

Enhancing Communication between Nurses, Radiologists, and Psychologists in Trauma Care: A Multidisciplinary Approach to Improving Patient Outcomes

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Abstract

Background: Effective communication among healthcare professionals is critical in trauma care to ensure timely interventions and improve patient outcomes. This study examines communication practices among nurses, radiologists, and psychologists in a tertiary hospital, identifies barriers, and explores strategies to enhance interdisciplinary collaboration.

Methods: A cross-sectional study design was used, involving 150 participants (60 nurses, 40 radiologists, and 50 psychologists). Data were collected through structured surveys, semi-structured interviews, and non-participant observations. Quantitative data were analyzed using descriptive and inferential statistics, while thematic analysis was applied to qualitative data.

Results: While overall communication effectiveness was rated moderately high (mean: 3.8 ± 0.8), significant barriers included time constraints (72%), professional silos (53%), and limited interdisciplinary training (65%). Facilitators such as regular interdisciplinary meetings and the use of shared electronic medical records enhanced communication efficiency. Effective communication was associated with improved patient outcomes, faster diagnosis, and better interdisciplinary trust.

Conclusion: Addressing communication barriers through structured frameworks, training programs, and technology integration can significantly enhance interdisciplinary collaboration and patient care in trauma settings.

Keywords: Interdisciplinary Communication, Trauma Care, Nurses, Radiologists, Psychologists, Patient Outcomes, Tertiary Hospital

Introduction

Effective communication among healthcare professionals is a cornerstone of quality care in trauma settings, where the complexity of patient needs requires seamless interdisciplinary collaboration. Nurses, radiologists, and psychologists play distinct yet complementary roles in trauma care, making effective communication essential to integrating their expertise for improved patient outcomes. Research

underscores that poor communication between healthcare providers can lead to delays in diagnosis, treatment errors, and reduced patient satisfaction (Manser, 2009). In contrast, fostering structured and transparent communication improves both team dynamics and patient safety (O'Daniel & Rosenstein, 2008).

Nurses are often the first point of contact for trauma patients and serve as key coordinators of care, bridging information between patients, families, and other healthcare providers (Benner, Tanner, & Chesla, 2009). Radiologists contribute critical diagnostic information through imaging, guiding treatment decisions in trauma cases. However, miscommunication about imaging findings or their clinical implications can hinder timely interventions (Schwartz et al., 2011). Similarly, psychologists provide essential mental health support, addressing the psychological impact of trauma, which is increasingly recognized as a significant component of recovery (Briere & Scott, 2012). Despite these overlapping roles, barriers such as professional silos, hierarchical structures, and varying communication styles can impede effective teamwork in trauma care (Lingard et al., 2004).

Addressing these challenges requires implementing structured communication frameworks, such as regular interdisciplinary meetings and standardized handover protocols. Evidence suggests that such strategies not only enhance information exchange but also foster mutual respect and understanding among team members (Leonard, Graham, & Bonacum, 2004). Trauma-informed care models further emphasize the need for communication that promotes patient safety and empowerment, particularly in managing the psychological sequelae of trauma (Protocol, 2014).

In conclusion, improving communication between nurses, radiologists, and psychologists in trauma care is critical for optimizing patient outcomes. By addressing communication barriers and adopting structured strategies, healthcare teams can provide more cohesive and comprehensive care to trauma patients.

Literature Review

The Role of Effective Communication in Trauma Care

Effective communication among healthcare providers is essential for delivering high-quality care in trauma settings. Studies have shown that communication breakdowns can lead to errors in diagnosis, delays in treatment, and poor patient outcomes (Manser, 2009). In trauma care, where decisions often need to be made rapidly, seamless information exchange is critical for ensuring patient safety and effective care delivery. O'Daniel and Rosenstein (2008) emphasize that structured communication frameworks, such as interdisciplinary rounds and standardized handoffs, are instrumental in reducing errors and improving teamwork.

Nurses' Role in Trauma Care Communication

Nurses play a pivotal role in trauma care by acting as intermediaries between patients, families, and other healthcare professionals. As frontline caregivers, they coordinate patient care and facilitate communication between the multidisciplinary team (Benner, Tanner, & Chesla, 2009). Effective communication by nurses ensures that critical information is relayed promptly to radiologists and

psychologists, enabling timely interventions. However, studies highlight that nurses often face challenges such as high workloads and inadequate communication training, which can impede their ability to share information effectively (Lingard et al., 2004).

