Nursing knowledge of people with paresis of voluntary muscles: a living scoping review protocol

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ABSTRACT

Objective: This review aims to continuously map the nursing knowledge about people with paresis of voluntary muscles in any context of care.

Introduction: Muscle paresis is a condition that significantly impacts quality of life. Nurses have a crucial role in managing this condition, particularly paresis of voluntary movement muscles. However, nursing knowledge about patients with paresis of voluntary muscles is dispersed, hampering the integration of evidence within the structure of information systems. Mapping how the nursing process components are identified is the first step in creating a Nursing Clinical Information Model for this condition, capable of integrating evidence into information systems.

Inclusion criteria: This scoping review will consider studies focusing on the nursing process regarding people with paresis of voluntary muscles in all care contexts. The review will include quantitative, qualitative, and mixed-methods study designs, systematic reviews, clinical guidelines, dissertations, and theses.

Methods: The review process will follow JBI's scoping review guidance, as well as the Cochrane Collaboration's guidance on living reviews. Screening of new literature will be performed regularly, with the review being updated according to new findings. The search strategy will map published and unpublished studies. The databases to be searched will include MEDLINE, CINAHL, Scopus, *JBI Evidence Synthesis*, and the Cochrane Central Register of Controlled Trials. Searches for unpublished studies will include OpenGrey and Repositorios Científicos de Acesso Aberto de Portugal. Studies published in English and Portuguese from 1975 will be considered for inclusion.

Registration: Open Science Framework: https://osf.io/d7c9g/

Keywords: clinical information model; clinical reasoning; nursing; paresis

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Introduction

According to the International Classification for Nursing Practice (ICNP) 2019 release, paresis is defined as an "incomplete or complete loss of ability to move body part such as mouth, throat or eyelid."[1(n.p.)] As part of the corporal processes within the ICNP,[1] this neuromuscular impairment can be a consequence of health conditions, such as neurologic disorders, leading to a compromise in the voluntary recruitment of motor units, specifically in the central and peripheral execution processes.[2] These processes are crucial in the ability to control the tension and length of the muscle, the maintenance of posture, and the sense of position.[3] These voluntary body movements rely on links between the central and peripheral nervous systems. When compromised, they impair the person's self-care

ability, leading to a discrepancy between needs and means.

Despite being referred to as an etiology in some nursing taxonomies, nurses can address paresis through nursing actions. This can be achieved through nursing actions that, for example, induce neuroplasticity or trigger different neural pathways for voluntary movement, potentially leading to positive outcomes, such as re-activating motor function.[2] Thus, nurses play a vital role in caring for people with paresis of voluntary muscles (PVM), whether by enhancing neuromuscular processes or by stabilizing the impairment.[4] By meeting the patients' expectations and responding to how they experience this paresis, nurses can influence how patients adapt and transition to a new health condition, helping them master actions that enhance the central and/or peripheral execution processes.[4,5] Depending on the person's needs, nursing interventions for people with PVM may include "exercise promotion: strength training"[6(p.530)] to maintain or increase muscle strength; "exercise promotion: stretching"[6(p.532)] to increase or maintain body flexibility; and "exercise therapy: muscle control"[6(p.536)] to enhance or restore body movement. Thus, and according to Orem's self-care deficit theory, in the presence of PVM, nurses may intervene as supplement or complement, replacing or assisting the person in performing these exercises.[4,7] In line with Meleis' transitions theory, nurses should facilitate awareness of and engagement with the important role of nursing therapeutics by addressing the facilitating and inhibiting conditions associated with the transition process.[5] Nurses' clinical decision-making within these theories will help the person with PVM to develop skills and mastery to incorporate the new condition into their identity.[4,5]

Yet, how nurses conceptualize PVM and its integration into the nursing process is varied. This disparity creates a communication gap in nursing care planning for people with PVM, limiting the exchange of information and continuity of care.[4,8] Not only does this hinder continuity of care and interoperability of the information produced by health information systems (HIS), but it also has a significant impact on delivering the best evidence-based standard of nursing.[8] Synthesizing the multiple assessment instruments, interventions, definitions, and labels associated with PVM to a nursing-led classification based on nursing theories will help translate the existing knowledge into clear,

interchangeable data, enabling semantic interoperability and enhancing nursing care.[1,9]

To achieve semantic interoperability, nursing elements should be described using a nursing taxonomy recognized by the World Health Organization, as in the ICNP.[10] The elements should also be structured according to international standards, specifically the International Standards Organization's ISO 18104:2014.[9] Mapping the nursing knowledge related to people with PVM and coding the extracted information based on this specific taxonomy and international standard is the first step toward interoperable data. The end result of this process is inclusion in a Nursing Clinical Information System (NCIM).[11-15] As an NCIM represents contextual and conceptual information that expresses both structure and restrictions, it comprises highly related, terminology-independent, and theory-based concepts,[8] representing discipline-specific knowledge. These models have the potential to create high-quality automated data and incorporate clinical guidelines. This would enhance interoperability and decision-making, thereby improving the quality of care for the person with PVM.[4,16-18]

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, and *JBI Evidence Synthesis* was conducted, and no current or in-progress scoping reviews on the topic were identified.

