CUIDADO É FUNDAMENTAL

BIBLIOMETRIC OVERVIEW OF STUDIES ON MISSED NURSING CARE

Panorama bibliométrico dos estudos sobre cuidados perdidos em enfermagem

Panorama bibliométrico de los estudios sobre cuidados perdidos en enfermería

Maria Adelaide Silva Paredes Moreira[1] (iD)

Betânia Maria Pereira dos Santos[2] (iD)

Josiane Maria Oliveira de Souza[3] (iD)

Ana Mabel Sulpino Felisberto[4] (iD)

Adriana Meira Tiburtino Nepomuceno[5] (iD)

Antônia Lêda Oliveira Silva[6] (iD)

ABSTRACT

Objective: to analyze the literature on missed nursing care using bibliometric analysis techniques. **Methodology:** a bibliometric study based on articles published in the Scopus database between 2006 and 2024, using terms related to missed nursing care. Data analysis was conducted using Bibliometrix and VOSviewer software. **Results:** the findings showed a significant increase in scientific production on the topic, with an annual growth rate of 25.06%. Most documents are original articles, reflecting a focus on presenting new data. Co-authorship and keyword co-occurrence analyses revealed substantial international collaboration and the identification of central and emerging themes. **Conclusion:** It is concluded that although there is a strong theoretical foundation and a robust network of collaboration, there are still areas that require further development, particularly in emerging themes that can revitalize and diversify the field of study on missed nursing care.

DESCRIPTORS: Missed nursing care; Neglected nursing care; Omitted nursing care; Unfinished nursing care; Incomplete nursing care.

[1,2,4,5,6] Federal University of Paraíba. Paraíba, João Pessoa, Brazil.

[3] University of Brasília-College of Ceilândia. Federal District, Brasília, Brazil.

CORRESPONDING AUTHOR: Ana Mabel Sulpino Felisberto ana.sulpino@academico.ufpb.br

RESUMO

Objetivos: analisar a literatura sobre cuidados perdidos em enfermagem utilizando técnicas de análise bibliométrica. Metodologia: estudo bibliométrico a partir de artigos publicados na base de dados Scopus entre 2006 e 2024, utilizando termos relacionados a cuidados perdidos de enfermagem. A análise dos dados utilizou os softwares Bibliometrix e VOSviewer.

Resultados: os resultados mostraram um aumento significativo na produção científica sobre o tema, com uma taxa de crescimento anual de 25,06%. A maioria dos documentos são artigos originais, refletindo um foco na apresentação de novos dados. As análises de coautoria e coocorrência de palavras-chave revelaram uma colaboração internacional substancial e a identificação de temas centrais e emergentes. Conclusão: conclui-se que, embora haja um forte embasamento teórico e uma rede de colaboração robusta, ainda existem áreas que necessitam de maior desenvolvimento, particularmente em temas emergentes que podem revitalizar e diversificar o campo de estudo sobre cuidados perdidos em enfermagem.

DESCRITORES: Cuidados de enfermagem perdidos; Cuidados de enfermagem deixados de lado; Cuidados de enfermagem omitidos; Cuidados de enfermagem inacabados; Cuidados de enfermagem incompletos.

RESUMEN

Objetivos: analizar la literatura sobre cuidados de enfermería perdidos utilizando técnicas de análisis bibliométrico. **Metodología:** estudio bibliométrico basado en artículos publicados en la base de datos Scopus entre 2006 y 2024, utilizando términos relacionados con cuidados de enfermería perdidos. El análisis de datos se realizó utilizando los programas Bibliometrix y VOSviewer. **Resultados:** los hallazgos mostraron un aumento significativo en la producción científica sobre el tema, con una tasa de crecimiento anual del 25,06%. La mayoría de los documentos son artículos originales, lo que refleja un enfoque en la presentación de nuevos datos. Los análisis de coautoría y co-ocurrencia de palabras clave revelaron una colaboración internacional sustancial y la identificación de temas centrales y emergentes. **Conclusión:** se concluye que, aunque existe una sólida base teórica y una red de colaboración robusta, todavía hay áreas que requieren un mayor desarrollo, particularmente en temas emergentes que pueden revitalizar y diversificar el campo de estudio sobre cuidados de enfermería perdidos.

