Rev Rene. 2025;26:e95651.
DOI: 10.36517/2175-6783.20252695651
www.periodicos.ufc.br/rene

Original Article

The nursing team's role in medication safety for hospitalized older adults

Atuação da equipe de Enfermagem na segurança medicamentosa da pessoa idosa hospitalizada

How to cite this article:
Silva ATH, Souza AES, Menezes VV, Silva GSA, Ferreira GRS, Pimentel ERS, et al. The nursing team's role in medication safety for hospitalized older adults. Rev Rene. 2025;26:e95651. DOI: https://doi.org/10.36517/2175-6783.20252695651

Adrya Thayanne Henriques da Silva[1]
Ana Elza da Silva Souza[2]
Vitória Victor Menezes[3]
Grazielle Sábta Alves da Silva[3]
Gerlania Rodrigues Salviano Ferreira[2]
Edlene Régis Silva Pimentel[3]
Mariana Albernaz Pinheiro de Carvalho[2]

[1]Universidade Estadual da Paraíba. Campina Grande, PB, Brazil.
[2]Universidade Federal da Paraíba. João Pessoa, PB, Brazil.
[3]Universidade Federal de Campina Grande. Cuité, PB, Brazil.

Corresponding author:
Adrya Thayanne Henriques da Silva
Rua Coronel Francisco Honório, 135.
Juarez Távora, CEP: 58387-000.
Campina Grande, PB, Brazil.
E-mail: adryathayanne45@gmail.com

Conflict of interest: the authors have declared that there is no conflict of interest.

ABSTRACT

Objective: to understand the nursing team's role in medication safety for hospitalized older adults. **Methods:** this qualitative study was conducted in the male and female medical wards of a public university hospital. Semi-structured interviews were carried out with 20 nursing staff members. Interview transcripts were processed using IRAMUTEQ and analyzed with Descending Hierarchical Classification. **Results:** five classes emerged: Difficulties related to medication safety; Factors that compromise medication safety; Special care in medication administration; Considerations for medication administration in older adults; and The nursing team's role. Factors such as patients' overall condition, advanced age, comorbidities, and the complexity of medication regimens and therapies shaped participants' perceptions. **Conclusion:** the most frequently reported strategies span the pre-, intra-, and post-administration stages and include patient identification checks, verification of expiration date, dose, route, dosing regimen, and monitoring for polypharmacy and drug interactions. **Contributions to practice:** these findings support the strengthening and recognition of safe medication-administration practices by highlighting strategies that encompass all stages of the process—rigorous checks of patient identity, dose, route, dosing regimen, and expiration date, as well as monitoring for polypharmacy and drug interactions.

Descriptors: Patient Safety; Nursing Care; Aged; Drug Administration Routes.

RESUMO

Objetivo: compreender atuação da equipe de enfermagem na segurança medicamentosa da pessoa idosa hospitalizada. **Métodos:** estudo qualitativo, conduzido nas clínicas médicas feminina e masculina de um hospital universitário público. Entrevistas semiestruturadas foram aplicadas a 20 profissionais da equipe de enfermagem com processamento do corpus textual pelo software IRAMUTEQ, utilizando Classificação Hierárquica Descendente. **Resultados**: emergiram cinco classes: Dificuldades relacionadas à segurança medicamentosa; Fatores que comprometem a segurança medicamentosa; Cuidados especiais na administração de medicamentos; Considerações na administração de medicamentos em idosos e Atuação da equipe de enfermagem. Fatores como estado geral do paciente, idade avançada, comorbidades e a complexidade dos medicamentos e terapias utilizados influenciaram as percepções dos participantes. **Conclusão:** as estratégias mais citadas envolvem medidas antes, durante e após a administração de medicamentos, como a checagem da identificação do paciente, validade, dose, via de administração, posologia, e o monitoramento da polifarmácia e interações medicamentosas. **Contribuições para a prática:** oferecer subsídios importantes para o fortalecimento e reconhecimento da adoção de práticas seguras na administração de medicamentos ao evidenciar estratégias que abrangem todas as etapas do processo, como a checagem rigorosa da identificação do paciente, da dose, via, posologia e validade do medicamento, além do monitoramento da polifarmácia e das interações medicamentosas.

