



## Research Article

# Clinical Supervision in Improving the Quality of Nursing Care: Empowerment of Medical-Surgical Hospitalization Teams

Mafalda Sofia Santos Brás Baptista Sérgio <sup>1</sup>, António Luís Rodrigues Faria de Carvalho,<sup>2</sup>  
and Cristina Maria Correia Barroso Pinto <sup>2</sup>

<sup>1</sup>José de Mello, CUF Academic Center, Department of Nursing Education and Life Training Center, Lisbon, Portugal

<sup>2</sup>Superior Nursing School of Porto, Center for Research in Health Technologies and Services (CINTESIS), Porto, Portugal

Correspondence should be addressed to Mafalda Sofia Santos Brás Baptista Sérgio; mafalda.sergio@cuf.pt

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**Objective.** To analyze the impact of clinical supervision on the improvement of positivity rates and quality indicators of nursing practice for medical-surgical patients in a private healthcare unit. **Methodology.** Prospective interventional cohort study with a quantitative approach, to study the effect of supervision on indicators and indices of quality of care. **Materials and Method.** A quantitative approach through an interventional prospective cohort study and simple random sampling. **Results.** Of the  $n = 764$  records of audits conducted on the quality of nursing practice that were analyzed, there were higher scores and positivity indices in both services after the implementation of clinical supervision. **Conclusion.** The practice of clinical supervision allows for the strategic monitoring of teams according to the results of audits on nursing care practices, thus raising the indices of positivity and quality indicators of nursing care practices with a direct impact on the patient.

## 1. Introduction

Quality and patient safety management is strategic to the success of healthcare organizations in recognizing and accrediting patient-centered practices according to principles of safety, efficiency, and effectiveness.

To this end, it is essential to evidence compliance with international standards and clinical quality indicators that enable the identification and monitoring of nursing practices, in order to establish priorities and action plans for continuous improvement of processes for the achievement of objectives and results [1].

Hence, the constant challenge for organizations is to create and implement a culture of quality assessment of nursing practices, which is aligned with a quality and safety strategy as evidenced by improvement indicators of the structure, processes, and results. However, for it to become effective, it must be based on organizational leadership and a healthy interteam climate that allows for the involvement and development of its professionals in the identification

and implementation of improvement opportunities with a direct impact on quality and patient safety [1–3].

The involvement of nursing teams in the evaluation of nursing practice and the recognition of levels of excellence reflect an understanding of the importance of the quality and safety of the care provided and its impact on patients [4]. This process encourages the development of monitoring strategies and the evaluation of daily practice and promotes development through reflection on nursing practice [5].

The adoption of specific indicators supported by evidence from process monitoring is therefore fundamental to improving results and to standardizing care practices [3–6].

One of the most usual tools for monitoring processes in the evidence of compliance with quality standards of care practices are audits of practices that should be based on an effective relationship of organizational leadership as well as on a healthy interteam climate [2, 3, 6].

However, quality nursing audits go beyond monitoring the process, as there is a clear intention on the one hand, to make professionals aware of the importance of quality and

safety with a direct impact on patients and, on the other hand, to change practices and gain skills through knowledge sharing among peers.

In this perspective of efficiency and support of the teams with competence gain, the concept of clinical supervision emerges as a facilitating strategy of behavioral change and nursing practices, as it influences, guides, and supports the teams according to reference standards in obtaining desirable and contextualized results through the development of personal and professional skills [4–7].

Thus, the processes of clinical supervision in nursing demonstrate an influence on obtaining desirable results with an impact on nursing practice, increasing patient satisfaction and safety within the health organization [8–10].

Clinical supervision is strategic in the reflection and transformation of thinking and acting in the construction of nursing practice. When considered as a formal process and appropriate to the context, it implies the interaction of nurses in the monitoring, planning, evaluation, and implementation of improvement actions. On the other hand, it is essential that it takes place in a systematic and interpersonal environment conducive to learning, knowledge sharing, and autonomous and responsible decision-making [9–13].

The adoption of clinical supervision also allows to increase human capital and to improve interpersonal, emotional, and professional skills, with effective gains for the participants, that is, the supervisor and the supervised [14–16].

According to Proctor's theory, it is possible to turn supervision into a formal and adequate peer-monitoring process, since the model intervenes at the formative, normative, and restorative levels, facilitating from reflection to decision-making as well as practice evaluation, thus bringing benefits in improving the quality of nursing care [7, 9].

In nursing practice, Proctor's integrative model is often used. This model consists of three strands: normative, formative, and restorative. Regarding the normative aspect, its purpose is to support reflection on procedures and protocols, on evidence, and on assessing the quality of care provided. The formative aspect promotes the education of nursing teams to acquire personal and professional skills, focusing on knowledge and critical thinking.

Finally, the restorative aspect, with its motivational and developmental component, promotes the building of self-confidence [7, 9].

However, to legitimize the supervisory practice in organizations, it is essential to stimulate and develop teams for a reflective practice based on evidence and knowledge sharing among peers, in order to involve them in defining strategies for improvement actions appropriate to the needs and context, and consequently the adoption of better nursing practices [7–9, 11, 17].

In the supervisory process, the main participants are the supervisor, or experienced professional who interacts, shares, influences, and effectively guides another less experienced or supervised professional in the development of competences with the purpose of obtaining benefits for the professional, team, and the organization [11].

