

Nursing care quality and work methods as perceived by nurses from a private hospital*

Qualidade dos cuidados de enfermagem e métodos de trabalho na percepção de enfermeiros de hospital privado

How to cite this article:

Gregório SRF, Bernardino E, Soares BFC, Gonçalves MN, Silva JM, Martins MMFPS. Nursing care quality and work methods as perceived by nurses from a private hospital. Rev Rene. 2026;27:e97478. DOI: <https://doi.org/10.36517/2175-6783.20262797478>

 Susana Rute Ferreira Gregório¹
 Elizabeth Bernardino²
 Bruno Filipe Carvalho Soares³
 Maria Narcisa Gonçalves⁴
 José Miguel Afonso Matos Silva¹
 Maria Manuela Ferreira Pereira da Silva Martins⁵

*Extracted from the thesis entitled “Mudança organizacional e efetividade dos cuidados de enfermagem”, Instituto de Ciências Biomédicas Abel Salazar da Universidade do Porto, Portugal, 2026.

¹Hospital Companhia União Fabril. Porto, Portugal.

²Universidade Federal do Paraná. Curitiba, PR, Brazil.

³Universidade Fernando Pessoa. Porto, Portugal.

⁴Escola Superior de Enfermagem do Porto. Porto, Portugal.

⁵Center for Health Technology and Services Research. Portugal.

Corresponding author:

Susana Rute Ferreira Gregório
Rua Fernandes dos Anjos 188, 3 dto.
4400-141. Vila Nova de Gaia, Porto, Portugal.
E-mail: sugreg@gmail.com

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

EDITOR IN CHIEF: Ana Fatima Carvalho Fernandes 

ASSOCIATE EDITOR: António Luís Carvalho 

ABSTRACT

Objective: to analyse how nurses from a private hospital perceive Nursing care quality and the work methods employed in the assistance provided. **Methods:** a cross-sectional study conducted with 105 nurses by means of a self-applied e-questionnaire. The Perception of Nursing Activities that Contribute to Care Quality scale was used. The data were analysed using descriptive statistics and non-parametric tests. **Results:** a favourable global perception regarding care quality was observed. There were differences in the Well-being and self-care domain and in the total score according to the perceived frequency of the individual method. The overall perception regarding the service presented differences in the total score and in five domains. **Conclusion:** care quality was perceived in a favourable way, with differences related to the Individual method and to the overall evaluation of the service. **Contributions to practice:** the results signal managerial strategies targeted at clarifying the work methods, involving nurses in the service goals and monitoring Nursing-sensitive quality standards.

Descriptors: Nursing; Quality of Health Care; Nursing Care; Total Quality Management.

RESUMO

Objetivo: analisar a percepção de enfermeiros de um hospital privado sobre a qualidade dos cuidados de enfermagem e os métodos de trabalho utilizados na assistência. **Métodos:** estudo transversal realizado com 105 enfermeiros mediante questionário eletrônico autoaplicável. Utilizou-se a Escala de Percepção das Atividades de Enfermagem que Contribuem para a Qualidade do Cuidado. Os dados foram analisados por estatística descritiva e testes não paramétricos. **Resultados:** observou-se percepção global favorável da qualidade dos cuidados. Houve diferenças no domínio bem-estar e autocuidado e na pontuação total segundo a frequência percebida do método individual. A avaliação geral do serviço apresentou diferenças na pontuação total e em cinco domínios. **Conclusão:** a qualidade dos cuidados foi percebida favoravelmente, com diferenças relacionadas ao método individual e à avaliação geral do serviço. **Contribuições para a prática:** os resultados apoiam estratégias de gestão destinadas a esclarecer os métodos de trabalho, envolver os enfermeiros nas metas do serviço e monitorar padrões de qualidade sensíveis à enfermagem.

Descritores: Enfermagem; Qualidade da Assistência à Saúde; Cuidados de Enfermagem; Gestão da Qualidade Total.

Introduction

Care quality has become a core concern in contemporary health systems, particularly in hospital environments characterized by increasing complexity, safety requirements, responsibilities, efficiency and person-centred care⁽¹⁻³⁾. In this context, Nursing care quality is especially relevant because nurses play a fundamental role in direct care provision, clinical surveillance, prevention of complications, care coordination, discharge planning, health education and support to patients' functional recovery and self-care^(2,4).

