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SAFE NURSING STAFFING LEVELS: IMPACT ON THE QUALITY OF CARE IN A HOSPITAL SETTING

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ABSTRACT: Safe nursing staffing levels have been a major concern in the hospital setting. Compliance with these standards is crucial for the quality of nursing care and subsequent patient satisfaction (Barroso *et al.*, 2021). To analyze the impact of safe staffing levels on the quality of nursing care and patient safety. A narrative review of the literature was conducted. The search was conducted in scientific databases in Portuguese, English, and Spanish over the past 5 years. Data collection took place during October and November 2025. We used the following MeSH descriptors: nurse, quality of care, safe, staffing, and workload, along with the Boolean operator *AND*. The sample consisted of 11 scientific articles. The studies indicate that inadequate nurse-to-patient ratios lead to high nurse turnover, poorer clinical outcomes, and a higher incidence of omissions in nursing care, thereby compromising the quality of care. In this study, we can conclude that the factors facilitating the provision of excellent nursing care are directly related to: the qualifications of nurses, adequate staffing levels relative to workload, a healthy work environment, satisfactory salaries, professional recognition, and support from managers. In the hospital setting, safe staffing levels ensure higher quality of care, leading to patient satisfaction and safety. Based on this study, we recommend the use of validated instruments for calculating safe staffing levels in each department.

KEYWORDS: nurses; safe staffing levels; quality of care; patient safety.

1 INTRODUCTION

The shortage of nurses is cited as a global concern, as it compromises not only the population's access to healthcare but also the quality of care provided, increasing the risk of complications and the length of hospital stays (World Health Organization [WHO], 2020). Key elements for the organization of nursing care include: continuing education for nurses, nurses' satisfaction with the quality of their professional practice, and the number of nurses relative to the need for nursing care (Portuguese Nursing Association [OE], 2012). Existing resources, the training of healthcare professionals, and the staffing levels and adequacy of healthcare professionals and teams are considered determinants of safe environments (Directorate-General for Health [DGS], 2021). In the hospital setting, constraints include lack of time, shortages of human resources, varying levels of training, and the hierarchical organization of work, resulting in fatigue among healthcare professionals and failures in patient safety (Barroso *et al.*, 2021).

Nursing practice focuses on the quality of nursing care; therefore, ensuring patient safety is paramount (Barroso *et al.*, 2021), with the aim of achieving the highest level of patient satisfaction (OE, 2012). Within the scope of the Global Patient Safety Action Plan 2021–2030 (DGS, 2021), patient safety is established as one of the pillars of quality of care, with the aim of reducing incidents in the provision of healthcare (DGS, 2021). Another pillar consists of safe practices in safe environments, that is, creating conditions for the full professional practice of nursing, with the aim of ensuring the provision of safe care (DGS, 2021). According to the International Council of Nurses (ICN), 2022, environments condu-

cive to the development of nursing practice not only allow nurses to feel valued but also ensure their satisfaction and, consequently, their retention in the workforce. It is the responsibility of managers to provide safe environments for the practice of safe care (DGS, 2021), ensuring the adequacy of nursing resources—that is, their adequate allocation in terms of both quantity and quality, in accordance with clients' needs—with a view to achieving health gains. In agreement, the OE (2012) argues that it is the responsibility of healthcare institutions to allocate resources in a way that provides conditions and creates an environment conducive to the professional development of nurses. Furthermore, Normative Order No. 1400-A/2015 highlights staffing levels as one of the areas with the greatest potential for improvement in the short term.

The concept of safe nursing staffing refers to the need to ensure adequate nursing resources, taking into account patient safety, the level of nursing care required by patients, the quality of nursing care, work overload, the work environment, and the level of nurses' qualifications (OE, 2014). These are based not only on a quantitative assessment (number of hours of care per patient per day) but also on a qualitative assessment (professional competencies) to ensure the quality of nursing care provision, in accordance with Regulation No. 743/2019 of the Portuguese Nurses' Association. The ICN (2022) also advocates that safe staffing levels must be ensured in close relation to adequate training, competencies, and experience, leading to the provision of excellent care. To define safe staffing levels across various healthcare settings, the Portuguese Nurses' Association approved the Standard for the Calculation of Safe Nur-

sing Care Staffing Levels. This standard serves as a management tool for determining the recommended staffing levels of nurses in relation to the nursing care needs of their clients, across all nursing specialties, and it is the exclusive responsibility of nurses to calculate safe staffing levels, as well as to assess compliance with them (Regulation No. 743/2019, 2019).