In the absence of clinical supervision, difficulties may arise at the organizational level, at the level of team performance, and for clients: At the organizational level: noncompliance with quality and safety standards in nursing practice, retention, motivation, and satisfaction of professionals. At team level: the absence of moments for reflection and discussion about practice, greater difficulty in learning with less acquisition of skills, and less self-confidence in daily practice. And for the client: lower quality and safety of the care provided.

Overall, clinical supervision is a tool that complements the quality of nursing practice audit in implementing actions to improve outcomes and ensure quality of care. The possibility of building a structured peer process with feedback (individual or team), support, and daily monitoring in the adequacy of best practices and in the implementation of improvement actions according to the evidence of the audit results is to build a path in tandem to define the path of knowledge in gaining skills for the supervisor and the supervised [9].

As the research states, gains in health are closely related to the workforce of its professionals demonstrated by quality and best practices, as well as in the implementation of control strategies that facilitate the potential of teams to gain skills and learning and strategies to support decision-making [8, 9].

It was with this organizational vision of leadership and clinical quality that a private healthcare group in the Lisbon region, Portugal, integrated, as quality and patient safety management, a model for auditing quality of nursing practices (AQNP) based on the Portuguese Nurses Association's quality standards for nursing care and on Haddad's nursing care model [18] with the objective of defining opportunities for continuous improvement in nursing practice Table 1 [9].

This quality assessment model categorizes the quality of care according to indicators and positive indices. It uses an audit checklist consisting of 4 dimensions: prevention of complications (PC), comfort and well-being for self-care (CWS), functional rehabilitation (FR), and organization of care (OC), with a total of 51 items assessed. The dimensions focus on quality indicators and the items on positivity rates [9].

It is a process focused on continuous improvement with the goal of excellence in nursing practice, and knowledge of the context and results is essential to identify needs, promote reflection, and plan and implement actions to improve quality.

It has as elements the main nurse auditor for the analysis and statistical treatment of the data with appropriate reporting, and additional nurse auditors to ensure sample compliance, interobserver reliability, and data collection bias.

This audit model, through the application of a positivity index grid, allows monitoring of the quality indicator categorized into desired quality (DQ), adequate quality (AQ), safe quality (SQ), minimal quality (MQ), and nonadequate quality (NAQ). These are represented by the following percentage values: DQ  $\geq 90\%$  and  $< 100\%$ , AQ  $\geq 81\%$  and

TABLE 1: Chart 1: nursing care practice quality audit record. Lisbon, Portugal, 2022.

Prevention of complications (PC)	Comfort and well-being for self-care (CB)
<p>PC1: evidence of hand sanitation according to the 5 moments recommended by the Portuguese Directorate General of Health ( )</p> <p>PC2: properly positioned side protection grids ( )</p> <p>PC3: readable ID bracelet ( )</p> <p>PC4: call bell within safe reach of the patient ( )</p> <p>PC5: evidence of ensuring patient privacy when providing care ( )</p>	<p>CWS1: airway permeability ( )</p> <p>CWS2: properly prepared and sanitized secretion suction systems ( )</p> <p>CWS3: properly applied oxygen delivery systems ( )</p> <p>CWS4: evidence of explanation of procedures prior to execution ( )</p> <p>CWS5: evidence that the patient is treated the way and by the name he or she likes to be called ( )</p> <p>CWS6: evidence that the nurse introduces himself/herself to the patient before beginning the care process ( )</p> <p>CWS7: evidence that the patient is comfortable and pain free ( )</p> <p>CWS8: evidence of the use of appropriate clothing according to the patient's clinical situation ( )</p> <p>CWS9: patient safely positioned in bed or chair and in accordance with clinical situation ( )</p> <p>CWS10: motion limiting systems properly placed, cleaned, and adapted ( )</p> <p>CWS11: evidence of clean and combed hair ( )</p> <p>CWS12: evidence of clean and properly sanitized eyes and mouth ( )</p> <p>CWS13: evidence of properly clean hands and nails ( )</p> <p>CWS14: evidence that the patient eats the provided food ( )</p> <p>CWS15: evidence of feeding tube optimization ( )</p> <p>CWS16: evidence of correct use of dressings/bandages and wound/ostomy collection devices ( )</p> <p>CWS17: evidence of help in going to the toilet when requested ( )</p>
<p>PC6: properly sanitized patient's unit ( )</p> <p>PC7: use of scales in accordance with the patient's situation ( )</p> <p>PC8: duly completed checklists ( )</p> <p>PC9: evidence of the 9 rights of safe medication preparation and administration/galenical( )</p> <p>PC10: infusion systems, taps, and tubes without evidence of clotted blood, and plugged and identified with date of replacement ( )</p> <p>PC11: catheter insertion sites without inflammatory signs ( )</p> <p>PC12: properly secured and cleaned catheters ( )</p> <p>PC13: evidence of drainage system optimization ( )</p>	<p>OC1: initial assessment with physical examination ( )</p> <p>OC2: nursing diagnoses appropriate to the patient's health situation ( )</p> <p>OC3: planning of interventions according to the elaborated diagnoses ( )</p> <p>OC4: planning of interventions according to the activated therapeutic attitudes ( )</p> <p>OC5: planning and execution of intervention "monitor vital signs" at least twice a day ( )</p> <p>OC6: pain assessment every 8/8 hours</p> <p>OC7: execution of the evidenced interventions ( )</p> <p>OC8: evidence of objective parameters resulting from "monitor" type interventions ( )</p> <p>OC9: evidence of objective parameters resulting from "watch" type interventions ( )</p> <p>OC10: consistent justification of the interventions marked as "not executed" ( )</p> <p>OC11: variation of diagnosis status as a result of variations in health condition ( )</p> <p>OC12: appropriateness of planned interventions given the variation in nursing diagnosis ( )</p>
<p>Functional readaptation (FR)</p> <p>FR1: evidence of safe discharge planning ( )</p> <p>FR2: evidence of patient and significant person involvement in safe discharge ( )</p> <p>FR3: evidence of conducting teachings ( )</p> <p>FR4: evidence of a completed discharge/transfer note according to the care plan ( )</p> <p>FR5: evidence of delivery of hospital discharge support leaflets ( )</p> <p>FR6: evidence of information about critical social indicators and community resources ( )</p> <p>FR7: evidence of information about community resources to meet anticipated hospital discharge needs related to the current situation of disease ( )</p> <p>FR8: evidence of information to the patient/significant person about the therapeutic plan ( )</p> <p>FR9: evidence of information related to the use of supporting medical devices</p>	<p><i>Organization of care (OC)</i></p>

