Effectiveness of a Tutoring Program for the Development of Competencies in Novice Nurses in a Hospital Emergency Service: Longitudinal Quasi-Experimental Study

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Contribution to Emergency Nursing Practice

- The transition of newly incorporated nurses into emergency departments is marked by clinical uncertainty and limited preparedness to manage complex, high-acuity situations. Although tutoring is recognized as a support strategy, available evidence largely stems from academic or simulated settings, leaving a gap regarding its real-world effectiveness with practicing professionals in clinical environments.
- This study provides quasi-experimental evidence from a real hospital emergency setting with registered nurses. The study shows that a structured tutoring program significantly improves core competencies, with effects sustained after 6 months.
- Embedding competency-based tutoring within the work environment accelerates clinical development beyond what experience alone provides. It enables early identification of learning needs and promotes safer care through structured, longitudinal support for novice nurses.

Abstract

Introduction: This study aimed to measure the effectiveness of a tutoring program designed for the development of competencies in novice nurses in a hospital emergency service.

The development of nursing competencies is essential to ensure patient safety and quality care. Health care systems should implement programs that enhance competency and facilitate the professional transition of new nurses to ensure safe clinical environments.

Methods: A quasi-experimental, longitudinal, and prospective study was conducted in the emergency department of a tertiary hospital in Spain between 2023 and 2024. Newly hired nurses (n = 63) were allocated to an experimental group, which received a structured tutoring program led by a single tutor, and to a control group. Competency levels were evaluated by the tutor using validated rubrics. Data were analyzed with descriptive and inferential statistics, with significance set at $P<.05$.

Results: The experimental group demonstrated significant improvements in all evaluated competencies compared with the control group ($P<.05$). Gains were maintained at 6 months, supporting the program's sustained effectiveness.

Discussion: The findings of this study have important implications for health care settings, showing that the development of a tutoring program within hospitals is an effective measure for the competency and professional development of nurses.

Key words: Nursing; Tutoring; Clinical nurse; Competence; Professional development; Evaluation; Effectiveness; Emergency service; Hospital

Introduction

Patient safety and quality care are fundamental elements in current health policies. Health needs and health care services show increasing diversity and complexity owing to evolving epidemiologic, demographic, and economic

patterns.[1] Nurses play a crucial role in the health care system. According to a report from the National Institute of Statistics 2024, the National Health System in Spain has approximately 345,969 nurses.[2] The same report from the Ministry of Health indicates that approximately 11,000 newly graduated nurses enter the workforce in Spain each year.[2]

Health care systems constantly face the incorporation of new nurses into hospital units, and integration into the work environment is a concern described by various authors,[1,3] reflecting the difficulties of adapting to the health care environment owing to high-complexity situations, technical difficulties, and competency development issues.[4,5] To effectively address this demand, it is essential for nurses to possess specialized clinical competencies,[6] which go beyond the basic skills acquired during undergraduate education. These advanced competencies refer to complex and high-risk procedures typically required in acute care settings, such as noninvasive mechanical ventilation, advanced life support (ALS), or emergency airway management, not to be confused with higher levels of performance within a specific skill.

The transition from university to the professional environment presents significant challenges for new nurses, who must quickly adapt to a complex and demanding clinical environment.[7] This adaptation process is critical to ensuring safe and effective practice.

In Spain, university education guarantees the acquisition of basic competencies, the foundational knowledge and skills expected at the beginning of professional practice. However, the hospital setting is the environment in which nurses must develop and consolidate more complex or specialized competencies, adapting to the realities of clinical care and increasing levels of responsibility. To adequately understand how nurses progress in acquiring these competencies, it is essential to consider Patricia Benner's theory, presented in her work "From Novice to Expert: Excellence and Power in Clinical Nursing Practice."[8,9] This theoretical framework establishes 5 levels of skill acquisition in nursing practice, allowing for an understanding of professional evolution and the design of training interventions tailored to each stage. Benner's theory identifies 5 levels of competence: novice, advanced beginner, competent, proficient, and expert. This model emphasizes the importance of practical experience and continuous learning in the professional development of nurses.

New nurses often experience difficulties in managing complex clinical situations, prioritizing tasks, and making decisions under pressure.[10,11] These difficulties can generate insecurity, stress, and high job turnover. Previous studies have documented that new nurses experience a *reality shock* when facing the demands of the hospital environment, which can negatively affect nurses' self-esteem and confidence in their abilities.[12-14] Kavanagh and Sharpnack[14] reported that a low percentage of new nurses who graduated in 2020 demonstrated the basic competencies required for novice practice.

The literature also highlights the challenges faced by newly graduated nurses in adapting to the work environment. Studies such as those by Myers[12] and Arrowsmith[13] have shown that newly graduated nurses experience uncertainty in technical aspects of care, limitations in critical thinking, and difficulty thinking holistically. Similarly, Marrero[15] and Ten Hoeve[16] have emphasized that the adaptation difficulties of newly graduated nurses constitute a current problem, describing challenges in adapting to the professional role and situations of fear and insecurity when feeling alone in their tasks. To address this, the authors[4,7,13] propose the implementation of tutoring programs in the work environment. The tutor role represents an evolution from traditional preceptorship models to formal tutoring figures that incorporate andragogy training, structured feedback, and critical reflection on practice. Unlike the preceptor, who primarily focuses on clinical supervision and technical skill acquisition, the tutor emphasizes a broader educational, evaluative, and formative responsibility. This includes guiding professional integration, fostering continuous learning, and providing personalized support.

