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Nursing competency assessment in the emergency department of Dolo Hospital: a self-assessment checklist for improving training and clinical practice

Sonia Diblasio,[1] Antonello Carta,[2] Simona Romano,[3] Andrea Pellegrini[4]

[1]Midwife, Obstetrics-Gynecology Unit, Mirano, ULSS 3 Serenissima, Venice; [2]Director of Health Professions, ULSS 3 Serenissima, Venice; [3]Nurse, Emergency Department Unit, Dolo, ULSS 3 Serenissima, Venice; [4]Director, Emergency Department, Dolo, ULSS 3 Serenissima, Venice, Italyy

ABSTRACT

Introduction: competency-Based Education (CBE) is widely used in the training of healthcare professionals. Competency is defined as an expected level of performance integrating knowledge, clinical skills, and professional attitudes. In emergency nursing, performance levels evolve from novice to expert depending on the nurse's learning and experience. A key principle of CBE is the evaluation and identification of competency development over time. The aim of this study is to define the knowledge and skills required for nurses working in the Emergency Department, using a Clinical Skills Checklist. This tool allows for the identification of individual competencies as well as educational gaps, which can be addressed through targeted training. Moreover, it enables monitoring of training effectiveness and the maintenance of competencies over time.

Materials and Methods: a literature review was conducted to identify and adapt a self-assessment instrument for nursing competencies. The resulting checklist consisted of 72 performance indicators, categorized into seven core domains, and was administered to 40 nurses working in the Emergency Department of Dolo Hospital (ULSS3 Serenissima). Participants completed the instrument in self-assessment mode, employing a four-point Likert scale (0 to 3).

Results and Discussion: data analysis highlighted both areas of consolidated competence and domains in which staff reported a need for support. Specifically, in six skills (management of patients with psychiatric disorders, management of patients with AIDS, care of abused children, care of pregnant women with hemorrhage, care of pregnant women with hemodynamic instability, and performance of FAST ultrasound in polytrauma patients) more than 50% of nurses reported limited experience and the need for supervision, indicating the necessity of targeted educational interventions. These findings suggest that the checklist may serve as a valuable tool not only for identifying individual training gaps but also for defining team-level educational priorities.

Conclusions: the use of a structured checklist enables nurses to reflect on their own level of competence and allows the organization to strategically guide training programs. The findings highlight the need to plan targeted educational interventions in specific critical areas, thereby promoting the standardization of competencies within the Unit. Periodic administration of the instrument can support the continuous monitoring of competencies and contribute to the improvement of care quality.

Key words: education, nursing, competency-based; clinical competence; self-assessment; emergency nursing; staff development.

Correspondence: Sonia Diblasio, Midwife, Obstetrics and Gynecology Unit, Mirano, ULSS 3 Serenissima, 147 Don Federico Tosatto, 30174, Venice, Italy.
E-mail: sonia.diblasio@aulss3.veneto.it

Introduction

Competency-Based Education (CBE) is a learning paradigm focused on describing and measuring what students must know and be able to do (outcomes). In this framework, competencies define the knowledge, skills, and attitudes required to perform successfully within a given discipline.[1]

Nurses play a central role in the healthcare system, and their clinical skills are particularly critical in emergency and urgent care settings.[2] Within this clinical context, professional performance develops from novice to expert as learning and experience increase, according to the progression described by Benner's model (From Novice to Expert).[3] A fundamental principle of CBE is the assessment and tracking of competency development over time.

In a context characterized by continuous changes in medical technology, nursing roles and responsibilities, it is important not only to develop and maintain the clinical competencies but also to assess them over time, to ensure the quality and safety of care.[4,5] The availability of reliable instruments for measuring nursing competencies therefore assumes a strategic role.[6]

Clinical competencies can serve as a useful reference both for staff assessment and for the design of training pathways, including standardized onboarding programs for newly hired or recently assigned nurses in Emergency Departments.[7] These tools allow the identification of priority learning areas and help guide targeted education.

Furthermore, the literature highlights that professional development and educational support are closely linked to well-being at work, perceived autonomy, and job satisfaction.[8,9] In this regard, evaluating and enhancing competencies does not only meet clinical and organizational needs but can also contribute to improving professional engagement, with positive effects on care quality and nurse retention.[10,11]

The aim of this study was to develop a self-assessment instrument for nursing performance to: i) define the knowledge and competencies required for nurses working in the emergency department; ii) identify areas where further training is needed; iii) monitor the impact of educational interventions over time.

Materials and Methods

A literature search was conducted to identify studies and documents regarding the assessment of clinical skills of nurses in Emergency Departments. The research methodology followed the PIO (Population, Intervention, Objective) method and was defined as follows:

P: nurses working in emergency departments

I: implementation of clinical competency assessment tools, such as standardized checklists, direct observation, or competency-based assessment systems

O: improvement in training and learning outcomes for healthcare professionals in emergency care settings

The bibliographic search was carried out between January and March 2023 using the PubMed and Scopus databases. Additionally, Google Scholar was used as a supplementary source to include grey literature. Keywords were used individually and in combination with Boolean operators ("AND", "OR").

