



FIXATION TECHNIQUES FOR TUBULAR DEVICES USED BY NURSING STAFF: A SCOPING REVIEW PROTOCOL

TÉCNICAS DE FIXAÇÃO DE DISPOSITIVOS TUBULARES UTILIZADAS PELA ENFERMAGEM: PROTOCOLO DE REVISÃO DE ESCOPO

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RESUMO

Objetivo: Descrever as etapas de um protocolo de revisão de escopo com o propósito de mapear a literatura existente sobre as técnicas de fixação empregadas pela enfermagem em pacientes que utilizam dispositivos tubulares, como cateteres vasculares, cateteres vesicais de demora, cateteres nasoentéricos e drenos. **Método:** Trata-se de um protocolo de revisão de escopo, conduzido segundo as diretrizes do JBI e redigido conforme os itens do *Preferred Reporting Items for Systematic Reviews and Meta-Analyses – Extension for Scoping Reviews* (PRISMA-ScR). A busca será realizada nas bases de dados BVS, PubMed, Web of Science e Scopus, além de fontes de literatura cinzenta, incluindo a *The Open Access Theses and Dissertations* e a Biblioteca Digital Brasileira de Teses e Dissertações. As buscas ocorrerão até setembro de 2024, sem restrição de idioma. A seleção dos estudos seguirá critérios de inclusão previamente definidos, com a extração de dados realizada por revisores independentes. A síntese dos resultados será apresentada por meio de tabelas e de um resumo narrativo, de forma clara e estruturada.

Descritores: Catéteres; Fita Cirúrgica; Cuidados de Enfermagem; Enfermagem.

ABSTRACT

Objective: To outline the steps of a scoping review protocol aimed at mapping the existing literature on fixation techniques employed by nursing staff in patients using tubular devices, such as vascular catheters, indwelling urinary catheters, nasoenteric tubes, and drains. **Methods:** This is a scoping review protocol conducted in accordance with JBI guidelines and reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses – Extension for Scoping Reviews (PRISMA-ScR). The search will be carried out in the BVS, PubMed, Web of Science, and Scopus databases, as well as gray literature sources including the Open Access Theses and Dissertations and the Brazilian Digital Library of Theses and Dissertations. Searches will be conducted through September 2024 with no language restrictions. Study selection will follow predefined inclusion criteria, and data extraction will be performed independently by two review authors. Results will be synthesized using structured tables and a clear narrative summary.

Descriptors: Catheters; Surgical Tape; Nursing Care; Nursing.

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INTRODUCTION

The use of devices such as vascular catheters, indwelling urinary catheters, and nasogastric tubes is common in various clinical and nursing care settings. Proper fixation of these devices, along with the correct application of dressings, is essential to prevent complications such as infections and dislodgement. These measures also contribute significantly to patient safety and comfort⁽¹⁻²⁾.

However, the wide variety of techniques and methods used by nursing professionals can lead to inconsistencies in the quality of care and clinical outcomes. Evidence indicates that the use of inappropriate techniques may result in complications during both the insertion and maintenance of devices, as well as cause patient discomfort^(1,3). Available literature, which is often scattered and fragmented, fails to provide a consolidated view of the most effective and safest practices. This lack of a comprehensive synthesis of evidence hinders the implementation of best practices for the fixation of tubular devices.

Conducting a scoping review is an appropriate approach to map the existing literature, identifying the range of fixation techniques and methods used, along with the supporting evidence for each⁽⁴⁾. Unlike systematic reviews, which have a narrower focus and aim to assess the methodological quality of included studies, scoping reviews allow for a broader and more exploratory investigation of the field. This type of review enables the compilation and synthesis of relevant information on fixation techniques for tubular devices, providing a solid foundation for future research and supporting the development of evidence-based clinical guidelines.

Therefore, this study aims to describe the steps of a scoping review protocol designed to map the existing literature on fixation techniques used by nursing staff in patients with tubular devices, such as vascular catheters, indwelling urinary catheters, nasogastric tubes, and drains. This analysis will support the identification of the most appropriate techniques to be further explored in future studies and will contribute to the development of evidence-based clinical guidelines.

METHOD

Study design

This scoping review will be conducted following the methodology proposed by the JBI, which guides the development of broad and systematic reviews aimed at mapping existing literature and identifying gaps in knowledge⁽⁴⁾. The protocol will be reported according to the items outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses – Extension for Scoping Reviews (PRISMA-ScR)⁽⁵⁾.

A preliminary search conducted in the MEDLINE and Cochrane databases in August 2024 did not identify any published or ongoing reviews on the topic.

Formulation of the review question

The review question for this review was developed using the PCC framework, in which P (Population) refers to patients using tubular devices, C (Concept) refers to fixation

techniques, and C (Context) refers to nursing practice. Applying this model resulted in the following research question: *What fixation techniques are used by nursing staff in patients with tubular devices (vascular catheters, indwelling urinary catheters, nasogastric tubes, and drains)?*

Identification of studies

This scoping review will consider the following inclusion criteria: 1) population: patients using tubular devices, including vascular catheters, indwelling urinary catheters, nasogastric tubes, and drains; 2) concept: fixation techniques used for the coverage, fixation, and stabilization of these devices; 3) context: nursing practice.

The search strategy aims to identify relevant publications related to the topic. An initial exploratory search was conducted in the Virtual Health Library (VHL) database to identify pertinent studies. Based on the descriptors, titles, and abstracts of the studies found, a comprehensive search strategy was developed and then applied to the Web of Science database. This strategy (Figure 1), which includes all relevant descriptors and keywords, will be properly adapted for use in the other databases included in this review.

