

# The connection between the patients nursing care product and the professional competencies of nurses

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## Abstract

### Background:

Nurses play a vital role in emergency and urgent care settings, where their competencies significantly impact the quality of care delivered to patients. These competencies encompass skills such as clinical reasoning, leadership, decision-making, and communication, all of which are essential in fast-paced and high-pressure environments. Despite the critical nature of these competencies, the relationship between nurses' professional competencies and the outcomes of patients nursing care in urgent and emergency units remains underexplored.

### Methods:

This study was conducted in two public hospitals with emergency and urgent care units. A total of 99 nurses participated, completing two validated Brazilian instruments: the Competence Scale of Actions of Nurses in Emergencies (ECAEE) and the Patients nursing care Product Assessment Scale (APROCENF). Data were collected and descriptive statistics, correlations, and reliability analyses were performed to examine the relationship between nurses' competencies and the quality of care provided.

### Results:

The study revealed significant correlations between nurses' competencies in professional practice, workplace relationships, and other key factors with the quality of patients nursing care outcomes. Self-evaluations consistently showed higher competency ratings compared to evaluations by nursing leaders. The quality of patients nursing care, as measured by the APROCENF scale, was predominantly rated as "Good," reflecting a positive assessment of care delivered. The study also highlighted the influence of factors like staffing, care monitoring, and addressing patient needs on nursing outcomes.

### Conclusion:

Nurses' professional competencies play a critical role in ensuring the quality of care in urgent and emergency settings. The competencies assessed in this study, including professional practice, communication, and clinical decision-making, were strongly associated with the quality of patients nursing care outcomes. These findings underscore the importance of fostering specialized competencies among nurses to enhance care delivery in high-pressure clinical environments.

## **Introduction**

Nurses play a crucial role in diverse healthcare settings, both within and outside hospitals. Their responsibilities encompass preparing, organizing, coordinating, and implementing care strategies aimed at rehabilitating patients and facilitating their reintegration into family and societal roles (1). Combining science and art, nursing practice is grounded in technical and scientific expertise, elevating the profession's foundational principles (2).

Urgency and emergency units are characterized by their complexity, which demands that healthcare professionals, including nurses, possess advanced clinical reasoning and decision-making skills. These units serve as key access points for health services, requiring efficient and effective responses to patients' diverse health conditions (3). Within these units, nurses function as care managers, utilizing essential competencies such as leadership, decision-making, clinical reasoning, and communication to optimize care processes. Nurses develop and implement care plans tailored to specific patient needs, ensuring the immediate delivery of the required interventions (4-5).

To effectively manage care, nurses must possess specialized skills and knowledge that facilitate the patient's recovery and reintegration. These competencies, identified in a structured framework (6), are vital for guiding nursing activities in urgency and emergency contexts. Nurses collaborate with multidisciplinary teams to share workloads and enhance the care process. This collaboration ensures that care plans are aligned with patients' actual health requirements and are communicated effectively among team members using standardized terminology (7).

The quality and impact of care provided must be assessed to determine whether it meets patients' needs and delivers the intended outcomes. A well-designed care plan should result in a product reflective of the effort invested in its creation, ultimately benefiting the patient (5). Additional research is essential to further investigate the competencies required of nurses in urgent and emergent care settings, strengthening their skills to enhance the quality of nursing interventions.

This study sought to explore the relationship between nurses' professional competencies in urgency and emergency units and the outcomes of patients nursing care. A systematic review revealed no established connection between these variables (8). Consequently, the research aimed to address this gap by examining how nurses' competencies influence the quality and effectiveness of patients nursing care outcomes.

## **Method**

The study was conducted in emergency and urgent care units of two public hospitals. One facility is a university hospital, while the other operates as a secondary-level institution with characteristics of tertiary-level services. These hospitals, hereafter referred to as Hospital A and Hospital B, were selected through random sampling to ensure broader participant inclusion within an established urgency and emergency care network framework. A convenience sample comprising 91 nurses, 3 nursing residents, 4 coordinators, and 1 manager participated in the study.

Participants included healthcare professionals employed in emergency units for at least three months, as well as second-year nursing residents specializing in the same area. Professionals using the sector only as a temporary assignment, nursing residents from unrelated areas, and individuals on leave or vacation were excluded.

In Hospital A, 53 nurses were eligible and invited to participate, but one opted out, resulting in 52 participants (96.29% response rate). This group included 49 clinical nurses and 3 nursing residents working across various shifts and tasks, including emergency care, risk classification, and observations in medical and surgical clinics. Additionally, three nursing leaders (1 manager and 2 coordinators) conducted hetero-evaluations of competencies.

In Hospital B, 42 individuals participated (95.45% response rate), with two exclusions due to leave and vacation. This group comprised 36 on-duty nurses covering different shifts and 8 day-shift nurses, providing care in areas such as triage, emergency rooms, urgent care wards, pediatric first aid, and psychiatric observation. Two nursing leaders (coordinators) conducted hetero-evaluations.