DESCRIPTORES: Cuidados de enfermería perdidos; Cuidados de enfermería dejados de lado; Cuidados de enfermería omitidos; Cuidados de enfermería inacabados; Cuidados de enfermería incompletos.

INTRODUCTION

Nursing care is fundamental to ensuring the quality of care provided to patients in various healthcare institutions. However, the occurrence of missed care, defined as the partial or total omission of essential nursing tasks, has been a recurring problem, leading to significant adverse consequences such as medication errors, infections, increased mortality and unfavorable prognoses, often contributing to the outcome of death.[1]

The phenomenon of omission of nursing care or missed care was first studied in two US hospitals in 2006, through a qualitative survey of nurses, technicians and nursing assistants about the presence and reasons for omission of nursing care in their workplace. This resulted in the identification of nine themes related to the lack of nursing care: ambulation, decubitus changes, feeding, patient teaching, discharge planning, emotional support, hygiene, water balance documentation and surveillance.[2]

Therefore, the problem of missed care in nursing is multifaceted and involves several factors, including inadequate allocation of human and material resources, high demand for care, and failures in communication and interpersonal relationships within healthcare teams.3 Studies have shown that insufficient nursing staff is one of the main factors triggering

missed care, but there are still significant gaps in understanding how these factors interrelate and impact clinical practice.[1,3]

Furthermore, a study carried out in Portugal concluded that missed nursing care compromises the quality of care and increases the vulnerability of patients, and that the adoption of strategies that improve the clinical practice environment and the continuous development of nursing professionals are key to reducing missed care.[3]

In addition, nurses' moral competence, which involves ethical skills, sensitivity, motivation and knowledge to deal with ethical dilemmas, has been identified as a crucial element in ensuring high-quality care. This suggests that strengthening these competencies may be an effective strategy for reducing the frequency of omissions in nursing care.[1-3]

Missed nursing care and the reasons for this omission have been studied in different contexts, revealing different justifications such as inadequate labor and material resources, insufficient staffing and excessive demands, with direct repercussions on patient safety.[5]

As highlighted in a Brazilian study carried out in the adult inpatient units of a public hospital, which showed that the main reasons attributed to the omission of care were related to inadequate labor and material resources, such as insufficient staffing, non-availability of medicines, materials or equipment, and emergency situations during the shift.[5]

In this sense, the literature on missed care has expanded in recent years, with several studies exploring the causes, consequences and possible interventions to mitigate this problem. However, most research has focused on isolated aspects, without an integrated approach that considers the multiple variables involved. This highlights the need for studies that can provide a comprehensive overview of the current state of research, helping to identify trends and gaps in existing knowledge.

Bibliometrics, as a method of quantitative analysis of scientific production, offers a valuable solution to this challenge. By making it possible to map the development of a field of study over time, identify the main researchers and institutions, and assess the influence and impact of publications, bibliometrics stands out especially in international electronic databases. With this tool, it is possible to obtain a panoramic and detailed view of the evolution of specific topics, such as missed care in nursing.[6-7]

One of the objectives of bibliometric studies is to analyze the existing literature using citation analysis and keyword co-occurrence techniques. These techniques will make it possible to provide a detailed overview of the evolution of the topic, highlighting the main scientific contributions, areas of focus and the interconnections between different aspects of missed care. This integrated approach is essential to fully understand the current state of research and to guide future investigations.[7-9]

The justification for carrying out a bibliometric study on missed care in nursing is based on the need to synthesize existing knowledge and identify areas that still require exploration. With the growing complexity and demand for healthcare, it is crucial that nurses and healthcare managers have up-to-date and comprehensive information to implement effective strategies to improve the quality of care. This study aims to fill this gap by providing a solid foundation for the development of more informed policies and practices.

Therefore, this bibliometric study aims to make a significant contribution to the existing literature by offering a detailed and comprehensive analysis of missed care in nursing. By identifying key trends, areas of focus and gaps in research, the expected results of this study will be able to guide health policies, continuing education programs for nurses and management strategies aimed at reducing the occurrence of missed care and improving the quality of care provided to patients. To this end, the research question we intend to answer is: What are the temporal trends in scientific production on missed care in nursing?

This study aims to analyze the literature on missed care in nursing using bibliometric analysis techniques.