The goal of tutoring is to guide new nursing professionals by providing basic training in the emergency care setting where they will work. This includes familiarization with typical patient profiles, such as triage categories, common reasons for consultation, age ranges, and care priorities, together with patients' health needs, unit protocols, required technical skills, and routine care tasks. However, its scope is broader, given that new staff acquire competencies, integrate into a work group, and receive support and advice from their tutor.[17]

Integration into the work environment has been a constant concern in the nursing profession, as described by El Haddad.[18] Although not new, the topic remains relevant owing to the complexity of hospital care environments characterized by heavy workloads and high patient comorbidity.[19] Tutors provide opportunities and resources to new staff, supporting professional growth and reducing the time required to gain autonomy and confidence in developing clinical skills.

Tutoring programs benefit nurses by improving their competencies, confidence, and satisfaction; patients by promoting safer practices; and institutions by fostering

professional commitment and reducing costs through more efficient resource utilization. In addition, these benefits serve as evidence of structural empowerment.[11,20]

To ensure safe clinical environments, health care systems must offer programs aimed at improving the competency of new nurses and facilitating their professional transition. In this context, tutoring programs emerge as an effective strategy to facilitate the transition of new nurses, providing guidance, emotional support, and practical learning opportunities.

The importance of these programs is grounded in existing literature, where studies conducted in different contexts demonstrated that tutoring can improve clinical competence, confidence, and job retention of new nurses.[21] In addition, tutoring facilitates organizational socialization, promoting a collaborative and supportive work environment.[22]

However, despite the growing recognition, there is a lack of experimental research evaluating the effect of structured clinical training programs on newly graduated nurses' competency development. Most existing studies are descriptive, qualitative, or limited in scale.[23-26] This evidence indicates a clear gap in the literature regarding the effectiveness of structured, workplace-based interventions.

In response, this study was designed to implement a competency development program for newly hired nurses in a hospital emergency service. The intervention followed a complex intervention framework that included 4 phases: program development, pilot and feasibility, implementation, and evaluation.[27]

This study focused on evaluating the effectiveness of this program; previous publications described the design, piloting, and feasibility phases.[28,29]

STUDY OBJECTIVE

This study aimed to measure the effectiveness of a tutoring program aimed at developing clinical competencies in newly hired nurses in a hospital emergency service.

STUDY HYPOTHESIS

The alternative hypothesis stated that nurses in the intervention group would achieve significantly higher scores ($P<.05$) in each of the 5 competencies evaluated than the control group after the intervention. The null hypothesis stated that no statistically significant differences would be observed between the intervention and control groups.

Methods

STUDY DESIGN

This study had a quasi-experimental design with a longitudinal and prospective intervention. It was nonrandomized.

Owing to organizational and temporal considerations, participants were assigned consecutively and alternately to the control or the intervention group based on their order of entry into the emergency unit.

The study included all newly hired nurses in the hospital emergency department during 2023 and 2024 who met the inclusion criteria. These criteria were employment in the emergency department during the study period, less than 1 year of tenure in the unit, and voluntary agreement to participate. The exclusion criterion was employment contracts shorter than 45 days. A convenience sampling method was used.

The study design included an initial evaluation of competencies for both groups before the intervention. The intervention group then participated in the competency development program, whereas the control group continued with standard practice.

After the intervention, both groups underwent a second evaluation, having accumulated equivalent work experience in the emergency department, which allowed for a balanced comparison.

After this comparative phase, the training program was provided to the control group to ensure equity in professional development opportunities.

PARTICIPANTS

The study enrolled newly hired nurses in the emergency service. Given the specific inclusion criteria and the target population of new nurses in the unit, convenience sampling was used because this method offered the greatest benefit to participants, reduced potential bias, and was the most suitable for this project.

During the study period, 69 newly hired nurses joined the emergency unit; therefore, 6 had very short-term contracts and were excluded from the study.

A post hoc power analysis was conducted using the G*Power software to assess the reliability of the results obtained with the available sample. Assuming a significance level of $\alpha = 0.05$ and a medium effect size (Cohen's d = 0.50), the calculated statistical power was 0.98. This high power indicates that the sample size of 63 participants was sufficient to detect meaningful effects, thereby supporting the robustness of the findings.

ASSIGNMENT METHOD

Participants were not randomly assigned to groups. Instead, they were allocated consecutively and alternately (control, intervention) according to their order of entry into the emergency unit. This systematic but nonrandom approach was consistent with the quasi-experimental design. After completing the intervention and analyzing the results, the same intervention was provided to the control group participants, given that withholding the program's potential benefits from these professionals would have been ethically unacceptable.

SELECTION, QUALIFICATION, AND TRAINING OF THE TUTOR

The hospital management formally designated the tutor nurse, after a competitive selection process for a profiled position within the clinical structure. Candidates submitted a detailed professional dossier outlining their clinical background, andragogical experience, and proposed contribution to the tutoring program. Subsequently, the selection panel—composed of nursing supervisors and hospital management representatives—conducted a structured evaluation interview with each candidate.

