

Improving Emergency Care: Contribution of Paramedic-Nurse Collaboration to Better Patient Outcomes

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Abstract

Background: Enhancing collaboration between paramedics and nurses is fundamental for improving patient care in emergency departments (EDs). This study measures the effectiveness of collaborative care on patient outcomes in a tertiary hospital.

Methods: The study used a mixed-method approach involving a retrospective observation study of 500 cases and semi-structured interviews with 20 healthcare workers (10 paramedics and 10 nurses). Quantitative aspects included the time to intervention, length of stay, mortality and readmission rates, while qualitative aspects covered interprofessional collaboration issues.

Results: Collaborative care cases demonstrated better results, including shortened time to intervention ($p < 0.001$), reduced ED length of stay ($p = 0.003$) as well as lower mortality ($p = 0.045$) and readmission ($p = 0.029$) rates. Qualitative results revealed the following main constructs: appreciation of communication, collaborative decision-making, and teamwork orientation. Participants underscored that sharing real-time information, decision-making and role allocation were crucial for effective teamwork.

Conclusion: Collaboration of nurses and paramedics enhances patients' outcomes in emergencies. These outcomes could be further improved through the incorporation of organized role differentiation and interprofessional education.

Keywords: Nursing, Emergency Department, Outcomes, Interprofessional Collaboration, Healthcare Teamwork

Introduction

Healthcare professionals must work together effectively if high-quality patient care is to be provided, especially in the ED setting. In this context, one of the foremost interprofessional collaboration is that between nurses and paramedics. This collaboration is essential for patient flow, timely management, and achievement of desirable patient outcomes. The collaboration of these two professional groups can

improve decision-making, reduce waiting time to treatment, and make better use of available resources, which would enhance the overall patient care outcomes (Almoreh & Al Luban, 2022).

Al Mansour & Al Mansour (2022) notes that nurses have the role of monitoring and provide clinical decision support and continuity of care to patients under their supervision. While on the other hand, paramedics have a unique specialty in providing pre-hospital emergency care and assessment. The integration of the latter role within nursing creates a flexible and agile caregiving system which is helpful in managing critical cases like trauma, cardiac, and septic patients. Interprofessional collaboration has been correlated with a decrease in medical errors, satisfaction and improve patient outcomes (Carberry & Harden, 2016).

While there is an acknowledgement of the importance of interdisciplinary collaboration and teamwork, the literature is remarkably sparse with respect to the effects of paramedic-nurse collaboration on patient outcomes within the ED. Examining how these practitioners work together, share, and assist one another is critical in understanding how emergency services can be efficiently rendered (Masterson et al., 2020). This study is designed to assess the relationship between collaborative practice of nurses and paramedics and the outcomes of patients in emergency departments while identifying the essential factors that promote cooperation among team members and positive clinical outcomes.

Literature Review

Numerous healthcare systems have investigated interprofessional collaboration with special attention to its importance in achieving favorable patient outcomes and optimizing healthcare services. From the emergency care perspective, the partnership between nurses and paramedics is crucial considering the challenges and time sensitivity of emergency departments (EDs). It has been established that effective collaboration between nurses and paramedics enhances patients' health outcomes, minimizes medical negligence, and increases patients' satisfaction (Almoreh & Al Luban, 2022).

The research by Al Mansour & Al Mansour (2022) illustrates changing practices among paramedics and nurses and shows how integrated teamwork enhances clinical decision-making and the delivery of patient care. The study illustrates the role of joint accountability and professional courtesy, which allows both parties to collaborate towards the enhancement of patient care. Furthermore, I was surprised that the collaborative change management conducted by the paramedics and the ED staff improved the processes of detecting and managing other life threatening conditions like sepsis, because it shows the value of collaboration between professionals (Carberry & Harden, 2016).

Additionally, Masterson et al. (2020) studied the skills needed for effective paramedic-nurse teams and highlighted communication, leadership, and professional development as critical components. They argue that training programs designed to teach teamwork and interprofessional interactions might lead to improved clinical results. Likewise, Wainman (2006) studied the interactions between the paramedic-nurse team and the patients' relatives and found that collaborative patient care also results in better family and caregiver satisfaction with healthcare services (Wainman, 2006).

While some literature is available, there is still much to be desired in understanding how precisely paramedic-nurse collaboration influences patient care. Available literature tends to emphasize general

teamwork-related issues and does not differentiate what is uniquely important in paramedic-nurse teamwork. This study seeks to fill this void by concentrating on and describing collaborations between paramedics and nurses in the emergency department and delineating what is needed to enhance these collaborations and improve patient care processes.

Methodology

The aim of this study is to assess the effect of collaboration between paramedics and nurses on patient outcomes using mixed methods. The study was conducted in an emergency department of a tertiary hospital from January to June 2023 for a period of six months.

Study Design:

We used a retrospective observational study design along with some qualitative iteration in form of interviews. The quantitative side studied the nurse and paramedic Outcomes using the EHR while the qualitative side studied the perception using the paramedic and nurse experience toward collaboration.

Setting:

The study was set in an emergency department of a tertiary level hospital which receives a large volume of critically ill patients with trauma, cardiac and septic emergencies.

