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The Impact of a Clinical Nurse Specialist in Emergency Medicine on Patient Satisfaction and Waiting Times in the Emergency Department

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ABSTRACT

Crowding in emergency department (ED) has been a global issue and has led to a long waiting time and low patient satisfaction. The clinical nurse specialist (CNS) role has taken more prominence in the delivery of services designed to enhance patient outcomes given the advanced skills associated with this role and the changing system. This systematic review shows how CNS practice in EDs influences patient satisfaction and waiting time. PubMed, CINAHL, Scopus and Web of Science were searched extensively to identify those that were published within the period between 2012 and 2025. The selection criteria included peer-reviewed studies, in English language and which reviewed CNS or advanced practice nurse roles in the emergency department and whose outcome measures satisfaction or throughput. Fifteen studies were included: systematic reviews, cross-sectional surveys, quality improvement, and role-specific evaluations. The results remained the same and showed that CNS and other advanced practice roles significantly correlate with reduced waiting times, improved triage accuracy, fewer stay days, and improved patient satisfaction. The majority of the evidence addresses nurse practitioner or advanced practice nurse interventions, but there are new studies that point to the contributions that CNSs can make to triage, communication, and the coordination of care. Overall, CNSs are significant in enhancing the efficiency of ED and patient experience. Any future study should aim at controlled experimentation so as to achieve direct causal links between CNS practice and quantifiable ED outcomes.

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KEYWORDS:

Clinical nurse specialist, advanced practice nurse, emergency department, waiting time, patient satisfaction

INTRODUCTION

Emergency departments (EDs) are the major gateways to urgent and life-threatening care but are overwhelmed by persistent overcrowding, lengthy waits, and growing demand. These pressures cause stress to the healthcare personnel and deteriorated patient experience and patient outcome. Long waiting triage queue and treatment have been a persistent predictor of dissatisfaction in patients, dissatisfaction with communication, and low care quality perception (Nyce et al., 2021; de Steenwinkel et al., 2022). With patient satisfaction being used with growing popularity to measure quality and safety, wait time reduction has become a target of concern in emergency care delivery.

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The proposal of designing advanced practice nursing as one of the most pressing coping means of dealing with such challenges has been made. The positive ED-related results involving Nurse practitioners (NPs) and advanced nurse practitioners (ANPs), characterized as the shortening of the waiting time and length of stay and the improvement of patient satisfaction, are already proved to be measurable (Jennings et al., 2015; Woo et al., 2017; Bauernfeind et al., 2024). Since CNSs and NPs are not synonymous, various tutelage, consultation, and clinical operationalization competencies may be selectively applied to attain the best patient outcomes and system performance. The competency and value-added of the CNS roles in clinical care or emergency care, including triage acuity, care coordination, and communication, have been demonstrated through research (Wolf et al., 2023; Campbell et al., 2022; Kilpatrick et al., 2024).

Despite this emerging evidence, the unique effects of CNSs on ED waiting times and patient satisfaction have not been extensively studied, compared to NP or ANP

studies. A systematic review is necessary to unify the available studies and explain how the CNS can play an important role in solving these desolate outcomes. In this review, the research question will be answered as follows: What is the effect of the clinical nurse in emergency medicine on patient satisfaction and waiting times in the emergency room?

METHODS

The systematic review was conducted scientifically per the Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA). The aim was to synthesize the peer-reviewed literature regarding the extent of the impact of clinical nurse specialists (CNSs) in emergency medicine on patient level of satisfaction and emergency department (ED) waiting time.

Search Strategy

PubMed, CINAHL, Scopus, and Web of Science were included, and a structured search was conducted in them. The search was restricted to the articles published in English from January 2012 to February 2025 to ensure inclusion of up-to-date evidence. Keywords and Boolean operators were employed simultaneously in the following ways: clinical nurse specialist OR advanced practice nurse OR nurse practitioner AND emergency medicine OR emergency department AND waiting time AND length of stay OR patient satisfaction. Approaches to the search for related articles were also extended to hand searches of relevant reference lists.