This living scoping review aims to continuously map the nursing knowledge on people with PVM and, specifically, how nurses assess, diagnose, plan, and implement nursing care. Data collected in this review will be the first step toward developing an NCIM with nursing knowledge. This NCIM will allow frequent updates and integration of new nursing knowledge (structured as concepts and rules) within the structure of the HIS. Accordingly, this review's living design will embed interoperable concepts into the structure of HIS, influencing nursing practice for people with PVM through dynamic integration into decision support systems.[19,20]

Review questions

i) What data do nurses assess when caring for people with PVM (eg, muscle strength scales)?
ii) Which nursing diagnoses do nurses use to describe problems for people with PVM (eg, paresis, muscle strength impairment)?

iii) Which goals and/or potential positive outcomes do nurses plan when caring for people with PVM? (eg, improved musculoskeletal performance)?

iv) Which actions do nurses carry out when caring for people with PVM (eg, active-assisted exercise technique)?

Inclusion criteria

Participants

The review will consider studies that include people of all ages with PVM. Specifically, the review will include studies on people with paresis of the muscles responsible for the voluntary movement of a body part (eg, upper limb, eyelid). Studies related to the paresis of involuntary muscles (eg, respiratory, oropharyngeal muscles) and studies addressing only nursing problems related to the impact of PVM (eg, self-care, caregiver role, parental role) will be excluded from this review.

Concept

The concept of interest is the nursing knowledge available in the literature used in nursing decision-making, and specifically, nursing assessment, diagnosis, planning, and implementation.

Context

This review will consider studies from all types of settings and contexts, regardless of country of origin or sociocultural setting.

Types of sources

This scoping review will consider both experimental and quasi-experimental study designs, including randomized controlled trials, non-randomized controlled trials, before and after studies, and interrupted timeseries studies. In addition, analytical observational studies, including prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies, will be considered for inclusion. This review will also consider descriptive observational study designs, including case series, individual case reports, and descriptive cross-sectional studies for inclusion. Qualitative studies with designs such as phenomenology, grounded theory, ethnography, qualitative description, action research, and feminist research will also be considered. In addition, systematic reviews and

clinical guidelines that meet the inclusion criteria will be considered. Conference abstracts and posters will be excluded due to their brevity.

Methods

The proposed review will be conducted following the JBI methodology for scoping reviews and the Cochrane Collaboration's guidance for living systematic reviews.[21,22] This combination was chosen to reflect the best possible dynamic integration between the nursing knowledge in the literature and nursing practice.

Regular observation of the relevant literature will be performed to guide new updates of the review. The team will discuss the structuring of the new knowledge to be integrated into the NCIM, and subsequently, into the update/development of clinical guidelines to integrate as concepts and rules into the structure of the HIS.

The protocol for this living scoping review was registered with Open Science Framework (https://osf.io/d7c9g/).

Search strategy

The search strategy will aim to locate both published and unpublished studies. An initial limited search of MEDLINE (PubMed) and CINAHL (EBSCO) was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy for MEDLINE (PubMed; see Appendix I). The search strategy, including all identified keywords and index terms, will be adapted for each included information source. The reference lists of all selected studies will be screened for additional studies.

As per guidance by Tricco et al.,[23] in accordance with the Cochrane guidance on living reviews, electronic database searches will be performed 12 months after the original search date to guide the review update.[22] Subsequently, we will carry out monthly literature searches. New updates will be performed when a minimum of 10% new literature is achieved, compared with the original search results.

Studies published from 1975 to September 2020 will be considered for inclusion. Due to the close relationship between rehabilitation nursing and research on people with PVM, this review will

consider 1975 as the lower date limit, as this is the year the *Association of Rehabilitation Nurses Journal* launched.[20]

This review will include all languages. The authors are fluent in English and Portuguese, and other languages will be translated using Google Translator and Linguee.

The databases to be searched will include MEDLINE (PubMed), CINAHL (EBSCO), Scopus, *JBI Evidence Synthesis,* Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, SportDiscus, and PEDro. Searches for unpublished studies will include Open-Grey and Repositorios Científicos de Acesso Aberto de Portugal.

Study selection

Following the search, all identified citations will be collated and uploaded into Rayyan QCRI (Qatar Computing Research Institute [Data Analytics], Doha, Qatar) and duplicates removed. Pilot testing will be performed by the entire review team prior to title/abstract and full-text screening. For stage one, 5% of the total search will be used to achieve approximately 75% agreement between reviewers. For stage two, 2% of the full-text articles will be used to achieve the same level of agreement.

