

# Nursing care for therapeutic bleeding in the elderly: a scope review protocol

## Cuidados de enfermagem para sangria terapêutica em pessoa idosa: um protocolo de revisão de escopo

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### ABSTRACT

**Objective:** To map in the literature nursing care before, during, and after therapeutic bleeding in the elderly. **Method:** this review will be conducted by the Joanna Briggs Institute Manual using the PRISMA Extension for Scoping Reviews CHECKLIST guidelines using the following databases: MEDLINE via PubMed, Web of Science, EMBASE, COCHRANE and, for gray literature, Catalogue of theses and dissertations CAPES and Google Scholar. After searching the studies, the duplicates will be removed in the EndNote manager and then exported to the Rayyan software where the titles and abstracts will be analyzed followed by reading the full text by pairs and blind, and any disagreements will be discussed with a third reviewer. The extracted data will be presented through flowcharts, tables, and narrative and descriptive discussion. The review will be recorded in the Open Science Framework: <https://doi.org/10.17605/OSF.IO/HS2EK>.

**Descriptors:** Aged; Nursing Care; Bloodletting.

### RESUMO

**Objetivo:** mapear na literatura os cuidados de enfermagem antes, durante e após a sangria terapêutica em pessoa idosa **Método:** esta revisão será conduzida conforme o Manual do Instituto Joanna Briggs com utilização das diretrizes do checklist PRISMA *Extension for Scoping Reviews*, utilizando as seguintes bases de dados: MEDLINE via PubMed, *Web of Science*, EMBASE, COCHRANE e, para a literatura cinzenta, Catálogo de Teses e Dissertações CAPES e o Google Scholar. Após a busca dos estudos, será feita remoção das duplicadas no gerenciador EndNote e, em seguida, serão exportadas para o software Rayyan onde serão analisados os títulos e resumos seguida da leitura do texto completo por pares e às cegas, e quaisquer desacordos serão discutidos com um terceiro revisor. Os dados extraídos serão apresentados por meio de fluxogramas, tabelas, quadros e discussão narrativa e descritiva. Será realizado o registro da revisão no *Open Science Framework*: <https://doi.org/10.17605/OSF.IO/HS2EK>.

**Descritores:** Idoso; Cuidados de Enfermagem; Sangria.

### INTRODUCTION

Population aging is a global occurrence that began in Western Europe at the end of the 19th century with gradual growth, expanding in developed countries as well as in developing countries in recent decades<sup>(1)</sup>. Advances in modern medicine are providing an improvement in health conditions and the reduction of premature mortality, thus, the elderly population has grown considerably in recent times, due to policies and incentives in the area of health and a great technological process<sup>(2)</sup>.

Aging is complex and, although aging and getting sick are not synonymous, it is a biopsychosocial process consisting of anatomical,

psychological, and physiological changes that make the elderly person more vulnerable to the appearance of several diseases<sup>(3-4)</sup>. Certain hematological disorders may develop in the elderly population, such as hyperferritinemia, erythrocytosis secondary to hypoxia (such as chronic lung diseases and cyanotic heart diseases), and other diseases, which generate hyperferritinemia, in which treatment is possible through therapeutic bleeding<sup>(5)</sup>.

In the past, therapeutic bleeding was used to treat a variety of diseases based on mood theory. Also known as phlebotomy, it is a hemostatic procedure consisting of blood removal, approximately 300 to 500 ml per session, to treat and prevent various thrombotic events, such as cardiovascular and cerebrovascular accidents, such as heart failure and brain failure. more frequent outcomes in people over 60 years of age and with a previous history of thromboembolic events<sup>(6)</sup>, in which a certain amount of red cells are removed, as well as serum iron, controlling the symptoms and possible complications of hematological diseases<sup>(5)</sup>, which allows a better quality of life for patients when indicated correctly, is simple, safe and low cost<sup>(5)</sup>.

During bleeding the patient may have some side effects such as dizziness or weakness, fatigue, thirst, chills, and nausea. Although the signs and symptoms are mild and temporary, a specific care plan is necessary to reduce the likelihood of these reactions. Given this scenario, the role of the nurse is of extreme importance because it reflects safe and quality care, since its competence early identification, as well as to propose actions in the pre, intra, and post procedure phases<sup>(7)</sup>.