Based on the analysis of instruments previously tested in other contexts, the authors adapted the tools to the Italian setting and developed a checklist containing items describing all activities in which Emergency Department nurses should achieve autonomy.

The materials used for developing this tool were inspired by the following documents: i) Emergency Department Core Competencies, Skills Checklist, and Development Tool, 2015:[12] developed by the Brant Community Healthcare System, this guide supports the training and development of nursing and healthcare staff in Emergency Departments and includes a skills checklist; ii) Emergency Nursing Core Competencies, 2015:[13] published by the National Emergency Nurses Association, this document outlines the core competencies required of emergency nurses, including a wide range of knowledge and skills necessary to provide effective emergency care; iii) Core Competencies for the Emergency Nurse Revised, 2019:[14] this checklist from the Emergency Nurses Association of Ontario provides guidance on competencies required for emergency nurses, covering various aspects of clinical practice,it can be used both for initial orientation of new nurses and for annual competency assessment; iv) National Curriculum and Competency Framework Emergency Nursing, 2017–2019:[17] developed by the Emergency Care Association in collaboration with the Royal College of Nursing, this framework defines competencies and standards for nurses working in Emergency Department, it covers skills required at different experience levels, from foundation practice to advanced roles, including leadership and specialization; the framework emphasizes quality improvement, continuous professional development, promotion of clinical competencies, and enhancement of mentoring capabilities to ensure safe, high-quality patient care in emergency settings; v) Emergency Nursing Certification Exam Blueprint and Specialty Competencies, 2020:[16] the Canadian Nurses Association provides updated resources regarding competencies and exam blueprints for emergency nursing certification, detailing the knowledge and skills assessed in each certification exam.

A monitoring checklist was developed by adapting the above instruments to the Italian context. The self-assessment checklist included 72 indicators grouped into seven sections and was implemented using Google Forms for ease of completion.

Before sample administration, the instrument underwent a preliminary evaluation of face validity, using a small voluntary group of nurses to assess clarity and comprehensibility, and content validity, systematically comparing items with international frameworks to ensure coverage of the main competency domains. This step ensured that the tool was adequate in terms of both clarity and conceptual completeness.

The checklist was then administered for the first time to 40 nurses working in the Emergency Department of Dolo Hospital (ULSS3 Serenissima) between October and November 2023. Nurses self-assessed using a four-point Likert scale (range:0–3): 0, no experience, theoretical knowledge only; 1, limited experience, supervision required; 2, mastery of knowledge; 3, expert, capable of teaching others.

The checklist grouped nursing competencies into the following domains: i) respiratory skills, emergency airway management (devices,procedures and airway maintenance) and breathing management (devices and evaluation in primary survey); ii) neurological skills; iii) trauma care; iv) cardiovascular skills; v) infectious disease; vi) pediatric skills; vii) obstetric skills.

In 2024, the emergency department of Dolo Hospital, where the study was conducted, treated 44,480 patients. The main cases involved trauma, abdominal pain, ocular disorders, dyspnea, and chest pain. Considering the absence of a pediatric unit, the number of pediatric patients presenting to the emergency department of Dolo was limited.

Results

35 of the 40 nurses provided complete responses, corresponding to a response rate of 87.5%. The mean age of the sample was 38 years, and 51.85% were female (Figure 1).

Positive evaluations were observed in neurological, cardiovascular, and infectious disease skills. Within neurological skills domain, 71.4% of nurses self-assessed a score of 3 using the Cincinnati Scale, while 77.1% scored 3 using the Glasgow Coma Scale.

Assessment scales are essential tools in healthcare practice, as they allow standardized data collection, facilitating the identification of patients' care needs and the planning of interventions. Their use also standardizes communication among professionals, improving both communication and quality of care.[17]

Nurses considered themselves highly competent in managing neurological patients according to the Stroke Protocol. However, 30% of nurses reported the need for supervision in the management of patients with psychiatric disorders or states of agitation.

Regarding cardiovascular skills, which represent the section with the largest number of items, all nurses self-assessed positively (scores of 2 and 3) in the management of patients with chest pain. Competencies related to infectious diseases also received high scores, although 40% of nurses reported requiring supervision when managing patients with AIDS, a less common scenario compared to cases involving hepatitis B or C, or COVID-19-positive patients.

Pediatric skills generally received high scores; however, 42.9% of nurses reported needing supervision when caring for children who are victims of abuse, a low-frequency clinical occurrence in the studied Emergency Department.