Radiologists' Contribution to Trauma Care

Radiologists provide vital diagnostic insights in trauma settings through imaging modalities such as X-rays, CT scans, and MRIs. Their interpretations guide clinical decisions, making accurate communication of imaging findings imperative. Schwartz et al. (2011) notes that miscommunication of radiological reports is a significant source of diagnostic errors. Furthermore, the lack of direct interaction between radiologists and other team members often limits the opportunity for real-time discussions, underscoring the need for improved communication pathways in trauma care (Lingard et al., 2004).

Psychological Support in Trauma Care

Trauma patients often experience significant psychological distress, which can hinder recovery. Psychologists address these issues by providing mental health support, helping patients cope with the emotional and psychological impact of their injuries. Briere and Scott (2012) highlight the importance of integrating psychological care into trauma management, emphasizing that communication between psychologists and the medical team ensures that mental health needs are adequately addressed. However, research indicates that psychological care is often underutilized in trauma settings due to a lack of interdisciplinary coordination (Protocol, 2014).

Barriers to Interdisciplinary Communication

Several studies identify barriers that hinder effective communication among nurses, radiologists, and psychologists. Hierarchical structures, professional silos, and differing communication styles often contribute to miscommunication and reduced collaboration (Lingard et al., 2004). Manser (2009) found that these barriers are particularly pronounced in high-pressure environments like trauma care, where time constraints exacerbate the challenges. Addressing these issues requires targeted interventions, such as training programs focused on team communication and the use of technology to streamline information exchange (Leonard, Graham, & Bonacum, 2004).

Strategies for Improving Communication

Implementing structured communication strategies has been shown to improve interdisciplinary collaboration in trauma care. Leonard, Graham, and Bonacum (2004) propose the use of standardized communication tools such as SBAR (Situation, Background, Assessment, Recommendation) to facilitate clear and concise information exchange. Regular interdisciplinary meetings and case discussions can also enhance mutual understanding and respect among team members. Additionally, trauma-informed care models advocate for communication practices that prioritize patient safety, empowerment, and emotional well-being (Protocol, 2014).

The literature highlights the critical role of effective communication among nurses, radiologists, and psychologists in trauma care. While each profession contributes uniquely to patient management, collaboration is often hindered by systemic barriers and communication challenges. Addressing these issues through structured frameworks and interdisciplinary training is essential for improving patient outcomes and ensuring comprehensive trauma care.

Methodology

Study Design

This study employed a descriptive cross-sectional design to evaluate the communication practices among nurses, radiologists, and psychologists in trauma care at a tertiary hospital. The aim was to explore the effectiveness of interdisciplinary communication, identify existing barriers, and propose strategies for improvement.

Setting

The study was conducted at a tertiary hospital equipped with a Level I trauma center, which handles a high volume of trauma cases annually. The facility includes an advanced diagnostic imaging department, a nursing unit specializing in trauma care, and a psychological services department integrated into the patient care pathway.

Participants

A total of 150 participants were recruited for the study, including 60 nurses, 40 radiologists, and 50 psychologists actively involved in trauma care. Participants were selected through purposive sampling to ensure that individuals with direct experience in trauma patient management were included.

Inclusion criteria:

- Healthcare professionals working in the trauma care unit for at least six months.
- Direct involvement in interdisciplinary communication related to trauma care.

Exclusion criteria:

- Healthcare professionals not directly involved in trauma care.
- Professionals on leave or unavailable during the study period.

Data Collection

Data were collected over a three-month period using a combination of quantitative surveys and qualitative interviews.

1. Survey Instrument

- A structured questionnaire was developed, validated, and distributed to assess participants' perceptions of communication practices, barriers, and their impact on patient

care. The questionnaire included both closed-ended questions (using a 5-point Likert scale) and open-ended questions for qualitative insights.

2. Interviews

- Semi-structured interviews were conducted with 30 key participants (10 from each professional group). Interviews explored experiences with interdisciplinary communication, perceived barriers, and suggestions for improvement.

3. Observation

- Non-participant observations of interdisciplinary meetings and trauma care rounds were conducted to assess real-time communication practices. Detailed field notes were taken to capture interactions, collaboration patterns, and challenges.

Data Analysis

1. Quantitative Data Analysis

- Survey responses were analyzed using descriptive statistics (frequencies, means, and standard deviations) to summarize communication practices and identify common barriers.
- Inferential statistics, such as chi-square tests and ANOVA, were used to compare perceptions across the three professional groups.

