

Health Security, Complexity, and Mental Health in Healthcare Practice: A Cultural-Analytical Study Across Nursing, Pharmacy, Laboratory, and Dental Disciplines

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Abstract

Background: Health security has increasingly been recognized as a multidimensional construct that extends beyond technical safety measures to encompass institutional culture, professional values, and workforce well-being. In complex healthcare systems, the mental health of healthcare professionals plays a critical role in shaping safety practices, interprofessional collaboration, and system resilience. Despite growing attention to workforce well-being, mental health is often treated as a secondary outcome rather than a foundational element of health security culture.

Objective: This study aims to conceptually examine health security as a cultural framework supporting mental health within complex healthcare systems, with a specific focus on interprofessional practice across nursing, pharmacy, laboratory, and dental disciplines.

Methods: A qualitative conceptual cultural-analytical approach was adopted. The analysis draws on secondary sources, including peer-reviewed literature, international health security and mental health frameworks, and established theoretical models related to human security, organizational culture, system complexity, and interprofessional practice. An axiological lens was employed to explore how values, norms, and institutional culture shape the relationship between health security and mental well-being among healthcare professionals.

Results: The analysis indicates that mental health functions as a foundational condition for effective health security rather than a peripheral concern. Health security cultures that prioritize psychological safety, professional support, and interprofessional trust are more likely to sustain safety practices, ethical decision-making, and workforce engagement. Conversely, cultures characterized by excessive control, fragmented responsibility, and neglect of mental well-being may undermine both security objectives and professional performance, particularly in highly complex healthcare environments.

Conclusion: Conceptualizing health security as a cultural framework that supports mental health offers a more holistic and sustainable understanding of safety in healthcare systems.

By positioning mental well-being as a core pillar of health security culture, this study contributes a value-based perspective that is relevant across healthcare disciplines and supports the development of human-centered, resilient, and ethically grounded healthcare systems.

1. INTRODUCTION

Health security has emerged as a central concern in contemporary healthcare systems, extending beyond traditional notions of disease control and infection prevention to encompass the resilience, well-being, and sustainability of the health workforce itself. In increasingly complex healthcare environments, where interprofessional collaboration is essential, health security can no longer be understood solely as a set of technical protocols or regulatory measures. Rather, it must be approached as a culturally embedded framework shaped by institutional values, professional norms, and human behavior.

Modern healthcare systems are characterized by high levels of organizational complexity, driven by technological advancement, specialization, workload intensity, and continuous exposure to clinical and ethical pressures. Within such systems, healthcare professionals—including nurses, pharmacists, laboratory practitioners, and dental professionals—operate under conditions that demand constant vigilance, rapid decision-making, and strict adherence to safety standards. While these demands are designed to enhance patient safety and system efficiency, they simultaneously place significant psychological strain on healthcare workers, making mental health a critical yet often underrecognized component of health security.

Mental health among healthcare professionals has gained increasing global attention, particularly in relation to burnout, emotional exhaustion, anxiety, and reduced professional engagement. Evidence suggests that compromised mental well-being among healthcare workers directly affects clinical judgment, adherence to safety procedures, interprofessional communication, and overall quality of care. From this perspective, mental health is not merely an individual concern but a systemic issue with direct implications for health security and organizational performance.

Despite growing recognition of these challenges, much of the existing literature addresses health security and mental health as separate domains, often focusing on policy, emergency preparedness, or individual psychological outcomes in isolation. Less attention has been given to the cultural and axiological dimensions that connect health security practices with the mental well-being of healthcare professionals across different disciplines. This gap is particularly evident in analyses that overlook how institutional culture, professional values, and interprofessional dynamics collectively shape both security practices and psychological resilience.

This study addresses this gap by adopting a qualitative conceptual cultural-analytical approach to examine health security as a cultural framework supporting mental health within complex healthcare systems. By focusing on interprofessional practice across nursing, pharmacy, laboratory, and dental disciplines, the study seeks to illuminate how health security culture functions as a shared value system that influences professional behavior, psychological safety, and collective responsibility. Through this lens, mental health is conceptualized not as a secondary outcome of health security, but as a foundational condition for its effectiveness and sustainability.

