Management of spinal cord injury-related pain using complementary alternative medicine: a scoping review protocol

Abstract

Objective: To identify the complementary alternative medicine methods used to manage spinal cord injury-related pain

Introduction: Spinal cord injury-related pain is common, with a third of the individuals experiencing severe pain. Conventional interventions are well documented, however, pain relief remains elusive to people with spinal cord injuries. Although complementary alternative medicine is available to alleviate health problems, little is known about the different complementary alternative medicine methods employed in pain management in people with spinal cord injuries.

Inclusion criteria: All of the studies that include complementary alternative medicine treatment methods used by adults with spinal cord injury to treat their associated pain will be considered in this scoping review. The concept of interest in this study is complementary alternative medicine, and quantitative, qualitative and mixed methods studies, as well as systematic reviews on this topic, will be included in this review.

Methods: A three-step search strategy, including an initial limited search, a full search, and a screening of the reference lists of all the included articles will be undertaken. Key information sources to be searched include (but not limited to) CINAHL, Cochrane Library, PubMed, Science Direct, Scopus, SPORTDiscus, Web of Science, and Wiley Online Library. All titles and abstracts of identified citations will be screened and then uploaded to a reference management programme. Full texts of studies potentially meeting the inclusion criteria will be assessed in detail, and relevant data extracted and reported in a tabular format that is in line with the objectives and scope of this review.

Keywords: Complementary alternative medicine; Pain management; Spinal cord injury

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Introduction

Pain is a well-researched topic with in-depth descriptions of the epidemiology of this phenomenon and its management. Although not as common a topic in the literature, pain experienced subsequent to a spinal cord injury (SCI) is common, with up to 94% of people with SCI (PWSCI) reporting the presence of pain.[1] The experience and perception of pain may be intense and reported as severe to extreme, with the possibility of being aggravated over time[2] and interfering with activities of daily living;[3] emotional and cognitive function;[4] mobility and the independence of the person with SCI.[5] Pain after SCI is not only multifactorial but also multidimensional.[6] The type of pain could be nociceptive, neuropathic or mixed;[7] chronic or acute;[8] and might even be experienced at one or more locations at the same time.[9] A variety of emotional, behavioral and social factors affects the experience of pain,[10] with the severity of pain being influenced by different factors such as genetics, comorbidities, current psychological state, prior experience of pain, and socioeconomic circumstances.[11]

The mechanisms of pain also differ, thus making the management of pain complex and challenging, particularly in the SCI population, and treatment is rarely aimed at all of the associated factors of pain.[12] Pain emanating from SCI is debilitating and warrants thorough and effective interventions. It must be noted that whereas the general population with shoulder pain could rest the associated shoulder to relieve the pain, PWSCI and shoulder pain would not be able to successfully rest the painful shoulder as it would be needed for wheelchair propulsion, transfers and other activities of daily living.[13] Despite the challenges, management of pain is essential, and without intervention, PWSCI may experience additional losses in function and community mobility.[14]

The biopsychosocial model is the most widely accepted and holistic perspective to the management of chronic pain[15] and hypothesizes individual pain experiences as resulting from the interaction of psychological, social, cognitive, physiological and behavioral factors.[16] The biopsychosocial approach of pain management acknowledges that pain can be aggravated (and diminished) by emotional dimensions, social determinants, pain catastrophizing, perceptions of injustice, anxiety and fear, depressed moods and behaviors, as well as social exclusion.[17] There are various documented conventional management methods to manage SCI-related pain, including pharmacological, therapeutic and sometimes even surgical interventions.[6] However, there are PWSCI who do not find relief for their pain.[18] People with SCI may be prescribed management methods that are not appropriate for their type of pain or that do not target the other mediating factors that influence the experience of pain. The willingness to use one treatment method over the other may mediate the behavior of employing such a treatment,[19] and as much as various pain management methods are made available to PWSCI, their attitude toward the treatment may play a role in attaining pain relief or not. In order to holistically and effectively manage SCI-related pain, PWSCI need to be considered as a whole person, while psychosocial and environmental factors that might influence the way they would respond to pain

management methods should also be considered. The experience of pain differs per individual, therefore pain management should be patient-specific and should also speak to the individual's attitudes, beliefs, and preferences.[12]

The complexity of pain management has opened the door to the usage of unconventional and sometimes undocumented treatment methods. Complementary alternative medicine (CAM) is anecdotally emerging as a strong unorthodox approach for treating pain and encompasses a group of varying healthcare systems and practices, as well as products that are not generally considered to be part of usual conventional medicine.[20] Psychological and social intervention approaches such as the ingestion or application of cannabis oils and ointments[21] and religious activities[22] are gaining momentum in the SCI population. Pannek, Pannek-Rademacher and Wöllner[23] conducted a survey to evaluate the use of CAM methods in PWSCI and found that 73% of PWSCI used CAM for chronic pain. Furthermore, they found an 85% general satisfaction level with CAM. Acupuncture is one of the CAM methods that has shown positive results in reducing SCI-related pain[23,24] with lasting pain relief.[25]

This review protocol was prompted by unpublished findings on the measures taken by PWSCI experiencing pain to alleviate their pain.[22] Both successful and unsuccessful CAM methods used by PWSCI to manage pain are not well researched, and this is the first review to identify the available literature on the management of SCI-related pain using CAM methods. The management of SCI-related pain needs to be limited not only to the conventional management methods. The outcome of this review would provide a concise overview of the existing evidence on the CAM methods used in the management of SCI-related pain which could be explored as pain management measures based on the biopsychosocial approach.