We defined the objective of this study as follows: to analyze the impact of safe staffing levels on the quality of nursing care and patient safety. To address these objectives, we opted to conduct a narrative review of the literature, thereby contributing to excellence in patient safety and providing a foundation for future research.

2 METHODOLOGY

To address our research question, we chose to conduct a narrative literature review. According to Fortin (2009), a narrative literature review consists of understanding the state of the art of a specific research topic and analyzing it based on a research question. It is not limited to a fixed protocol but prioritizes thematic understanding.

Thus, our research began with the formulation of the research question according to the PICO strategy: **P** (nurses); **I** (safe staffing levels in care provision); **C** (quality of care); **O** (client safety) (Craig & Smith, 2004).

Inclusion and exclusion criteria were subsequently defined to guide our literature search and study selection.

The following inclusion criteria were defined: all studies involving nurses in a hospital setting; studies on the influence of nurse staffing levels on the quality of care;

studies available in *full text* between 2020 and 2025; studies only in Portuguese, English, and Spanish; systematic literature review articles. The types of studies included in the research comprise primary studies (qualitative or quantitative in nature) and secondary studies (literature reviews, *scoping* reviews, and systematic reviews).

The exclusion criteria included: all opinion articles; unpublished theses; and studies unrelated to the topic.

The search was conducted in electronic databases of recognized relevance in the health field, namely PubMed, SciELO, and the Portuguese Open Access Scientific Repository (RCAAP), in October and November 2025.

The search strategy included the use of controlled descriptors (MeSH) related to the concepts defined by the PICO question.

Descriptors such as “Nurse,” “Quality of Care,” “Safe,” “Staffing,” and “Workload” were combined using Boolean operators, specifically “AND,” to refine and focus the search.

In the first phase, a broad search was conducted in each database without immediately applying the inclusion and exclusion criteria, with the aim of assessing the suitability of the selected descriptors and identifying the volume of available evidence. In the next phase, the previously defined filters (time period, language, and study type) were applied, with the goal of making the search more specific and relevant.

The initial search yielded 16,062 studies (PubMed: 12,761 articles; Scielo: 2,235; RCAAP: 1,066). After applying the inclusion and exclusion criteria, 15,466 studies were removed, leaving 595 for analysis. The studies resulting from this initial selec-

tion were evaluated based on their title, abstract, and relevance to the research question. From this analysis, 31 studies were selected; duplicates were excluded, resulting in 11 articles included in the final synthesis.