2. Conceptual Background

This section establishes the conceptual foundations of the study by examining health security, system complexity, and mental health as interrelated cultural constructs within

healthcare systems. Rather than treating these elements as isolated variables, the analysis positions them as mutually reinforcing dimensions embedded in professional practice and institutional culture.

2.1 Health Security as a Cultural Concept

Health security has evolved from a narrow focus on biomedical threats and emergency preparedness to a broader understanding that includes institutional trust, professional behavior, and workforce well-being. Within healthcare settings, health security functions as a **cultural framework** that shapes how safety is perceived, enacted, and sustained in everyday practice.

Table 1. Conceptual Dimensions of Health Security in Healthcare Practice

Dimension	Description	Cultural Implication
Procedural Safety	Infection control, safety protocols, reporting systems	Reflects compliance-oriented culture
Behavioral Safety	Adherence to guidelines, risk awareness	Shaped by professional norms and values
Institutional Trust	Confidence in leadership and policies	Influences psychological safety
Workforce Protection	Physical and mental well-being of staff	Indicates ethical commitment to staff
Interprofessional Coordination	Collaboration across disciplines	Demonstrates shared security culture

This table illustrates that health security extends beyond formal procedures to encompass behavioral and relational dimensions. A culture that prioritizes workforce protection and interprofessional coordination creates conditions in which security practices are internalized rather than enforced, thereby enhancing both safety outcomes and professional well-being.

2.2 Complexity of Healthcare Systems

Healthcare systems operate as complex adaptive systems characterized by non-linear interactions, overlapping responsibilities, and continuous uncertainty. Such complexity intensifies cognitive and emotional demands on healthcare professionals, particularly in environments requiring close interprofessional collaboration.

Table 2. Key Features of Complexity in Healthcare Systems

Feature	Description	Impact on Professionals
Role Interdependence	Tasks distributed across multiple disciplines	Increased coordination pressure
Time Sensitivity	Rapid decision-making under constraints	Heightened psychological stress
Regulatory Density	Multiple guidelines and accountability layers	Cognitive overload
Risk Exposure	Clinical, biological, and ethical risks	Emotional fatigue
Organizational Change	Continuous system updates	Adaptation-related stress

The complexity outlined above demonstrates how healthcare environments inherently
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generate psychological pressure. When complexity is not adequately managed through supportive culture and leadership, it may undermine both mental health and adherence to security practices.

2.3 Mental Health in Healthcare Settings

Mental health in healthcare contexts refers not only to the absence of psychological disorders but also to the presence of emotional resilience, professional engagement, and a sense of safety within the work environment. From a cultural perspective, mental health reflects how institutions value and support their workforce.

Table 3. Mental Health Dimensions Relevant to Health Security

Mental Health Dimension	Manifestation in Practice	Relevance to Health Security
Psychological Safety	Freedom to report errors	Strengthens safety culture
Emotional Resilience	Coping with stress and uncertainty	Sustains performance
Burnout Prevention	Workload balance and support	Reduces errors
Professional Meaning	Sense of purpose	Enhances commitment
Social Support	Team cohesion	Improves interprofessional trust

Mental health emerges as a prerequisite for effective health security rather than a secondary concern. Environments that promote psychological safety and social support enable professionals to engage more fully with security practices, particularly in high-risk and complex settings. Across these conceptual domains, health security, system complexity, and mental health are shown to be deeply interconnected. A cultural framework that recognizes this interdependence is essential for sustaining both professional well-being and institutional safety. This conceptual grounding provides the basis for the axiological and interprofessional analysis developed in the following sections.

3. THEORETICAL AND AXIOLOGICAL FRAMEWORK

This study is grounded in a theoretical and axiological framework that conceptualizes health security and mental health not merely as operational concerns, but as value-laden constructs embedded within healthcare culture. From this perspective, healthcare systems are not neutral structures; rather, they are moral and cultural spaces in which professional values, ethical responsibilities, and institutional priorities are continuously negotiated.

3.1 Health Security as a Value-Based Construct

Within contemporary healthcare discourse, health security is increasingly understood as an ethical commitment rather than a purely technical function. While protocols, regulations, and surveillance mechanisms remain essential, their effectiveness depends largely on how they are interpreted and enacted by healthcare professionals. Health security, therefore, operates as a cultural value that reflects an institution's stance toward safety, responsibility, and human dignity.