In total, the study included 55 participants from Hospital A (52 self-evaluations and 3 hetero-evaluations) and 44 from Hospital B (42 self-evaluations and 2 hetero-evaluations), resulting in 99 participants.

### **Instruments for Data Collection**

The study utilized two validated Brazilian instruments: the Competence Scale of Actions of Nurses in Emergencies (ECAEE) (6) and the Patients nursing care Product Assessment Scale (APROCENF) (5).

The ECAEE (6) consists of 78 items divided into seven dimensions: (1) Professional Practice (33 items), (2) Workplace Relationships (19 items), (3) Positive Challenges (10 items), (4) Targeted Actions (7 items), (5) Constructive Behavior (2 items), (6) Professional Excellence (4 items), and (7) Adaptation to Change (3 items). Responses were scored on a Likert scale from 1 (Not Competent) to 5 (Extremely Competent). Hetero-evaluations by nursing leaders used the same instrument to assess participants' performance.

The APROCENF (5) evaluates eight domains: care planning, resource allocation, staffing, staff development, care monitoring, multidisciplinary collaboration, patient and family care, and meeting care needs. Scores range from 9–12 (Poor) to 31–32 (Excellent).

### **Study Variables**

Data included demographic and professional characteristics such as age, gender, marital status, graduation year, postgraduate education, certifications, work experience, emergency training, and dual employment. Results from the ECAEE and APROCENF scales, including their domains and overall scores, were analyzed.

### **Data Collection Process**

A pre-test involving 10 nurses (5 from each hospital) assessed the instruments' clarity and feasibility. Following this phase, participants completed the ECAEE, and managers performed hetero-evaluations. The APROCENF scale was then administered after 15 shifts for each nurse, yielding a total of 1,410 assessments. Leaders in coordination and management roles did not participate in APROCENF completion.

### **Data Analysis**

Descriptive statistics, including frequency tables, means, standard deviations, medians, and quartiles, were calculated. Internal consistency was assessed using Cronbach's alpha ( $\geq 0.70$  considered acceptable) (11). Correlations between variables were analyzed using Spearman's coefficient (9), while Wilcoxon's test compared self-evaluations and hetero-evaluations. Intraclass Correlation Coefficient (ICC) was applied to assess inter- and intra-evaluator reliability.

### **Results**

The study involved two healthcare facilities, referred to as Hospitals A and B. A total of 99 nurses participated in the survey, with 55 from Hospital A and 44 from Hospital B. A descriptive analysis was conducted encompassing all respondents. Among the participants, the age group of 30 to 39 years accounted for 55.32% (n=52), and the majority were women (74.47%, n=70). Regarding marital status, 52.13% (n=49) identified as single, while 34.04% (n=32) were married. Table 1 summarizes the sample characteristics.

Most participants (93.62%, n=88) were assigned to the Emergency Room for Adults (ERA), while 6.38% (n=6) worked exclusively in the ER medical clinic. Their shifts were distributed as follows: 17.02% (n=16) worked morning shifts (7 am–1 pm), 20.21% (n=19) worked

afternoons (1 pm–7 pm), 40.43% (n=38) worked night shifts (7 pm–7 am), and 22.34% (n=21) worked 12-hour day shifts (7 am–7 pm). A notable 67.02% (n=63) of the respondents reported no secondary employment, while among those with additional jobs (32.98%, n=31), most worked ERA shifts from 7 am to 7 pm (58.06%, n=18).

Concerning higher education, 73 nurses held specialist qualifications, with 67.12% (n=65) specializing in Nursing, of which 56.92% (n=37) focused on urgency and emergency. Five participants completed Master’s degrees, while two held doctorates in Nursing or Health Sciences. Additional qualifications included training in areas such as Home Health, Nursing Service Management, and PICC insertion (17.02%, n=16). Seven nurses had completed residencies, specializing in fields like urgency and emergency (n=4), intensive care (n=1), nephrology (n=1), and internal medicine and surgery (n=1). Regarding professional development, 40.86% (n=38) had completed courses such as Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Advanced Trauma Life Support (ATLS FOR NURSE), and Pediatric Advanced Life Support (PALS) in the previous two years. Furthermore, 23.40% (n=22) reported involvement in organizing events, participating in committees, or engaging in study groups during the same period.

In terms of scientific engagement, 24.47% (n=23) indicated participation in activities such as preparing scientific manuscripts, publishing papers, or presenting at academic events . significant differences with higher scores in self-assessments. The inter-evaluator reliability (ICC) was 0.511, demonstrating moderate agreement between the two evaluation methods.