METODOLOGY

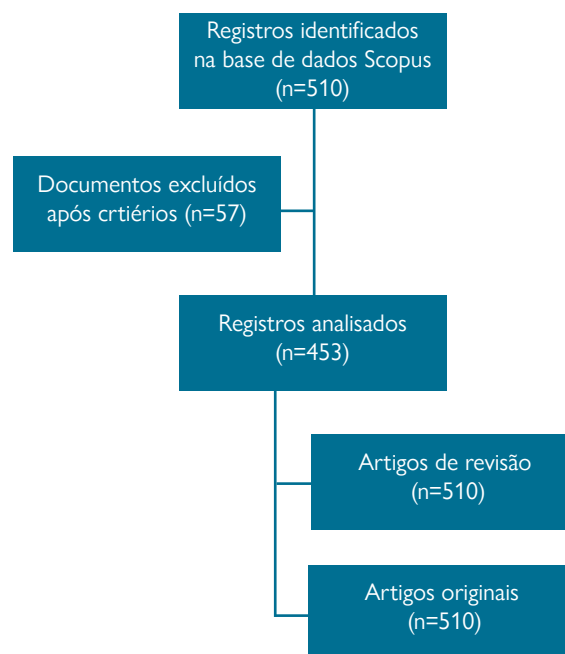This study adopted a quantitative approach, using the technique of bibliometrics to analyze scientific production on the subject. Bibliometrics is a method that allows for the quantitative analysis of scientific production using bibliographic metrics and indicators, offering a detailed view of the evolution and impact of a given field of study.[7-9] In order to carry out this study, specific steps were followed to collect, analyze and interpret the data, as described below.

The first stage consisted of defining the inclusion and exclusion criteria for the studies to be analyzed. Articles published in journals indexed in the SCOPUS databases between 2006 and 2024 were included. Conference abstracts, editorials and letters to the editor, books, book chapters, notes, retractions and errata were excluded.

The search was carried out using terms in English related to the topic, such as the string (TITLE-ABS-KEY("Missed Nursing Care") OR TITLE-ABS-KEY("Nursing Care Left Undone") OR TITLE-ABS-KEY("Omitted Nursing Care") OR TITLE-ABS-KEY("Unfinished Nursing Care") OR TITLE-ABS-KEY("Incomplete Nursing Care")).

According to the eligibility criteria, 453 articles were selected for full analysis. Of these, nine studies were included in the sample, as shown in Figure 1.

Figure 1. Flowchart of data collection and selection of studies for the sample

Source: Research authors, 2024**.**

Next, bibliographic data was collected from the selected articles, including information on authors, title, year of publication, keywords, abstract, source and references cited. This was done using automated tools, directly from the Scopus interface, guaranteeing the accuracy and integrity of the data collected.[7]

The analysis was carried out using the Bibliometrix software, a tool developed in the R environment which enables complete bibliometric analysis and comprehensive scientific mapping.[8] The analysis was divided into two main phases: descriptive analysis and network analysis. In the descriptive analysis, basic bibliometric indicators were generated, such as the number of publications per year, distribution of publications by country and institution, and identification of the main journals and most productive authors. These indicators provided an overview of the temporal evolution of scientific production on missed care in nursing.[6-9]

In the network analysis, co-authorship, co-citation and keyword co-occurrence networks were mapped using social network analysis (SNA) techniques. The co-authorship analysis identified collaborations between researchers and institutions, highlighting the main research clusters. Co-citation analysis helped identify the most influential studies and authors in the field, while keyword co-occurrence analysis revealed the main themes and research trends over time.[8-9]

To ensure the validity and reliability of the results, data triangulation procedures were used, comparing the results obtained with different methods and data sources. In addition, additional statistical analyses were carried out, such as correlation tests and regression analysis, to identify possible relationships between the variables studied and assess the significance of the findings.