Titles and abstracts will then be screened by two independent reviewers for assessment against the inclusion criteria for the review. Studies that could potentially meet the inclusion criteria will be retrieved in full. If the reviewers have doubts about the relevance of a study or if the abstract is unclear, the full article will be retrieved. The full text of selected studies will be retrieved and assessed in detail against the inclusion criteria. Full-text studies that do not meet the inclusion criteria will be excluded, and reasons for exclusion will be provided in an appendix in the final report. Any disagreements that arise between the reviewers at each stage of the study selection process will be resolved through discussion or with a third reviewer. The results of the search will be reported in full in the final report and presented in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.[24]

Data extraction

Data will be extracted from papers included in the review by two independent reviewers using a data extraction tool aligned with the review objective and questions (Appendix II). A two-stage data extraction strategy will be used to allow maximum data reduction without compromising the findings.

The draft data extraction tool will be modified as required throughout the review, depending on the data extracted.[25] The modifications will be documented in the full report. Two reviewers will extract data independently. As suggested by Levac *et al.,* the two reviewers will chart the "first five to ten studies using the data-charting form and meet to determine whether their approach to data extraction is consistent with the research question and purpose."[25(p.6)] Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer. Authors will be contacted for further information or clarification of the data where required, as suggested by Arksey and O'Malley.[26]

The full text of the selected articles will be uploaded to NVivo 10 (QSR International, United Kingdom). A classification sheet will be included for each article with the specific details about the population, concept(s), context, study methods, and key findings relevant to the review objective. Nodes will be created to represent the conceptual components (data, diagnoses, interventions, outcomes) prior to the extraction of the articles. Data related to each component will be inserted raw, as context units, in the respective nodes.

A content analysis of the extracted context units will be performed to categorize the raw data. Rules of encoding will be based on the ICNP concept definitions as of 2019[10] and the category structure recommended by the ISO 18104:2014.[10] Codes representing each category will be created through NVivo.

Data presentation

For research question 1, the tables and charts may include data indicated in Table 1. For research question 2, the tables and charts may include data indicated in Table 2. For research question 3, the tables and charts may include data indicated in

Table 1: Data assessed by nurses for people with paresis of voluntary muscles

Assessment data category	Unit of context

Table 2: Nursing diagnoses made for people with paresis of voluntary muscles

Diagnosis category	Unit of context

Table 3: Nursing goals and/or potential positive outcomes planned for people with paresis of voluntary muscles

Goal and/or potential positive outcome category	Unit of context

Table 4: Nursing actions applied to people with paresis of voluntary muscles

Action category	Unit of context

Table 3. For research question 4, the tables and charts may include data indicated in Table 4.

Acknowledgments

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Appendix I: Search strategy

MEDLINE (PubMed)
Search conducted in October 26, 2021

Search	Query	Records retrieved
#1	("Paresis"[Mesh] OR "Hemiplegia"[Mesh] OR "Facial Paralysis"[Mesh] OR pares*[Ti-[Title/Abstract] OR hemipares*[Title/Abstract] OR monopares*[Title/Abstract] OR plegia[Title/Abstract] OR hemiplegia[Title/Abstract] OR monoplegia[Title/Abstract] OR "facial paralysis"[Title/Abstract] OR ((impairm*[Title/Abstract] OR weak*[Title/ Abstract]) AND (((upper[Title/Abstract] OR lower[Title/Abstract]) AND extremit* [Title/Abstract]) OR crural[Title/Abstract] OR brachial[Title/Abstract] OR muscle [Title/Abstract] OR muscular[Title/Abstract])))	124,551
#2	("Nursing"[Mesh] OR nurs*[Title/Abstract])	614,696
#3	#1 AND #2	786
#6	("Nursing"[Mesh] OR nurs*[Title/Abstract]) AND ("Paresis"[Mesh] OR "Hemiplegia"[Mesh] OR "Facial Paralysis"[Mesh] OR pares*[Title/Abstract] OR hemipares* [Title/Abstract] OR monopares*[Title/Abstract] OR plegia[Title/Abstract] OR hemiplegia [Title/Abstract] OR monoplegia[Title/Abstract] OR "facial paralysis"[Title/ Abstract] OR ((impairm*[Title/Abstract] OR weak*[Title/Abstract]) AND (((upper [Title/Abstract] OR lower[Title/Abstract]) AND extremit*[Title/Abstract]) OR crural[Title/Abstract] OR brachial[Title/Abstract] OR muscle[Title/Abstract] OR muscular[Title/Abstract]))) Filters: Publication date from 1975-26 Oct 2021	721

Appendix II: Draft data extraction instrument

Author(s)	
Year of publication	
Country of origin	
Study population and sample size	
Context	
Nursing assessment data	
Nursing diagnosis(es)	
Nursing goal(s) and/or potential positive outcome(s) planned	
Nursing action(s) implemented	