The program required stringent criteria for access to the tutor role:

- Minimum of 5 years of clinical experience in critical patient care, specifically within the hospital's emergency department
- Expert-level knowledge in emergency and critical care nursing, with a demonstrable record of clinical excellence
- Accredited pedagogical training, acquired through certified continuing education programs or specific postgraduate training focused on clinical teaching and mentorship
- Demonstrated leadership competencies evaluated through previous performance assessments and substantiated through the application dossier and interview

In addition, the selected tutor received methodological training for their participation in the implementation phase of the program, particularly in:

- Structured observation and competency assessment
- Documentation procedures aligned with the mentoring plan
- Use of predefined evaluation tools to ensure consistency and reliability in data collection

The competency profile corresponding to the tutor role is presented in Supplementary Appendix A.

INTERVENTION

The tutoring program was structured in 2 sequential stages: an initial orientation program and a competency development program.

The orientation phase included activities to familiarize new nurses with the hospital environment, unit protocols, and the most common care functions and processes. In-person sessions covered the hospital information system, unit workflows, and the patient population profile.

The competency development phase aimed to provide on-the-job training to newly hired nurses to develop the skills and competencies necessary for performing their job functions, supported by the guidance of a tutor.

Before starting the program, the tutor conducted an initial evaluation of technical competencies for the 63 nurses in both the control and intervention groups.

During the program, training strategies were used to facilitate the transition from novice to competent professional, and an individualized schedule was established as a guide for the professional trajectory that new nurses were expected to follow in the emergency unit, conducting longitudinal follow-up of the participants.

The tutoring program included the development of 5 key competencies, addressed in 4 sessions of 2 hours each, which incorporated relevant theoretical and practical content for each topic. Training was delivered in small group sessions, led by a single tutor, with a maximum tutor-to-learner ratio of 1:5. These competencies were addressed in in-person sessions that included (1) knowledge and management of orotracheal intubation technique in emergency situations; (2) knowledge and management of patients with noninvasive mechanical ventilation; (3) knowledge of the application of the ALS algorithm[30] and management of the defibrillator monitor; (4) knowledge, management, and care of patients requiring mechanical restraint; and (5) knowledge and management of patients undergoing fibrinolytic treatment for ischemic stroke. The sessions used real devices available in the unit, such as ventilators, defibrillator monitors, and mechanical restraint systems, to ensure that the training was applicable and practical. This methodological approach guaranteed the immediate applicability of the acquired knowledge, enriched the learning process, and facilitated its transfer to the care environment.

The expert panel in critical care proposed and selected the competencies for their high specificity to the service and

their time-dependent execution, given that emergency nurses typically apply these competencies in clinical contexts. The competency evaluation rubrics were designed according to the definition of minimum content in emergency nurse training, as published in the consensus document of the Spanish Institute of Nursing Research and the General Council of Nursing of Spain, along with the Spanish Society of Emergency and Emergency Medicine.[31,32]

After the intervention, the tutor repeated the evaluation to assess improvement relative to baseline in both the control and intervention groups.

The main components, phases, and learning activities of the intervention are presented in Figure 1. Manero-Solanas et al[29] provided a more complete and detailed description of the training program.

VARIABLES AND MEASURES

Competency levels of newly hired nurses were recorded at 3 time points:

1. Preintervention evaluation: the tutor evaluated both groups immediately before the start of the competency development program.
2. Short-term postintervention evaluation: the tutor evaluated both groups 1 month after the intervention.
3. Six-month postintervention evaluation: the tutor evaluated both groups 6 months after the intervention.

This strategy allowed for the assessment of not only the immediate effect of the tutoring program but also the sustainability of the acquired learning over time.

An evaluation rubric was designed for each of the 5 competencies included in the training program to obtain quantitative data. The tutor then applied this rubric through a simulated exam specifically designed to assess clinical competencies in the emergency service and conducted the evaluation.

Each rubric included a detailed description of the observable evaluation criteria at each competency level based on the methodology proposed by Benner, referenced in previous studies.[8,9] To strengthen the measurability of competencies, the descriptors were formulated as observable and measurable actions aligned with Bloom's taxonomy,[33,34] ensuring that competencies reflected knowledge, application, and critical reasoning in clinical practice. In addition, each rubric incorporated an application flowchart that facilitated its interpretation and contributed to the homogenization of the evaluation process.

The assessment of each rubric was governed by the following principles:

- The tutor applied rubrics in reference to the specific simulated test and the practical actions performed by the nurse during the evaluation.
- The tutor used competency level diagrams to determine the appropriate level based on theoretical knowledge, ability to replicate procedures, anticipation of complications, and real-world experience.
- The tutor followed all test scenarios in the prescribed order as indicated in the flowchart.
- If the nurse did not fully meet the criteria for a given level, the tutor assigned the immediately preceding level.