Respiratory skills and trauma care also received high scores. Respiratory management was rated positively, with 82% of nurses self-assessed between 2 and 3, reflecting the frequency of such cases.

Obstetric skills with the lowest scores were related to the care of pregnant women with active hemorrhage and hemodynamic instability, with over 50% of nurses self-assessed with a score of 1.

Items in which more than 50% of nurses self-assessed with a score of 1 were considered priorities for targeted educational interventions (Figure 2).

Interventions

Based on the results, a training session focused on obstetric skills was organized with a midwife. The event was conducted in person, with the option for remote participation to facilitate attendance by all staff. During the session, topics covered included: causes and management of hemorrhage during the three trimesters of pregnancy, prevention and treatment of postpartum hemorrhage, estimation of blood loss, and management of pre-eclampsia and eclamptic seizures.

Following the educational interventions, the questionnaire was administered again between November and December 2024 to assess progress after one year. Twenty nurses responded, including three newly hired staff members. Although the sample was not numerically identical to the previous one, the results indicate an improvement in self-assessment scores for the competencies targeted by the training (Figures 3 and 4).

In the management of pregnant women with hemorrhage, only one nurse self-assessed with a score of 0, while in the management of pregnant women with blood pressure alterations, no nurse rated themselves with a score of 0, indicating an increased awareness of their own competencies.

Discussion

The checklist used in this study was inspired by models proposed by international nursing associations. Comparison with these models revealed substantial overlap in core competencies, although differences emerged related to the specific characteristics of the local context.

Data analysis showed a good level of preparation in the neurological and cardiovascular domains. For example, 71.4% of nurses reported the maximum score on the use of Cincinnati Scale, and 77.1% on the use of Glasgow Coma Scale, while all nurses achieved positive scores in the management of chest pain. These findings confirm that the most frequent cases in the Emergency Department are managed safely by the nursing staff.

On the contrary, some less frequent case studies have highlighted greater critical issues. For example, 30% of nurses reported needing supervision when managing patients with

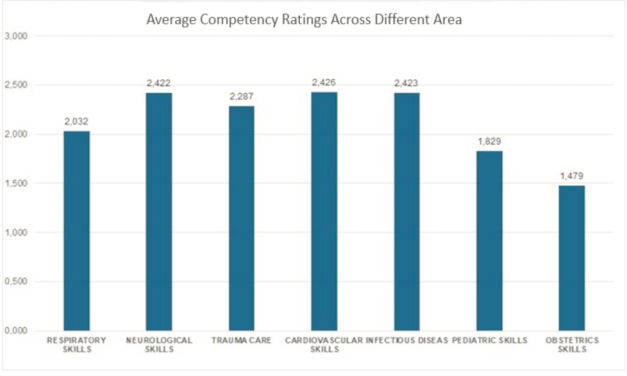

Figure 1. Mean ratings of competencies across different competency areas.

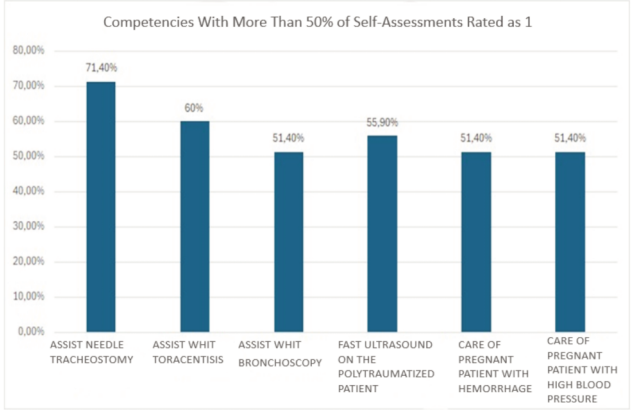

Figure 2. Competencies requiring structured educational interventions for clinical development.

psychiatric disorders, 42.9% when caring for children who are victims of abuse, and over 50% in the management of pregnant women with active hemorrhage and hemodynamic instability. This trend may be attributed to limited practical exposure or a less structured educational offering in these areas.

Planning targeted educational activities and clinical case discussions is essential to: i) address the identified gaps; ii) deepen understanding of critical issues for nursing activity in the emergency department; iii) ensure that all staff attain the minimum level of knowledge required to work in critical care settings; iv) promote the sharing of experiences on less common cases.

The organization of specific courses, such as the one on obstetric skills, contributed to improvements in self-assessment scores, highlighting increased confidence among nurses in managing the clinical situations addressed.

It will be useful to monitor the effectiveness of these initiatives over time through annual administration of the questionnaire.

Limitations

This study has several limitations, including the subjectivity inherent in self-assessment and the relatively small sample size. Although the number of participants provides an initial overview of nurses' perceptions of their competencies, the results should be compared with data from other hospitals.