In private hospitals, quality assumes additional strategic relevance, as these institutions work in environments marked by competition, reputational pressure, patients' expectations and a need to demonstrate both clinical efficacy and organizational efficiency. In this context, Nursing care quality assessments cannot be exclusively based on administrative indicators, certification metrics or institutional reports. Nurses' knowledge provides an important complementary perspective, as it reflects the way in which norms, responsibilities and care processes are implemented in the everyday clinical practice⁽⁵⁻⁹⁾.

In Portugal, Nursing care quality assessments are supported by the professional norms set forth in the Order of Nurses. These standards organize Nursing care quality into six domains: Client satisfaction, Health promotion, Prevention of complications, Well-being and self-care, Functional readaptation and Nursing care organization. This model expands understanding in relation to quality because it integrates the relational, preventive, educational, functional and organizational dimensions inherent to the practice⁽¹⁰⁻¹²⁾.

Nursing care quality is not only influenced by the professionals' individual competencies but also by the organizational context in which such assistance is developed. Factors such as team adequacy, leadership, communication, workload, documentation systems and clinical governance mechanisms contribute to defining the conditions in which Nursing care is planned, implemented and assessed^(5-6,13). In particular, the Nur-

sing care provision model adopted to organize the assistance offered (including Task-based Nursing, Team Nursing, Individual patient care and Reference or Primary Nursing) can exert an influence on care continuity, professional accountability, clarity of roles and nurses' views about the quality of the care provided⁽¹⁴⁾.

Although individual and professional characteristics such as age, academic degree, professional experience, employment situation and clinical profile can also influence this perception, organizational factors like staffing, practice environment and work organization seem to play a relevant role in the way in which nurses experience and assess care quality in their everyday practice^(9,15-16).

This study was guided by the following research questions: How do nurses working in a private hospital perceive Nursing assistance quality, according to professional standards? and How is this perception associated with sociodemographic characteristics and with the work methods used in the institution?

Although work methods may influence care continuity, accountability and organization, the evidence on their relationship with nurses' perceptions regarding the different quality domains in private hospitals is still limited. Thus, the objective of this study was to analyse how nurses from a private hospital perceive Nursing care quality and the work methods employed in the assistance provided.

Methods

Study design

This cross-sectional study was conducted in 2022 at a private hospital from Portugal. It was reported following the recommendations set forth in Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).

This design was considered suitable to assess nurses' perceptions regarding care quality in a real-life organizational context and to explore the associations between perceived quality, the participants'

characteristics and the work methods used in care provision.

Context and participants

The target population encompassed all nurses with active employment contracts in the institution at the data collection time (n=127). The eligibility criteria were as follows: contract hour load of at least 20 weekly hours and direct involvement in patient care during the study period. Nursing Directorate members were excluded to minimize the influence exerted by hierarchical and managerial factors on the answers. Prior to sending the invitations, 22 nurses were excluded due to temporary unavailability: disease (n=8), pregnancy (n=10) or extended training (n=4). Consequently, 105 eligible nurses were invited to participate. All 105 answered the online questionnaire, resulting in a 100% response rate with no explicit refusals or incomplete questionnaires. The final sample included three nurse-managers who were kept in the study for devoting at least 50% of their work time to direct patient care during the study period.

A census strategy was adopted, inviting all eligible nurses, reason why no sample calculation was performed.

Variables

The main independent variable was the perceived use frequency corresponding to four Nursing work methods: Task-based work method; Team Nursing; Individualized patient allocation (Individualized Nursing care method); and Primary Nursing model (reference work method). Each method was assessed separately by means of an item with for answer categories: Never, Sometimes, Frequently and Always. The answers stated nurses' perceptions regarding the frequency with which each method was used in the service, not the existence of any method formally instituted by the organization⁽¹⁷⁾.

Although an assessment scale for nurses'

work methods with content validity evidence has already been published⁽¹⁷⁾, no multidimensional measures were applied in this study. The perceived use frequency for each method was assessed by means of single items developed by the authors, with four answer categories: 1 = Never, 2 = Sometimes, 3 = Frequently and 4 = Always. The answers indicated if the participating nurses perceived each method as being used in the service.