The validation of the rubric followed a 2-phase process. Initially, 2 in-person consensus meetings were convened with 10 expert nurses and clinical supervisors, during which the experts reviewed and refined the indicators and descriptors. Subsequently, the expert panel evaluated the final version through an online questionnaire, and the rubric achieved a high content validity index of 0.9. Expert feedback was systematically integrated to enhance the clarity, relevance, and practical applicability of the rubric. The tutor assessed each nurse, which ensured consistency in the application of the rubric but limited the possibility of analyzing interrater agreement. The rubric was developed and validated in Spanish, which was also the language of application in the study setting.

The full evaluation rubric is presented in Supplementary Appendix B. This supplementary material comprised the 5 competency-specific evaluation rubrics, accompanied by a structured application flowchart designed to guide the assessment process and ensure consistency. For more details on the design, validation, and description of the rubrics, please refer to the article by Manero-Solanas et al,[29] which addresses these methodological aspects.

STATISTICAL ANALYSIS

Baseline characteristics were analyzed for both the intervention and control groups using descriptive statistics, including means, SDs, frequencies, and percentages. The chi-square test was applied to examine associations among categorical variables. To assess between-group differences in competencies before and after the intervention, the nonparametric Mann–Whitney U test was applied. The
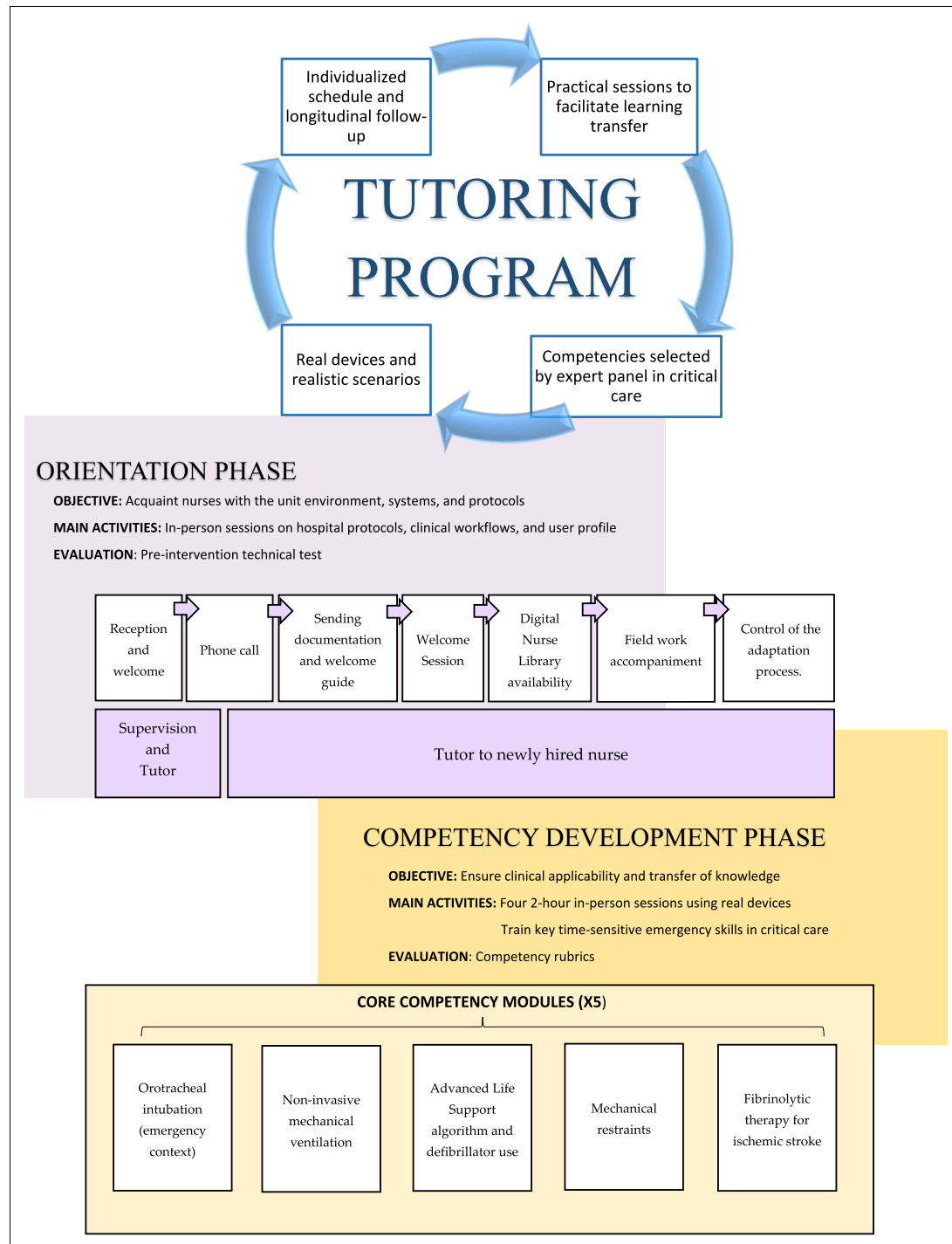
FIGURE 1

Tutoring program.

Wilcoxon signed-rank test was used to evaluate within-group changes in competencies from before to after the intervention (at 1 and 6 months) and changes between the 1- and 6-month follow-ups. For analyses involving 3 related measurements over time, the Friedman test was used to detect overall differences across time points. Statistical significance was set at $P < .05$, and all analyses were performed using the SPSS software, version 29.0.2.0 (IBM Corp, Armonk, NY).