Descritores: Segurança do Paciente; Cuidados de Enfermagem; Idoso; Vias de Administração de Medicamentos.

Received: Jul. 1st 2025; Accepted: Aug. 28th 2025.

Introduction

Population aging is an accelerating phenomenon driven by demographic transition and advances in medicine and technology. Rising life expectancy has led to changes in the epidemiological profile and in the organization of health services, requiring more complex and prolonged care for the older adult population[1]. In Brazil, projections indicate that by 2050, the age structure will invert, with a higher proportion of older adults than young people, demanding a restructuring of care practices[2].

With advancing age, physiological, cognitive, and structural changes increase older adults' vulnerability and the risk of adverse clinical outcomes. This condition is frequently associated with continuous and concurrent use of multiple medications — polypharmacy, commonly defined as the use of five or more medications[3]. In hospitals, polypharmacy is common and represents a risk factor for adverse events, drug interactions, and the use of potentially inappropriate medications, thereby jeopardizing medication safety[4].

The use of potentially inappropriate medications among older adults is a widely recognized problem. A national study found that 99.3% of hospitalized older adults received at least one potentially inappropriate medication, with notable use of benzodiazepines, nonsteroidal anti-inflammatory drugs (NSAIDs), and cardiovascular agents[4]. Internationally, a study conducted in two U.S. hospitals reported that about 23% of ambulatory older adults used potentially inappropriate medications, indicating that the problem crosses borders and constitutes a global challenge for clinical practice and patient safety[5]. Potentially inappropriate medications increase the risk of adverse drug reactions, falls, prolonged hospitalization, delirium, and mortality, thereby compromising medication safety[6].

Older adults in hospitals are highly susceptible to adverse events such as medication errors, falls, healthcare-associated infections, pressure injuries, and accidental dislodgement of therapeutic devices. This vulnerability results from the interplay of age-related physiological changes, multimorbidity, polypharmacy, and prolonged hospitalization[7].

The preparation, administration, and monitoring of medications are central activities in hospital care, performed predominantly by the nursing team. These tasks require technical and scientific knowledge, practical skills, clinical decision-making ability, and strict adherence to safety protocols, since any failure can have significant consequences for the patient's health[8].

However, the nursing team's practice faces several challenges, such as a heavy workload, prescription errors, a lack of ongoing training, and a lack of clinical decision-support tools. These factors compromise the safety of the medication process and underscore the need for structured interventions[910]. The implementation of organizational strategies — such as evidence-based protocols, digital technologies, systematic medication reviews, and continuing education programs — has been shown to reduce medication errors and promote the safety of hospitalized older adults[11].

Although studies have examined the risks associated with polypharmacy and the use of potentially inappropriate medications in older adults, investigations specifically addressing how the nursing team implements medication-safety measures in hospitals remain scarce. This gap is concerning because the absence of consolidated evidence on nursing practices may weaken care, hinder the development of effective protocols, and perpetuate failures in the medication process. Given that nursing professionals are directly involved in medication preparation, administration, monitoring, and detection of adverse events, it is essential to understand how these practices are carried out in routine clinical care[7].

This study's originality lies in exploring the nursing team's perspective on the challenges of ensuring safe medication use in hospitalized older adults, which may inform educational initiatives, institutional protocols, and more effective health policies[12]. Ad-

ditionally, the findings may contribute to improving the quality of care and reducing preventable harm, thereby promoting safer, more patient-centered care tailored to the specific needs of the gerontological population[13–14].

Therefore, considering the role of nursing professionals in this process, the repercussions for hospitalized older adults, their families, and health institutions, and the potential to identify training needs, we ask: What are the nursing team's perceptions of their role in medication safety for hospitalized older adults?

Thus, this study aimed to understand the nursing team's role in medication safety for hospitalized older adults.

Methods

This qualitative study was guided by the Consolidated Criteria for Reporting Qualitative Research (COREQ). It was conducted in the male and female medical wards of a public university hospital in Campina Grande, Paraíba, Brazil.

The study population comprised members of the nursing team, including registered nurses and nursing technicians. Included were nursing staff who had worked in their role for at least six months — a period considered sufficient for adaptation to unit routines and for accruing practical experience relevant to this research[15]. Professionals who were on leave, on vacation, or otherwise absent during the scheduled data-collection period were excluded. No enrolled participants refused participation or withdrew.