The dependent variables were the scores obtained in the six domains from the Perception of Nursing Activities that Contribute to Care Quality (*Escala de Percepção das Atividades de Enfermagem que Contribuem para a Qualidade do Cuidado*, EPAECQC) and the total score. The global assessment corresponding to quality of the service as per the nurses opinion was analysed as a complementary variable⁽¹²⁾.

Data collection instrument

A structured and self-applied questionnaire organized in two parts was used. The first one gathered sociodemographic and professional data and items on the perceived use frequency for the work methods in the service. The second one corresponded to EPAECQC.

This scale was developed and validated in Portugal based on the Nursing Care Quality Standards defined by the Order of Nurses^(10,12). It has 25 items distributed across six domains: Client satisfaction, Health promotion, Prevention of complications, Well-being and self-care, Functional readaptation and Nursing care organization. Each item is answered by means of a Likert-type scale from 1 for Never to 4 for Always. The total score varies between 25 and 100, where higher values indicate more favourable perceptions regarding Nursing care quality⁽¹²⁾.

Data collection procedures

The data were collected between May 2022 and August 2022 by means of a structured and self-applied questionnaire organized in two parts. The

first part consisted of items on the participants' socio-demographic and professional characteristics and on the perceived use frequency corresponding to each of the four work methods in the service. The second part included EPAECQC.

The invitations to the eligible nurses were sent via the institutional email service, along with diverse information about objectives, voluntary participation, anonymity and confidentiality. The nurses could only access the questionnaire after formalizing their informed consent. Five reminders were sent.

Data analysis

The analyses were performed in SPSS, version 22.0, using descriptive and inferential statistics. Absolute and relative frequencies were used for the categorical variables; in turn, mean values, standard deviations, medians and minimum/maximum values were calculated for the total EPAECQC score and its domains.

The distribution assumptions for the total scale and its domains were assessed using the Shapiro-Wilk test and by visually inspecting Q-Q histograms and graphs. Normality was not supported for the total score (Shapiro-Wilk $p < 0.05$) or for several domains; consequently, non-parametric methods were used. The comparisons between two groups of EPAECQC scores in relation to binary sociodemographic/professional factors were made with the Mann-Whitney U test; in turn, the Kruskal-Wallis was employed for the comparisons involving three or more groups (work method perceived with four sorted frequency categories and overall assessment regarding quality of the service, for example).

A 5% significance level was adopted. The Kruskal-Wallis test results were interpreted as global differences across the categories, without identifying the specific groups between which the differences were recorded. Internal consistency of the total scale and its domains was assessed by means of the Cronbach's alpha coefficient.

Ethical considerations

Ethical approval for the study was granted by the Ethics Committee of the private hospital where the research was conducted (Authorization No. 04-22/2022), in full compliance with the principles set forth in the Declaration of Helsinki and the applicable European and Portuguese laws on data protection and research ethics. All the participants provided their informed consent via electronic means before accessing the questionnaire. Participation was voluntary, anonymity and confidentiality were guaranteed during all study phases and the data were exclusively used for scientific purposes.

Artificial Intelligence was solely used while preparing the manuscript to assist in the linguistic review and organization of the text, specifically by means of NotebookLM. No Artificial Intelligence tool was employed for collecting/analysing the data, interpreting the results or making decisions related to the study findings. The authors critically reviewed the entire content and assume full responsibility for the final version of the manuscript.

Results

Of the 105 nurses included in the study, 85 (81.0%) were female and 20 (19.0%) were male as for their age, 57 (54.3%) were less than 30 years old, 41 (39.0%) were between 31 and 40 years old, 6 (5.7%) were between 41 and 50 years old and 1 (1.0%) was over the age of 51. Most of the participants had Bachelor's degrees 92 (87.6%) and 13 (12.4%) were MScs. Regarding professional categories, 81 (77.1%) were general care nurses, 21 (20.0%) were specialized nurses and 3 (2.9%) were nurse-managers. Most of the participants had formal employment contracts 96 (91.4%) and 9 (8.6%) worked on a service provision regime. The distribution regarding professional experience was as follows: 18 (17.1%) nurses had less than one year of experience, 31 (29.5%) had between two and five years, 29 (27.6%) had between six and ten years and 27 (25.7%) had more than eleven years.

In relation to the work methods, the task-based one was predominantly reported as never used, whereas the individual and team methods were more frequently identified as oftentimes or always used. The reference method presented the most scattered distribution across the categories. These findings suggest variability in the way in which nurses perceived the predominant work method in the institution.