ETHICAL CONSIDERATIONS

The study was explained to both cohorts of nurses participating in the competency development program. The Research Ethics Committee of the Autonomous Community of Aragón (PI 23/2013) approved the study, which followed the ethical principles described in the Declaration of Helsinki.

All participants were informed of the study's purpose, and signed consent forms were collected. Data were used solely for research purposes, and confidentiality of all personal information was ensured. Participants also received explicit reminders that each nurse could revoke consent or discontinue participation at any time without adverse consequences. No conflict of interest with the participants was reported.

Results

PARTICIPANT FLOW

A total of 63 participants were recruited, with 30 assigned to the intervention group and 33 to the control group. During the study, 2 participants left the program because their employment contracts ended, leaving 29 nurses in the intervention group and 32 in the control group for the postintervention analysis. One month after the intervention, the tutor evaluated both the intervention and control groups. To ensure data comparability, it was confirmed that both groups had the same length of stay in the unit at the time of evaluation.

Six months after the intervention, the tutor reevaluated all participants to analyze retention of the competency levels acquired during the training (see Figure 2).

COMPARISON OF CHARACTERISTICS BETWEEN GROUPS FOR HOMOGENEITY

The intervention and comparison groups demonstrated similar general characteristics in terms of age and sex. The control group had a mean age of 28.3 years (SD = 4.91), and the intervention group had a mean age of 30.6 years (SD = 8.17) ($P = .38$). In the control group, 87.9% of the participants were women compared with 90% in the intervention group ($P = .789$).

EFFECTS OF THE TUTORING PROGRAM

At baseline, the control and intervention groups did not differ significantly in competency levels across any of the domains ($P = .809$ for noninvasive ventilation; $P = .132$ for the ALS algorithm; $P = .392$ for mechanical restraint; $P = .376$ for orotracheal intubation; $P = .618$ for fibrinolytic therapy). After the intervention, the intervention group (tutoring program participants) demonstrated significantly greater competency acquisition than the control group in all competencies ($P < .001$). The control group did not exhibit significant changes during the same period (Table 1).

The intervention group maintained the competency levels observed 1 month after program participation at the 6-month follow-up (Table 2). These findings indicate that the effects of the tutoring program were immediate and sustained, demonstrating 6-month retention of acquired competencies.

The competency levels achieved by participants in both groups across all evaluated skills are presented in Table 1. Initially, most nurses in both groups were classified at the novice level for all assessed competencies. After implementing the tutoring program, the intervention group demonstrated significant improvements in every skill, with a substantial increase in participants reaching the competent and proficient levels (all $P < .001$). By contrast, the control group did not show statistically significant changes in competency levels across the same skills ($P = .132$–$.809$).

All rubrics demonstrated marked improvement in the intervention group after the program, particularly in areas such as noninvasive mechanical ventilation and ALS. The percentages for each competency level and group are presented in Table 1.