We used a non-probability convenience sample determined according to the accessibility and willingness of participants to take part in the study[16]. The institution's nursing staff comprised 53 professionals; 30 were invited during the data-collection period, and 20 met the inclusion and exclusion criteria and were therefore enrolled. The final sample size was determined by theoretical saturation, defined as the point at which responses became repetitive and no new relevant information emerged for the qualitative analysis[17].

Data were collected from June to September 2023 through semi-structured interviews developed by the research team. The interview guide consisted of two sections: (1) sociodemographic and professional profile, and (2) knowledge and perceptions of the nursing team regarding medication safety in the preparation, administration, and monitoring of medications for hospitalized older adults.

We collected demographic data and information related to clinical complications associated with medication administration in hospitalized older adults. Demographic variables included professional category, age, sex, educational attainment, years since qualification, and years of experience in the current unit. Regarding medication safety, the instrument assessed professionals' knowledge of safe medication-administration practices, including key concepts, risk factors, and management strategies adopted to promote medication safety.

The interview guide was semi-structured and developed from a model previously used in similar studies. This type of instrument is widely applied in qualitative research because it offers the researcher flexibility in data collection, allowing the exploration of emerging aspects in participants' discourse while maintaining focus on the study objectives[18].

Before data collection, the project was presented to the head nurse of each unit, and the data-collection instrument was administered during participants' work shifts. Data were collected in morning, afternoon, or night shifts by a single researcher. On the day of collection, the researcher visited the wards and invited professionals to participate. Each interview was conducted individually in a private setting, audio-recorded on a smartphone digital recorder, and supplemented with field notes. One of the researchers transcribed the recordings and notes verbatim. No interruptions or repetitions were necessary, and any remaining participant questions were addressed at the end. After transcription, the interviews were not returned to participants for comment.

Sociodemographic data were analyzed using descriptive statistics (absolute and relative frequen-

cies). Participant responses were organized into a textual corpus and processed with IRAMUTEQ (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires) to support data analysis.

Interview data were analyzed using a lexicometric approach to identify patterns, trends, and discourse styles across the corpus[16–17]. Descending Hierarchical Classification (DHC) was applied in four stages: (1) automatic reading and preparation of the textual corpus, distinguishing between active and supplementary forms; (2) construction of contingency matrices followed by DHC until no new stable classes emerged; (3) generation of lexical profiles for each class, detailed presentation of chi-square test results, and execution of a factorial correspondence analysis of the classes; and (4) complementary calculations and identification of the text segments (TS) most representative of each grouping[16].

This textual analysis sought to identify classes of TS that shared similar vocabularies while differing from those in other classes. Relationships among classes were also displayed visually in a dendrogram. Based on the DHC, an factorial correspondence analysis was performed to map the words associated with each class in a Cartesian plane, graphically representing the connections and oppositions between words and classes as an additional way to visualize these relationships[16].

The data were then subjected to Content Analysis, following the stages of pre-analysis, material exploration, processing of results, inference, and interpretation. Finally, the findings were compared with existing scientific literature, providing a deeper understanding of the emerging content[19].

The analyses considered two main criteria: (1) a minimum of 75% of text segments included in the lexicographic approach, indicating satisfactory separation among classes; and (2) the sum of the factorial correspondence analysis axis factors being close to 100%. The DHC classes were named and interpreted according to the dendrogram, which was read from left to right, as recommended. The factorial correspondence analysis interpretation was conducted in terms of opposition between the X and Y axes, allowing the analysis of associations and distances between classes and the words linked to each[16].

All participants were informed about the study objectives, voluntary participation, anonymity, and their right to withdraw at any time. Participation was formalized through a signed Informed Consent Form.

To ensure anonymity, participants were numbered from 1 to 20 and identified with the abbreviation "P" for participant, followed by the sequence of the interviews. The study was approved by the Research Ethics Committee of the Federal University of Campina Grande, under opinion number 6,031,120/2023 and Certificate of Presentation for Ethical Appraisal 68330123.3.0000.0154, in accordance with Resolution No. 466/12 of the Brazilian National Health Council.