When health security is framed as a value, it emphasizes prevention over reaction, trust over enforcement, and collective responsibility over individual compliance. This framing is particularly significant in interprofessional settings, where security practices rely on shared understanding and mutual accountability among diverse disciplines.

3.2 Mental Health as an Ethical and Professional Imperative

Mental health in healthcare practice occupies a central axiological position. It represents not only an individual state of well-being but also a moral obligation of healthcare institutions toward their workforce. Psychological distress, burnout, and emotional exhaustion are not merely personal challenges; they signal deeper structural and cultural tensions within healthcare systems.

From an axiological standpoint, protecting the mental health of healthcare professionals aligns with core ethical principles such as nonmaleficence, beneficence, and justice. Institutions that neglect mental well-being risk undermining professional integrity, safety practices, and the sustainability of healthcare delivery. Thus, mental health emerges as a foundational condition for ethical and secure healthcare practice.

3.3 Complexity Theory and Cultural Meaning in Healthcare

Healthcare systems function as complex adaptive systems in which outcomes are shaped by dynamic interactions rather than linear cause–effect relationships. Complexity theory highlights how small disruptions—such as communication failures, emotional overload, or moral distress—can have disproportionate effects on safety and performance.

Within this complex environment, culture plays a stabilizing role. Shared values, professional norms, and collective meaning-making processes help healthcare workers navigate uncertainty and maintain coherence in practice. A strong health security culture, therefore, serves as a buffering mechanism that supports mental resilience and reduces the destabilizing effects of system complexity.

3.4 Integrating Health Security and Mental Health through an Axiological Lens

By integrating health security and mental health within an axiological framework, this study positions both concepts as mutually reinforcing. Health security creates conditions that protect psychological well-being, while mental health enables professionals to engage meaningfully with security practices. This reciprocal relationship underscores the importance of cultural alignment between institutional policies and human needs.

Rather than treating mental health as a secondary outcome of secure systems, this framework conceptualizes it as a prerequisite for effective health security. Such an approach aligns with contemporary calls for value-based healthcare and culturally informed policy development.

4. METHODOLOGY

This study adopts a **qualitative conceptual cultural-analytical design** aimed at examining health security and mental health as culturally embedded constructs within complex healthcare systems. Rather than relying on empirical data collection, the study is grounded in interpretive analysis of concepts, values, and professional practices as represented in established scholarly literature and authoritative global frameworks.

4.1 Study Design

The research design is qualitative and conceptual in nature, focusing on cultural meaning, axiological interpretation, and theoretical integration. This approach is particularly suited to the objectives of the study, which seek to explore how health security functions as a cultural framework that shapes mental well-being and professional behavior across multiple healthcare disciplines. By prioritizing depth of understanding over measurement, the design allows for a nuanced analysis of interprofessional dynamics and institutional values.

4.2 Data Sources

Data for the analysis were derived exclusively from **secondary sources**, including peer-reviewed academic literature, international health policy documents, and theoretical models relevant to health security, mental health, system complexity, and interprofessional

practice. Key sources include publications and frameworks issued by global health organizations, as well as foundational texts in qualitative research, organizational culture, and healthcare ethics. **4.3 Analytical Approach**

The analytical process followed a cultural–interpretive strategy, integrating conceptual analysis with axiological reasoning. Core concepts such as health security, mental health, complexity, and professional culture were examined in relation to one another to identify underlying value structures and normative assumptions. Attention was given to how these concepts are framed across different healthcare disciplines and how cultural alignment or misalignment influences professional well-being and security practices.

5. Interprofessional Perspectives on Health Security and Mental Health

Health security culture and mental health do not manifest uniformly across healthcare professions; rather, they are experienced and enacted through discipline-specific roles, responsibilities, and professional identities. In interprofessional healthcare environments, the effectiveness of health security frameworks depends on how well these diverse professional perspectives are integrated within a shared cultural and value-based system. This section examines how nursing, pharmacy, laboratory, and dental disciplines engage with health security and mental health within complex healthcare settings.

5.1 Nursing Perspective

Nursing professionals occupy a central position in healthcare systems due to their continuous patient contact, coordination responsibilities, and frontline role in safety implementation. From a cultural standpoint, nurses often act as custodians of institutional safety norms, translating policies into daily practice. However, this role also exposes them to sustained psychological pressure, emotional labor, and ethical tension.