COMPETENCY RETENTION ANALYSIS

Six months after the intervention, the tutor performed the competency retention evaluation. The analysis demonstrated that nurses in the intervention group maintained the acquired competency levels across all evaluated domains ($P < .001$) (Table 2). In particular, in noninvasive mechanical ventilation, 54.76% of nurses remained at the competent level and 14.29% at the proficient level ($P < .001$). In ALS, 57.14% of participants remained competent and
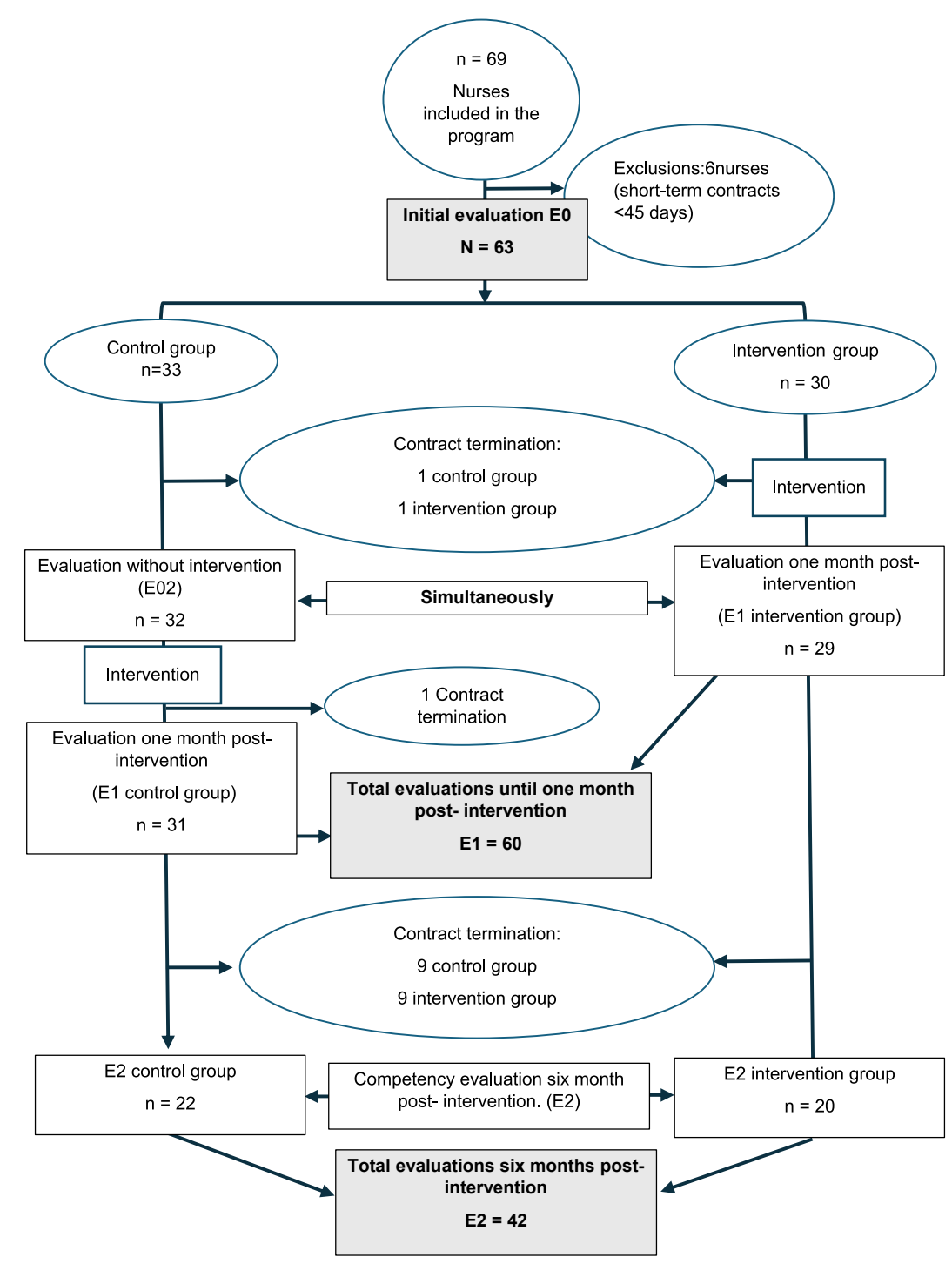
FIGURE 2

The study flowchart. E0, baseline measurement; E1, measurement 1 month after the intervention; E2, measurement 6 months after the intervention.

TABLE 1

Pre- and postintervention results of the competency levels acquired by participants in the control and intervention groups

Competency: knowledge and management of patients with noninvasive mechanical ventilation therapy

Competence level	Initial evaluation, n (%)				After the intervention, n (%)			
	Control group (n = 33)		Intervention group (n = 30)		Control group (n = 32)		Intervention group (n = 29)	
	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage
Beginner	26 (78.90)	78.79	25 (83.33)	83.33	25 (78.13)	78.13	1 (3.45)	3.45
Advanced beginner	7 (21.21)	100.00	2 (6.67)	90.00	7 (21.88)	100.00	4 (13.79)	17.24
Competent	0	0	3 (10.00)	100.00	0	0	21 (72.41)	89.66
Proficient	0	0	0	0	0	0	3 (10.34)	100.00
Expert	0	0	0	0	0	0	0	0
	$P = .809^*$				$P < .001^*$			

Competency: knowledge of the application of the advanced life support algorithm and management of the defibrillator monitor

Competence level	Initial evaluation, n (%)				After the intervention, n (%)			
	Control group (n = 33)		Intervention group (n = 30)		Control group (n = 32)		Intervention group (n = 29)	
	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage
Beginner	30 (90.91)	90.91	23 (76.67)	76.67	28 (87.50)	87.50	3 (10.34)	10.34
Advanced beginner	1 (3.03)	93.94	3 (10.00)	86.67	1 (3.13)	90.63	3 (10.34)	20.69
Competent	2 (6.06)	100.00	4 (13.33)	100.00	3 (9.38)	100.00	17 (58.62)	79.31
Proficient	0	0	0	0	0	0	6 (20.69)	100.00
Expert	0	0	0	0	0	0	0	0
	$P = .132^*$				$P < .001^*$			

Competency: knowledge, management, and care of patients requiring mechanical restraint

Competence level	Initial evaluation, n (%)				After the intervention, n (%)			
	Control group (n = 33)		Intervention group (n = 30)		Control group (n = 32)		Intervention group (n = 29)	
	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage
Beginner	29 (87.88)	87.88	24 (80.00)	80.00	27 (84.38)	84.38	12 (41.38)	41.38
Advanced beginner	3 (9.09)	96.97	4 (13.33)	93.33	3 (9.38)	93.75	7 (24.14)	65.52
Competent	0	96.97	1 (3.33)	96.67	1 (3.13)	96.88	0.00	65.52
Proficient	1 (3.03)	100.00	1 (3.33)	100.00	1 (3.13)	100.00	10 (34.48)	100.00
Expert	0	0	0	0	0	0	0	0
			$P = .392^*$		$P < .001^*$			

continued

Competency: knowledge and management of the orotracheal intubation technique in emergency situations