Results

Of the 30 nursing professionals interviewed, after applying the inclusion and exclusion criteria, 20 were selected for the sample: 10 (50%) were registered nurses and 10 (50%) were nursing technicians. Regarding sex, three (15%) were male, 16 (80%) were female, and one (5%) chose not to disclose. The mean age was 38.6 years, with a minimum of 30 and a maximum of 54.

Concerning years since qualification, one participant (4.8%) reported 8 years; four (19.0%), 10 years; one (4.8%), 12 years; three (14.3%), 13 years; four (19.0%), 15 years; one (4.8%), 16 years; two (9.5%), 17 years; one (4.8%), 18 years; one (4.8%), 22 years; one (4.8%), 25 years; one (4.8%), 32 years; and one (4.8%), 35 years.

Regarding length of service in the unit, one participant (4.8%) reported seven months; four (19.0%), eight months; three (14.3%), three years; three (14.3%), four years; five (23.8%), five years; one (4.8%), nine years; one (4.8%), 10 years; one (4.8%), 13 years; and one (4.8%), 25 years.

Processing of the textual corpus in IRAMUTEQ, based on the seven interview transcripts divided into

100 text segments (TS), identified a total of 3,420 word occurrences, 332 in active form. A minimum of 87 TS (87%) were retained, exceeding the 75% threshold and thus considered statistically valid. The distinct classes represented in a dendrogram (Figure 1). The classes were subdivided into four branches: the first generated Classes 5 and 3; the second, Classes 1 and 4; and the third generated Class 2.

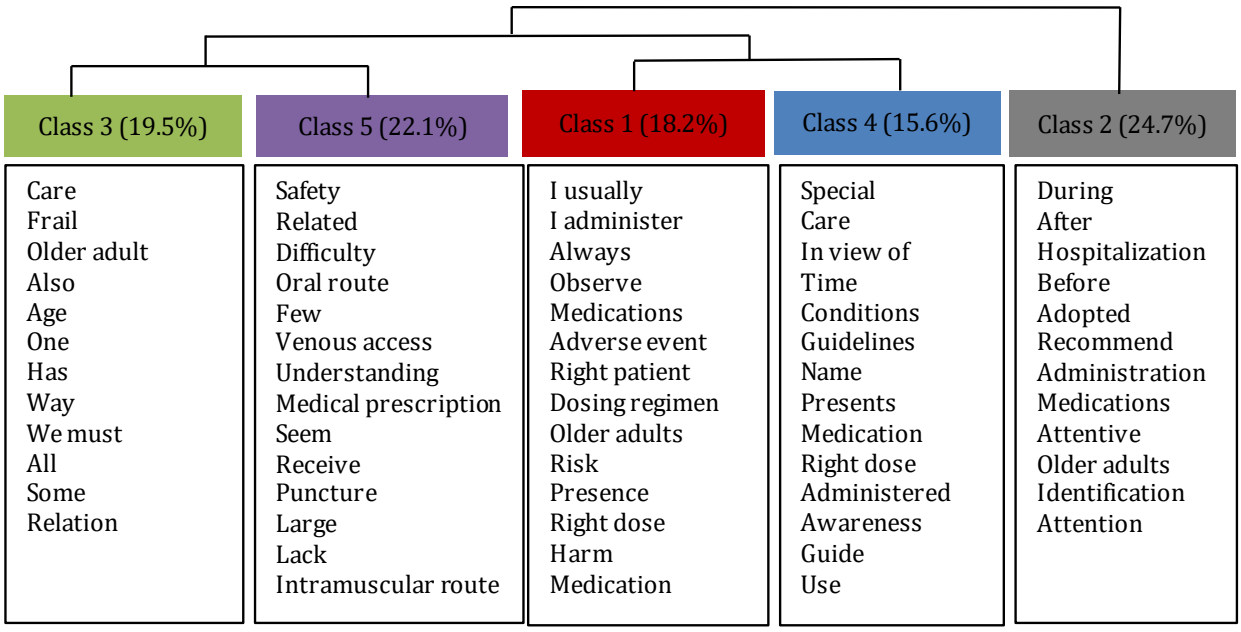

Figure 1 – Dendrogram showing the distribution of words in each class according to Descending Hierarchical Classification. Campina Grande, PB, Brazil, 2025

Class 5, entitled *Difficulties related to medication safety*, brings together the reports of nursing professionals regarding the main challenges related to the medication safety of older adults: *Oral administration brings the issue of swallowing, and if it is intravenous, there is always the problem of the peripheral venous access, which fails very easily* (P5). *Dosing schedule and peripheral venous access require greater caution to avoid contamination or harm to the patient, such as phlebitis* (P8). *The frequency of administration, the route, the number of drug interactions — there are many medications through different routes: subcutaneous, injectable, oral* (P11).