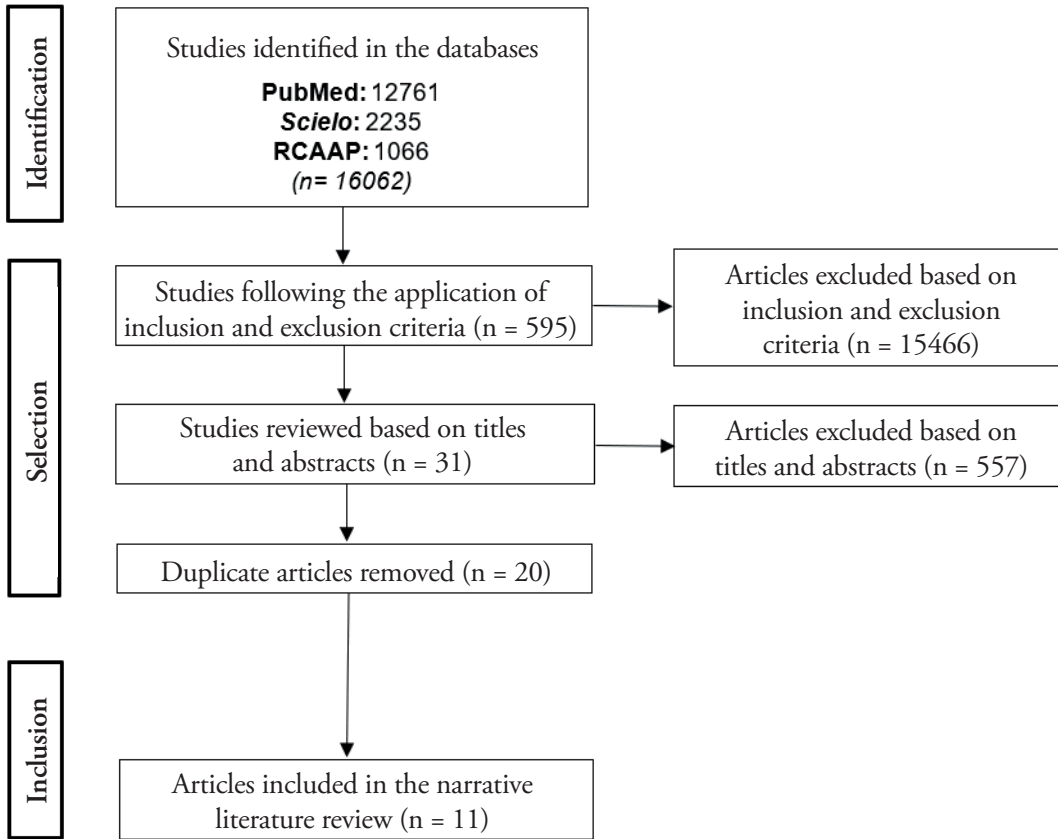
The analysis of the results was conducted by the research team. We chose not to use specialized *software* for qualitative analysis, given the small volume of data and the rigor ensured by the double-blind review. This methodological choice is supported by the literature, given that, as noted by Bardin (2016) and Creswell and Poth (2018), thematic content analysis can be performed manually, provided that a transparent and properly coded systematic process is maintained, allowing for the rigorous identification of the units of analysis present in the study’s conclusions.

3 RESULTS

To optimize the understanding and interpretation of the results obtained, a comparative table was created that includes the article title and respective authors, the objectives and methodological design of each study, as well as the main considerations and conclusions presented.

This strategy we employed allowed us to establish a more rigorous and systematic framework, reducing the risk of omitting information that could be essential to the study’s development.

Figure 1 – Flowchart of the methodological process for article selection, PRISMA guidelines (2020).



Source: research data from November and December (2025).

Table 1 - Methodological and analytical mapping of the selected studies.

Article Title / Authors	Objectives/ Type of study	Considerations / Conclusions
<p>Causes of Care Omission – Nurses’ Perceptions: A Scoping Review Sara Maria de Jesus Mota (2025)</p>	<p>To identify factors related to the omission of care. Scoping Review</p>	<p>The shortage of nurses and work overload are factors that influence the delivery of care. The failure to provide nursing care is a result of this shortage, which often prevents the delivery of care to patients based on a holistic, patient-centered model. The continuity of care is also compromised. For this reason, it is necessary to strengthen the human resources of the institution—in this case, the hospital—in order to maintain the high quality of care provided by nurses to patients.</p>