2. Qualitative Data Analysis

- Interview transcripts and open-ended survey responses were analyzed using thematic analysis. Key themes related to communication barriers, facilitators, and strategies for improvement were identified.
- Observational data were coded and triangulated with survey and interview findings to enhance the validity of the results.

Ethical Considerations

Ethical approval was obtained from the hospital's ethics committee prior to the commencement of the study. Participants provided written informed consent after being briefed about the study's purpose, procedures, and confidentiality measures. Data were anonymized to protect participants' identities.

Study Limitations

Potential limitations of the study include:

- **Self-reporting bias** in survey and interview responses.
- Limited generalizability of findings due to the focus on a single tertiary hospital.
- Observational data may not fully capture all communication barriers, as some may occur outside formal settings.

Findings

Quantitative Findings

A total of 150 participants completed the survey: 60 nurses, 40 radiologists, and 50 psychologists. The survey responses provided insights into the effectiveness of communication, identified barriers, and highlighted potential strategies for improvement.

Table 1: Perceptions of Communication Effectiveness across Professions (Mean Scores on a 5-Point Likert Scale)

Profession	Communication Effectiveness (Mean \pm SD)	Clarity of Information (Mean \pm SD)	Timeliness (Mean \pm SD)	Interdisciplinary Respect (Mean \pm SD)
Nurses	3.8 \pm 0.9	4.0 \pm 0.8	3.5 \pm 0.9	3.9 \pm 0.8
Radiologists	3.5 \pm 0.8	3.6 \pm 0.7	3.4 \pm 0.8	3.7 \pm 0.7
Psychologists	4.1 \pm 0.7	4.2 \pm 0.6	4.0 \pm 0.7	4.3 \pm 0.5
Overall	3.8 \pm 0.8	3.9 \pm 0.7	3.6 \pm 0.8	3.9 \pm 0.7

Key Findings:

- Psychologists reported the highest scores for communication effectiveness (4.1 \pm 0.7), indicating positive interdisciplinary interactions.
- Radiologists reported the lowest scores for clarity of information (3.6 \pm 0.7) and timeliness (3.4 \pm 0.8), highlighting challenges in real-time information exchange.
- Nurses indicated moderate satisfaction with communication but emphasized timeliness as a challenge (3.5 \pm 0.9).

Table 2: Identified Barriers to Effective Communication (Percentage of Participants Reporting)

Barrier	Nurses (%)	Radiologists (%)	Psychologists (%)	Overall (%)
Lack of Real-Time Feedback	60	75	50	61
Professional Silos	55	65	40	53
Hierarchical Structures	45	50	30	42
Limited Interdisciplinary Training	70	60	65	65
Time Constraints	75	80	60	72

Key Findings:

- Time constraints were the most commonly reported barrier, with 72% of participants indicating it impacted communication.
- Radiologists highlighted a lack of real-time feedback (75%) as a significant challenge.

- Professional silos and limited interdisciplinary training were reported by more than half of the participants.

Qualitative Findings

Thematic analysis of interviews and open-ended survey responses identified three main themes, each with sub-themes and illustrative participant quotes.

Theme 1: Communication Barriers

- **Sub-theme 1.1: Time Constraints**
 - *“Sometimes I don’t have enough time to discuss imaging results with the team in detail, which delays decision-making.”* (Radiologist)
 - *“We are so busy attending to patients that there’s limited opportunity for team discussions.”* (Nurse)
- **Sub-theme 1.2: Lack of Training**
 - *“We’ve never been trained on how to communicate effectively with other professions, which creates misunderstandings.”* (Psychologist)
 - *“Interdisciplinary communication feels ad-hoc; we need formal training programs.”* (Nurse)
- **Sub-theme 1.3: Hierarchical Structures**
 - *“In some cases, decisions are made without consulting us, which makes us feel undervalued.”* (Psychologist)
 - *“There’s a perception that radiologists don’t need input from other disciplines, which is not true.”* (Radiologist)

Theme 2: Facilitators of Effective Communication

- **Sub-theme 2.1: Regular Interdisciplinary Meetings**
 - *“When we hold regular case discussions, it’s much easier to align on patient care goals.”* (Nurse)
 - *“Interdisciplinary meetings have helped us build mutual respect and trust.”* (Psychologist)
- **Sub-theme 2.2: Use of Technology**
 - *“Implementing shared electronic medical records has made communication faster and more efficient.”* (Radiologist)
 - *“When everyone updates the system, we can all see the latest information and avoid duplication.”* (Nurse)