When asked to assess global functioning of the service, most of the participants 77 (73.3%) classified it as of very good quality, whereas 17 (16.2%) considered that it exceeded the expected quality levels. Fewer subjects classified the service as of acceptable quality 9 (8.6%), bad quality 1 (1.0%) or substandard quality 1 (1.0%).

The characteristics of the sample, the work methods perceived and the overall assessment regarding quality of the service are presented in Table 1.

Table 1 – Sociodemographic and professional characteristics corresponding to the participating nurses. Portugal, 2022

Variables	n (%)
Gender	
Female	85 (81.0)
Male	20 (19.0)
Age (years old)	
<30	57 (54.3)
31-40	41 (39.0)
41-50	6 (5.7)
>51	1 (1.0)
Academic degree	
Bachelor's degree	92 (87.6)
MSc degree	13 (12.4)
Professional category	
General care nurses	81 (77.1)
Specialised nurses	21 (20.0)
Nurse-managers	3 (2.9)
Employment situation	
Formal employment contract	96 (91.4)
Service provision regime	9 (8.6)
Professional experience (years)	
<1	18 (17.1)
1-5	31 (29.5)
6-10	29 (27.6)
>11	27 (25.7)

The perceptions regarding work organization and global quality of the service are detailed in Table 2. The Task-based method was the most frequently reported as never used, whereas the Individual and Team ones were more frequently identified as oftentimes or always used. The Primary Nursing method (reference) presented a more scattered distribution across the categories. In relation to overall performance of the service, most of the participants classified quality as very good, with others considering that it exceeded the expected levels.

Table 2 – Perceptions regarding the work methods and assessment corresponding to overall quality of the service. Portugal, 2022

Variables	n (%)
Task-based work method	
Never	66 (62.9)
Sometimes	21 (20.0)
Frequently	10 (9.5)
Always	8 (7.6)
Team work method	
Never	22 (21.0)
Sometimes	23 (21.9)
Frequently	28 (26.7)
Always	32 (30.5)
Individual work method	
Never	16 (15.2)
Sometimes	15 (14.3)
Frequently	37 (35.2)
Always	37 (35.2)
Primary Nursing model (reference)	
Never	45 (42.9)
Sometimes	24 (22.9)
Frequently	22 (21.0)
Always	14 (13.3)
General assessment regarding quality of the service	
Substandard quality	1 (1.0)
Non-acceptable quality	1 (1.0)
Acceptable quality	9 (8.6)
Very good quality	77 (73.3)
It exceeds the expected quality levels	17 (16.2)

EPAECQC presented high internal consistency in the sample under study, with a Cronbach's alpha coefficient of 0.952 for the total score. The coefficients for its domains varied between 0.692 and 0.886,

namely: Client satisfaction, 0.692; Health promotion, 0.702; Prevention of complications, 0.886; Well-being and self-care, 0.885; Functional readaptation, 0.814; and Nursing care organization, 0.795.

The descriptive statistics indicated overall favourable perceptions (Table 3). The total score reached a mean of 85.04 (Standard Deviation [SD]: 10.645) and a median of 86.00. Among the domains, Prevention of complications presented the highest mean value (24.29), followed by Well-being and self-care (20.45), Functional readaptation (13.35), Client satisfaction (10.65), Health promotion (9.55) and Nursing care organization (6.75). The distributions

were slightly asymmetric and negative in all domains and in the total scale, indicating certain tendency toward better perceived quality. No missing data were recorded.

The comparisons corresponding to EPAECQC according to perceived use frequency for the Individual work method and the overall assessment regarding quality of the service are presented in Table 4. Statistically significant differences were noticed in the Well-being and self-care domain and in the total score according to the Individual method, as well as in the total score and in five domains according to the overall assessment regarding quality of the service.