A preliminary search of MEDLINE (PubMed) and CINAHL was conducted and no current or underway scoping reviews or systematic reviews on the topic were identified. The aim of this review is to identify current CAM methods used in the management of pain in PWSCI.

Review question

What are the CAM methods used to manage pain in PWSCI?

Inclusion criteria

Participants

This scoping review will consider studies including CAM management methods for treating SCI-related pain. Studies with participants older than 18 years of age, and irrespective of the participant's demographic and injury profile (such as type or completeness of SCI), will be included in the review.

Concept

The concept of interest in this study is the range of CAM management methods available that are used to treat SCI-related pain. These methods could include any of the constructs of the biopsychosocial model of care and also any aspect of pain in PWSCI (such as any type, cause, location, character and severity of pain). Studies that focus on pain in conjunction with other secondary health conditions will also be considered.

Context

This review will consider studies conducted on PWSCI in in-patient and out-patient rehabilitation facilities, as well as in any other healthcare settings where they receive professional health care services, irrespective of the country of origin, racial, gender-based interest or sociocultural standing.

Types of sources

No limits will be imposed on this scoping review; as such, it will consider - quantitative, qualitative and mixed methods study designs, as well as validation and methodological studies. In addition, systematic reviews, primary research studies and text and opinion papers will also be considered for inclusion.

Methods

The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews.[26]

Search strategy

The search strategy will aim identify both published and unpublished studies, including reviews, texts and opinion papers. A three-step search strategy will be utilized. The first step has already been completed and included an initial limited search of PubMed and CINAHL databases to identify relevant articles on the topic. The initial search was then followed by an analysis of the text words contained in the titles and abstracts of the relevant articles, and the index terms used to describe these retrieved articles. This step informed the development of a search strategy including the identification of key words and index terms that will be adapted for each information source (see Appendix I). For the second step, all identified keywords and index terms will be searched across all of the included databases. Thirdly, the reference lists for all of the included articles will be screened to search for additional papers to also be considered for inclusion in this scoping review. Articles published in English will be included. No restrictions on the year of publication will be made as they may be relevant to this scoping review irrespective of the publication date. Should the need arise, the reviewers will contact the authors of the primary studies or reviews for further information.

The databases to be searched include EBSCO Host interface, including CINAHL complete, MEDLINE complete (PubMed) and SPORTDiscus; Cochrane Library, Science Direct, Scopus, Web of Science, and Wiley Online Library. Sources of unpublished studies and grey literature to be searched include Open Access Theses and Dissertations, ProQuest Nursing and Allied Health Source and ProQuest Health and Medical Collections.

Study/Source of evidence selection

Following the search, all identified records will be collated and uploaded to the reference management programme, Endnote X9 (Clarivate Analytics, PA, USA), and duplicates removed. Titles and abstracts will then be screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant papers will be retrieved in full and their citation details imported into the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia).[27] The full text of selected citations will be assessed in detail against the inclusion criteria by two independent reviewers. Studies that do not meet the inclusion criteria will be excluded and the reasons for exclusion will be recorded and reported in the scoping review. Any disagreements that might arise between the reviewers at any of the stages in the selection process will be resolved through discussion or by considering inputs from a third reviewer. The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scoping Reviews (PRISMA-ScR) flow diagram.[28]

Data extraction

Data will be extracted from the articles included in the scoping review by two independent reviewers using a self-developed data extraction table. The data thus extracted will include specific details about the study population, concept (pain and intervention information), context (setting of the intervention), methods (including the study design and aims), as well as the findings relevant to the topic. The reviewers will categorize the intervention information according to each aspect of the biopsychosocial model. A draft data extraction tool is provided (see Appendix II). This tool will be modified and revised as necessary during the process of extracting data from each included paper and the modifications will be detailed in the full scoping review. Any disagreements that might arise between the reviewers during the data extraction process will also be resolved through discussion or by considering the inputs of a third reviewer. Where required, the authors of the papers will be contacted to request missing or additional information.

Data analysis and presentation

The presentation of the extracted data will be in tabular form and in line with the objective of this scoping review. Information about each identified management intervention will also include the intervention name and prescription. A narrative summary will accompany the tabulated results and will describe how the results relate to the review objective.

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Appendix I: Search strategy

Search strategy for PubMed

Search conducted on April, 07 2021.

Search number	Query	Results
1	(((((((pain[MeSH Terms]) OR ("pain management"[MeSH Terms])) OR (pain[Title/Abstract])) OR ("pain management"[Title/Abstract])) OR ("pain managements")) OR ("pain treatment")) OR ("pain treatments")) OR ("pain interventions")	823,207
2	((((((("spinal cord injuries"[MeSH Terms]) OR ("spinal cord injuries"[Title/Abstract])) OR ("spinal cord"[Title/Abstract])) OR ("spinal injury"[Title/Abstract])) OR ("spinal injuries"[Title/Abstract]))) OR (sci)	1,706,135
3	(((((((("complementary therapies"[MeSH Terms]) OR ("complementary therapies"[Title/Abstract])) OR (complementary therapies)) OR (complementary therapy)) OR (complementary medicine)) OR (alternative medicine)) OR (alternative therapy)) OR (alternative therapies)) OR (complementary alternative medicine)) OR ("other treatment")	520,913
4	#1 AND #2	43,849
5	#3 AND #4	1,851
6	#5 AND English [La]	1,720
7	#6 AND Humans [Species]	1,075

Appendix II: Data extraction instrument

Study details	
Author, (year), country of study	
Title	
Design	
Aims	
Participants	
Pain information	
Type of pain	
Location of pain (severity)	
Intervention information	
CAM intervention	
Description	
Frequency / Duration	
Setting	
Facilitator	
Results	