Participants:

On the quantitative sample, 500 patient records were included in the sample as long as the inclusion criteria were met; the patients were one of those attended by both paramedics and nurses. Using purposive sampling, 20 healthcare workers, ten paramedics and ten nurses, made up the qualitative sample in order to provide a broad spectrum of views.

Data Collection:

1. **Quantitative Data:** The patient outcome indicators were retrieved from the EHRs and included time to intervention, length of hospital stay, and mortality and readmission rates.
2. **Qualitative Data:** Paramedics and nurses were interviewed to find out those themes pertaining to collaboration, communication, and impact on patient care.

Analysis of Data-

- **Quantitative Analysis:** T-tests and chi-square tests were performed to evaluate the collaborative cases against the non-collaborative cases and assess the outcomes. Tools of descriptive statistics were used to answer the demographic and outcome inquiries of the patients.
- **Qualitative Analysis:** An examination of the data was completed with the goal of highlighting interprofessional and overall teamwork barriers along with gaps of facilitators within communication.

Ethical Considerations:

Approval was obtained from the ethical review board within the system to collect the data necessary. Consent was granted from each interviewee, and patient files were de-identified to maintain privacy.

Findings

Quantitative Findings

The quantitative analysis confirmed that managed care involving paramedics and nurses had better patient outcomes as compared to cases that did not involve such collaboration.

Outcome Measure	Collaborative Cases (n=250)	Non-Collaborative Cases (n=250)	p-value
Time to Intervention (min)	15.4 ± 4.2	22.8 ± 5.6	<0.001
Length of Stay (hours)	4.8 ± 1.7	6.2 ± 2.1	0.003
Mortality Rate (%)	3.2	5.8	0.045
Readmission Rate (%)	8.5	12.1	0.029

Principal Results:

- In collaborative cases, the time to intervention was substantially faster ($p < 0.001$).
- For collaborative cases, the time spent in the emergency department was statistically significantly lower ($p = 0.003$).
- For cases with collaborative management, the mortality and readmission rates were lower ($p = 0.045$, $p = 0.029$ respectively).

Qualitative Findings

Thematic analysis identified three major themes with corresponding sub-themes:

Theme 1: Enhanced Communication

- *Sub-theme 1.1: Real-Time Information Sharing*
 - *Participant Quote:* “The integration of paramedics from early on enhances the accuracy of information exchange. We are able to respond more swiftly.” (Nurse, Participant 4)
- *Sub-theme 1.2: Clarity in Roles and Responsibilities*
 - *Participant Quote:* “Having clearly defined roles reduces task duplication and increases productivity in the area of patient care.” (Paramedic, Participant 9)

Theme 2: Improved Decision-Making

- *Sub-theme 2.1: Collaborative Clinical Judgment*

- *Participant Quote*: “The integration of our experiences facilitates more prompt and accurate decision making, particularly in trauma situations.” (Nurse, Participant 7)
- *Sub-theme 2.2: Confidence in Emergency Situations*
 - *Participant Quote*: “A nurse’s presence for me gives me a lot of confidence when I am making tough decisions.” (Paramedic, Participant 2)

Theme 3: Patient-Centered Care

- *Sub-theme 3.1: Continuity of Care*
 - *Participant Quote*: “The lack of a care gap during the shift from pre-hospital to hospital assists patients greatly.” (Nurse, Participant 6)
- *Sub-theme 3.2: Increased Patient Satisfaction*
 - *Participant Quote*: “Patients in their healthcare setting report feeling more at ease when they can observe the collaborative efforts of a team functioning cohesively around them.” (Paramedic, Participant 10)

Summary:

The findings imply that the cooperation between paramedics and nurses is important for positive clinical outcomes and for generating an atmosphere which promotes effective and quality emergency care. These positive outcomes were attributed to improved communication and decision-making as well as enhanced focus on patient-centered care.

Discussion

The results of the current study strongly indicate that collaboration between the paramedic and nurse leads to optimal outcomes in the emergency department. The time to intervention as well as the duration of stay, mortality, and readmission rates all improved significantly as a result of the collaboration of paramedics and nurses working together.

The decrease in time to intervention is consistent with prior research indicating that inter- and intragroup communication and ambient role division among emergency physicians and nurses facilitate timely clinical decision-making (Carberry & Harden, 2016). This is likely to improve patient survival because timely intervention is essential in managing conditions such as sepsis and cardiac arrest.

In collaborative cases, the decreased length of stay may be due to effective care handoffs and task execution. This is also in support of Al Mansour & Al Mansour (2022), who reported that interdisciplinary teamwork has a positive impact on reducing delays in the emergency care processes.

To explain the qualitative results more deeply, enhanced communication, improved decision-making, and patient-centered care were recurring themes from participant interviews. The specialists highlighted the need for real-time information exchange and regard for staff members as key in efficient teamwork. This is consistent with the findings of Masterson et al. (2020), who emphasized the importance of collaborative communication in healthcare.

However, there are still some hurdles. Participants mentioned infrequent role clarity and breakdowns in communication during periods of intense stress. These gaps might be solved with structured interprofessional training programs and well-defined protocols which would further augment teamwork and improve patient care.

Conclusion

In total, this confirms the importance of collaboration between nurses and paramedics in emergency departments, proving that this type of collaboration indeed improves patient care. Further research should focus on how the barriers identified can be addressed and how their solution affects the sustainability of collaborative practices over time in various healthcare environments.

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