Table 3 – Descriptive statistics corresponding to the EPAECQC scale as a whole and its domains (n=105). Portugal, 2022

Domains	Mean (SD)	Median	Asymmetry	Asymmetry standard error	Minimum-Maximum
Client satisfaction	10.65 (1.387)	11.00	-1.305	0.236	4-12
Health promotion	9.55 (1.681)	9.00	-0.278	0.236	4-12
Prevention of complications	24.29 (3.115)	25.00	-0.402	0.236	16-28
Well-being and self-care	20.45 (2.859)	20.00	-0.385	0.236	12-24
Functional readaptation	13.35 (2.227)	13.00	-0.391	0.236	8-16
Nursing care organization	6.75 (1.125)	7.00	-0.528	0.236	4-8
Total score	85.04 (10.645)	86.00	-0.450	0.236	48-100

EPAECQC: *Escala de Percepção das Atividades de Enfermagem que Contribuem para a Qualidade do Cuidado*; SD: Standard deviation

Table 4 – Comparisons of the scale scores according to the Individual method and the overall assessment regarding quality of the service. Portugal, 2022

Independent variable/Domain	p-value
Individual work method	
Client satisfaction	0.097
Health promotion	0.180
Nursing care organization	0.097
Functional readaptation	0.191
Prevention of complications	0.125
Well-being and self-care	0.005*
Total EPAECQC score	0.049*
General assessment regarding quality of the service	
Client satisfaction	0.070
Health promotion	0.041*
Nursing care organization	0.048*
Functional readaptation	0.034*
Prevention of complications	0.026*
Well-being and self-care	0.009*
Total EPAECQC score	0.018*

*Values obtained in the Kruskal-Wallis test; statistical significance set at $p < 0.05$; EPAECQC: *Escala de Percepção das Atividades de Enfermagem que Contribuem para a Qualidade do Cuidado*

The Kruskal-Wallis test indicated global differences across the Individual method frequency categories in the Well-being and self-care domain ($p=0.005$) and in the total scale score ($p=0.049$). In the overall assessment regarding quality of the service, global differences were observed in the total score ($p=0.018$) and in the Health promotion ($p=0.041$), Nursing care organization ($p=0.048$), Functional readaptation ($p=0.034$), Prevention of complications ($p=0.026$) and Well-being and self-care ($p=0.009$) domains. No difference was detected in the “Client satisfaction” domain ($p=0.070$).

Discussion

This study found that the nurses from a private hospital had favourable perceptions regarding Nursing care quality in all the domains assessed. The results support a multidimensional understanding

in relation to quality that encompasses patient safety, person-centred care, functional support and care organization⁽¹⁸⁻¹⁹⁾. Although not directly measured in this study, some organizational mechanisms may contribute to explaining this pattern, namely: clinical surveillance, escalation pathways, clarity in terms of care accountability during shifts and managerial practices targeted at Nursing-sensitive processes⁽²⁰⁻²²⁾.

EPAECQC presented high internal consistency in the sample under study, both in the total score and in most of its domains. The coefficients obtained were globally similar to those found in an original study for developing and validating an instrument and in the validation of the French version; however, certain variation was observed between the domains and the different application contexts^(12,23). These results support consistency of the answers given to the items in this sample, without disregarding the possibility of assessing other psychometric properties of the instrument in future studies.

The favourable scores in the Prevention of complications domain may reflect the importance nurses attribute to clinical surveillance, to recognizing deterioration and to implementing timely responses. The literature relates Nursing surveillance to patient safety, to identifying adverse events and to preventing failures in rescuing patients showing clinical deterioration⁽²⁴⁾.

Nursing-sensitive indicators allow monitoring results such as falls, pressure injuries, infections, medication errors and failures to rescue, contributing to assessing care quality and safety⁽²⁵⁾. Discharge education with the Teach-Back method can also favour understanding the guidelines and reducing readmissions in the case of chronic conditions, thus enhancing care continuity and safety⁽²⁶⁾. Recent evidence also shows that omitting surveillance-related care and the increased number of patients per nurse are associated with higher in-hospital mortality, whereas timely responses can reduce this risk⁽²⁷⁾.

The favourable scores in the Well-being and self-care domain indicate that the participants perceived that practices targeted at the patients' comfort,

autonomy and participation in care were in fact implemented. These dimensions are compatible with person-centred Nursing frameworks, which value care individualisation, patients' participation and therapeutic relationships⁽¹⁹⁾.

Although Health promotion was also assessed in a positive way, it's comparatively lower mean value underscores the challenge of integrating health promotion activities to acute care work flows, dominated by immediate clinical priorities and organizational requirements. Even so, hospitalisation still represents a critical opportunity for education and for supporting behavioural changes; in addition, although their sustainability depends on reformulating work flows, on clarity of roles and on audit and feedback mechanisms, brief and integrated strategies such as Teach-Back and individualised discharge plans are viable⁽²⁵⁻²⁶⁾.