<p>Are minimum nurse-to-patient staffing ratios needed in hospitals? An observational study in British Columbia, Canada.</p> <p>Karen B Lasater, Heather Brom, Linda H Aiken, Matthew D McHugh (2025)</p>	<p>To assess whether the existence of minimum nurse-to-patient ratios is associated with the quality and safety of hospital care.</p> <p>Quantitative Study</p>	<p>Higher ratios (more nurses per patient) are associated with better quality of care, greater patient safety, and a lower incidence of adverse events. The implementation of safe staffing levels brings benefits not only to patients but also to nurses, helping to reduce the intention to leave the profession and promoting lower turnover in healthcare facilities.</p>
<p>Patient outcomes and cost savings associated with hospital safe nurse staffing legislation: an observational study.</p> <p>Karen B Lasater, Linda H Aiken, Douglas Sloane, Rachel French, Brendan Martin, Maryann Alexander, Matthew D McHugh (2021)</p>	<p>To assess variations in nurse-to-patient ratios and determine whether higher workloads are associated with mortality, length of stay, and hospital costs.</p> <p>Observational Study</p>	<p>Higher workloads, which translate into a greater number of patients per nurse, are associated with worse clinical outcomes. The implementation of safe staffing levels, as recommended by legislation, could result in fewer deaths, a reduction in length of stay, and, consequently, lower costs for the hospital.</p>
<p>Consensus Development Project: An overview of staffing for safe and effective nursing care.</p> <p>Jane E. Ball, Peter Griffiths (2022)</p>	<p>To synthesize the existing evidence on nursing staffing levels and their relationship to the quality and safety of care.</p> <p>Narrative Literature Review</p>	<p>The authors conclude that a high level of qualified nurses is associated with better clinical outcomes, such as a lower incidence of adverse events and shorter length of stay.</p> <p>They emphasize that a shortage of qualified nurses should not be compensated for by hiring less qualified professionals, as this practice compromises the safety and quality of care provided.</p> <p>They emphasize the need to use workload assessment tools to determine the appropriate number and qualifications of nurses.</p>
<p>Strengthening Europe's Nursing Workforce: Strategies for Retention.</p> <p>Rachel Greenley; Linda H. Aiken; Water Sermeus; Martin Mckee (2024)</p>	<p>To analyze current evidence and policy implications regarding nurse staffing.</p> <p>Narrative Literature Review</p>	<p>The authors highlight the shortage of professionals and nurse dissatisfaction in Europe, emphasizing that retaining professionals is crucial to ensuring quality of care.</p> <p>High turnover, caused by factors such as work overload and burnout, increases costs and compromises patient safety. It advocates for the implementation of policies that promote safe work environments and value nurses.</p>
<p>How can we optimize nurse staffing systems? Insights from a comparative document analysis of 10 widely used models and a focused interpretive-review of implementation experiences.</p> <p>Davina Allen, Heather Strange, Nina Jacob, Anne Marie Rafferty (2025)</p>	<p>Analyze the components and implementation contexts of 10 nurse staffing systems.</p> <p>Narrative Literature Review</p>	<p>The authors analyze and compare the key elements of nursing staffing systems, highlighting that the allocation of staff is a process involving various complexities.</p> <p>They conclude that there is no single model of safe staffing that works in all contexts, and that it is essential to adapt it according to the specific characteristics and needs of each hospital.</p>

<p>Nursing Staffing to Reduce Healthcare-Associated Infections: A Systematic Review.</p> <p>Ivan Ulises Cabrera-Ku; Claudia Estefanía Domínguez-May; Mario Alexander Sansores-Juárez; Lizbeth Paulina Padrón-Aké; Guadalupe Concepción Pacheco-Catzim (2023)</p>	<p>To demonstrate the importance of safe nursing staffing levels according to the patient's clinical condition, in comparison with the nurse-to-patient ratio, and how this influences healthcare-associated infections in patients admitted to an Intensive Care Unit.</p> <p>Systematic Literature Review</p>	<p>Through this study, the authors state that after analyzing the results obtained from the research, they found a significant relationship between the nurse-to-patient ratio in an Intensive Care Unit and Healthcare-Associated Infections (HAIs). Examples of these infections described in the study include: sepsis associated with venous/urinary catheters; urinary tract infections; ventilator-associated pneumonia; surgical site infections; and postoperative infections. The authors note that specialized nurses—that is, those with technical and practical skills in intensive care and the ability to handle the severity of the clinical situations they face—are a key factor in preventing these HAI, as well as in reducing hospital length of stay, falls, and mortality rates.</p>
<p>Omissions in Nursing Care (ONC) in a Portuguese Hospital Setting: Nurses' Perceptions of Mitigation Strategies</p> <p>Ivo Cristiano Soares Paiva; António Fernando Salgueiro Amaral; Isabel Maria Pinheiro Borges Moreira (2021)</p>	<p>To identify strategies perceived by nurses at an oncology hospital as minimizing NNC.</p> <p>Qualitative Study</p>	<p>This study demonstrates that by ensuring adequate resources (human or material), it is possible to minimize the incidence of adverse events. One such resource is adequate nursing staffing levels, which not only enable high levels of patient safety but also ensure the quality of the healthcare provided to those patients.</p>
<p>Factors contributing to the quality of nursing care in hospitals in Gauteng Province</p> <p>Nomali S. Sabelo; Sibusiso M. Zuma. (2025)</p>	<p>To identify the factors contributing to the quality of nursing care in public hospitals in Gauteng and to establish recommendations for improving the quality of care in hospitals in general.</p> <p>Qualitative Study</p>	<p>The factors affecting the quality of nursing care provided were identified, and these are: lack of human and material resources; insufficient support from managers; client attitudes and behaviors; differences between private <i>and</i> public hospitals; lack of effective communication among team members; and unsafe staffing levels. These factors contribute not only to excessive workloads but also to client safety. The authors conclude that to improve the provision of nursing care and client satisfaction, it is necessary to maintain safe staffing levels and adjust the workload. Furthermore, they also note that a healthy team environment, satisfactory salaries, professional recognition, and support from managers result in better quality of care.</p>
<p>Validation of a scale to measure midwives' workload</p> <p>Lorena Gómez García; Maria Dolores Roldan Valcarcel; Ana Myriam Seva Llor; Maria Fuensanta Hellín Gil; Guadalupe Ruiz Merino; Francisco Javier Navarro Guerrero; Esperanza De La Iglesia Cano (2024)</p>	<p>To validate the development of a scale to measure midwives' workload based on the Nursing Interventions Classification (NIC) through its multicenter application in different delivery room units.</p> <p>Quantitative Study</p>	<p>Based on this study, the authors conclude that the workload in delivery rooms is excessively high. They state that using the NIC scale makes it possible to highlight the need to strengthen the team and increase the number of professionals in the unit, which contributes not only to improving human resource management but also to enhancing care for clients and their newborns and promoting the quality of care and safety for mother and child.</p>