The results were interpreted based on the existing literature, seeking to contextualize the findings in the current scenario of research into missed care in nursing. The main scientific contributions, areas of focus, knowledge gaps and possible directions for future research were discussed, with the aim of offering a comprehensive and integrated view of the subject.[7-9]

RESULTS AND DISCUSSION

The analysis of the completeness of the bibliographic metadata of the 453 documents sourced from Scopus reveals the quality and integrity of the information available for research. The analysis is detailed below based on the categories and percentages of missing data:

1. Author (AU): Only 3 records (0.66%) are missing information about the authors. This is rated as good, but there is room for improvement.
2. Affiliation (C1): There are 9 records (1.99%) missing the information on affiliations. This category is also rated as good, but again indicates an area where completeness could be improved.
3. References Cited (CR): There are 10 documents (2.21%) missing references cited. This status is rated as good, suggesting that most documents have complete references.
4. DOI (DI): There are 18 records (3.97%) missing DOI information. This category is considered good, but

indicates that almost 4% of the documents lack an important digital identifier.
5. Corresponding Author (RP): A total of 45 documents (9.93%) are missing information about the corresponding author. This is rated as good, but almost 10% is a significant fraction that can impact scholarly communication.
6. Keywords (DE): There are 48 documents (10.60%) missing keywords. This category is considered acceptable, but the absence of keywords can hinder indexing and information retrieval.
7. Plus keywords (ID): There are 80 documents (17.66%) missing Plus keywords. This status is also acceptable, but the high percentage of absence can limit the scope of content analysis.

The analysis reveals that most of the metadata is well complete, with categories such as abstract, document type, journal, language, year of publication, title and total citations presenting an excellent status. However, categories such as keywords and keywords plus have a significant amount of missing records, classified as acceptable, while the total absence of scientific categories is a critical point that needs to be addressed.[10]

The presence of some missing data in the categories author, affiliation, cited references, doi and corresponding author, although classified as good, suggests that there is room for improvement in the completeness of the metadata to ensure the integrity and usefulness of the bibliographic information analyzed by Bibliometrix.[11]

Table 1 describes the main information obtained by Bibliometrix when analyzing the corpus on missed care in nursing. This analysis provides detailed information on various aspects of the literature reviewed, allowing an in-depth understanding of the current state of research in this area.

Table 1 - Summary of the Main Bibliometric Information on Missed Care in Nursing

Description	Results
Period analyzed	2006 a 2024
Sources (magazines, journals)	175
Documents	453
Annual growth rate %	25,06
Average age of documents	3,92
Average number of citations per document	27,3
References	14.239
DOCUMENT CONTENT	
Keywords plus (ID)	1.194
Authors' keywords (DE	838
AUTHORS	

Authors	1.267
Authors of single-author documents	10
COLLABORATION BETWEEN AUTHORS	
Single-author documents	13
Co-authors per documen	4,74
International co-authorship %	26,71
TYPES OF DOCUMENTS	
Original articles	412
Reviews	41

Source: Research authors, 2024.

The period covered by the analysis is extensive, from 2006 to 2024, making it possible to observe the evolution of research into missed care in nursing over almost two decades. With 175 sources (magazines and journals) used, Table 1 indicates a wide range of publications, suggesting that the topic is of significant and wide-ranging interest in the scientific literature.[12]

The total of 453 documents reflects a considerable volume of research. The annual growth rate of 25.06% is quite high, indicating a rapid and continuous increase in the number of publications on the subject. This suggests a growing recognition of the importance of lost care in nursing practice.[13]

The average age of the documents is 3.92 years, which indicates that most of the research is relatively recent. The average of 27.3 citations per document suggests that studies on missed care in nursing are widely referenced, indicating their relevance and impact on the academic community.[14]

The total number of references is 14,239, which points to the depth of the research and the level of theoretical foundation. The presence of 1,194 keywords plus (ID) and 838 authors' keywords (DE) shows the richness and diversity of the topics covered, allowing for a detailed analysis of research trends and areas of focus.[13-15]

With 1,267 authors involved, research on missed care in nursing is clearly collaborative. However, only 10 authors produced single-authored documents, and 13 documents were single-authored, indicating a preference for collaborative work. The average of 4.74 co-authors per document and 26.71% of international co-authorships reinforce the collaborative nature and global dimension of the research.[13]
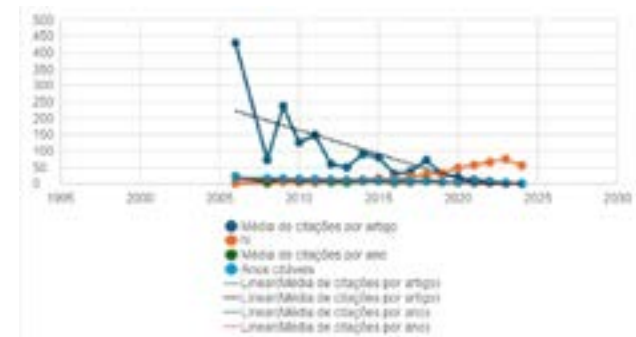
Most of the documents are original articles (412), with fewer reviews (41). This suggests that most of the literature focuses on presenting new data and analysis, while reviews provide syntheses and evaluations of existing knowledge.[11-13]