No statistically significant differences were detected according to the sociodemographic or professional characteristics analysed. This result may indicate higher homogeneity of perceptions in the organizational context under study; however, it does not allow concluding that the individual factors are irrelevant. The literature highlights the practice environment, team adequacy, workload, and surveillance and escalation processes as factors related to nurses' and patients' outcomes^(9,15,18,27). However, the fact that no differences were detected should be interpreted with caution, considering the imbalance between the groups, the limited variability and the potential restrictions in terms of statistical power. On the other hand, differences were observed in the total score and in the Well-being and self-care domain according to the perceived frequency for the individual model.

However, in the absence of post-hoc comparisons, it was not possible to identify the categories that differed or to establish a linear trend between higher frequency of the method and more favourable perceptions regarding quality. Therefore, the result should be interpreted as exploratory.

The perceptions regarding the work methods may reflect coexistence of different care organization

modalities, such as teamwork processes associated with individual attribution of patients. The literature presents diversity in the definition and operationalisation of Nursing care provision models, which reinforces the need to distinguish formally instituted models from practices perceived by professionals^(14,17). Future studies should also investigate factors such as teamwork, workload, care continuity, clinical surveillance and clarity of roles^(15,27).

The differences observed according to the overall assessment regarding quality of the service point to convergence between two related perceptive measures. However, as both were self-reported and assessed similar aspects of quality, common-method variance may have heightened the associations noticed. Consequently, these results should be interpreted as evidence of consistency across the professionals' perceptions and not as proof of objective differences in care quality. The triangulation process with observational data and Nursing-sensitive indicators such as staffing, falls, pressure injuries, care-associated infections, medication errors, clinical deterioration and failure to rescue may come to strengthen inferences in future studies^(22,25,27).

From a managerial point of view, the findings advocate quality improvement strategies that translate institutional goals into practical conditions for Nursing work, namely: clarifying patient care responsibilities in each shift; saving time and tools for brief and integrated health promotion interventions; enhancing surveillance and escalation as collective team practices; and monitoring Nursing-sensitive standards with timely and significant feedback^(20-22,26-28). Periodically assessing nurses' perceptions may inform local improvement cycles and help align organizational expectations with the everyday clinical practice^(18-19,27).

Based on the diverse evidence available, clarity in terms of responsibility for the care provided, definition of functions, teamwork and workload adequacy constitute relevant dimensions for care organization and for Nursing-sensitive results^(14-15,18,27). Articulation between perceptive measures and objective quality indicators, as well as conducting studies in different

institutional contexts, may contribute to enhancing what is known about the relationship between work methods and care quality^(22,25,27-28).

Study limitations

Having conducted the study in a single private hospital limits generalization of the results. The cross-sectional design precludes establishing causal relationships; in addition, self-reported measures are subject to social desirability and to common-method variance. The assessment regarding the work methods using single items and based on the participants' perceptions may not represent formally instituted models. The small number of participants in some categories limited the power and stability of the comparisons. In addition to that, the high number of tests increased the chances for statistically significant results at random, particularly in the values close to the significance limit. The absence of objective quality indicators also precludes interpreting the perceptions as a direct measure of the quality actually provided.

Contributions to practice

The results reinforce the importance of making work methods explicit and of team discussions on how care responsibilities are distributed. Combined with Nursing-sensitive objective indicators, periodically assessing nurses' perceptions may support identifying local needs and inform quality improvement initiatives.

Conclusion

The participating nurses presented favourable perceptions regarding Nursing care quality. Differences were identified in the total score and in the Well-being and self-care domain according to the perceived frequency corresponding to the Individual model, without identifying the specific categories that differed. The overall assessment regarding quality of the service also presented differences in the total score

and in five domains. No differences were identified according to the sociodemographic and professional characteristics analysed. The results highlight the importance of clarifying work organization methods and of combining the professionals' perceptions with objective quality indicators.

Authors' contributions

Study conception and design; Data collection; Data analysis and interpretation; Drafting of the manuscript; Final approval of the version to be published; and Agreement to be accountable for all aspects of the paper: **Gregório SRF, Gonçalves MN, Martins MMFPS**. Data analysis and interpretation; Relevant critical review of the intellectual content; Final approval of the version to be published; and Agreement to be accountable for all aspects of the paper: **Bernardino E, Soares BFC, Silva JM**.

