval System Online (PubMed/MEDLINE); Web of Science; the Cochrane Library and the Scientific Electronic

Library Online . To capture all relevant information, we will also search a variety of grey literature sources, including Google Scholar, Open Grey, PROQUEST, Capes Bank of dissertations and theses and the Brazilian Ministry of Health. We will also hand-search all reference lists of the included studies to identify additional studies of relevance.

Search strategy

To construct the search strategies, we used the PICO strategy. In addition to guiding the development of the research question, the PICO strategy allows the best available scientific information to be accurately located by the professional or researcher. Considering the research questions mentioned above, the literature search of articles was guided by PICO: ‘P’ population (people with SCI), ‘I’ phenomenon of interest (self-care; skin injury) and ‘C’ context (rehabilitation).¹³

The search was guided by the Boolean operators ‘AND’ and ‘OR’, as needed. A librarian led the refinement of our database search strategies during this stage. Each search result was documented, and the references were imported into separate folders using Mendeley Desktop V.1.15.2 reference management software.

The following descriptors, keywords and their combinations were used to construct the strategies: ‘Spinal Cord Trauma’, ‘Spinal Cord Traumas’, ‘Spinal Cord Injury’, ‘Spinal Cord Injuries’, ‘Spinal Cord Disease’, ‘Spinal Cord Diseases’, ‘Spinal Cord Disorders’, ‘Spinal Cord Disorder’, ‘Spinal Paraplegia’, ‘Spinal Paraplegias’, ‘Paraplegia’, ‘Paraplegias’, ‘Tetraplegia’, ‘Tetraplegias’, ‘Quadriplegia’, ‘Quadriplegias’, ‘Skin’, ‘Skin care’, ‘Hygiene’, ‘Skin Ulcer’, ‘Skin Ulcers’, ‘Pressure Ulcers’, ‘Pressure Ulcer’, ‘Decubitus Ulcers’, ‘Decubitus Ulcer’, ‘Bedsores’,

Box Research questions and operational definitions

1. *What evidence is available in the literature that can support the self-care of people with spinal cord injury (SCI)?*
✓Support networks, health education and health technologies
2. *What barriers and facilitators to implementing strategies of self-care are available to people with SCI?*
✓Barriers and facilitators as identified by authors
3. *What does the literature reveal about of the involvement of health professionals, researchers and government entities in self-care skin strategies in people with SCI?*
✓Research and public policies
4. *How is self-care of the skin provided in care networks for people with SCI?*
✓Care networks (primary, secondary and tertiary)
5. *How do health professionals involved in the care/rehabilitation process contribute to the self-care of the skin of people with SCI?*
✓Multiprofession actuation and individual actuation
6. *How do family members/caregivers involved in this process contribute to the self-care of the skin of people with SCI?*
✓Support types

'Bedsore', 'Sore pressure', 'Pressure Sore', 'Pressure Sores', 'Pressure Injury', 'Pressure Injuries', 'Self-Care', 'Self-Care (Rehabilitation)', 'Daily Living Activities', 'Daily Living Activity', 'Rehabilitation', and 'habilitation'.

Stage 3: Study selection

The review process will consist of two levels of screening: (1) a title and abstract review and (2) a full-text review. For the first level of screening, the titles and abstracts of articles retrieved in the search will be read and analysed by two independent investigators to identify potentially eligible articles. In the second step, the two investigators will then each independently assess the full-text articles to determine whether they meet the inclusion/exclusion criteria. Any discordant full-text articles will be reviewed a second time, and further disagreements about study eligibility at the full-text review stage will be resolved through discussion with a third investigator until full consensus is obtained. Scoping reviews do not allow articles to be excluded according to methodological quality criteria; thus, the items included in this review were not submitted to an evaluation of methodological quality.

To include studies from the list of references, three experts in the area of rehabilitation and disability at the national and international levels will be consulted. To organise the data, a PRISMA flow diagram will be used.

Stage 4: Charting the data

A data collection instrument will be developed by the research team to confirm study relevance and to extract study characteristics, covering questions related to the research proposal (type of publication, language, country and year); the researcher (name and place of work) and the article (journal, title, year and place of the research, methodology, sample, interventions, analysis, the results and conclusions). Based on a preliminary analysis, we will develop categories and priorities, which will guide the extraction and mapping of data. Bibliographies Management Software (Mendeley Desktop V.1.15.2) will assist the organisation.