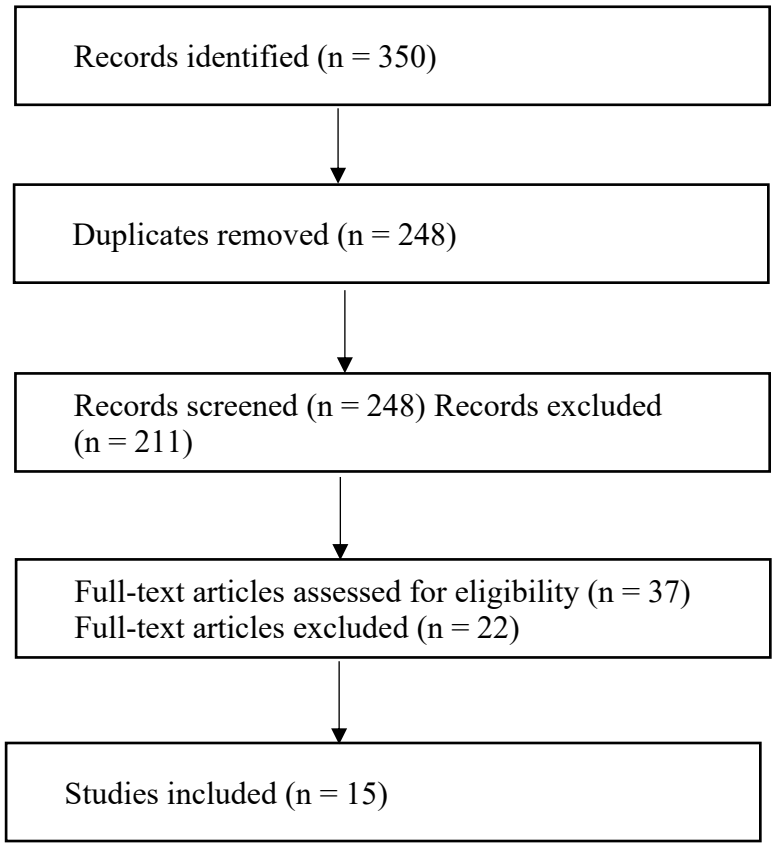
Eligibility Criteria

The inclusion criteria were (a) a systematic review or a primary study, (b) studies that took place in ED or acute care settings, (c) an intervention or role including CNSs or advanced practice nurses with relevance to emergency care, and (d) results including patient satisfaction, waiting, or throughput outcomes. Exclusion criteria were publications published in a language other than English, abstracts, studies not conducted in an acute or emergency care context, or studies that only addressed a physician or non-nursing-related intervention.

Screening and Selection

The preliminary search of the databases provided about 350 records. The 248 unique studies were left after duplicates were removed. Abstracts were reviewed by two reviewers separately against the eligibility criteria. Thirty-seven full-text articles were accessed to be assessed further. The final synthesis included 15 studies, as they met all inclusion criteria. The selection process is articulated in PRISMA-style flow diagram: 350 records were identified; 102 duplicates were removed; 248 records were screened; 37 full-text articles were examined, and 15 studies were included.

PRISMA Flow Diagram



Data Extraction and Quality Appraisal

The authors retrieved key information from the included studies, such as the author, year, country, prosecution design, sample size, the intervention's details, and the outcomes concerning satisfaction or waiting time. Based on the study design, the quality was appraised using the Joanna Briggs Institute (JBI) checklists and the Critical Appraisal Skills Programme (CASP) tools. The qualitative studies were grouped as high-quality, moderate-quality, or low-quality, depending on the strength of research methods, sample representativeness, and description of results and outcomes.

Synthesis of Findings

A narrative synthesis was adopted in light of diversity in terms of design and results. The collected data were organized into three categories: (1) the effect on waiting times and ED throughput, (2) patient outcome in terms of satisfaction, and (3) their role and contributions to the emergency care field of CNSs.

RESULTS

Characteristics of Included Studies

Upon review, 15 studies were included that were published between 2012 and 2025. The studies were heterogeneous, including four systematic reviews (Jennings et al., 2015; Woo et al., 2017; Bauernfeind et al., 2024; Glarcher et al., 2024), two umbrella or integrative reviews (Feller et al., 2023), and three cross-sectional surveys of CNS or advanced practice nurse practice (Wolf et al., 2023; Wiggs et al., 2025); The expansion of foundational knowledge was assessed by the results of quality improvement initiatives (Campbell et al., 2022; Williams et al., 2022), observational or patient experience studies (Dilworth et al., 2025; de Steenwinkel et al., 2022; Nyce et al., 2021; Thompson et al., 2012), and two knowledge translation projects (Kilpatrick et al., 2024). It is a research study carried out in North America, Europe, and Australia, thus differing healthcare settings. The sample size varied, with some comprising single-institution reviews and some systematic reviews of dozens of primary studies.

Impact on Waiting Times and Throughput

The CNSs demonstrated to significant reduction in ED waiting times and a boost in patient flow, and this fact was convincingly presented by advanced practice nurses. Both Jennings et al. (2015) and Woo et al. (2017) in their meta-analyses discovered that nurse practitioner or advanced nurse practitioner placement in the ED led to decreased waiting time and length of stay (LOS). Bauernfeind et al. (2024) also highlighted the improvements made in throughput in acute care, particularly in disaster and emergency settings, with the contributions of advanced practitioners.

