

Evaluating the Relationship Between Leadership Communication and Trust Among Nursing Team Members

Tobias Romero, Eloise Jenkins, Asher Hayes

1 Introduction

The critical importance of effective leadership communication in healthcare settings has been widely acknowledged in both academic literature and clinical practice. However, the precise mechanisms through which leadership communication influences trust development among nursing team members remain inadequately understood. Traditional approaches to studying this relationship have been limited by methodological constraints, including reliance on retrospective self-report data and artificial experimental conditions that fail to capture the dynamic, high-stakes environment of clinical nursing practice. This research addresses these limitations by introducing an innovative methodological framework that combines computational linguistics with social network analysis to examine leadership communication and trust relationships in their natural context.

Trust represents a fundamental component of effective healthcare teams, influencing everything from medication error rates to patient satisfaction scores. Within nursing teams, trust facilitates knowledge sharing, reduces cognitive load during critical decision-making, and enhances psychological safety. Leadership communication serves as a primary vehicle for trust cultivation, yet the specific communication patterns that most effectively build and

sustain trust remain poorly defined. Previous research has typically treated communication as a unidimensional construct, focusing primarily on frequency or clarity while neglecting the complex interplay of emotional tone, timing, and contextual factors.

This study addresses several critical gaps in the existing literature. First, we move beyond self-report measures to incorporate objective behavioral metrics of both communication and trust-related behaviors. Second, we examine communication patterns longitudinally, allowing for analysis of how trust relationships evolve over time and across different clinical contexts. Third, we employ a multi-dimensional trust framework that distinguishes between cognitive trust (based on competence assessments), affective trust (based on emotional bonds), and behavioral trust (manifested through delegation and collaboration patterns).

Our research questions are deliberately designed to explore previously unexamined aspects of the communication-trust relationship: (1) How do specific linguistic features of leadership communication correlate with different dimensions of trust? (2) What is the nature of the relationship between communication frequency and trust development—is it linear, curvilinear, or moderated by contextual factors? (3) How does emotional variance in leadership communication influence trust resilience during high-stress clinical events? (4) To what extent do communication patterns mediate the relationship between leadership behaviors and team trust outcomes?

2 Methodology

2.1 Research Design and Setting

This study employed a mixed-methods longitudinal design conducted across three distinct hospital units: a medical-surgical unit, an intensive care unit, and an emergency department. These settings were selected to represent varying levels of clinical acuity, team stability, and communication demands. The research was conducted over a six-month period, allowing for observation of trust development across multiple nursing shifts and clinical scenarios. Par-

ticipants included 87 nursing team members comprising registered nurses, licensed practical nurses, nursing assistants, and unit leadership. The sample represented diverse experience levels, with clinical tenure ranging from 6 months to 32 years.

2.2 Data Collection Procedures

Data collection incorporated multiple complementary approaches to capture both communication behaviors and trust indicators. Electronic health record communication logs provided the primary source for analyzing leadership communication patterns. These logs included shift handoff communications, interdisciplinary team messages, and internal unit communications. All personally identifiable information was removed prior to analysis, and institutional review board approval was obtained with appropriate safeguards for participant confidentiality.

Trust assessment employed a triangulated approach including behavioral observation, social network mapping, and validated instrument administration. The Behavioral Trust Observation Protocol was developed specifically for this study to document trust-related behaviors including information sharing, task delegation, backup behaviors, and consultation seeking. Social network analysis mapped advice-seeking and collaboration patterns across shifts. Additionally, participants completed the Multi-dimensional Nursing Trust Scale at three time points during the study period.

2.3 Analytical Framework

The analytical approach integrated computational linguistics with sophisticated statistical modeling. Natural language processing techniques were applied to communication logs to extract features including sentiment polarity, emotional variance, linguistic complexity, and communication responsiveness. These features were then analyzed in relation to trust outcomes using multilevel modeling to account for nested data structure (communications nested within individuals, nested within shifts, nested within units).

Network analysis examined structural properties of communication and trust networks, including density, centrality, and clustering coefficients. Temporal analysis explored how communication patterns preceding critical clinical events influenced subsequent trust behaviors. Qualitative content analysis of selected communication instances provided contextual understanding of the quantitative patterns identified.

2.4 Innovative Methodological Contributions

This study introduces several methodological innovations. First, the real-time capture of communication behaviors through existing clinical systems represents a significant advancement over traditional self-report methods. Second, the integration of computational linguistics with trust measurement allows for fine-grained analysis of how specific communication features influence trust development. Third, the multi-dimensional trust assessment protocol provides a more comprehensive understanding of trust dynamics than previous unidimensional approaches. Finally, the longitudinal design enables analysis of causal pathways and temporal dynamics in the communication-trust relationship.

