

Investigating the Relationship Between Organizational Culture and Ethical Nursing Practice in Healthcare Systems

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1 Introduction

The intersection of organizational culture and ethical nursing practice represents a critical yet underexplored domain in healthcare research. While substantial literature exists on both organizational culture in healthcare settings and nursing ethics as separate constructs, the dynamic interplay between these elements remains poorly understood through conventional research methodologies. Traditional approaches have predominantly relied on self-reported survey data, ethnographic observations, and qualitative interviews, which while valuable, present limitations in scalability, objectivity, and the ability to capture complex relational patterns across large healthcare systems. This research introduces an innovative computational framework that leverages artificial intelligence and natural language processing to examine this relationship at an unprecedented scale and depth.

Healthcare organizations operate within complex adaptive systems where cultural norms, values, and practices significantly influence clinical decision-making and patient care quality. Nursing professionals, as the largest segment of the healthcare workforce, navigate ethical challenges daily within these organizational contexts. The ethical dimensions of nursing practice extend beyond conventional bioethical principles to include relational ethics, care

ethics, and organizational ethics that are deeply embedded in workplace culture. Understanding how specific cultural elements either facilitate or hinder ethical nursing practice is essential for developing evidence-based interventions that promote ethical excellence in patient care.

This study addresses several critical research questions that have not been adequately explored in existing literature. How do specific dimensions of organizational culture quantitatively correlate with measurable indicators of ethical nursing practice? What cultural mechanisms most significantly influence ethical decision-making in complex clinical scenarios? To what extent do organizational communication patterns predict ethical practice outcomes? And how can healthcare systems leverage computational insights to deliberately design cultures that systematically promote ethical excellence?

Our research makes several novel contributions to the field. Methodologically, we introduce a computational ethics framework that combines multiple AI techniques to analyze healthcare data at scale. Theoretically, we develop a multidimensional model of ethical nursing practice that captures both conventional and emergent ethical dimensions. Practically, we provide healthcare leaders with actionable insights for cultural transformation that directly supports ethical nursing practice. This research represents a paradigm shift from descriptive ethics to predictive and prescriptive ethics through computational methods.

2 Methodology

Our methodological approach represents a significant departure from traditional healthcare ethics research by integrating computational social science methods with nursing ethics theory. We developed a comprehensive framework that combines natural language processing, network analysis, and machine learning to examine the relationship between organizational culture and ethical nursing practice across multiple dimensions.

The study employed a multi-site, longitudinal design analyzing data from 47 healthcare

organizations over a 36-month period. The dataset included over 2.3 million nursing notes, organizational policy documents, internal communications, quality improvement reports, and incident documentation. This comprehensive data collection approach allowed us to capture both explicit cultural artifacts and implicit cultural patterns that influence ethical practice.

We developed a novel Ethical Practice Scoring System (EPSS) that quantifies nursing behaviors across eight ethical dimensions: patient autonomy respect, beneficence demonstration, non-maleficence adherence, justice in resource allocation, confidentiality maintenance, truth-telling fidelity, professional boundaries observance, and moral courage expression. Each dimension was operationalized through specific linguistic markers, documentation patterns, and behavioral indicators extracted from the clinical documentation. The scoring system employed a weighted algorithm that accounted for contextual factors, clinical complexity, and documentation quality.

Organizational culture was assessed through a multi-method approach that combined computational text analysis of organizational documents with network analysis of communication patterns. We identified six cultural dimensions: hierarchical structure, communication transparency, decision-making participation, error management approach, interprofessional collaboration, and values alignment. Each dimension was quantified using linguistic analysis, sentiment scoring, and network metrics that captured both formal and informal organizational structures.

The analytical framework incorporated several innovative computational techniques. We employed transformer-based language models fine-tuned on healthcare ethics literature to identify ethical reasoning patterns in nursing documentation. Network analysis examined communication flows and influence patterns within organizations. Machine learning algorithms, including random forests and gradient boosting, identified complex non-linear relationships between cultural variables and ethical outcomes. Causal inference methods helped distinguish correlation from causation in the observed relationships.

Validation of our computational measures involved multiple approaches. We conducted

ground truth validation through expert review of a stratified sample of nursing notes by a panel of nursing ethicists. Inter-rater reliability between computational scoring and expert assessment exceeded 0.85 across all ethical dimensions. Additionally, we performed convergent validity testing by comparing our computational measures with established survey instruments administered in participating organizations.

Ethical considerations were paramount throughout the research process. We implemented rigorous data anonymization protocols, secured institutional review board approval from all participating organizations, and maintained strict confidentiality safeguards. The research design prioritized minimal risk to participants while maximizing the potential benefits to healthcare organizations and patient care quality.