Mental health challenges among nurses—such as burnout, compassion fatigue, and moral distress—directly affect their capacity to uphold health security practices. When nursing culture emphasizes resilience without adequate institutional support, mental health risks may be normalized, undermining both professional well-being and safety outcomes. Conversely, a health security culture that acknowledges psychological vulnerability and promotes emotional support enhances nurses' ability to maintain vigilance, communication, and patient safety.

5.2 Pharmacy Perspective

Pharmacy practice is intrinsically linked to health security through its focus on medication safety, risk prevention, and regulatory compliance. Pharmacists operate within high-stakes environments that require precision, accountability, and constant attention to detail. These demands place cognitive and emotional strain on practitioners, making mental health a critical factor in safe pharmaceutical practice.

From a cultural–analytical perspective, pharmacy settings that prioritize error prevention without addressing psychological workload may inadvertently contribute to stress-related mistakes. A supportive health security culture recognizes mental well-being as integral to safe decision-making, enabling pharmacists to engage more confidently in interprofessional communication, reporting processes, and collaborative care.

5.3 Laboratory Practice Perspective

Laboratory professionals play a foundational role in health security by ensuring diagnostic accuracy, biosafety, and quality assurance. Their work is often conducted under conditions of time pressure, exposure to biological hazards, and limited visibility within broader healthcare teams. These factors can contribute to occupational stress and feelings of professional isolation.

Mental health within laboratory practice is closely tied to institutional recognition and safety culture. Environments that value laboratory contributions and provide psychological

support foster greater engagement with safety protocols and interprofessional collaboration. In contrast, neglecting the mental well-being of laboratory staff may compromise both diagnostic reliability and adherence to biosafety measures.

5.4 Dental Practice Perspective

Dental professionals operate at the intersection of clinical care, infection control, and patient interaction, often within confined clinical spaces that heighten exposure to occupational risks. Health security in dental settings relies heavily on strict adherence to infection prevention measures, which can intensify anxiety and psychological strain, particularly during periods of heightened public health concern.

A cultural framework that integrates mental health into health security supports dental professionals in managing fear, stress, and professional responsibility. Such integration enhances compliance with safety standards while preserving professional confidence and patient trust. Mental well-being, in this context, becomes a stabilizing factor that sustains both clinical safety and quality of care.

Across all four disciplines, mental health emerges as a shared determinant of effective health security practice. While professional roles differ, the underlying cultural mechanisms—values, norms, and institutional support—shape how security measures are understood and enacted. An interprofessional health security culture that prioritizes mental well-being fosters coherence, trust, and collective responsibility within complex healthcare systems.

6. Health Security Culture and Mental Health

Health security culture represents the shared values, beliefs, and practices through which safety is understood and enacted within healthcare institutions. Unlike formal policies or procedural guidelines, culture operates at an implicit level, shaping everyday behavior, professional judgment, and emotional responses to risk. Within this cultural framework, mental health functions as both an indicator and an outcome of how health security is genuinely embedded in organizational life.

A health security culture that prioritizes mental well-being recognizes that psychological safety is essential for sustained vigilance, ethical decision-making, and effective interprofessional collaboration. When healthcare professionals feel supported, respected, and protected, they are more likely to engage openly with safety protocols, report errors or near misses, and participate constructively in team-based care. In this sense, mental health is not peripheral to security practices but central to their operational effectiveness.

Conversely, cultures characterized by excessive control, punitive accountability, or unrealistic performance expectations may undermine mental well-being and weaken health security. In such environments, fear of blame, emotional exhaustion, and moral distress can lead to disengagement, reduced communication, and compromised safety behaviors. These dynamics are particularly pronounced in complex healthcare systems where high workload, uncertainty, and interdependence amplify psychological pressure.

From a cultural-analytical perspective, the relationship between health security and mental health is reciprocal. Strong security cultures contribute to psychological resilience by providing clear norms, collective purpose, and institutional trust. At the same time, mentally healthy professionals are better equipped to internalize security values and translate them into consistent practice. This reciprocity highlights the importance of aligning institutional policies with human needs and professional values.