The subjective nature of self-assessment may have introduced response bias, as nurses' perceptions of their own competencies do not always reflect their actual operational skills.

Finally, the influence of variables such as professional experience, academic training, and specialization within the sample was not explored, but these factors could affect the perception of competencies.

Conclusions

The assessment of nurses' professional competencies represents a key element for ensuring high-quality care and promoting professional development in the context of emergency and urgent care. High-quality nursing care can only be achieved when a professional's competencies are fully aligned with the demands of the clinical setting in which they operate. Therefore, identifying and defining the distinctive competencies according to the care setting becomes essential for guiding professional development and ensuring high standards of care.[18]

This study demonstrated that the use of a self-assessment checklist can be a valuable tool to identify the strengths and areas for improvement of nursing staff, enabling the planning and prioritization of targeted educational interventions.

The adoption of a structured evaluation system allows not only the monitoring of individual competencies but also the standardization of skills across the Unit, improving the quality of care and patient safety. Moreover, periodic use of the Clinical Skills Checklist enables the assessment of the effectiveness of educational activities, promoting continuous updating and progressive improvement of competencies.

An additional advantage lies in optimizing economic resources by targeting training only to areas where staff demonstrate actual development needs. This approach maximizes the cost-benefit ratio, reduces inefficiencies, and improves the overall effectiveness of the training system. Targeted and adequate training could also positively impact staff job satisfaction. Despite some limitations, this study may represent a first step toward a structured model for evaluating and updating nursing competencies in the emergency department. Integrating the checklist with direct practical assessments or supervisor-led evaluation tools could improve the reliability of results, as demonstrated by the ENAO checklist.[15] Furthermore, conducting a longitudinal study would be valuable to verify the evolution of competencies over time and the effectiveness of the checklist as a continuous monitoring tool. Implementing a competency framework could strengthen services, improve nurse recruitment and retention, and ultimately enhance the quality of care provided to patients.[19]

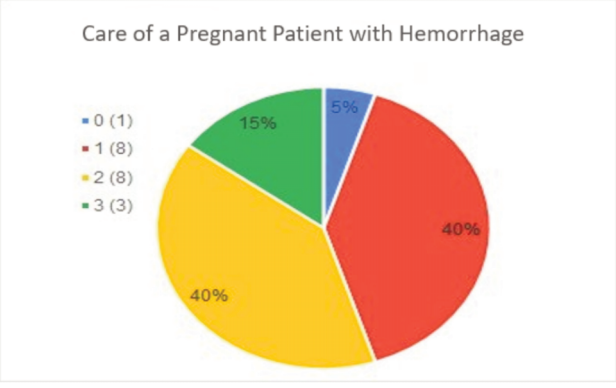

Figure 3. Post-training evaluation of midwifery skills in the care of a pregnant patient experiencing hemorrhage.

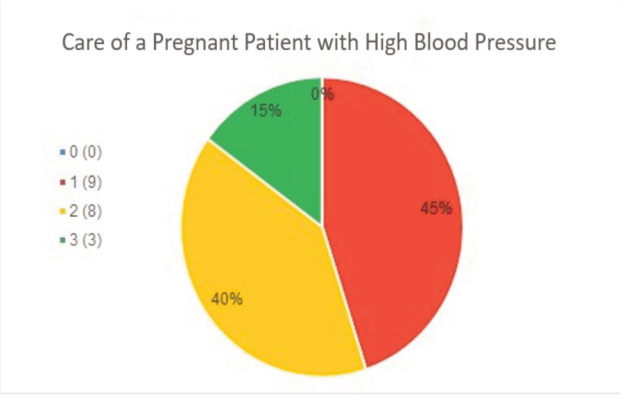

Figure 4. Post-training evaluation of midwifery skills in the care of a pregnant patient with blood pressure abnormalities.

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Online supplementary materials:

Self-assessment checklist for knowledge and skills

Contributions: Sonia Diblasio, conception and formulation of the research objectives; conduct of the research and data collection; data management and curation; statistical data analysis; methodology development; administrative management and project coordination; drafting and preparation of the initial manuscript; critical review, commentary, and revision of the manuscript through to the final version; Antonello Carta, conception and formulation of the research objectives; methodology development; administrative management and project coordination; drafting and preparation of the initial manuscript; critical review, commentary, and revision of the manuscript through to the final version; Simona Romano, data collection; drafting and preparation of the initial manuscript; Andrea Pellegrini.: data collection; drafting and preparation of the initial manuscript; project lead.

Conflict of interest: the authors declare that they have no potential conflicts of interest, and all authors confirm the accuracy of the manuscript.

Availability of data and materials: all data analyzed in this study are available in this article.

Ethical approval and consent to participate: the focus of the study does not concern clinical practice and does not involve patients; therefore, approval from the Institutional Ethics Committee was not required, as its competence is limited to the aforementioned cases.

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