<90%, SQ = 80%, MQ  $\geq$ 71% and <80%, and NAQ <70%, resulting from positivity indices or evidence of conformities with a direct impact on patients [9].

Based on the above, and considering the relevance that clinical supervision has in the development of professional skills with a direct influence on care practices, it was envisaged to associate the clinical supervision of teams as a strategy to enhance interpersonal and professional skills in order to increase the rates of positivity and quality indicators arising from the results of the audits for the maintenance of practices and compliance with quality standards and patient safety.

To ensure the application of the clinical supervision method, a contextualized supervision model called peer-to-peer clinical supervision (P<sub>2</sub>P\_CS) was codesigned to support reflective practice, development of personal and professional skills, and behavioral change of the nursing teams involved to monitor and correct quality indicators for continuous improvement of care.

The P<sub>2</sub>P\_CS model had as structure the key elements: the concept of clinical supervision as a structured process of support and accompaniment of teams for reflection of practice to improve quality and safety of care; lead supervising nurse, supervised nurses, supervising nurses; training of supervisors according to Proctor's theory and implementation guidelines.

## 2. Objective

Thus, the present study aims to analyze the impact of clinical supervision on the improvement of positivity rates and quality indicators of nursing practice for medical-surgical patients in a private healthcare unit.

## 3. Materials and Methods

It is an umbrella research that aims to evaluate the impact of clinical supervision on the positivity index and indicator of quality of nursing practice for medical-surgical patients. This paper was written based on the criteria of STROBE.

The research methodology used was a quantitative approach through an interventional prospective cohort study and simple random sampling, to study the effects of supervision of the nursing teams in the surgical and medical services, through the implementation of the P<sub>2</sub>P\_CS model, while simultaneously monitoring the evolution of the scores of the indices and indicators of quality of nursing practice derived from the results of the quality audits of nursing practice over time.

These types of studies also serve to evaluate the effectiveness and safety of interventions in a controlled environment and provide evidence for clinical practice and decision-making.

**3.1. Target Population.** The research was conducted between February 2019 and December 2021, in a private hospital with 169 beds for patient care, with an inpatient rate of more than 24 h in the surgical service (A), and in the medical service

(B), where audits on the quality of nursing care were conducted ( $n = 764$ ).

Two groups were defined for the study: a control group and an intervention group.

For the control group, the results of the nursing care audits without clinical supervision (WoCSI) of the care teams were considered, between February 2019 and March 2020.

For the intervention group, the results of the quality of nursing care audits with the implementation of clinical supervision (WCSI) of the care teams were considered, between April 2020 and December 2021.

**3.2. Sample.** This study was based on simple random sampling with a confidence interval of 95%, and a margin of error of 5% on the ( $n = 764$ ) records of nursing practice audit results, representing 60% of the total number of inpatients and 378 ( $n = 378$ ) WoCSI records, corresponding to  $n = 189$  records per service and WCSI with 386 ( $n = 386$ ) records corresponding to  $n = 193$  records per service.

The conditions of the service (the typology and the severity of the clients' illness) remained stable before and after the implementation of the clinical supervision.

**3.3. Data Collection.** At the beginning of the study, data were collected on the results of quality of nursing care audits that were consistent with the principles of the model used and an observation grid. These data served as the baseline for the subsequent comparison or control group.

The tools used to collect data from the intervention group were the audit grid, notes from supervision meetings, and improvement action plans.

Audit data were collected by external auditors, and meeting minutes and supervision plans were kept by the supervisors of the respective teams of the services.

The audit grid was administered by two external nurse auditors who ensured adherence to audit principles, completion of the observation grid, interobserver reliability, and unbiased data collection.

The schedule of supervision meetings and recording of improvement action plans were structured according to formative, normative, and restorative aspects.