<p>Analysis of the situation of midwives and the need to measure workloads</p> <p>Lorena Gómez García; Ana Myriam Seva LlorI; María Fuensanta Hellín Gill; María Dolores Roldán Valcárcel; Pablo Paredes Cerezo; Esperanza de la Iglesia Cano; Guadalupe Ruiz Merino; Francisco Javier Navarro Guerrero (2022)</p>	<p>To analyze the working conditions of midwives and identify their needs regarding workload measurement.</p> <p>Mixed-methods study (quantitative and qualitative)</p>	<p>Through this study, the authors concluded that midwives experience a high workload during their shifts, influenced by various factors. For this reason, effectively measuring midwives' workload using a specific tool will allow for quantifying the time each one dedicates to performing their interventions individually and, consequently, understanding the actual need to strengthen multidisciplinary teams.</p>
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Source: Authors (2025).

4 DISCUSSION OF RESULTS

This study was conducted to assess the impact of safe staffing levels on the quality of nursing care in a hospital setting. Analysis of the articles obtained reveals that the shortage of nurses, and the resulting work overload, directly influences the delivery of care. Adequate nurse-to-patient ratios are associated with higher-quality care, greater patient safety, and a lower incidence of adverse events (Lasater; Brom; Aiken & McHugh, 2025). This finding aligns with the relationship established by the DGS (2021), which indicates that reducing incidents in care delivery improves the quality of care. Paiva, Amaral & Moreira (2021) also consider that adequate nursing staffing levels enable high levels of patient safety, as well as quality of care, which validates the findings of the WHO (2020). On the other hand, high workloads, which translate into a higher number of patients per nurse, are associated with worse clinical outcomes (Lasater; Brom; Aiken & McHugh, 2021). The authors point to an increase in Healthcare-Associated Infections (HAIs), an increase in the number of patient falls, as well as mortality rates (Cabrera-Ku; May; Juárez; Padrón-Aké & Pacheco-Catzim, 2023) (Lasater et al., 2021). Sabelo & Zuma (2025)

identified factors affecting the quality of nursing care, which are: lack of human and material resources; insufficient support from managers; client attitudes and behaviors; differences between private and public hospitals; lack of effective communication among team members; and unsafe staffing levels. Barroso et al. (2021) agree with the above, noting that, in the hospital setting, the shortage of human resources is considered a constraint.

In addition to improving care delivery, Sabelo & Zuma (2025) argue that adequate staffing levels and a balanced workload lead to client satisfaction and safety.

The study by Paiva et al. (2021) demonstrates that through the proper allocation of human resources, it is possible to minimize the incidence of omitted nursing care. This is reinforced by Mota (2025), who notes that the omission of nursing care stems from a shortage of nurses in hospital services, compromising not only the provision of care but also the continuity of care provided. The adequate allocation of human resources—that is, ensuring sufficient staffing levels for nursing personnel—allows for the minimization of the incidence of omitted nursing care (Paiva et al., 2021).