These data reveal a rapidly growing field of research, with robust and collaborative scientific production. The diversity of sources, the high annual growth rate and the significant number of citations per document highlight the relevance of the topic. International collaboration and the variety of keywords suggest a multidisciplinary and global approach,

which is essential for tackling the challenges associated with missed care in nursing practice.[12-14]

Graph 1 provides a comprehensive overview of the scientific output and impact of research on missed care on the Scopus database over almost two decades. Although production has stabilized, the drop in average citations suggests challenges that need to be addressed to maintain and increase the relevance of research in this area. Future studies should explore new methodologies, emerging themes and international collaboration to revitalize the field and increase scientific impact.

Graph 1 - Average number of citations per year

Source: Research authors, 2024.

There was an initial peak in 2006, followed by a sharp drop in 2007. After this decline, the average number of citations per article fluctuates with intermittent peaks, but shows a general downward trend over time, as indicated by the trend line. This decline may suggest that older articles received more initial attention, but interest may have waned or new articles are not being cited as widely.[16]

The orange line represents the number of articles published each year. Initially, there is a very low number of publications until 2006, followed by a steady increase. Although there are some variations, the number of articles tends to stabilize at around 20 articles per year after 2015. This indicates a growth in scientific production on lost care, stabilizing at a consistent level of annual publications.[17]

The green line represents the average number of citations per year. This figure follows a similar pattern to the average number of citations per article, with fluctuations over the years, but also shows a downward trend as indicated by the linear trend line. This suggests that, despite the increase in the number of publications, the visibility and average impact of these articles has decreased.

The light blue line shows the citable years, which remain relatively stable over the period analyzed. This is an important indicator of the durability and continued relevance of research over time.
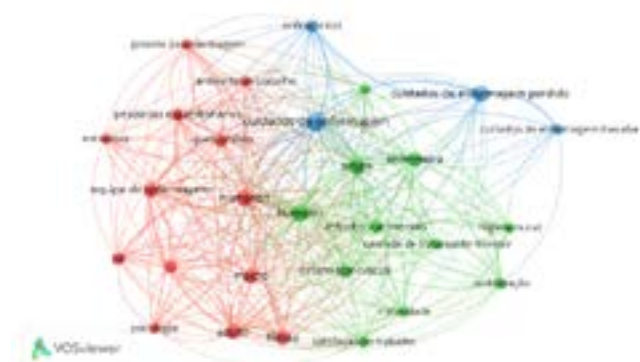
The trend lines for average citations per article and average citations per year indicate a downward trend. This can reflect various factors, including saturation of the field of study,

changes in research priorities or the need for theoretical or methodological innovations to revitalize interest in the area. Despite initial fluctuations, the number of publications per year has stabilized, indicating an active and consistent research community, although the impact of these works, as measured by citations, is declining. The analysis of citations is crucial to understanding the impact and visibility of research. Declining citations may suggest the need for new approaches or emerging themes to maintain the relevance and impact of research on missed care.[16-17]

The map in Figure 2 shows the co-occurrence of authors' keywords, presenting a visual analysis of the relationships between different authors' keywords used in the scientific publications retrieved.

O mapa da Figura 2 mostra a coocorrência de palavras-chave dos autores, apresenta uma análise visual das relações entre diferentes palavras-chave dos autores, utilizadas nas publicações científicas recuperadas.

Figure 2. Cooccurrence map of authors' keywords with a minimum of two occurrence

Source: Research authors, 2024.

Interpreting the graph reveals some important trends and points of view on the field of study. It reveals a rich network of thematic and methodological interconnections in research on missed nursing care. Analyzing these co-occurrences can help to identify priority areas for future research and to develop more effective strategies for tackling challenges in the nursing field.

The largest red cluster groups together terms such as "nursing care", "missed nursing care", "intensive care unit", "cross-sectional studies" and "oral hygiene". This group suggests a strong relationship between nursing care research and research in intensive care settings, as well as specific issues such as oral hygiene and cross-sectional study methodologies.