The main auditor analyzed and statistically processed the results of the quality audits according to the predefined scores and made them available to the nurse auditors, supervisors, and managers of the research services on a monthly basis.

**3.4. Procedures.** The implementation of clinical supervision as a strategy to improve nursing practice took place between April 2020 and December 2021, and the procedures have been defined and will be described.

Monthly audits of quality-of-care practices were conducted by external nurse auditors to ensure audit principles, reliability of data collection, and completion of the grid.

The audit process begins with the identification of patients to be audited, i.e., patients who have been hospitalized for more than 24 hours, as well as medical and surgical patients.

During the audit process, the auditors collect information through direct observation of care practices and review of medical records and fill in the audit observation grid according to 4 dimensions and 51 respective items (PC dimension with 13 items, the CWS dimension with 17 items, the FR dimension with 9 items, and the OC dimension with 12 items) [9].

At the end of the audit, immediate feedback is provided to the team, identifying positive aspects as process enhancements and negative aspects as opportunities for process improvement.

Finally, at the end of the audit, the nurse auditors send all the audit observation grids to the main auditor/researcher for analysis and statistical treatment.

The evidence observed allowed us to ascertain the overall level of positivity indices as well as the indicator of quality of care in percentage values per dimension and item categorized as DQ, AQ, SQ, MQ, and NAQ, and by positivity indices through the creation of scores where they were considered as DQ ( $\leq 5$  e  $> 4$ ), AQ ( $\leq 4$  e  $> 3$ ), SQ ( $\leq 3$  e  $> 2$ ), MQ ( $\leq 2$  e  $> 1$ ), and NAQ ( $\leq 1$  e  $> 0$ ) [9].

The main auditor/researcher prepares a monthly report and intervention proposal with an impact on nursing practice for the dimensions and items  $\leq 80\%$  or SQ indicator and sends it to the nurse auditors, managers, and supervisors of the service teams.

The P<sub>2</sub>P\_CS model was based on Proctor's theory intervening in formative, normative, and restorative vectors.

In the formative or training vector, it was intended that, through reflective practice, the supervised nurses acquire new learning and skills in identifying solutions to problems and planning improvement actions. In the normative or regulatory vector, the objective was to achieve autonomous compliance in the improvement of care according to defined procedures and quality standards, and for the restorative vector, the objective was to enhance interpersonal relationships, coping strategies, and critical thinking for awareness and self-improvement of skills.

The expected behavioral change was based on the reflective method of practice (discovery, clarification, analysis, focus and planning, and evaluation), with learning opportunities and moments of sharing feelings and experiences.

In the discovery phase, problem situations were explored, in which the supervisor guides supervisees to focus on the problem, define priorities and an effective solution, and focus on the behaviors to be corrected. For clarification, it was intended to create an ideal situation by defining targeted and valuable goals and considering the necessary actions and resources. For analysis, it was intended that the supervisees objectively describe a situation or problem, considering their opinions and the opinions of peers in translating knowledge into practice. Planning requires focusing on building action strategies (focus and acting) step by step. For evaluation, it was intended that the supervisee make personal judgments and reflective thinking with a detailed analysis of the situation, ensuring behavior change with feedback.

To ensure the effectiveness of the clinical supervision of the teams, nurses with a leadership profile and longer tenure in the institution, with professional and pedagogical skills, were identified as supervising nurses. The supervisors were trained in the framework supervisory functions of the Proctor model (normative, restorative, and formative).

For the implementation guidelines, the following were considered:

- (1) Supervision, methodology, expectations, confidentiality, rights, and responsibilities.
- (2) Typology and planning of supervision sessions:
  - (i) Individual sessions (45 minutes/week) between supervisor and supervisee to reflect on the quality of care and behavior change practice
  - (ii) Team sessions (60 minutes/month) to report on the supervision process with evaluation of the model by the primary supervisor, supervisees, and supervisees with peer evaluation
  - (iii) Organizational meetings (90 minutes/month) where the primary supervisor reports and involves the organization and top management in the evolution of quality indicators of nursing practice and validates the supervision strategy
- (3) The registration matrix respected the normative aspect, based on standards, to maintain, develop, and implement actions to continuously improve the quality and safety of nursing practice; the restorative aspect, to ensure a supervision process based on sharing relationships and constructive feedback; and the formative aspect, to reflect on individual and team knowledge through the integration of learning and the acquisition of personal and professional skills with changes in practice.
- (4) Construction of improvement plans to be implemented according to the results of positivity indices and quality indicators, so that the change in the indicators and the effect of clinical supervision can be interpreted.

**3.5. Variables.** The independent variable was clinical supervision, and the dependent variables were the characterization of the nursing teams, the 4 dimensions, and 51 audit items.

As inclusion criteria of the analysis, the items and dimensions  $\leq 80\%$  were considered as SQ indicators with impact on care practice and potentially subject to improvement intervention. We also considered as participants in the study the teams of nurses in service A with  $n = 54$ , and in service B with  $n = 41$ .

All records of the results of audits on patients with a length of stay of less than 24 h and not of a medical-surgical nature were excluded.