Data availability

The anonymised data supporting the results of this study can be made available by the corresponding author upon duly justified request and institutional authorization, as long as all ethical approval conditions and applicable laws are respected.

References

1. Aiken LH, Sermeus W, McKee M, Lasater KB, Sloane DM, Pogue CA, et al. Physician and nurse well-being, patient safety and recommendations for interventions: cross-sectional survey in hospitals in six European countries. *BMJ Open*. 2024;14(2):e079931. doi: <https://dx.doi.org/10.1136/bmjopen-2023-079931>
2. World Health Organization. Global patient safety action plan 2021–2030: towards eliminating avoidable harm in health care [Internet]. 2021 [cited Jun 25, 2026]. Available from: <https://www.who.int/teams/integrated-health-services/patient-safety/policy/global-patient-safety-action-plan>
3. Spoon D, Legé T, Oudshoorn C, van Dijk M, Ista E. Implementation strategies of fall prevention interventions in hospitals: a systematic review. *BMJ Open Qual*. 2024;13(4):e003006. doi: <https://doi.org/10.1136/bmjopen-2024-003006>
4. Kumah A. Poor quality care in healthcare settings: an overlooked epidemic. *Front Public Health*. 2025;13:1504172. doi: <https://doi.org/10.3389/fpubh.2025.1504172>
5. Strumann C, Geissler A, Busse R, Pross C. Can competition improve hospital quality of care? A difference-in-differences approach to evaluate the effect of increasing quality transparency on hospital quality. *Eur J Health Econ*. 2022;23(7):1229-42. doi: <http://doi.org/10.1007/s10198-021-01423-9>
6. Alshammari MS, Tyerman J, Beogo I, Phillips JC. Nurses' perceptions of patient safety culture measured by the Hospital Survey on Patient Safety Culture in the Gulf Cooperation Council region: a systematic review. *Int J Nurs Stud Adv*. 2026;10:100512. doi: <https://doi.org/10.1016/j.ijnsa.2026.100512>
7. Timofeyev Y, Goldenova V, Mantaeva E, Jakovljevic M. The impact of hospital competition on the quality of care in Europe: a systematic review. *Healthcare (Basel)*. 2024;12(22):2218. doi: <https://doi.org/10.3390/healthcare12222218>
8. Sriram V, Yilmaz V, Kaur S, Andres C, Cheng M, Meessen B. The role of private healthcare sector actors in health service delivery and financing policy processes in low- and middle-income countries: a scoping review. *BMJ Glob Health*. 2024;8(Suppl 5):e013408. doi: <https://dx.doi.org/10.1136/bmjgh-2023-013408>
9. Lake ET, Riman KA, Lee C. The association between hospital nursing resource profiles and nurse and patient outcomes. *J Nurs Manag*. 2022;30(3):836-45. doi: <https://doi.org/10.1111/jonm.13553>
10. Ordem dos Enfermeiros (PT). Padrões de qualidade dos cuidados de enfermagem: enquadramento conceptual, enunciados descritivos [Internet]. 2012 [cited Aug 10, 2026]. Available from: <https://www.ordemenfermeiros.pt/media/8903/divulgar-padroes-de-qualidade-dos-cuidados.pdf>
11. Ordem dos Enfermeiros (PT). Padrões de Qualidade dos Cuidados de Enfermagem [Internet]. 2012 [cited Sep 3, 2026]. Available from: <https://www.ordemenfermeiros.pt/a-ordem/projetos-e-programas/padr%C3%B5es-de-qualidade-dos-cuidados-de-enfermagem/>