Competence level	Initial evaluation, n (%)				After the intervention, n (%)			
	Control group (n = 33)		Intervention group (n = 30)		Control group (n = 32)		Intervention group (n = 29)	
	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage
Beginner	21 (63.64)	63.64	22 (73.33)	73.33	20 (62.50)	62.50	1 (3.45)	3.45
Advanced beginner	11 (33.33)	96.97	8 (26.67)	100	11 (34.38)	96.88	26 (89.66)	93.10
Competent	0	96.97	0	0	0	96.88	2 (6.90)	100.00
Proficient	1 (3.03)	100	0	0	1 (3.13)	100	0	0
Expert	0	0	0	0	0	0	0	0
	$P = .376$*				$P < .001$*			

Competency: knowledge and management of patients undergoing fibrinolytic treatment for ischemic stroke

Competence level	Initial evaluation, n (%)				After the intervention, n (%)			
	Control group (n = 33)		Intervention group (n = 30)		Control group (n = 32)		Intervention group (n = 29)	
	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage	Percentage	Cumulative percentage
Beginner	25 (75.76)	75.76	21 (70.00)	70.00	24 (75.00)	75.00	1 (3.45)	3.45
Advanced beginner	7 (21.21)	96.97	8 (26.67)	96.67	7 (21.88)	96.88	4 (13.79)	17.24
Competent	1 (3.03)	100.00	1 (3.33)	100.00	1 (3.13)	100.00	18 (62.07)	79.31
Proficient	0	0	0	0	0	0	5 (17.24)	96.55
Expert	0	0	0	0	0	0	1 (3.45)	100.00
	$P = .618$*				$P < .001$*			

* Mann–Whitney test.

11.90% proficient ($P<.001$). In patient management with mechanical restraint, 50% of nurses remained at the proficient level ($P<.001$). In orotracheal intubation, 54.76% of participants remained at the advanced beginner level and 11.90% at the competent level ($P<.001$). Finally, in fibrinolytic treatment for ischemic stroke, 47.62% of nurses remained competent and 19.05% proficient ($P<.001$).

Discussion

The development of nursing competencies is essential to ensure the quality of care and patient safety in clinical settings. The implementation of a specific training program for nurses in a hospital emergency service, which includes tutor evaluation with a validated tool, represents a significant step toward improving clinical competencies.

At baseline, most nurses in both groups were classified at the novice level, the lowest in the competency framework across the 5 competencies evaluated. This finding aligns with previous studies describing the early career stage as a period of professional and organizational vulnerability.[3,4,7,10]

Although Benner originally developed the model[8,9] as a comprehensive framework describing the progression of nursing expertise over time, the present study applied this taxonomy to evaluate observed performance in high-complexity clinical tasks, rather than global professional development. This distinction is essential. The study does not claim full professional proficiency or expertise, typically achieved after 3 to 5 years of sustained clinical experience in a specific field. Instead, the results indicate that, after a structured and targeted training intervention, nurses in the intervention group demonstrated proficient-level behaviors in specific procedures, such as noninvasive mechanical ventilation or ALS. These performance levels used criteria aligned with Benner's descriptors and formulated according to Bloom's taxonomy,[33,34] ensuring that task-specific clinical actions were assessed as observable and measurable learning outcomes.

TABLE 2

Competency level results of participants before the intervention, 1 month after the intervention, and 6 months after the intervention

Competency		Competence level, n (%)					Friedman test (*P* value)	Wilcoxon test result (*P* value)		
		Beginner	Advance beginner	Competent	Proficient	Expert	E0-E1-E2	E1-E0	E2-E1	E2-E0
Noninvasive mechanical ventilation therapy	E0	51 (80.95)	9 (14.29)	3 (4.76)	0	0	<.001	<.001	.827	<.001
	E1	1 (1.67)	14 (23.33)	37 (61.67)	8 (13.33)	0				
	E2	1 (2.38)	12 (28.57)	23 (54.76)	6 (14.29)	0				
Advanced life support algorithm and management of the defibrillator	E0	53 (84)	4 (6.35)	6 (9.52)	0	0	<.001	<.001	.465	<.001
	E1	6 (10)	4 (6.67)	39 (65)	11 (18.33)	0				
	E2	8 (19.05)	5 (11.90)	24 (57.14)	5 (11.90)	0				
Mechanical restraint	E0	53 (84.13)	7 (11.11)	1 (1.59)	2 (3.17)	0	<.001	<.001	.156	<.001
	E1	19 (31.67)	10 (16.67)	2 (3.33)	29 (48.33)	0				
	E2	4 (9.52)	15 (35.71)	2 (4.76)	21 (50)	0				
Orotracheal intubation technique in emergency situations	E0	43 (68.25)	18 (28.57)	2 (3.17)	0	0	<.001	<.001	.048	<.001
	E1	3 (5)	43 (71.67)	8 (13.33)	5 (8.33)	1 (1.67)				
	E2	3 (7.14)	23 (54.76)	5 (11.90)	10 (23.81)	1 (2.38)				
Fibrinolytic treatment for ischemic stroke	E0	46 (73.02)	15 (23.81)	2 (3.17)	0	0	<.001	<.001	.310	<.001
	E1	4 (6.67)	11 (18.33)	27 (45)	17 (28.33)	1 (1.67)				
	E2	2 (4.76)	11 (26.19)	20 (47.62)	8 (19.05)	1 (2.38)				

E0, baseline measurement; E1, measurement 1 month after the intervention; E2, measurement 6 months after the intervention.