Beyond care-related difficulties directly associated with medication administration, participants emphasized the workload faced by nursing professionals. This condition directly affects the quality of care, as the multiplicity of tasks and high service demand reduce the time available for safe practice: *The greatest challenge is vigilance. Unfortunately, we are assigned to several patients and cannot stay at the bedside all the time to monitor whether a patient will develop a reaction* (P15). *There are not enough nursing professionals to be closer to older adults and verify whether the medication is actually effective* (P22). *It requires more time from the team, because there are many patients, which increases the need for communication between the pharmacy team and other professionals* (P24).

Class 3, entitled *Factors that compromise medication safety*, presents the reports of nursing professionals on the factors that interfere with the safe administration of medications to hospitalized older adults, relating them to the patient's general condition, age, comorbidities, polypharmacy, self-medication, as well as to the type of medication and therapy used: *The condition is often more debilitated, the age, some medications that can sometimes be more harmful to them than to younger people* (P5). *Comorbidities — they usually already take medication*

at home for chronic conditions, and when that is combined with hospital treatment, there are too many drug interactions, and we end up losing control (P11). *Older adults are more likely to be involved with polypharmacy and self-medication* (P17).

Class 1, entitled *Special care in medication administration*, highlights the actions implemented by nursing professionals to ensure safe medication administration for older adults: *Older adults need the same precautions as other patients, such as checking the expiration date, the appearance of the medication, name, and correct dose — all of these measures are essential* (P13). *Special care involves observing the medication, its expiration date and color, the patient's name, the correct time, the correct route, and the dosing regimen* (P15). *Older adults are more fragile in terms of accepting some medications, making it important to understand the route of administration and the possible complications after administration* (P20).

Class 4, entitled *Considerations for medication administration in older adults*, presents, based on the participants' statements, the main recommendations aimed at ensuring the safe administration of medications to older adults: *I usually consider the route, dosage, and whether the patient is able to receive the medication at that time, because there may be several oral medications of 50 ml each, and sometimes the patient is drowsy or poorly positioned* (P1). *I usually consider especially the route of administration, whether the venous access is peripheral or central, whether it is patent, the gauge of the access, the type of medication, and whether the patient is tolerating it well* (P20). *I usually consider the route of administration and the frailty of the older adult to assess whether there is a risk of an undesirable adverse effect due to the medication administration* (P22).

Class 2, entitled *The nursing team's role*, emphasizes the fundamental role of nursing professionals in promoting safety throughout the medication-administration process. Their role is expressed through the adoption of rigorous measures and protocols that not only aim to minimize errors but also significantly contribute to improving the quality of care. Such practices are essential to ensure patient safety and achieve better therapeutic outcomes: *Before administering the medication, check the dosing schedule, confirm the dose, time, and patient identification. During administration, pay attention to the route; if intravenous, ensure viable venous access and observe the patient's skin. Afterward, monitor whether the medication produced a positive or negative effect* (P3). *Before administering, give full attention to identification, dosing schedule, and preparation; during administration, observe the correct route and time; and after administration, check for any medication interactions, such as allergies* (P8). *Always confirm the patient's name, correct route, and any allergies, and observe the patient's reaction during medication administration* (P13).

Discussion

In this study, most participants were female (80%) with a mean age of 38.6 years, reflecting the demographic profile of the nursing workforce in Brazil, historically composed mainly of women of working age with significant professional experience[19]. The heterogeneity in years since qualification, ranging from 8 to 35 years, demonstrates the diversity of professional backgrounds among participants, which may directly influence the quality of care provided and the implementation of safe practices in medication administration. Regarding years of experience in the current unit, most participants had been working between a few months and five years, which may indicate challenges related to adapting to institutional routines and consolidating specific competencies, particularly concerning medication safety for hospitalized older adults[20-21].