Stage 5: Collating, summarising and reporting the results

In our scoping review, we will describe key categories, such as the target populations, dominant action areas, intervention characteristics and types of questions posed. This review of the research about intervention effectiveness will also provide suggestions for future research. Potential gaps in skin self-care actions will be identified. The data collected will be stored in the electronic database of Excel 2010. The results of this study will be presented in a descriptive way in tables and graphs.

Stage 6: A consultation exercise

Arksey and O'malley¹² and Levac *et al*¹⁵ suggest that the consultation stage provides opportunities for stakeholder involvement, providing insights beyond what is reported in the literature. To address the study's patient-centric approach and the interests of stakeholders, particularly people with SCI, our study will consist of two stages: (1) consultations with experts in the area of rehabilitation and disability (three stages), who will be responsible for the analysis of the list of references relevant to the research and (2) recorded interviews with patients or caregivers in which information about their daily skin care practices is requested to clarify possible research gaps found in the study (table 1).

ETHICS AND DISSEMINATION

The research protocols aim to guide the researcher in the construction of a research method that encompasses the following points: importance of the theme—literature review; the issue of study, sample selection, study design and study conduction strategy; and data analysis, ethical considerations and administrative responsibilities.¹⁶

In recent years, the publication of revision protocols has been increasing, since process transparency is considered a quality criterion for review, facilitating their subsequent publication in high-impact journals. The review will have relevance to a variety of audiences, including researchers and health professionals who are interested in better

Table 1 Consultations with stakeholders composed of experts and patients

Consultant stakeholders		Intervention proposal
Experts in the area of rehabilitation and disability	Doctor Nurse Physical therapists Psychologist Social worker Nutritionist	Responsible for the analysis of the list of references and inclusion of studies relevant to the research
Patient-centric	People with spinal cord injury Family or caregiver	Semistructured interview guide: What do you need to know about skin care in your daily routine? Describe how you perform skin care in your daily life. If you were to find any skin changes, what would you do? How would you care for an injury? What are your difficulties (barriers) in performing routine skin care? What are the benefits or reasons for performing skin care in your daily routine?

understanding the practical applications of self-care in a rehabilitation context, the impacts of this rehabilitation and how to build an evidence base for this work in future.

Corroborating this fact, several studies of protocols of revision of scope in the health area have been conducted. Halas *et al*³ performed a scoping review protocol to systematically review published review articles specific to tobacco control and primary prevention over the last 10 years. Goertzen *et al*¹⁷ described a protocol for a scoping review of reviews that aims to map a decade of research focused on physical activity interventions within the domain of primary prevention. Additionally, Colquhoun *et al*¹⁸ performed a study protocol for a scoping review on rehabilitation. Jolley *et al*¹³ outlined a scoping review protocol to systematically review published and unpublished literature, implemented and evaluated in various care settings, specifically for patient-centred quality indicators.

Since the scoping review methodology consists of reviewing and collecting data from publicly available materials, this study does not require ethical approval. Our protocol for systematically conducting a scoping review of published review articles, specifically about skin self-care among people with SCI over the last 10 years, has been presented. This is an innovative approach that offers a viable way to synthesise a wide range of research literature specific to self-care strategies for the skin of people with SCI, identifying specific potential trends and gaps. The scoping review will undertake a secondary analysis of previously collected data and does not require ethical approval; however, the ethical precepts of copyright were respected.

CONCLUSIONS

Caring for the injured spinal cord must be continued throughout the life trajectory. The need for improvements in care in this setting has strong impacts on the prevention of complications and other health problems that may require changes in the quality of life of these people.

The development of new products and technologies helps the health team and supports and subsidises safer, effective and practical care for those who live with daily permanent care needs.

The elaboration of this protocol and others that may arise from this example will contribute to improvement in the planning and self-care of the individual with SCI. Likewise, this protocol will certainly enable the scientific community to present concrete steps that are capable of presenting strong evidence related to the subject it is intended to investigate.

Contributors DKSL conceived of the conception, developed the research question and study methods and contributed meaningfully to the drafting and editing; she has also approved the final manuscript. SDS, NSK, CPV, ADT, SGRL, MMM and

KSdAH aided in developing the research question and study methods, contributed meaningfully to the drafting and editing and approved the final manuscript.

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