Recent studies on simulation-based and competency-focused education supported this methodological approach and demonstrated that targeted evaluation tools grounded in theoretical frameworks effectively measure progress in well-defined skill domains.[35,36] Clarifying this distinction preserves the conceptual integrity of Benner's theory while adapting it to structured, competency-based learning environments. Further research is encouraged to explore how domain-specific proficiency relates to broader professional development over time.

The positive reception of the tutoring program and full participation of all eligible nurses underscore the growing demand for structured training to support the transition of new professionals into complex hospital environments.[37,38] The provision of regular meetings and the presence of an organizational culture that values tutoring are essential components for the success of such programs. In this study, institutional support facilitated the intervention and contributed to measurable improvements in competency levels, both immediately after training and at 6 months of follow-up, demonstrating knowledge retention over time.

The implementation of a tutoring program proved effective in facilitating the acquisition of knowledge and advanced skills among newly hired nurses in hospital emergency services. These results are consistent with longitudinal studies involving nursing students.[39-41] However, few published studies have implemented experimental designs in real clinical environments with fully licensed professionals and a control group. This scarcity limits direct comparisons with the current evidence base in nursing literature. The research gap may stem from the challenges of incorporating structured competency assessment methodologies into high-pressure care environments, such as emergency services.[42,43] These environments often present multifactorial demands that complicate the integration and follow-up of training interventions in clinical practice.

Findings from this study reinforce the hypothesis that a structured tutoring program enhances performance by providing a safe and supportive environment that facilitates the development of skills, competencies, and confidence in newly hired nurses. The results further suggest that strengthening postgraduate learning contributes to adaptation to complex environments, improved clinical practice, and potentially better staff retention.

Tutoring programs improve nursing practice and staff retention, leading to benefits for patients and health care organizations.[44,45] A formally organized program, including comprehensive education and follow-up support, enhances the professionalization of frontline nurses and helps maintain a positive and constructive work environment.[46]

The study results show competency benefits, and previous research complements these findings by demonstrating the benefits of tutoring programs in satisfaction, motivation, reduced turnover, and nurse retention.[42,45-48]

In addition, tutor evaluation and feedback acted as a positive reinforcement mechanism, consolidating learning and fostering confidence in acquired skills.[49,50] Evaluation from an external perspective can validate or challenge individual perceptions, promoting deeper and collaborative learning.[51-53]

A key strength of the program was the involvement of subject matter experts in designing and validating the competency framework and assessment criteria, ensuring clarity, relevance, and content validity. Another notable strength lies in the use of an experimental design with a control group, addressing a common limitation in many existing studies.[23-26,41,46] Moreover, the inclusion of practicing nurses, as opposed to students, enhances the ecological validity of the findings.[39,41,54]

This prospective design provides medium-term data on the effectiveness of the intervention and offers insight into knowledge retention over time, an advantage over the predominance of cross-sectional studies in current nursing literature.[21,44] Such an approach allows for a more nuanced understanding of learning dynamics and practice change in real-world clinical settings.[55]

Limitations

This study has some limitations. The intervention was conducted in a single hospital, which may restrict the generalization of the findings to other health care institutions. In addition, the national hiring system in Spain, characterized by frequent short-term contracts, may hinder both the implementation of the competency development program and the participation of temporary nurses.

Implications for Emergency Nurses

This study highlights the importance of integrating structured tutoring programs into the professional transition of newly hired nurses in emergency departments. The findings show that, unlike the control group, the intervention group demonstrated significant improvements in key competencies, despite having equivalent exposure time and clinical experience in the unit. These results confirm that

clinical exposure alone is insufficient to ensure competency development and that guided, structured interventions are essential.

A critical implication for practice is the use of competency-based evaluation as part of routine clinical activity, not as a judgmental mechanism but as a framework for continuous improvement. Assessing the performance of newly hired nurses through validated rubrics enables the identification of specific learning needs, promotes clinical reasoning, and fosters reflective practice in real care settings.

Emergency departments are fast-paced, high-acuity environments that demand rapid and competent decision making by nurses. This reality further emphasizes the importance of implementing structured tutoring interventions to support the professional transition of newly hired staff.

Competency-based tutoring programs encourage a shift toward evidence-based staff development in emergency nursing, reducing variability in care and enhancing patient outcomes. Incorporating structured tutoring into institutional onboarding strategies can also strengthen confidence, reduce stress among novice nurses, and support retention in high-demand services.

Ultimately, emergency nurses benefit from environments that facilitate structured and purposeful development, where competence is built systematically and recognized as part of daily professional growth.

Conclusion

The findings of this study have important implications for health care settings, suggesting that the implementation of a structured tutoring program within hospitals is an effective measure to strengthen the competency and professional development of newly hired nurses. Such programs should be systematically integrated into the onboarding plan for hospital emergency units to enhance patient safety and quality of care. Future studies should include multiple hospital centers and develop strategies for improved longitudinal follow-up of participants to validate and expand these results.

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Author Disclosuresds

Supplementary Data

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