Nurses demonstrated consistent performance across emergency care sectors during their shifts, with the predominant rating being “Good” (73.3%). Internal consistency for the ECAEE factors was strong, with alpha values exceeding 0.70 for Factor 1 (0.790) and Factor 2 (0.720), though Cronbach’s alpha for all nurse assessments was lower at 0.501.

**Table 1 - Descriptive analysis of the ECAEE categorical variables corresponding to the urgency and emergency nurses (n=94).\***

Variable	n	%
Improvement		
Yes	2	2.1
No	92	97.9
Certification		
Yes	16	17.0
No	78	83.0
Residency		
Yes	7	7.8
No	87	92.6
Bachelor’s degree		
Yes	-	-
No	94	100.0
Emergency courses attended (in the last 2 years)		
Yes	39	40.9
No	55	59.1
Other participations		
Yes	22	23.4
No	72	76.6
Scientific activities		
Yes	23	24.5
No	71	75.5

## Discussion

Professional competencies are integral to the growth and effectiveness of the nursing workforce. These competencies establish a distinct professional identity, delineating the responsibilities and expectations for nurses. For those tasked with managing, organizing, and delivering patients nursing care, these skills are essential for meeting patient needs during each shift, ensuring care is prioritized effectively (12). The delivery of care is rooted in technical and scientific knowledge, encompassing a broad spectrum of expertise that informs professional practices (13).

The majority of participants in this study were women, which aligns with broader trends in the nursing profession, as highlighted by studies profiling the nursing workforce (14). The sociodemographic analysis revealed areas needing attention, particularly in fostering better management practices and enhancing care quality. Nurses utilize foundational constructs of the profession to guide their decisions and actions, continuously seeking professional development to improve both individual and team performance (15).

To enhance their expertise, many nurses pursue further education, ranging from short technical courses to longer, specialized programs. A notable proportion of participants reported completing advanced training in specific nursing fields, emphasizing the importance of professional growth and skill enhancement. Specialization in areas such as emergency and urgent care was especially common, with over half of the respondents indicating such a focus. This targeted training directly impacts the quality of care delivered, reflecting positively on patient outcomes and the overall care experience.

Additionally, many nurses actively participate in training programs, such as Basic Life Support (BLS), Advanced Cardiovascular Life Support (ACLS), and Prehospital Trauma Life Support (PHTLS), among others. This demonstrates a commitment to advancing technical proficiency, particularly in the fast-paced and complex environments of emergency and urgent care. These roles demand quick and accurate decision-making, supported by continuous education, practice, and personal dedication to professional excellence (16). Other studies have similarly noted the importance of self-perceived training needs among nurses (17).

The need for standardized training opportunities in emergency and urgent care settings has been highlighted by research (18). This standardization would ensure that nursing practices go beyond routine protocols, promoting a deeper understanding of care through reflective and research-driven approaches. Technological advancements and innovative methodologies are also crucial for enhancing the delivery of care, requiring nurses to adapt and contribute to broader societal development through their professional expertise (19, 20). Academic training underscores the social responsibilities inherent in nursing, emphasizing its significance in societal growth (21).

When comparing self-assessment to manager evaluations, nurses generally rated themselves higher in many areas. However, in some cases, managers scored nurses higher than the nurses' own evaluations. This discrepancy could be attributed to the dynamic and demanding nature of the emergency care environment, which may have affected the accuracy of some responses. Notably, self-evaluations scored highest for "Professional practice" and "Targeted action," while managers gave the highest scores for "Professional excellence" (22). These findings indicate that nurses' efforts to enhance their skills align with their desire to excel in delivering care, requiring a robust foundation of theoretical and practical knowledge (23). Similar trends have been observed in studies conducted within other healthcare systems, where professional qualification was identified as a key area for growth based on nurses' feedback and expectations (24).

The alignment between nurses' self-assessments and managerial evaluations reflects a shared commitment to excellence. This demonstrates a reciprocal relationship where nurses' actions are closely monitored, and managers utilize validated tools to assess and guide their teams

effectively. Using scientifically validated instruments ensures that evaluations are reliable and relevant to the nursing field, fostering an environment of mutual improvement.

Collaboration within the healthcare team presents challenges that require nurses to balance their leadership roles with their professional identity. Managing nursing staff and working alongside multidisciplinary teams while maintaining authenticity in care delivery can be demanding. However, these challenges also present opportunities for growth. Nurses strive for excellence in their practices, which not only strengthens their professional identity but also enhances the overall quality of care they provide (25).

The APROCENF scale (5) was widely utilized, with each nurse completing the instrument fifteen times to provide an accurate depiction of their daily activities in the urgency and emergency sector. Notably, the scale was assessed across all areas of the urgency and emergency unit, covering a range of services from the emergency room to medication. Despite not having been previously tested in such settings, the scale produced a “Good” score across its eight domains, reflecting the substantial care provided by nurses in this study. While an “Excellent” score would have been ideal, this result is viewed as a starting point for unit managers to collaborate with the permanent education sector to enhance nurses' competencies and encourage the development of those still lacking. This study aligns with previous research where the APROCENF scale was used in specialized units (26), also reporting a predominantly “Good” outcome for patients nursing care .