12. Martins MMFPS, Gonçalves MNC, Ribeiro OMPL, Tronchin DMR. Quality of nursing care: instrument development and validation. *Rev Bras Enferm.* 2016;69(5):920-6. doi: <https://dx.doi.org/10.1590/0034-7167-2015-0151>
13. Chen Y, Sivey P. Hospital report cards: quality competition and patient selection. *J Health Econ.* 2021;78:102484. doi: <https://doi.org/10.1016/j.jhealeco.2021.102484>
14. Geltmeyer K, Eeckloo K, Dehennin L, De Meester E, De Meyer S, Pape E, et al. How much do we know about nursing care delivery models in a hospital setting? A mapping review. *Nurs Inq.* 2024;31:e12636. doi: <https://doi.org/10.1111/nin.12636>
15. Dall'Ora C, Saville C, Rubbo B, Turner L, Jones J, Griffiths P. Nurse staffing levels and patient outcomes: a systematic review of longitudinal studies. *Int J Nurs Stud.* 2022;134:104311. doi: <https://doi.org/10.1016/j.ijnurstu.2022.104311>
16. Alhussin EM, Mohamed SA, Hassan AA, Al-Qudimat AR, Doaib AM, Al Jonidy RM, et al. Patients' satisfaction with the quality of nursing care: a cross-section study. *Int J Afr Nurs Sci.* 2024;20:100690. doi: <https://doi.org/10.1016/j.ijans.2024.100690>
17. Ventura-Silva JMA, Martins MMFPS, Trindade LL, Faria ACA, Barros SCC, Melo RMC, et al. Nurses' Work Methods Assessment Scale: a study of content validation. *Rev Bras Enferm.* 2023;76(2):e20220396. doi: <https://doi.org/10.1590/0034-7167-2022-0396>
18. Boudreau C, Rhéaume A. Impact of the work environment on nurse outcomes: a mediation analysis. *West J Nurs Res.* 2024;46(3):210-8. doi: <https://doi.org/10.1177/01939459241230369>
19. McCance T, McCormack B. The person-centred nursing framework: a mid-range theory for nursing practice. *J Res Nurs.* 2025;30(1):47-60. doi: <https://doi.org/10.1177/17449871241281428>
20. Pereira SCA, Ribeiro OMPL, Fassarella CS, Santos EJP. The impact of nursing practice environments on patient safety culture in primary health care: a scoping review. *BJGP Open.* 2024;8(1):BJG-PO.2023.0062. doi: <https://doi.org/10.3399/BJG-PO.2023.0062>
21. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. *BMC Palliat Care.* 2022;21(1):80. doi: <http://doi.org/10.1186/s12904-022-00942-3>
22. Juvé-Udina ME, Adamuz J, González-Samartino M, Tapia-Pérez M, Jiménez-Martínez E, Berbis-Morello C, et al. Association between nurse staffing coverage and patient outcomes in a context of pre-pandemic structural understaffing: a patient-unit-level analysis. *J Nurs Manag.* 2025;2025:8003569. doi: <https://doi.org/10.1155/jonm/8003569>
23. Canedo E, Fernandes CS, Lopes R, Moreira T, Gonçalves MN, Martins MM. Perception of nursing activities that contribute to the quality of care: validity and reliability testing of the French version. *J Nurs Meas.* 2024;32(2):291-9. doi: <https://doi.org/10.1891/JNM-2022-0090>
24. Doyon O, Raymond L. Surveillance and patient safety in nursing research: a bibliometric analysis from 1993 to 2023. *J Adv Nurs.* 2024;80(2):777-88. doi: <https://doi.org/10.1111/jan.15793>
25. Oner B, Zengul FD, Oner N, Ivankova NV, Karadag A, Patrician PA. Nursing-sensitive indicators for nursing care: a systematic review (1997-2017). *Nurs Open.* 2021;8(3):1005-22. doi: <https://doi.org/10.1002/nop2.654>
26. Oh S, Choi H, Oh EG, Lee JY. Effectiveness of discharge education using teach-back method on readmission among heart failure patients: a systematic review and meta-analysis. *Patient Educ Couns.* 2023;107:107559. doi: <http://doi.org/10.1016/j.pec.2022.11.001>
27. Al-Ghraiyyah T, Lago L, Fernandez R, Sim J. Effects of the nursing practice environment, nurse staffing, patient surveillance and escalation of care on patient mortality: a multi-source quantitative study. *Int J Nurs Stud.* 2024;156:104777. doi: <https://doi.org/10.1016/j.ijnurstu.2024.104777>
28. Castro LC, Custodio LB, Silva LO, Nunes VC, Castro JC, Moraes JT. Instruments and dimensions for assessing care quality for people living with an ostomy: a scoping review. *Rev Rene.* 2025;26:e95922. doi: <https://dx.doi.org/10.36517/2175-6783.20252695922>



This is an Open Access article distributed under the terms of the Creative Commons