The majority of patients who perform bleeding are male, and these are the ones who show greater apprehension, fear, and insecurity with the procedure, especially at the beginning of therapy<sup>(7)</sup>. The professionals responsible for the bleeding procedure differ from one country to another. In Japan, this technique is done almost exclusively by the nursing team, while in the USA and the UK, they are delegated to specific medical professionals<sup>(8)</sup>. In Brazil, it is carried out by the nursing team duly empowered to program the procedure, perform, and act in adverse reactions together with the multiprofessional team, ensuring patient

safety<sup>(9)</sup>. Scientifically, therapeutic bleeding is allowed for the treatment of three chronic disorders: polycythemia Vera (PV), hemochromatosis, and late cutaneous porphyria (PCT)<sup>(5)</sup>, also with indication for secondary polycythemia, sickle cell disease, and other disorders<sup>(10)</sup>. PV is a chronic myeloproliferative neoplasm that causes increased blood viscosity through the sharp production of red cells. It is a rare disease, common in elderly males, it is not hereditary and its worldwide incidence is 2.8 in every 100 thousand individuals<sup>(11-12)</sup>. Before starting PV treatment, it is necessary to evaluate the cardiovascular risk of the patient, which is linked to age and previous history of thrombosis, in which people over 60 years of age and a history of thrombosis have high risk. The elderly person is considered to be at high risk and treatment involves bleeding, acetylsalicylic acid medication, hydroxyurea-inducing therapy, or interferon<sup>(11)</sup>.

In hemochromatosis, there is an increased iron absorption by the intestine, causing its deposition in several organs, with predominance in the liver, heart, and pancreas, and bringing complications such as diabetes mellitus, acute myocardial infarction, renal failure, and more severe cases, such as liver cirrhosis and hepatocellular carcinoma<sup>(13)</sup>. In elderly patients with comorbidities and/or poor vein conditions, the standard bleeding regime is modified in the initial phase, in which less than 400 to 500 ml of blood is collected and/or the higher periodicity between the blood and a higher level of ferritin of 200 to 400 µg/L may be allowed to avoid the discomfort of the blood and anemia<sup>(14)</sup>. PCT is an inherited or acquired disease and is due to the deficiency of the enzymatic activity uroporphyrinogen decarboxylase (UROD), the fifth enzyme of the biosynthesis of the heme, and results in the accumulation of uroporphyrin (URO) and 7-carboxyl porphyrinogen in the liver and skin<sup>(15)</sup>. The treatment of choice for PCT is therapeutic bleeding every 2 weeks, with the removal of 450 mL of blood until the ferritin concentration is less than 20 to 25 ng/dL<sup>(16)</sup>. Bleeding is contraindicated for adult and elderly patients with cardiovascular or pulmonary disease, and treatment started with antimalarials such as chloroquine 100mg 2x per week<sup>(17)</sup>.

Considering the relevance of the theme, a scope review on nursing care for therapeutic bleeding should be comprehensive and provide a map of evidence and address the main thematic elements, important definitions, and existing knowledge in the field and the possibility of a future systematic review. A preliminary search was carried out at the Virtual Health Library and PRÓSPERO Databases, Open Science Framework (OSF), MEDLINE and Cochrane Library, and no systematic or scope revisions were found in progress, or completed. Thus, the objective of this scope review is to map nursing care before, during and after therapeutic bleeding in the elderly.

## **METHOD**

This is a scope review that will be guided by the methodology recommended by the Joanna Briggs Institute (JBI)<sup>(18)</sup>. The results obtained and final report of this review will be described using the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA - SCR) checklist<sup>(19)</sup>, proper to conduct research of the scope review. This protocol will be registered in the Open Science Framework (OSF) with DOI: <https://doi.org/10.17605/OSF.IO/HS2EK>.

### **Question of the Review**

The question of the review was formulated according to the mnemonic structure PCC, this acronym corresponds to the population, concept and context, being P=elderly; C= nursing care; C=bleeding therapy. Thus, the guiding question of the review is: What is the nursing care before, during and after therapeutic bleeding in the elderly?

### **Inclusion criteria**

#### **Population**

Studies that address elderly people who are 60 years old or older, both sexes, who present pathologies that have therapeutic bleeding as medical treatment will be included.

#### **Concept**

This review will consider studies that explore nursing care before, during and after therapeutic bleeding in the elderly. Nursing planning and actions should be conducted in a systematic, integral and humanized manner,

according to the scientific evidence, in order to provide safe quality health care for both the patient and the professional<sup>(20)</sup>.

### **Context**

In this context, studies will be considered describing therapeutic bleeding performed in the elderly.

### **Types of sources of evidence**

This scope review will consider theoretical and empirical scientific articles, of quantitative, qualitative or mixed methods nature, resulting from the search in white and gray literature. Articles published in any language will be considered and no limitation of publication time will be defined. Studies that do not answer the research question, abstracts, letters to the editor and opinion articles will be excluded from the research.

### **Databases and search strategies**

The construction of the search strategy will be conducted in three stages as recommended by JBI<sup>(18)</sup>. Limited initial research was carried out using the search "advanced" in MEDLINE (PubMed) and CINAHL, using the elderly descriptors, nursing, and bleeding, followed by analysis in the title and summary of the relevant articles, and the index terms used to describe the articles.