The findings revealed critical challenges in administering oral and intravenous medications to older adults, including dysphagia and vascular fragility — factors that increase the risk of complications such as phlebitis, extravasation, and infections[22-23]. The polypharmacy observed in this group further amplifies the complexity of care, requiring the nursing team to devote greater attention to the choice of administration route, preparation, and infusion time, as well as to adopt safe practices, ensure continuous monitoring, and participate in ongoing training[24-25].

Workload also emerged as a critical factor compromising care safety, as it limits the time available to complete all stages of the administration process adequately, reducing vigilance and increasing the like-

lihood of errors. This scenario suggests that a high workload is directly associated with the occurrence of medication errors and reduced quality of care, especially in the care of older adults, who require comprehensive and continuous attention[26-27].

The nursing team's emphasis on specific precautions during medication administration — such as checking the expiration date, physical appearance, dosage, correct patient identification, and monitoring for adverse reactions — demonstrates awareness of the importance of these practices. Concern for the clinical condition of older adults and the appropriateness of the administration route reinforces the need for individualized care, centered on patients' needs and attentive to their specific physiological conditions. The frailty that characterizes this population requires medication care to go beyond technical protocols and be guided by thorough clinical assessments sensitive to the particularities of aging[28].

Medication administration involves a complex chain of stages — prescribing, dispensing, and administration — and requires coordinated action by multiple professionals. The "9 rights" protocol (right patient, medication, route, time, dose, documentation, action, form, and response) is recognized in the literature as an effective strategy for preventing medication errors and promoting patient safety[29].

However, the effectiveness of these strategies depends on structural and organizational factors, including adequate staffing, ongoing training, availability of supplies, and effective interprofessional communication. Strengthening coordination among nursing, hospital pharmacy, and other services involved in the medication process is, therefore, essential for building safe and integrated care[10-11].

Finally, there is a need for innovative interventions, such as implementing digital technologies to support medication administration, electronic alert systems for potential interactions and automated checks, as well as multidisciplinary medication safety rounds to discuss high-risk cases and preventive strategies[12].

Study limitations

This study has some limitations. The use of a convenience sample may have introduced selection bias, and the single-center design restricts the transferability of the findings. In addition, data triangulation was not performed, which could have strengthened internal validity and enhanced the robustness of the interpretations.

Contributions to practice

The findings provide guidance for implementing practical strategies to promote medication safety in hospitalized older adults. Key applications include ongoing training of the nursing team in preparation and safe administration techniques; adoption of standardized checking protocols covering patient identification, dose, route, dosing regimen, and medication expiration date; systematic monitoring of polypharmacy and potential drug interactions; and effective integration with clinical pharmacy to support prescription adjustments and pharmacotherapeutic follow-up.

The study also raises awareness among professionals about the complexity of caring for hospitalized older adults, reinforcing the need for individualized care based on careful clinical assessment and attention to specific physiological and functional characteristics of this population. Such measures may not only reduce the occurrence of adverse events but also improve the quality of care and strengthen effective and safe practices.

Conclusion

This study showed that the nursing team's role in medication safety for hospitalized older adults is marked by significant challenges. These include inadequate management of administration routes, polypharmacy, and workload, which directly affect the quality of care. These difficulties are compounded by older adults' clinical conditions, such as advanced age,

multiple comorbidities, and the use of complex therapies — factors that demand continuous attention and specialized care from the nursing team.

Nevertheless, even in the face of these challenges, nursing professionals adopt essential strategies to ensure medication safety. These strategies involve systematic practices at all stages of the process, such as strict checking of patient identification, verification of dose, route, time, and medication appearance, along with continuous monitoring of polypharmacy and potential drug interactions.

Authors' contributions

Conception and design or data analysis and interpretation; drafting of the manuscript or critical revision of its intellectual content; agreement to be responsible for the accuracy and integrity of any part of the manuscript: Silva ATH, Carvalho MAP. Drafting of the manuscript or critical revision of its intellectual content; final approval of the version to be published: Souza AES, Menezes VV, Silva GSA, Ferreira GRS, Pimentel ERS.