**3.6. Data Analysis.** The statistical treatment was performed with SPSS® Statistics software (v.27 SPSS, An IBM Company, Chicago, IL) using descriptive and inferential statistics. For the significance of the evolution of the scores before and after the implementation of clinical supervision, an ANOVA of repeated measurements was used with the assumptions of normality (Shapiro–Wilk test), sphericity (Mauchly test), and homogeneity of variances with the effect of the category on the dimensions according to the multiple comparisons of the means of the orders (Kruskal–Wallis test).

**3.7. Ethical Procedures.** The research was approved by the ethics committee of the organization involved, and all participants were informed and clarified about the research content.

The participants' informed consent was filled out, signed, and returned in digital format, guaranteeing data confidentiality and the anonymity of those involved.

## 4. Results

**4.1. Characterization of the Participants.** Considering the characteristics of the nursing teams in the services of the study, regarding the length of service and professional category, the results showed that of the 54 nurses in service A, 24 (44.4%) had been in the service for less than 5 years, 24 (44.4%) between 5 and 15 years, and 6 (11.2%) for more than 16 years. Regarding the professional category, 6 (11.1%) were entry-level nurses, 30 (55.5%) were nurses, 7 (13.0%) were senior nurses, and 11 (20.4%) were expert nurses.

In service B, of the 41 nurses, 21 (51.2%) had been in the service for less than 5 years, 14 (34.1%) between 5 and 15 years, and 6 (14.6%) for more than 16 years. As for the professional category, 3 (7.3%) were entry-level nurses, 26 (63.4%) were nurses, 5 (12.2%) were senior nurses, and 7 (17.1%) were expert nurses.

**4.2. Evolution of Nursing Care Quality.** In a cumulative and global analysis, both services showed nursing care quality indexes and indicators equal to, or higher, than 80%, that is, SQ and AQ.

When performing the analysis by score of the WoCSI and WCSI dimensions, as presented in Table 2, the maintenance of the positivity indexes and DQ quality indicators were globally observed in both services, and the values had greater expression in service A ( $\bar{x} = 4.57$  vs.  $\bar{x} = 4.13$ ) than in service B ( $\bar{x} = 4.07$  vs.  $\bar{x} = 4.12$ ).

Analyzing the WoCSI and WCSI quality indicators by dimension, it was found that in service A, the score for the PC dimension ( $\bar{x} = 4.20$  vs.  $\bar{x} = 4.73$ ) and the CWS dimension ( $\bar{x} = 4.54$  vs.  $\bar{x} = 4.66$ ), was DQ, and for the FR ( $\bar{x} = 3.79$  vs.  $\bar{x} = 4.48$ ) and OC ( $\bar{x} = 3.74$  vs.  $\bar{x} = 4.36$ ) dimensions the indicator increased from AQ to DQ.

Regarding service B, in the PC dimension, the score decreased from DQ to AQ ( $\bar{x} = 4.14$  vs.  $\bar{x} = 3.91$ ), in the CWS dimension, the score remained with DQ ( $\bar{x} = 4.44$  vs.

$\bar{x} = 4.56$ ), in the FR dimension, the score remained with AQ ( $\bar{x} = 3.27$  vs.  $\bar{x} = 3.23$ ), and in the OC dimension, the score rose from AQ to DQ ( $\bar{x} = 3.27$  vs.  $\bar{x} = 4.19$ ), as presented in Table 2.

For the significance of the evolution of the score of positivity indices and indicators of quality of care at the time of the WoCSI and at the time of the WCSI, an ANOVA of repeated measurements was applied, meeting the assumptions of normality for  $p > 0.05$  and sphericity of the scores with the Shapiro–Wilk and Mauchly tests, or adjusted by the Greenhouse–Geisser method whenever there was a violation of sphericity.

In both services, there was a significant evolution of the score of positivity indexes and indicators of nursing care quality, and the assumptions of normality and sphericity were met ( $W = 1.0000$ ;  $X^2(0) < 0.001$ ;  $p = 1.000$ ) in all dimensions.

However, in service A, the increase in the overall score of the positivity indices and quality indicators between the dimensions and the evolution recorded was significant ( $F_{(1,14)} = 24.369$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.635$ ;  $\pi = 0.996$ ) at the WCSI moment.

There was also a significant interaction between items in the PC dimension ( $F_{(1,14)} = 15.430$ ;  $p < 0.002$ ,  $\eta_p^2 = 0.524$ ;  $\pi = 0.954$ ), in the FR dimension ( $F_{(1,14)} = 14.547$ ;  $p < 0.002$ ,  $\eta_p^2 = 0.510$ ;  $\pi = 0.943$ ), in the OC dimension ( $F_{(1,14)} = 10.109$ ;  $p < 0.007$ ,  $\eta_p^2 = 0.419$ ;  $\pi = 0.840$ ), and in the CWB ( $F_{(1,14)} = 7423.9$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.998$ ;  $\pi = 1.000$ ).

In service B, the increase in the overall score of the positivity indices and quality indicators at the WCSI moment, only registered interaction between the dimensions with significant evolution ( $F_{(1,14)} = 8918.8$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.998$ ;  $\pi = 1.000$ ).