In the second stage, the search was performed using indexed descriptors of Health Sciences Descriptors (DeCS) for Latin American databases, and descriptors indexed in Medical Subject Headings (MESH), between and CINAHL Subject headings for databases in English. The selected databases were: BDNF, LILACS, IBECs, SCOPUS, EMBASE, COCHRANE, Web of Science, and, for gray literature, the CAPES Theses and Dissertations Catalogue and the first 100 results in Google Scholar. Alternative terms with the application of Boolean operators OR and AND will be used for search.

In step three, the references of the selected studies will be analyzed to verify the need to include additional studies. Reviewers, if applicable, may contact the authors of the studies if they need further clarification on any study in question.

In the sequence, in Figure 1, the preliminary search strategy is demonstrated solely for the MEDLINE base via Pubmed.

Sources of information	Search strategy 1	Retrieved studies
PubMed	(((((Aged[MeSH Terms]) OR (Aged)) OR (Elderly)) OR ("Senior Citizen")) OR (Senium)) AND (((((((((((((((Nursing[MeSH Terms]) OR (Nursing)) OR (Nursings)) OR (Nurses[MeSH Terms])) OR (Nurses)) OR (Nurse)) OR ("Personnel, Nursing")) OR ("Nursing Personnel")) OR ("Registered Nurses")) OR ("Nurse, Registered")) OR ("Nurses, Registered")) OR ("Registered Nurse")) OR ("Nursing Care"[MeSH Terms])) OR ("Nursing Care")) OR ("Care, Nursing")) OR ("Management, Nursing Care")) OR ("Nursing Care Management")) AND (((((((((((("Therapeutic Phlebotomy") OR (Bloodletting[MeSH Terms]) OR (Bloodletting)) OR (Phlebotomy[MeSH Terms])) OR (Phlebotomy)) OR (Venesection)) OR (Venesections)) OR (Venipuncture)) OR (Venipunctures)) OR ("Blood Letting"))	231
<b>Search strategy 2</b>		
PubMed	(((((Aged[MeSH Terms]) OR (Aged)) OR (Elderly)) OR ("Senior Citizen")) OR (Senium)) AND (((((((((((((((("Polycythemia Vera"[MeSH Terms]) OR ("Polycythemia Vera")) OR ("Primary Polycythemia")) OR ("Polycythemia Rubra Vera")) OR (Erythremia)) OR (Hemochromatosis)) OR ("Bronzed Cirrhosis")) OR (Hemochromatosis[MeSH Terms])) OR (Haemochromatosis)) OR ("Bronze Diabetes")) OR ("Pigmentary Cirrhosis")) OR (Hemochromatose)) OR ("Porphyria Cutanea Tarda"[MeSH Terms])) OR ("Porphyria Cutanea Tarda")) AND (((Bloodletting[MeSH Terms]) OR (Bloodletting)) OR (Phlebotomy)) OR ("Blood Letting"))	907
<b>Search strategy 3</b>		
PubMed	((("Blood Donors"[MeSH Terms]) OR ("Blood Donors")) OR ("Blood Donor")) AND (((((((((((((((Nursing[MeSH Terms]) OR (Nursing)) OR (Nursings)) OR (Nurses[MeSH Terms])) OR (Nurses)) OR (Nurse)) OR ("Personnel, Nursing")) OR ("Nursing Personnel")) OR ("Registered Nurses")) OR ("Nurse, Registered")) OR ("Nurses, Registered")) OR ("Registered Nurse")) OR ("Nursing Care"[MeSH Terms])) OR ("Nursing Care")) OR ("Care, Nursing")) OR ("Management, Nursing Care")) OR ("Nursing Care Management"))	362

**Figure 1** - Research strategy. João Pessoa, PB, Brazil, 2023

### Selection of sources of evidence

After the research in the databases and survey of the studies, the duplicates will be removed by the EndNote Web reference manager (Clarivate Analytics, PA, USA), and then the references will be exported to the Rayyan software (Qatar Computing Research Institute, Doha, Qatar) where the titles and abstracts will be analyzed by pairs and blind.

The full text of the selected citations will be evaluated by the inclusion criteria and the reasons for the exclusion of complete texts that do not meet these criteria will be compiled and reported in the review. If there are disagreements between reviewers they will be discussed with a third reviewer.

The results of the research will be reported in full in the review and shown according to the PRISMA-SCR flowchart<sup>(19)</sup>.

### Data extraction

The studies included in the review will be extracted by independent pairs through a data extraction instrument developed by the reviewers, which was based on the model of the JBI manual<sup>(18)</sup>. Initially, a pilot test will be performed by two reviewers who will extract the data from five studies and, after the collection, will be discussed and then adaptations to the instrument if necessary. The selected studies will include relevant specificities on the population, concept, context, methods and important considerations for the review issue. Disagreements between reviewers will be analyzed by a third reviewer.

The data to be extracted will be: identification of the article (author, country, year, language), periodical, title, type of study, the objective of the study, pathology diagnosed in the

elderly who have treatment bleeding, participants (inclusion and exclusion criteria), an environment where bleeding and nursing care was performed before, during and after therapeutic bleeding in the elderly.

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