The correlation between the nurses' average scores from the fifteen APROCENF evaluations and their professional competencies as measured by ECAEE revealed significant differences in both self-assessment and peer evaluation. This suggests that specific competencies are essential for planning, delivering, and executing care in the urgency and emergency unit. All ECAEE factors showed some degree of association with the APROCENF scale domains in both nurses' and their managers' assessments. Key factors such as Professional Practice (6), Workplace Relationships, Positive Challenge, Targeted Action, Constructive Behavior, and Adaptation to Change were particularly linked to nursing staffing levels, which are crucial for providing direct healthcare. These competencies contribute to effective rehabilitation and facilitate the patient's reintegration into their family and social life.

Adequate nursing staffing is a significant factor in patients nursing care . A sufficient number of professionals to meet the high demand for care positively impacts patient rehabilitation. Unfortunately, in many urgency and emergency settings, which face additional challenges like overcrowding and an open-door system for spontaneous demands, the nursing staff is often insufficient, leading to overload, absenteeism, and leave. However, studies have demonstrated that adequate nurse staffing reduces mortality, readmissions, and hospitalization times (27).

Patient satisfaction in hospital units is influenced by a combination of factors, including the care provided by nurses and the execution of care by the entire team. Nurses deliver quality care when working conditions are optimal, enabling them to perform their routines effectively. This fosters a positive feedback loop, where nurses' satisfaction directly impacts the care they deliver, ultimately improving patient rehabilitation (28). In one such study (28), sufficient nursing staffing met the care needs of patients involved, and it is believed that if the same scale were applied, it would yield even better results, particularly with increased staffing in urgency and emergency departments.

Similarly, the domains related to care monitoring and transfer (5) were connected to professional nursing practices. Through their expertise, nurses build strong team relationships, adapting to changes, managing conflicts, and handling challenges in a positive manner. Effective care must be continuous, with seamless transitions across various hospital sectors and post-discharge follow-up to prevent readmissions (29). A lack of continuity in care increases hospitalization times, and when patients are discharged, it may lead to readmissions. Nurses' competencies are vital in maintaining this continuity, ensuring smooth transitions and

optimizing care both in-hospital and at home. Communication, a central competence in this process, is essential for successful care transfer (31), and its absence can severely disrupt the process, leading to increased costs, stress for patients and families, and delays in bed turnover. In this study, care transfer, as assessed using the APROCENF scale (5), resulted in a “Good” score. This indicates a need for further analysis by managers, who, together with the permanent education sector, should create conditions to improve the transfer process. By doing so, patient care will be enhanced, and transfers and discharges will occur in a timely manner.

The competencies highlighted in this study are fundamental to meeting patients' needs, ensuring that nurses provide the necessary care to support patient health and well-being (5). Focusing care on the actual health needs of patients through targeted care planning will better address their health demands (32), allowing nurses to demonstrate and further develop their competencies to meet the needs presented by each patient.

Both the “Nursing staffing” and “Care transfer” domains were closely related to multiple competencies, emphasizing the necessity of adequate staffing to ensure effective assistance and safe care transfers. Coordinated efforts between nursing management and permanent education services are required to facilitate this process.

A limitation of this study is the potential for some items on the instruments to not fully capture the nurses' intended responses due to the dynamic nature of the urgency and emergency unit. However, the results indicate that the APROCENF scale can be effectively used in emergency units, especially when combined with the ECAEE, which not only assesses existing competencies but also encourages professionals to develop those that are limiting factors in care delivery, ultimately improving the quality of patients nursing care .

## Conclusion

The competencies of nurses are crucial for the quality of Patients nursing care delivered in urgent and emergency settings. These competencies were recognized across seven key factors, with particular focus on “Professional practice,” “Workplace relationships,” “Positive challenge,” “Targeted action,” “Constructive behavior,” and “Professional excellence,” as reflected in both self-assessments and evaluations by others. Nurses conducted their self-assessments with consideration for the unique demands of the urgent and emergency context, acknowledging the complexity of the environment and the need for specific skills to effectively address the unusual cases encountered. The APROCENF scale rated the Patients nursing care product as “Good,” indicating that the quality of care provided is perceived positively by the nurses delivering the service. This assessment reveals a connection between the professional competencies described in the ECAEE factors and the dimensions of the APROCENF scale. Notably, factors such as “Nursing staffing,” “Care monitoring and transfer,” and “Addressing care needs” directly influence the care provided to patients, highlighting the critical role of nurses who base their care delivery on the competencies outlined in this study.

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