One of the stated implications of the intervention level suggested by Williams et al. (2022) was the fact that the implementation of nurse standard work in one of the fast-track areas of the ED reduced, proving the effectiveness of process improvement initiatives spearheaded by nurses. Similarly, the project described by Campbell et al. (2022) resulted in fewer inaccuracies in the triage process, which indirectly helped to facilitate the movement of patients through the system and reduce delays on their way to the appropriate treatment process. Additional empirical evidence at the system level by Shindul-Rothschild et al. (2016) revealed that the lower ED wait time was associated with higher staffing, which indicated the necessity to consider the role of advanced practice leaders in staffing planning.

Impact on Patient Satisfaction

All patient satisfaction outcomes were favorable when advanced practice nursing roles were incorporated into the ED care. Dilworth et al. (2025) revealed that over 90 percent of patients were satisfied with the care provided by the emergency nurse practitioners in rural Australia, as many of them reported that they would prefer to become patients of the nurse practitioners again. Similarly, Thompson et al. (2012) revealed overwhelming satisfaction among patients who received care provided by emergency advanced nurse practitioners, especially communication, pain management, and holistic care.

The relationship between satisfaction and bringing down waiting times was known through complementary evidence. According to Nyce et al. (2021), waiting time had a direct correlation with the reduced patient experience measures, and de Steenwinkel et al. (2022) showed that patient satisfaction scores were higher when ED visits were short and communication with patients regarding wait times was provided. Glarcher et al. (2024) have also synthesized data on specialty nurse roles, and it has been concluded that patients who received care in advanced or specialized nurse models demonstrated higher satisfaction levels than in physician-only models.

Roles of CNSs in Emergency Care

Most outcome data were found on NP or ANP studies, but there is an emerging body of evidence on CNS-specific contributions to emergencies. A survey of CNSs in EDs in the U.S. occurred, and their competencies were aligned with better flow and satisfaction outcomes, including clinical care, leadership, and systems improvement. Wiggs et al. (2025) described the Australian practice of the CNS operating in the EDs and pointed out that they were members of multidisciplinary teams. CNSs are beneficial to patients when serving as a balance between clinical knowledge and healthcare system leadership (Kilpatrick et al., 2024). CNSs help streamline the patient traffic and enhance communication among the team in the ED.

SUMMARY OF FINDINGS

The evidence concludes that CNSs and other advanced practice nurses add value to the efficiency and patient experience of the ED. The direct ones include the promotion of triage accuracy (Campbell et al., 2022), standardization of the process (Williams et al., 2022), and adequate staffing patterns (Shindul-Rothschild et al., 2016). These changes indirectly equate to shorter waiting times and satisfaction as the patients perceive that the attended care is more responsive, streamlined, and patient-centered (Dilworth et al., 2025; Thompson et al., 2012). There is a relative dearth of literature on CNS related items, however, the literature available does indicate beneficial and positive change in throughput and patient-centered outcomes as a result of CNS in the ED.

DISCUSSION

This systematic review aimed to summarize the evidence considering the role of clinical nurse specialists (CNSs) and advanced practice nurses in emergency medicine to address patient satisfaction and the length of stay in emergency department (ED) waiting rooms. The evidence that directly links CNS-specific outcomes to advanced practice nurses is scarce, yet the overall research volume in this modality is positive regarding throughput and satisfaction. The implications of these findings for practice, workforce planning and policy making in the ED are substantial.

Interpretation of Findings

The data presented in the review showed that the role of advanced practice nurses including CNSs, in reducing waiting time and improving the efficiency of the ED was uniform. The results of systematic reviews (Jennings et al., 2015; Woo et al., 2017; Bauernfeind et al., 2024) show that the introduction of advanced practice in the emergency care environment shortened the length of stay and minimized the amount of wait times. Mechanistic insights were also introduced on quality improvement studies; a nurse-led enhance the standardization of fast-track areas in Williams et al. (2022) study showed enhancement in throughput, and a CNS-led increase in accuracy of triage in Campbell et al. (2022) study showed a reduction in delays to appropriate care. These outcomes suggest that CNSs are able to increase system- and patient-level efficiency.