References

1. Silva AS, Fassarela BPA, Faria BS, Nabbout TGME, Nabbout HGME, d`Avila JC. Population aging: current reality and challenges. Glob Acad Nurs.2021;2(-Suppl3):e188. doi: https://doi.org/10.5935/2675-5602.20200188
2. Instituto Brasileiro de Geografia e Estatística. Projeções da população [Internet]. 2024 [cited Jun 27, 2025]. Available from: https://www.ibge.gov.br/estatisticas/sociais/populacao/9109-projecao-da-populacao.html
3. Toh JJY, Zhang H, Soh YY, Zhang Z, Wu XV. Prevalence and health outcomes of polypharmacy and hyperpolypharmacy in older adults with frailty: a systematic review and meta-analysis. Ageing Res Rev. 2023;83:101811. doi: https://doi.org/10.1016/j.arr.2022.101811
4. Figueiredo GN, Timoteo AFP, Lins JMM, Sampaio MC, Dutra EV, Melo ELP, et al. Polypharmacy use by the elderly: drug interactions and adverse reactions. Contrib Ciênc Soc. 2024;17(5):e6686. doi: https://doi.org/10.55905/revconv.17n.5-051
5. Oliveira RMAF, Gorzoni ML, Rosa RF. Potentially inappropriate medication use in hospitalized elderly patients. Rev Assoc Med Bras. 2022; 68(6):797-801. doi: http://doi.org/10.1590/1806-9282.20220015
6. Zhou Y, Pan Y, Xiao Y, Sun Y, Dai Y, Yu Y. Association between potentially inappropriate medication and mortality risk in older adults: a systematic review and meta-analysis. J Am Med Dir Assoc. 2025;26(2):105394. doi: http://doi.org/10.1016/j.jamda.2024.105394
7. Viana SSC, Souza NPS, Aliberti MJR, Jacob-Filho W. Use of potentially inappropriate medications and adverse events in older outpatients with acute conditions. Einstein (São Paulo). 2022;20:eAO8024. doi: https://dx.doi.org/10.31744/einstein_journal/2022AO8024
8. Ferraz CR, Silva HS. A compreensão da equipe de enfermagem frente a segurança do paciente idoso hospitalizado. Com Ciênc Saúde [Internet]. 2021 [cited Jun 27, 2025];32(1):117-29. Available from: https://docs.bvsalud.org/biblioref/2022/03/1357989/770-final.pdf
9. Vanhaecht K, Seys D, Russotto S, Strametz R, Mira J, Sigurgeirsdóttir S, et al. An evidence and consensus-based definition of second victim: a strategic topic in healthcare quality, patient safety, person-centeredness and human resource management. Int J Environ Res Public Health. 2022;19(24):16869. doi: https://doi.org/10.3390/ijerph192416869
10. Jessurun JG, Hunfeld NGM, Roo M, van Onzenoort HAW, van Rosmalen J, van Dijk M, et al. Prevalence and determinants of medication administration errors in clinical wards: a two-centre prospective observational study. J Clin Nurs. 2023;32(1-2):208-20. doi: https://doi.org/10.1111/jocn.16215
11. Berdot S, Vilfaillot A, Bezie Y, Perrin G, Berge M, Corny J, et al. Effectiveness of a 'do not interrupt' vest intervention to reduce medication errors during medication administration: a multicenter cluster randomized controlled trial. BMC Nurs. 2021;20(1):153. doi: https://dx.doi.org/10.1186/s12912-021-00671

12. Fontaine G, Vinette B, Weight C, Maheu Cadotte M, Lavallée A, Deschenês M, et al. Effects of implementation strategies on nursing practice and patient outcomes: a comprehensive systematic review and meta-analysis. Implement Sci. 2024;19(1):68. doi: https://doi.org/10.1186/s13012-024-01398-0

13. Nicoli EM, Silva FVC, Assad LG, Cardinelli CC, Alves RA, Oliveira SG. Nursing care for hospitalized older adults – fall accidents versus safe mobility: a scoping review. Rev Bras Enferm. 2024;77(2):e20230180. doi: https://doi.org/10.1590/0034-7167-2023-0180