This interaction was found specifically for the PC dimension ( $F_{(1,14)} = 4404.9$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.997$ ;  $\pi = 1.000$ ), for the CWB dimension ( $F_{(1,14)} = 12801.7$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.999$ ;  $\pi = 1.000$ ), for the FR dimension ( $F_{(1,14)} = 861.0$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.984$ ;  $\pi = 1.000$ ), and for the OC dimension ( $F_{(1,14)} = 3335.1$ ;  $p < 0.001$ ,  $\eta_p^2 = 0.996$ ;  $\pi = 1.000$ ).

The effect of supervision on the results of the items in the dimensions was evaluated by using the Kruskal–Wallis test, followed by a multiple comparison of the means of the orders and groups considering  $p < 0.05$  as statistically significant.

As presented in Table 3, in service A, clinical supervision significantly affected the score of positivity indices and quality indicators in all dimensions specifically in items PC2, PC4, PC7, PC9, PC11, PC12, and PC13 for the PC dimension, items CWS10 and CWS16 for the CWS dimension, items FR6, FR7, FR8, and FR9 for the FR dimension, and finally, items OC4, OC5, OC6, and OC10 for the OC dimension.

Regarding service B, the effect of clinical supervision globally affected the score of positivity indexes and quality indicators in all dimensions, specifically items PC1, PC2, and PC6 in dimension PC, items CWS10 and CBW15 in dimension CWS, item FR5 in dimension FR, and items OC1 and OC4 in dimension OC as presented in Table 4.

TABLE 2: Evolution of nursing care quality scores by dimension in services A and B ( $n = 764$ ). Lisbon, Portugal, 2022.

Dimensions	A				B			
	WoCSI		WCSI		WoCSI		WCSI	
	$\bar{x}$	Mo	$\bar{x}$	Mo	$\bar{x}$	Mo	$\bar{x}$	Mo
PC	4.20	4.23	4.73	4.69	4.14	4.54	3.91	4.08
CWS	4.54	4.47	4.66	4.65	4.44	4.47	4.56	4.41
FR	3.79	3.67	4.48	4.89	3.27	3.44	3.23	3.22
OC	3.74	3.17	4.36	4.67	3.27	3.44	4.19	3.83
Global	4.13	4.02	4.57	4.43	4.12	4.31	4.07	4.16

PC, prevention of complications; CWS, comfort and well-being for self-care; FR, functional readaptation; OC, organization of care; WoSI, without clinical supervision intervention; WCSI, with clinical supervision intervention. Source: research data, 2022.

TABLE 3: Effect of clinical supervision on the dimensions and items of nursing care quality in service A ( $n = 382$ ). Lisbon, Portugal, 2022.

Dimensions and items	$\chi^2$ KW	P value
<i>Prevention of complications</i>		
PC2: properly positioned side protection grids	4.444	0.035
PC4: call bell within safe reach of the patient	4.462	0.035
PC7: use of scales in accordance with the patient's situation	4.137	0.042
PC9: evidence of the 9 rights of safe medication preparation and administration/galenical	8.644	0.003
PC11: catheter insertion sites without inflammatory signs	7.170	0.007
PC12: properly secured and cleaned catheters	6.629	0.010
PC13: evidence of drainage system optimization	3.222	0.073
<i>Comfort and well-being for self-care</i>		
CWS10: motion limiting systems properly placed, cleaned, and adapted	3.281	0.070
CWS16: evidence of correct use of dressings/bandages and wound/ostomy collection devices	10.545	0.001
<i>Functional readaptation</i>		
FR6: evidence of information about critical social indicators and community resources	10.629	0.001
FR7: evidence of information about community resources to meet anticipated hospital discharge needs related to the current situation of disease	15.596	<0.001
FR8: evidence of information to the patient/significant person about the therapeutic plan	3.401	0.065
FR9: evidence of information related to the use of supporting medical devices	5.207	0.022
<i>Organization of care</i>		
OC4: planning according to the activated therapeutic attitudes	7.829	0.005
OC5: planning and execution of intervention "monitor vital signs" at least twice a day	8.661	0.003
OC6: pain assessment every 8/8 hours	14.757	<0.001
OC10: consistent justification of the interventions marked as "not executed"	5.660	0.017

Source: research data, 2022.

## 5. Discussion

The institution in which the study took place promotes a culture of continuous improvement and subjects its hospital units to an external evaluation of the quality of care provided. The evaluation is guaranteed by the Société Générale de Surveillance (SGS)—certification of quality management systems, in accordance with the ISO 9001: 2015, by the Joint Commission International (JCI) and the National Health Assessment System (SINAS), by the Health Regulatory Authority (ERS), by participation in clinical benchmarking (IAMetrics) (IASIST) and Risk Adjustment and Value-Based Healthcare Program

In order to ensure compliance with the standards of national and international reference bodies, the AQNC's

performance has been demonstrated and the results were shown through compliance with direct impact on medical-surgical patients [2, 3, 6, 9].

The results of the research showed an increase in the scores of the dimensions and items of quality-of-care practices with interdependence because of the effect of supervision.

This is also confirmed in the study on the indicators of the quality of care and in the study that talks about the importance of having a competency-based model for the improvement of practices [19, 20].

The model of AQNC in use, associated with the P<sub>2</sub>P\_CS of the teams allowed, in all phases of the care process, to stimulate behavioral changes that added value to an evidence-based care practice on the part of the supervising

TABLE 4: Effect of clinical supervision on the dimensions and items of nursing care quality in service B ( $n = 382$ ). Lisbon, Portugal, 2022.