In the green cluster, terms such as "nurses", "nursing team", "work environment" and "questionnaire" predominate. The presence of these keywords suggests that a lot of research focuses on nursing staff, their working conditions and the research instruments used to collect data on these aspects.

The blue cluster includes words such as "psychology", "Iran", "nursing staff, "hospital", and "female". This indicates a link between psychology studies, the geographical location of research (e.g. Iran), and the gender composition of nursing staff. The inclusion of terms such as "Iran" and the diversity of geographical contexts indicate the global nature of research on the topic. This points to international collaboration and the application of knowledge in different cultural and regional contexts.
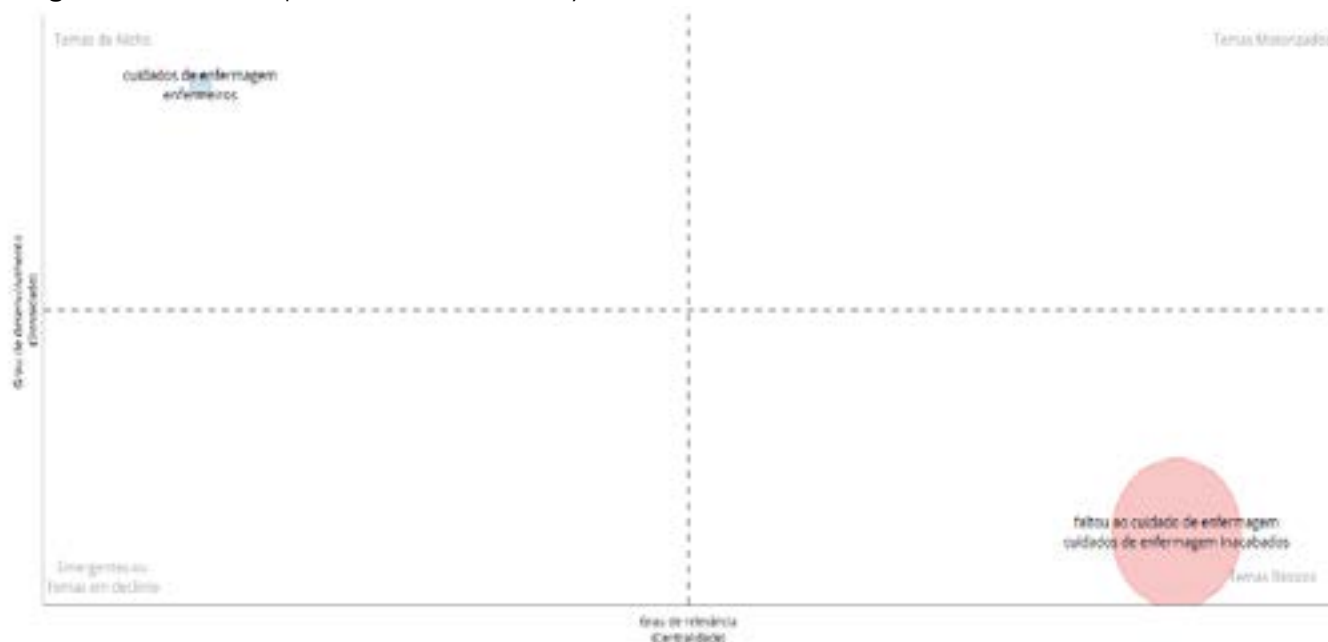
The keyword "nursing care" is centrally connected to many other terms, indicating its importance as a main concept in the field of study. The terms "human" and "humans" also appear frequently, which highlights the focus on humanistic and ethical issues in nursing care.

The diversity of keywords, including specific terms such as "job satisfaction", "oral hygiene", "mobilization" and "cross-sectional studies", points to a wide range of topics of interest within the field of missed nursing care.

The presence of terms related to work environment and job satisfaction suggests that many studies are concerned with the well-being and working conditions of nursing professionals.

The interconnection between the keywords reflects the multifaceted nature of nursing care research. Identifying these connections can help guide future research and policy to address critical issues in nursing practice. The emphasis on cross-sectional studies and quantitative research methodologies suggests a continued need for robust data to better understand and address missed care issues.