14. Rangel ARFM, Dias NS, Alencar BT, Borges JS, Oliveira JS, et al. A gestão do cuidado e a segurança do paciente: revisão integrativa. Rev Nurs. 2025; 29(322):10629-38. doi: https://doi.org/10.36489/nursing.2025v29i322p10629-10638

15. Hines S, Ramsbotham J, Coyer F. Registered nurses' experiences with reading and using research for work and education: a qualitative study. BMC Nurs. 2022;21(1):114. doi: https://dx.doi.org/10.1186/s12912-022-00877-3

16. Sousa YSO. O Uso do Software Iramuteq: fundamentos de lexicometria para pesquisas qualitativas. Estud Pesqui Psicol. 2021;21(4):1541-60. doi: https://doi.org/10.12957/epp.2021.6403412

17. Mendes AM, Tonin FS, Buzzi MF, Pontarolo R, Fernandez-Llimos F. Mapping pharmacy journals: a lexicographic analysis. Res Soc Adm Pharm. 2019;15(12):e1464-e1471. doi: https://dx.doi.org/10.1016/j.sapharm.2019.01.011

18. Minayo MCS. O desafio do conhecimento: pesquisa qualitativa em saúde. São Paulo: Hucitec; 2022.

19. Bardin L. Análise de conteúdo. São Paulo: Edições 70; 2016.

20. Conselho Federal de Enfermagem (COFEN). Demografia da enfermagem no Brasil: resultados preliminares da pesquisa nacional [Internet]. 2024 [cited Jun 27, 2025]. Available from: https://www.cofen.gov.br/demografia-da-enfermagem-2024

21. Amsalu ET, Messele TA, Adane M. Exploring the effect of professional experience on knowledge towards geriatric care among nurses working in adult care units. BMC Geriatr. 2021;21(1):227. doi: https://doi.org/10.1186/s12877-021-02156-3

22. Pereira F, Bieri M, Carral MDR, Martins MM, Verloo H. Collaborative medication management for older adults after hospital discharge: a qualitative descriptive study. BMC Nurs. 2022;21(1):284. doi: https://doi.org/10.1186/s12912-022-01061-3

23. Zazzara MB, Palmer K, Vetrano DL, Carfi A, Onder G. Reações adversas a medicamentos em idosos: uma revisão narrativa da literatura. Eur Geriatr Med. 2021;12:463-73. doi: https://dx.doi.org/10.1007/s41999-021-00481-9

24. Oliveira GL, Lula-Barros DS, Silva DLM, Leite SN. Factors related to adherence to treatment from the perspective of the old person. Rev Bras Geriatr Gerontol. 2020;23(4):e200160. doi: https://doi.org/10.1590/1981-22562020023.200160

25. Carvalho LM, Lira LB, Oliveira LB, Mendes AM, Pereira FGF, Galiza FT, et al. Analysis of hospital safety and risk of falls in the elderly: a cross-sectional study in Brazil. Int J Environ Res Public Health. 2024;21(8):1036. doi: http://dx.doi.org/10.3390/ijerph21081036

26. Menezes WC, Melo CA, Passos FP, Almeida RS. Satisfação e sobrecarga de trabalho da equipe de enfermagem em um hospital psiquiátrico. Rev Eletr Acervo Saúde. 2021;13(5):e7197. doi: https://doi.org/10.25248/reas.e7197.2021

27. Pinheiro TS, Mendonça ET, Siman AG, Carvalho CA, Zanelli FP, Amaro MOF. Administração de medicamentos em um serviço de emergência: ações realizadas e desafios para práticas seguras. Enferm Foco. 2021;11(3):e3172. doi: http://dx.doi.org/10.21675/2357-707X.2020.v11.n3.3172

28. Villar VCFL, Duarte SCM, Martins M. Patient safety in hospital care: a review of the patient's perspective. Cad Saúde Pública. 2020;36(12):e00223019. doi: https://doi.org/10.1590/0102-311X00223019

29. Moraes JT, Maia JM, Trindade OM, Oliveira LA, Sanches C, Trevisan DD. Fatores associados para potenciais interações medicamentosas clinicamente significantes em terapia intensiva adulto. Medicina (Ribeirão Preto). 2020;53(4):379-88. doi: https://dx.doi.org/10.11606/issn.2176-7262.v53i4p379-388