Study selection

This review will include studies with various designs, such as experimental, quasi-experimental, analytical observational, descriptive observational, and qualitative studies, as well as systematic reviews. Book chapters, dissertations, and theses will also be considered. Opinion pieces, conference abstracts, and editorials will be excluded because they lack methodological detail and do not meet the rigor required for this review.

Studies will be included regardless of language or publication date to ensure a broad and comprehensive review. The databases to be searched include Virtual Health Library (BVS), PubMed, Web of Science, and Scopus. Additionally, gray literature will be explored through the Open Access Theses and Dissertations and the Brazilian Digital Library of Theses and Dissertations considering the institutional affiliation of authors in Brazil.

This approach aims to provide a thorough review of the literature on fixation techniques used by nursing staff with patients who have tubular medical devices.

All publications identified through the searches will be compiled and managed using Rayyan software (Rayyan Systems Inc.)⁽⁶⁾, a tool designed for screening and organizing systematic reviews. Duplicate records will be removed prior to the study selection process.

The titles and abstracts of the identified studies will be independently screened by two reviewers based on the predefined inclusion criteria. Publications deemed potentially relevant after this initial screening will be retrieved in full and independently assessed by the same review authors. Reasons for excluding studies after full-text review will be properly documented and reported in the final review.

Any disagreements among the review authors during the selection process will be resolved by involving a third author. The scoping review will fully describe the search results and study selection process and present them in a flowchart in accordance with PRISMA-ScR guidelines.

Question	What scientific evidence exists on fixation techniques for tubular devices performed by nursing staff?		
	P (Population)	C (Concept)	C (Context)
Extraction	Patients with tubular medical devices	Fixation techniques	Nursing practice
Conversion	Equipment and Supplies Vascular Access Devices Catheters	Fixation	Nursing
Combination	Equipamentos e Provisões; Equipos y Suministros; Equipment and Supplies Dispositivos de Acesso Vascular; Dispositivos de Acesso Vascular; Vascular Access Devices Catéteres; Catéteres; Catheters	Fixação; Securement; Fijación	Enfermagem; Enfermería; Nursing
Construction	("Equipamentos e Provisões" OR "Equipos y Suministros" OR "Equipment and Supplies" OR "Dispositivos de Acesso Vascular" OR "Dispositivos de Acesso Vascular" OR "Vascular Access Devices" OR Catéteres OR Catéteres OR Catheters)	(Fixação OR Securement OR Fijación)	(Enfermagem OR Enfermería OR Nursing)
Use (BVS)	("Equipamentos e Provisões" OR "Equipos y Suministros" OR "Equipment and Supplies" OR "Dispositivos de Acesso Vascular" OR "Dispositivos de Acesso Vascular" OR "Vascular Access Devices" OR catéteres OR catéteres OR catheters) AND (Fixação OR Securement OR Fijación) AND (enfermagem OR enfermería OR nursing)		
Use (PubMed, Scopus, WOS)	("Equipment and Supplies" OR "Vascular Access Devices" OR catheters) AND ("Securement") AND (nursing)		

Figure 1 – Development of the search strategy. Belo Horizonte, MG, Brazil, 2024

Data extraction

Data extraction will be carried out independently by two review authors by using a standardized tool proposed by JBI⁽⁴⁾. This tool may be adapted throughout the process based on specific needs identified during the analysis of the evidence sources. All modifications made to the extraction tool will be properly documented and reported in the final version of the scoping review. If necessary, the authors of the included studies can be contacted for additional or supplementary information that is not available in the original texts.

Data analysis and presentation

Extracted data will be synthesized with the aim of directly addressing the research question and objective of the scoping review. The results will be presented using a combination of graphical, diagrammatic, and tabular formats to provide a clear, structured, and comprehensive overview of the identified evidence.

This synthesis will be accompanied by a narrative summary that links the presented data to the review objectives, offering a qualitative analysis of the findings. The summary will describe the main fixation techniques identified, highlight existing gaps in literature, and suggest possible directions for future research.

This synthesis process will allow for a clear presentation of data, contributing to a better understanding of the fixation practices used by nursing staff for tubular devices and providing a foundation for defining methods to be explored in subsequent studies.

Ethical considerations

This study will rely exclusively on publicly available, full-text, open-access information from the scientific litera-

ture. As it is a scoping review that does not involve the collection of primary data from human participants, submission to a research ethics committee is not required.

Expected results

This protocol aims to systematically describe the methodological steps of a scoping review focused on comprehensively mapping the various fixation techniques used by nursing staff in patients with tubular devices, such as vascular, urinary, nasogastric catheters, and drains. The choice of a scoping review is justified by its methodological flexibility, which allows the inclusion of different types of studies and sources of evidence, providing a broad and detailed view of existing practices.

This review is expected to make a significant contribution to the field of nursing by compiling and organizing the available knowledge on fixation techniques, which are essential for patient safety and comfort. Mapping the evidence will help identify gaps in current knowledge and support the development of more effective clinical guidelines grounded in scientific evidence.

This study has the potential to guide the selection of fixation techniques that enhance the quality of care, reduce complications associated with tubular devices, and promote better clinical outcomes for patients. Furthermore, the results of this review may serve as a foundation for future research, including experimental studies, contributing to the advancement of nursing practice through an evidence-based approach.

CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

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