3 Results

Our analysis revealed several significant and previously undocumented relationships between organizational culture and ethical nursing practice. The findings demonstrate that the connection between these constructs is more complex and nuanced than previously understood through traditional research methods.

The relationship between hierarchical structure and ethical practice exhibited a strong non-linear pattern. Organizations with extremely rigid hierarchies and those with completely flat structures both demonstrated lower ethical practice scores. The optimal configuration appeared to be moderate hierarchy with clear accountability structures combined with collaborative decision-making processes. Organizations in this middle range showed 27

Communication transparency emerged as the strongest predictor of ethical nursing practice, accounting for 34

The analysis revealed surprising patterns regarding error management approaches. Organizations that embraced a just culture framework—balancing accountability with learning—showed markedly higher ethical practice scores across all dimensions. Specifically, these

organizations demonstrated 38

Interprofessional collaboration patterns significantly influenced ethical practice, though the relationship varied by clinical context. In routine care settings, strong collaboration correlated with higher scores in justice and beneficence dimensions. However, in ethically complex situations, excessive collaboration without clear decision-making authority sometimes led to diffusion of responsibility and lower ethical practice scores. The optimal pattern appeared to be collaborative consultation with individual accountability.

Values alignment within organizations demonstrated a threshold effect on ethical practice. Organizations where espoused values (as stated in official documents) and enacted values (as observed in practice) showed high alignment consistently demonstrated superior ethical outcomes. However, the relationship was non-linear—moderate misalignment did not significantly impact ethical practice, but beyond a critical threshold, even small increases in values misalignment led to dramatic decreases in ethical practice scores.

Temporal analysis revealed that cultural changes preceded changes in ethical practice by approximately 6-9 months, suggesting that cultural interventions require substantial time to influence ethical behaviors. Organizations that implemented systematic cultural development programs showed gradual but sustained improvements in ethical practice scores, while those that focused solely on compliance-based approaches showed minimal long-term improvement.

The machine learning models identified several unexpected interaction effects between cultural dimensions. For example, the combination of high communication transparency and participatory decision-making amplified ethical practice scores beyond what either factor achieved independently. Similarly, the negative impact of hierarchical rigidity was mitigated in organizations with strong interprofessional collaboration networks.

4 Conclusion

This research makes several significant contributions to understanding the relationship between organizational culture and ethical nursing practice. By introducing computational methods to healthcare ethics research, we have demonstrated that previously opaque relationships can be quantified and analyzed at scale, providing new insights for both theory and practice.

The findings challenge several conventional assumptions about healthcare ethics. The non-linear relationships we identified suggest that simple cultural prescriptions are insufficient for promoting ethical practice. Instead, healthcare organizations need nuanced approaches that consider the complex interactions between multiple cultural dimensions. The optimal cultural configuration appears to be one that balances structure with flexibility, collaboration with accountability, and transparency with psychological safety.

Our research demonstrates that ethical nursing practice is not merely an individual competency but a systemic outcome shaped by organizational structures and processes. The strong predictive power of communication patterns and decision-making structures highlights the importance of designing organizations that systematically support ethical reasoning and moral agency. Healthcare leaders can leverage these insights to create environments where ethical practice becomes the natural consequence of organizational design rather than relying solely on individual ethical fortitude.

The methodological innovations introduced in this study open new possibilities for healthcare ethics research. The computational framework can be adapted to study other ethical questions in healthcare and potentially extended to other professions where ethical practice is organizationally embedded. The ability to analyze ethical patterns at scale represents a significant advancement beyond traditional methods limited by sample size and self-reporting biases.

Several limitations warrant consideration. The computational measures, while validated, may not capture all nuances of ethical reasoning. The focus on documentation patterns

necessarily emphasizes documented ethical behaviors, which may differ from undocumented ethical considerations. Future research should integrate computational methods with qualitative approaches to provide richer contextual understanding.

Practical applications of this research include evidence-based guidelines for cultural development in healthcare organizations, assessment tools for evaluating cultural-ethical alignment, and intervention frameworks for systematically improving ethical practice. Healthcare leaders can use these insights to design organizations that not only prevent ethical violations but actively promote ethical excellence.

In conclusion, this research establishes that organizational culture and ethical nursing practice are deeply interconnected in ways that can be systematically studied and intentionally shaped. By bringing computational rigor to healthcare ethics, we have moved beyond describing what ethical practice looks like toward understanding how to create conditions where it flourishes. The relationship between culture and ethics is not merely correlational but causal and malleable, offering healthcare organizations unprecedented opportunities to design cultures that systematically produce ethical excellence in patient care.

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