There were also very striking results regarding patient satisfaction. In both studies, there was concurring evidence that nurse practitioners or CNS-managed care services had a high satisfaction rate among patients who received care (Dilworth et al., 2025; Thompson et al., 2012). These results align with the study where the positive effects were observed due to the time in wait becoming shorter (Nyce et al., 2021; de Steenwinkel et al., 2022). The satisfaction was identified on the dimensions higher than the level of diminished waiting times because it was also focused on the feelings of communication, holistic care, and trust in nurse-led services (Glarcher et al., 2024). Because CNSs can occupy both clinical and consultative roles, they will be best poised to affect the logistical elements of ED care and the human element of care, which amounts to an experience of the patient.

Comparison Across Systems

The cross-national evidence on differences in integration of CNS roles in EDs is supported. In Australia and the United Kingdom, ENPs and CNSs are more appropriately integrated into the frontline staff in the EDs and tend to yield more autonomy (Dilworth et al., 2025; Wiggs et al., 2025). This integration has been linked with some steady transformation in access and satisfaction of the patients. In North America, CNS clinical has typically been consulting- and systems-leader focused (technically, less directly engaged in patient throughput). However, in the U.S., researchers note that the role of the CNS in clinical care and triaging activities is growing (Wolf et al., 2023; Kilpatrick et al., 2024), which is suggestive of the formation of a practice model comparable to that of other nations.

These changes in context are significant in adapting the CNS roles to the local regulations and the structure of the local workforce. Whereas in some systems, advanced practice nurses were directly involved in patient flow and satisfaction, in other systems, the advanced practice nurses facilitated triage optimization/process redesign to a greater extent globally.

Limitations in the Evidence

Although promising results are obtained, this review revealed several limitations to the evidence base. First, minimal focused studies specifically assessed central nervous system-related outcomes in EDs. Most of the outcome data were based on the studies of nurse practitioners or advanced practice nurses. Studies on DA-related pathologies and those of the CNS reveal a high degree of permeability across roles, and thus their contributions can be estimated with a high degree of precision.

However, CNS-specific research is also necessary to isolate their distinct contributions. They had varying study designs, ranging from single-site quality improvement projects to systematic reviews that aggregate various interventions. Such variation makes it challenging to compare effect sizes directly and narrows the possibilities of quantitative meta-analysis. Third, several studies involved patient-generated satisfaction surveys that can, although useful, be prone to satisfying recall and responding tendencies. Lastly, much research was done in high-income health systems and may not be extrapolated to lower-resource settings.

Implication for Practice and Policy

The results reveal the need to implement CNSs in order to enhance ED performance and the mental care of patients. The role of CNSs is to bring on experience in the clinical area, expertise in triaging, process redesign, and staff development. Regarding the time-tested problem of acute care crowding and patient dissatisfaction, hospitals and health systems should consider implementing hospital presence in the emergency department. There is a need to support policymakers and help them increase the degree of certainty and the scope of practice rules. The signs of increased autonomy of the advanced practice nurses that can be witnessed in Australia and the UK indicate that such a model has a chance of being generalized to other systems. Moreover, CNSs are likely to be integrated into the ED patterns of staffing and quality programs that can help to enhance patient experience and eliminate delays.

Future Research

Future research to build on the evidence base should concentrate on well-designed trials (RGID) or multi-site longitudinal studies that assess CNS intervention in EDs. Cost-effectiveness research should also be undertaken due to the twofold objectives of quality improvement and the control of healthcare expenditure. Notably, more focus should be given to CNS roles in resource-constrained and diverse healthcare systems, as they might be more significant in access- and satisfaction-related problems.

CONCLUSION

This systematic review examined the effect of clinical nurse specialists (CNSs) in emergency medicine on patient satisfaction and waiting time in the emergency departments. Throughout the fifteen studies, results were unanimous in support of advanced practice nursing, including CNSs, increasing efficiency and patient-centered ED results. CNSs' and advanced practitioners' interventions decreased waiting time and length of stay and increased triage accuracy, improving patient flow. The patients also noted high satisfaction rates with nurse-led care and associated those positive experiences with effective communication, holistic care, and the possibility of promptly accessing care.

Nurse practitioners, advanced practice nurses, and the role of a CNS have much evidence supporting their practices, although, as demonstrated by the emerging body of evidence specific to CNSs, they also have specific contributions to make as experts in clinical practice and system leaders. Disparities between populations in different national healthcare systems indicate that the efficacy of CNSs is influenced by role integration, the scope of practice, and institutional need alignment.

The results indicate that increased integration of CNSs in ED staffing patterns may be used to resolve the two-fold challenge of crowding and patient satisfaction. Prospective studies should be done to boost the causal body of evidence and to examine cost-effectiveness. CNSs are, therefore, an important facility for enhancing efficiency and quality in emergency care.

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