Figure 3 is the thematic map illustrating the thematic evolution of the authors' keywords in articles on missed nursing care published on the Scopus database from 2006 to 2024. This type of analysis makes it possible to identify the centrality and density of research topics, categorizing them into four quadrants: driving topics, niche topics, emerging or declining topics, and basic topics.[18]

Figure 3. Thematic map based on the authors' keywords

Source: Research authors, 2024.

The terms "Nursing Care" and "Nurses" are located in the upper left quadrant, indicating that they are highly developed themes, but with low centrality. This suggests that although these themes are widely studied and have a wealth of detail and depth, they may not be strongly connected with other main themes in the area of missed nursing care. These themes may represent areas of specialization or subfields that have developed independently. The presence of these terms as basic themes suggests that these topics are crucial and widely recognized as fundamental in the field. However, the low density indicates that there is a need for more research to develop these themes in greater depth.[18-19]

In turn, the topics "Lost Nursing Care" and "Unfinished Nursing Care" appear in the lower right quadrant. These themes are classified as basic, with high centrality but low density. This means that these terms are fundamental to the field of study and are well integrated into the literature on lost care, serving as a basis for further research. However, the low density indicates that there is still room for further development and deepening of these topics.[18]

There are no themes present in the upper right quadrant, which suggests the absence of themes that are both central and well-developed. This indicates an opportunity for future studies to transform emerging or basic themes into more robust and widely integrated research areas.

The bottom left quadrant is empty, indicating that, according to the data analyzed, there are no identifiable emerging or declining themes in the field of missed nursing care. This may suggest that research in this area is relatively stable, with a continued focus on well-established themes.[19]

The absence of driving themes and the concentration of basic and niche themes point to a field of study that, although well established in certain respects, still has plenty of room for growth and innovation. Researchers can explore connections between niche and basic themes to strengthen integration and theoretical development in the area of missed nursing care.[19]

The absence of emerging or declining themes suggests that the field is mature, but may also indicate the need to explore new research directions to revitalize and diversify the field, so the thematic map reveals a research area with strong foundations, but which could benefit from further development and thematic integration. Researchers have the opportunity to expand and deepen studies on missed nursing care, especially focusing on how this care can be improved to reduce its occurrence.

The bibliometric analysis of missed nursing care reveals several significant scientific contributions. One of the main contributions is the identification of risk factors and preventive strategies for the omission of essential nursing care. Studies highlight the importance of a standardized, evidence-based approach to the insertion and maintenance of devices such as central venous catheters, as well as the implementation of rigorous protocols that include ongoing training for healthcare professionals.

Another area of focus identified is the relationship between missed care and adverse outcomes for patients. Research indicates that omission of care is associated with an increase in the incidence of hospital-acquired infections, medication errors, and even patient mortality. These studies emphasize the need for interventions that improve the allocation of human and material resources to reduce missed care and improve patient safety.

International collaboration and the interdisciplinary nature of research into missed nursing care are also important highlights. The analysis reveals that there is significant international co-authorship, which suggests that research on this topic is a global effort. This is crucial, as it allows for the sharing of best practices and the implementation of effective health policies in different contexts.

CONCLUSION

The study revealed several significant findings. Firstly, a notable increase in scientific production on the topic was identified, evidenced by an annual growth rate of 25.06%. This growth highlights the growing importance of the topic in scientific literature, with the majority of documents being original articles, indicating a continued focus on presenting new data.

The co-authorship analysis showed substantial international collaboration, with an average of 4.74 co-authors per document and 26.71% international co-authorships. This suggests that research into missing care is a global effort, facilitating the sharing of best practices and the implementation of effective strategies in different contexts. In addition, keyword co-occurrence analysis identified central and emerging themes in the research. "Lost nursing care" and "unfinished nursing care" were highlighted as basic themes, fundamental to the field, but which still need further development and deepening. On the other hand, terms such as "nurses" and "nursing staff" were identified as niche themes, well developed but with less centrality.

The absence of driving themes and the concentration of basic and niche themes indicate that the field of study, although well established in certain respects, still has plenty of room for growth and innovation. Future research should explore connections between niche and basic themes to strengthen integration and theoretical development in the area of missed nursing care. Despite a strong theoretical foundation and a robust collaborative network, there are still areas that need further development, particularly in emerging themes that can revitalize and diversify the field of study on missed nursing care. These findings provide a solid foundation for future research and the development of more informed and effective health policies.

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