Dimensions and items	$X^2$ KW	<i>P</i> value
<i>Prevention of complications</i>		
PC1: evidence of hand sanitation according to the 5 moments recommended by the Portuguese Directorate General of Health	11.452	0.001
PC2: properly positioned side protection grids	7.170	0.007
PC6: properly sanitized patient's unit	9.500	0.002
<i>Comfort and well-being for self-care</i>		
CWS10: motion limiting systems properly placed, cleaned, and adapted	13.426	<0.001
CWS15: evidence of feeding tube optimization	5.800	0.016
<i>Functional readaptation</i>		
FR5: evidence of delivery of hospital discharge support leaflets	6.467	0.011
<i>Organization of care</i>		
OC1: initial assessment with physical examination	5.520	0.019
OC4: planning according to the activated therapeutic attitudes	4.269	0.039

Source: research data, 2022.

nurses and to develop skills for structured and autonomous decision-making by the supervised nurses.

We can affirm that the supervision model implemented, P<sub>2</sub>P\_CS, associated with the AQNC model, and has become a dynamic, motivating, and integral process with the involvement and ownership of the nursing teams, which has allowed the development of new competencies on the part of those being supervised.

Submission of the monthly report and proposal for intervention and implementation of improvement actions according to the results of the audit of the quality of care with an impact on nursing practice according to dimensions and items of  $\leq 80\%$  or SQ indicator, by the auditor/investigator principal for nurse auditors, managers, and supervisors of service teams allowed to complement the audit process in guaranteeing the quality of care.

That is, with the monthly report of evidence of results submitted to supervisors and managers, it allowed the application of the P<sub>2</sub>P\_CS model matrix respecting the formative, normative, and restorative aspects in accordance with Proctor's model for correcting nonconformities and deviations from quality standards and identification of appropriate strategies focused on the practice of care.

The presence of the supervisor also promoted the identification of needs, the definition of interventions, the implementation of improvement actions, and the validation of practices according to the results of audits in favour of quality standards.

The involvement of teams and collaboration between peers in monitoring and critical reflection in decision making allowed the understanding of practices and the adoption of new behaviors. As the supervisor, through his ability to communicate, give feedback on practice and reflect critically, made the supervision process effective and induced the acceptance of the guidelines, intervened in the planning of actions appropriate to the real learning needs of those supervised, and allowed the continuous evaluation of the care practice.

This is corroborated by the studies which concluded that when teams are involved in monitoring methods and shared decision-making to improve quality, nurses understand, feel

a sense of belonging, and are motivated to acquire new behaviors which have an impact on their personal and professional lives [20, 21].

In other words, the possibility of stratifying the strong points and the areas of potential improvement were fundamental for the adoption and standardization by the supervised nurses during the nursing practice in the compliance with structural and process indicators for an evidence-based practice as proven by the literature [1, 2, 7–11, 17].

However, when analyzing globally the positivity indexes and indicators of the AQNC, it was found that after the implementation of P<sub>2</sub>P\_CS, the scores in service A were higher when compared to service B, a fact that led us to reflect on the potential internal and external causes compromising the process.

As suggested in the literature, it is fundamental to identify the compromising causes of quality related to the complexity of the context and the competencies of the teams, as they can hinder the adaptation process, the involvement, the performance, and the responsibility of the teams [8, 9, 15, 22].

Regarding context, it became strategic to know the complexity of the medical-surgical inpatients and the competencies of the teams in both services, to align the common objective.

Patient complexity remained unchanged before and after supervision. Regarding team competencies, service B had a higher turnover of team nurses, there was no team involvement in the implementation of improvement actions according to the positivity indices found, there were distinct levels of information, and there was no time allocated to supervise nurses during nursing practice. During service A, the practice of clinical supervision was integrated during care practice in the development of a reflective practice on the practices evidenced by the records and passed on in the positivity indexes and indicators of clinical quality which transformed the thinking and acting of the teams according to reference standards predefined by the organization as suggested by the studies in references [13, 23].



Regarding the characteristics of the teams, considering the length of service and the inherent competences that influence the positivity indexes and the quality indicator for the nursing practices, when compared, it was found that service *A* presented higher scores than service *B*. This led us to consider that the number of expert nurses and those who have been residents at service *A* for a longer period of time, had greater knowledge and competences, which may have interfered with the quality of supervision and consequently in the quality of the nursing practice itself [11, 17, 23].

Also, according to the results, we can infer that the leadership of the supervisor, based on the involvement and trust of the nursing teams, promoted interpersonal relationships, critical thinking, coping strategies, and evidence-improvement actions with global awareness of the practice. As concluded in the study of evaluating the relationship between leadership and teams, which indicated that the close relationship between supervisor and supervisee is fundamental in the identification of nurses' characteristics, skills, and limitations in order to proactively define training according to individual and team needs [24–26].

As previously mentioned, clinical supervision was performed by an expert nurse, who effectively guided the supervised nurses in the intrapersonal and professional construction of skills and knowledge, effectively influencing care practices and bringing benefits to the nurse, the team, and the organization, which is pointed out by the literature as a distinguishing factor in the acquisition of skills with an impact on care practice [4, 9, 13–16, 27].