Theme 3: Impact on Patient Care

- **Sub-theme 3.1: Improved Patient Outcomes**
 - *“When communication is effective, patients receive faster diagnoses and better care.”* (Nurse)

- *"I've seen fewer delays in trauma cases when everyone collaborates effectively."* (Radiologist)
- **Sub-theme 3.2: Enhanced Patient Trust**
 - *"Patients feel more confident when they know all team members are on the same page."* (Psychologist)
 - *"Clear communication between us reassures patients that they are getting the best care possible."* (Nurse)

Discussion

The findings of this study highlight the critical role of effective communication among nurses, radiologists, and psychologists in trauma care. While the overall perception of communication effectiveness was moderate to high, several challenges, such as time constraints, professional silos, and a lack of interdisciplinary training, were identified as significant barriers. The discussion focuses on these barriers, the facilitators of effective communication, and their implications for improving patient outcomes.

Barriers to Communication

Time constraints emerged as the most frequently reported barrier, with 72% of participants indicating its impact on communication. This finding aligns with previous studies that highlight the high-paced nature of trauma care, where the urgency of patient needs often limits opportunities for thorough interdisciplinary discussions (Manser, 2009). Nurses and radiologists reported particular difficulty in real-time communication, reflecting the challenges of coordinating care across different departments with varying schedules. Addressing this barrier requires workflow optimization and dedicated time for team interactions.

Professional silos and hierarchical structures were also prominent barriers. Radiologists reported a lack of real-time feedback, while psychologists expressed concerns about being undervalued in decision-making processes. These findings are consistent with research suggesting that hierarchical dynamics and discipline-specific silos hinder collaboration and mutual respect among healthcare professionals (Lingard et al., 2004). Bridging these silos through targeted training and fostering a culture of equality in decision-making could significantly improve interdisciplinary relationships.

Facilitators of Effective Communication

The study identified regular interdisciplinary meetings and the use of technology as key facilitators of effective communication. Participants highlighted that case discussions and team meetings helped align goals, build mutual respect, and enhance understanding of each other's roles. This aligns with Leonard, Graham, and Bonacum's (2004) findings, which emphasize the importance of structured communication frameworks in improving teamwork and patient safety.

Technology, particularly shared electronic medical records (EMRs), was also recognized as a valuable tool for improving communication efficiency. Radiologists and nurses emphasized the role of EMRs in ensuring real-time information exchange and reducing the risk of miscommunication. This finding

supports previous research indicating that technology can streamline interdisciplinary communication and enhance care coordination (O'Daniel & Rosenstein, 2008).

Impact on Patient Care

Effective communication was reported to have a direct impact on patient care, including faster diagnosis, better treatment planning, and improved patient outcomes. Participants noted that clear and timely communication fosters trust among team members and with patients, ultimately leading to better health outcomes. These findings align with the trauma-informed care approach, which emphasizes the importance of communication in creating a sense of safety and empowerment for patients (Protocol, 2014).

The study also highlighted the psychological benefits of effective communication for patients. Psychologists emphasized that when team members are well-coordinated, patients experience less anxiety and are more likely to adhere to treatment plans. This underscores the need for integrating mental health considerations into trauma care, as highlighted by Briere and Scott (2012).

Implications for Practice

The findings suggest several actionable strategies to improve communication among nurses, radiologists, and psychologists in trauma care:

1. **Structured Interdisciplinary Meetings:** Regular team meetings can provide a platform for discussing cases, addressing challenges, and fostering collaboration.
2. **Communication Training:** Training programs focused on interdisciplinary communication can help professionals understand each other's roles and overcome barriers related to professional silos and hierarchical dynamics.
3. **Technology Integration:** Expanding the use of shared EMRs and other communication tools can enhance real-time information exchange and reduce delays.
4. **Time Management Strategies:** Allocating dedicated time for team communication, even in high-pressure environments, is essential for ensuring comprehensive care.

Limitations

While the study provides valuable insights, its findings are limited by its focus on a single tertiary hospital, which may reduce generalizability. Additionally, the reliance on self-reported data introduces the potential for bias, as participants may have overestimated or underestimated communication effectiveness.

Conclusion

This study underscores the importance of effective communication among nurses, radiologists, and psychologists in trauma care. While barriers such as time constraints, professional silos, and hierarchical structures persist, facilitators like interdisciplinary meetings and technology integration offer promising

solutions. By addressing these challenges and implementing the suggested strategies, healthcare teams can enhance collaboration, improve patient outcomes, and provide more comprehensive trauma care.

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