To minimize the omission of nursing care, Mota (2025) considers it necessary to strengthen the institution's human resources, thereby improving the quality of care provided. As indicated by the WHO (2020), several authors have also pointed out that the implementation of safe staffing levels leads to shorter hospital stays (Ball & Griffiths, 2022) (Cabrera-Ku et al., 2023) (Lasater et al., 2021), thereby resulting in lower costs for the hospital.

Allen, Strange, Jacob & Rafferty (2025) note that staffing is a complex process, and there is no single model of safe staffing that works in all contexts; it must be adapted according to the specific characteristics and needs of each hospital. Ball & Griffiths (2022) emphasize that the shortage of qualified nurses should not be compensated for by hiring less qualified professionals, as this practice compromises the safety and quality of the care provided. This aligns with the position of the ICN (2022), which argues that safe staffing levels must be ensured by taking into account adequate training, competencies, and experience, in order to guarantee excellence in care. Greenley, Aiken, Sermeus & Mckee (2024) report on the shortage of professionals and nurse dissatisfaction in Europe, emphasizing that retaining professionals is crucial to ensuring the quality of care. High turnover results from work overload and exhaustion, compromising client safety; thus, the implementation of safe staffing levels is identified by Lasater et al. (2021) and by Greenley et al. (2024) as a way to prevent this. Barroso et al. (2021) confirm that failure to adhere to safe staffing levels results in fatigue among healthcare professionals and lapses in patient safety. The ICN (2022) reinforces the need to create favorable conditions for the provision of nursing care in order to retain nurses in healthcare services and institutions.

Ball & Griffiths (2022) suggest the use of workload assessment tools to determine the appropriate number and qualifications of nurses. This is corroborated by García, Valcarcel, Llor, Gil, Merino, Guerrero & Cano (2024), who state that the use of a scale highlights the need to strengthen the team and increase the number of professionals in the service. The same is noted by García, Llor, Gil, Valcarcel, Cerezo, Merino, Guerrero, & Cano (2022) when they state that effectively measuring the workload using a tool allows for quantifying the time each professional dedicates to performing their interventions individually and, consequently, understanding the actual need to strengthen multidisciplinary teams. In this regard, the application of the Standard for the Calculation of Safe Nursing Staffing Levels developed by the OE (2014) appears to be of great importance. According to García et al. (2024), such an assessment supports the implementation of safe staffing levels, contributing not only to improving human resource management but also to promoting the quality of care delivery. Regulation No. 743/2019 (2019) also emphasizes the importance of using the standard for calculating safe staffing levels as a management support tool.

Sabelo & Zuma (2025) argue that a healthy team environment, satisfactory salaries, professional recognition, and support from managers lead to better quality of care. Greenley et al. (2024) emphasize that policies should be implemented to promote safe work environments and to value nurses. The advocacy for favorable work environments aligns with the position of the ICN (2022), which argues that this leads to greater nurse satisfaction. The analysis suggests that the implementation of safe staffing levels in a hospital setting results in improved quality of nursing care.

5 CONCLUSIONS

The results of this study reinforce that safe staffing levels directly influence the quality of care provided in a hospital setting.

Analysis of the 11 articles included in the study consistently revealed that adequate staffing levels are associated with improved quality indicators, a reduction in adverse events, and increased satisfaction among both professionals and patients. We also found that inadequate nurse-to-patient ratios and excessive workloads lead not only to high turnover due to nurse dissatisfaction and burnout, but also to worse clinical outcomes, such as increased IACS, increased patient falls, and increased mortality.

According to the authors, there is a higher incidence of missed nursing care, compromising the quality and continuity of care provided. On the other hand, nurses' qualifications, adequate staffing levels relative to workload, a healthy work environment, satisfactory salaries, professional recognition, and support from managers are factors that promote the delivery of excellent nursing care.

Based on the evidence found in this study, it is argued that the importance of using assessment tools to assist hospital managers in achieving safe staffing levels is an essential condition for excellence in care and for the consolidation of evidence-based clinical practices.

That said, it is important to highlight the significance of the creation of the Standard for Calculating Safe Nursing Staffing Levels, approved in 2014 by the Portuguese Nurses' Association, since this tool makes it possible to verify whether hospitals are practicing safe staffing levels.

It is therefore considered that, in the hospital setting, safe staffing ensures higher quality of care, leading to patient satisfaction and safety.

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