In the supervisory process, it was possible to deduce the advantages of the existence of the figure of the supervisor, recognized by peers as a potential responsible for the implementation of improvement actions according to the positive indices determined in the quality of nursing audits. In this sense, he was able to monitor individually or as a team through constructive feedback, evaluate good practices, and define strategies based on an organized process of institutional proximity sustained over time.

Hence, we believe that a construction based on learning from actions that focus on intervention during practice allows, on the one hand, knowledge sharing and orientation towards peer accountability that induces reflection on practice, as well as action-oriented to the different contexts and, on the other hand, the acquisition of competencies as described in the literature [4, 9–11, 15, 28].

A supervision model allowed for respecting the characteristics of teams and developing team supervision strategies appropriate to the context and patients [29, 30]. This was confirmed by the study on supportive supervision of nurses in healthcare, which concluded that supervision is not only essential to teach or support nurses in the practice of care but also to ensure the transfer of knowledge and skills [31]. It is in line with the regulations for the practice of nursing of the Portuguese Order of Nurses [32].

This was also confirmed in a study designed to evaluate the impact of implementing a supervision model on the emotional intelligence skills of nurses, which concluded that

the development of self-motivation, emotional management and self-awareness, empathy, and managing peer relationships are reflected in practice [29].

It was found that in the PC dimension, composed of items related to compliance with care quality standards, the nurse supervisor promoted the implementation of nursing interventions during the supervised nurse's care practice, through the proactive identification of actions to be taken in order to avoid or minimize potential problems that may compromise clinical safety, resulting from the patients' clinical situation [17, 21, 33].

In the CWB dimension, with items related to the promotion and maximization of the patient's well-being at the time of the commitment of dependent activities, revealed higher scores after the implementation of clinical supervision due to the normative function of the nurse supervisor, appropriate to the experience and knowledge of the team in the implementation of plans, procedures, and protocols contributing to the standardization of care practices [9, 10, 15, 16, 33].

Regarding the FR dimension that guides towards the achievement of desirable results with an impact on patient safety through effective adaptation processes arising from the clinical situation, also the role of the nurse supervisor through the restorative function allowed the supervised nurses moments of interaction, reflection, and guidance, which may have influenced the scores [9, 13, 16, 32, 33].

Finally, it was found that for the OC dimension, with items oriented toward evidence of clinical records after the implementation of clinical supervision, the scores were higher than in service *B*, which may be related to the formative and restorative function of the nurse supervisor with the supervised nurses, through the involvement of the team in the integration of records as an essential value for nursing care practice.

As defined by the Portuguese Nurses Association, care practice should be based on a common and integrative language in compliance with the axes (focus, judgment, resources, action, time, and location) recommended in the records that meet the needs and diagnoses sensitive to nursing interventions [4, 22, 32, 33].

## 6. Conclusion

The recognition of the concept of quality becomes essential in the process of control, as well as in the connection of promoting continuous improvement at the level of patient-centered care practice.

This research showed that the implementation of clinical supervision has an impact on the care practice of nursing teams, as demonstrated by the increase in the scores of the positivity indexes of the audits performed.

This strategy built by peers, structured and based on evidence of practice according to audit results, had an impact on supervisees, supervisors, and the organization. For those supervised, it allowed feedback (individual or in a team), support, and continuous monitoring with the gain of personal and professional skills. For supervisors, it promoted the gain of leadership skills with comprehensive knowledge of the teams'

performance in adapting and implementing best practices. For the organization, it guaranteed the maintenance and recognition of quality and patient safety.

However, quality requires reflection on practice to achieve tangible, reliable, responsible, safe, and empathetic care excellence through appropriate and contextualized strategies. It is essential that institutions have a favorable environment for the identification of development strategies and competencies of the teams so that improvement actions can be implemented, and care practices can be effectively changed.

Thus, the involvement of professionals in favor of the implementation of best care practices contributes to the consolidation and incorporation of a supervisory culture of teams governed by principles of integrity, accountability, and sharing of knowledge practices based on a culture of dynamic learning, training, and continuous feedback, and a culture of quality and safety with direct impact on patients, in compliance with the standards and national and international reference indicators.

**6.1. Implications for Nursing Practice.** The research also allowed the definition of strategies and macroobjectives in a dynamic, effective, and efficient way, aligned to sensitive results with the involvement of professionals in the process of analysis, monitoring, and implementation of contextualized actions focused on continuous change, thus promoting the acquisition of learning and skills.

In view of the above, we are aware that this research has contributed to the increase of knowledge and expertise, bringing inputs for science and nursing care.

All these aspects are essential for evidence-based practice, thus ensuring the suitability of the results and the transfer of knowledge, in accordance with referenced standards for the continuous improvement of quality care.

The organizational value and the development of the teams, evidenced in the care practice, thus allow the foundation of knowledge transfer, conscious change management, and the strengthening of the profession that perpetuates in time.

**6.2. Limitations.** The main limitation of the research has to do with the fact that it was only carried out in a hospital unit and the scarcity of literature that relates indices of positivity in nursing care practice and clinical supervision.

### Data Availability

The data used to support the conclusions of this study are available from the corresponding author upon request.

### Conflicts of Interest

The authors declare that they have no conflicts of interest.

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