3 Results

3.1 Communication Frequency and Trust Development

Contrary to conventional assumptions, our analysis revealed a complex, nonlinear relationship between communication frequency and trust development. While moderate communication frequency (approximately 15-25 substantive communications per shift) correlated positively with trust measures, both insufficient communication (fewer than 10 communications) and excessive communication (more than 35 communications) were associated with diminished trust scores. This curvilinear pattern was particularly pronounced for cognitive trust, suggesting that information overload may impair team members' ability to assess leader competence accurately.

The optimal communication frequency varied by clinical context, with higher-acuity environments tolerating greater communication volume before trust erosion occurred. In the intensive care unit, for example, the threshold for excessive communication was approximately 40 communications per shift, compared to 30 in the medical-surgical unit. This contextual variation highlights the importance of unit-specific communication norms and demands.

3.2 Emotional Tone and Trust Resilience

Analysis of emotional tone patterns yielded unexpected findings regarding trust resilience during stressful clinical events. Rather than uniformly positive communication correlating with stronger trust, we found that moderate emotional variance—incorporating appropriate expressions of concern, urgency, and gravity during critical situations—was associated with higher trust preservation during subsequent shifts. Teams whose leaders maintained inappropriately positive communication during crisis events showed greater trust deterioration than those whose leaders communicated with emotional authenticity matching the clinical context.

This relationship was mediated by perceptions of leader authenticity and situational awareness. Nursing team members reported higher trust in leaders who demonstrated emotional intelligence through context-appropriate tone variation, particularly when managing clinical deterioration or adverse events. The emotional variance index we developed accounted for 42

3.3 Linguistic Features and Trust Dimensions

Different linguistic features correlated with distinct trust dimensions. Cognitive trust (belief in leader competence) showed strongest correlation with communication clarity metrics, including syntactic complexity and semantic precision. Affective trust (emotional connection) correlated more strongly with empathy indicators and inclusive language. Behavioral trust

(willingness to rely on leader) demonstrated the most complex relationship with communication patterns, influenced by both linguistic features and communication timing.

Notably, we identified several communication patterns that simultaneously enhanced one trust dimension while diminishing another. For example, highly directive communication improved cognitive trust in leader competence but reduced affective trust when perceived as authoritarian. This finding helps explain previous contradictory results in the leadership communication literature and underscores the importance of a multi-dimensional trust framework.

3.4 Temporal Dynamics and Trust Trajectories

Longitudinal analysis revealed that trust development follows distinct trajectories influenced by communication consistency and responsiveness. Teams experiencing high communication variability—frequent shifts between highly engaged and minimally communicative leadership—showed unstable trust trajectories regardless of overall communication quality. Conversely, teams with consistent, predictable communication patterns demonstrated more stable trust development even when communication quality was moderate.

Communication responsiveness emerged as a critical factor in trust repair following communication failures. Leaders who promptly acknowledged and addressed communication breakdowns were able to maintain trust through subsequent interactions, while those who ignored or denied communication issues experienced progressive trust erosion. The timing of trust-repair communication appeared more important than the content, with responses within the same shift being most effective.

4 Conclusion

This research makes several significant contributions to our understanding of leadership communication and trust in nursing teams. Methodologically, we have demonstrated the

value of integrating computational linguistics with behavioral trust assessment to overcome limitations of traditional self-report measures. Theoretically, our findings challenge simplistic linear models of the communication-trust relationship, revealing complex nonlinear and contextual patterns that better reflect the reality of clinical nursing environments.

The identification of optimal communication frequency thresholds provides practical guidance for nursing leaders seeking to balance information sharing with cognitive load management. The finding that emotional variance—rather than uniform positivity—correlates with trust resilience offers a more nuanced understanding of emotional intelligence in healthcare leadership. The differential impact of communication features on distinct trust dimensions helps explain previous contradictory findings and suggests targeted communication strategies for building specific types of trust.

Several limitations should be acknowledged. The study was conducted in three hospital units within a single healthcare system, potentially limiting generalizability. While we captured electronic communications comprehensively, we were unable to document informal verbal exchanges that may influence trust development. Future research should expand to additional clinical settings and incorporate more sophisticated natural language processing capabilities.

This research has important implications for nursing leadership development and healthcare communication training. Current leadership programs often emphasize communication quantity over strategic communication quality. Our findings suggest that effective communication requires careful attention to frequency optimization, emotional authenticity, and feature-targeting based on specific trust goals. Healthcare organizations should consider implementing communication analytics similar to those developed in this study to provide leaders with feedback on their communication patterns and trust impacts.

In conclusion, the relationship between leadership communication and trust among nursing team members is far more complex and nuanced than previously recognized. By employing innovative methodological approaches and multi-dimensional theoretical frameworks,

this research provides new insights with significant implications for both theory and practice in healthcare leadership and team dynamics.

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