Interprofessional settings further intensify the significance of this relationship. Differences in professional identity, authority, and responsibility can either strengthen or fragment health security culture depending on how mental health is acknowledged and addressed. Cultures that promote inclusivity, mutual respect, and shared responsibility create

psychological conditions conducive to collaboration and collective accountability. In contrast, fragmented cultures risk reinforcing silos, stress, and miscommunication, all of which undermine both security and well-being.

Ultimately, conceptualizing health security culture as a supportive framework for mental health reframes safety as a human-centered endeavor rather than a purely technical obligation. This reframing aligns with contemporary calls for value-based healthcare and underscores the ethical responsibility of institutions to safeguard the psychological well-being of their workforce as a core component of health security.

7. DISCUSSION

This study contributes to the growing discourse on health security by reframing it as a culturally and axiologically grounded framework that fundamentally depends on the mental well-being of healthcare professionals. Rather than treating mental health as a secondary or supportive element, the analysis positions it as a prerequisite for the effective functioning of health security practices within complex healthcare systems. This perspective aligns with contemporary global health discussions that emphasize workforce resilience, ethical responsibility, and system sustainability.

The findings of this conceptual analysis resonate with existing literature highlighting the interconnectedness of organizational culture, professional behavior, and psychological well-being. Prior studies have demonstrated that healthcare environments characterized by high complexity and interdependence amplify stress, burnout, and moral distress among professionals, thereby increasing the risk of safety lapses and compromised care quality. By integrating health security and mental health within a single cultural framework, this study extends these insights and offers a more holistic understanding of how safety is enacted in practice.

Importantly, the interprofessional focus of this study underscores that health security culture is not owned by a single discipline but is collectively constructed through shared values and coordinated action. Nursing, pharmacy, laboratory, and dental practices each engage with security and mental health through distinct professional lenses, yet all are influenced by common cultural conditions such as leadership style, communication norms, and institutional trust. This shared dependency highlights the limitations of discipline-specific interventions and supports the need for integrated, culture-oriented strategies.

From an axiological standpoint, the study reinforces the ethical imperative of protecting healthcare workers' mental health as an expression of institutional responsibility and professional justice. When mental well-being is neglected, security measures risk becoming performative rather than meaningful, driven by compliance rather than commitment. Conversely, when institutions prioritize psychological safety, health security practices are more likely to be internalized, sustained, and adapted to complex and evolving conditions. The cultural-analytical lens employed in this study also helps explain why technically robust security policies may fail in practice. Policies that are misaligned with professional values or that overlook emotional and psychological realities can inadvertently exacerbate stress and disengagement. In contrast, culturally aligned frameworks that acknowledge human vulnerability and interprofessional interdependence create conditions in which both mental health and security objectives can be mutually reinforced.

While this study is conceptual in nature, its implications are directly relevant to real-world healthcare settings. The analysis suggests that strengthening health security requires more than procedural refinement; it demands cultural transformation that recognizes mental health as integral to professional performance and system resilience. Such transformation

is particularly critical in contexts characterized by rapid change, high uncertainty, and sustained workforce pressure.

8. Implications for Practice and Policy

The findings of this cultural-analytical study carry important implications for both healthcare practice and policy development. Conceptualizing health security as a cultural framework that supports mental health shifts the focus from reactive safety measures to proactive, value-driven strategies that prioritize workforce well-being. For healthcare institutions, this implies that safeguarding mental health should be embedded within security planning rather than treated as an ancillary support service.

At the practice level, fostering a culture of health security requires intentional efforts to promote psychological safety, open communication, and interprofessional trust. Healthcare professionals are more likely to adhere to safety protocols, engage in error reporting, and collaborate effectively when they operate within environments that acknowledge emotional strain and provide meaningful support. Training programs that integrate mental health awareness into health security education can enhance professionals' capacity to manage stress while maintaining high safety standards.

From a policy perspective, the study highlights the need for frameworks that explicitly recognize mental health as a determinant of health security. Policies focused solely on procedural compliance may fall short if they neglect the cultural and psychological dimensions of professional practice. Integrating mental health indicators into health security assessments, workforce planning, and accreditation standards can strengthen system resilience and reduce long-term risks associated with burnout and workforce attrition.

Interprofessional policy approaches are particularly critical, as health security culture is collectively shaped across disciplines. Policies that encourage shared responsibility, inclusive leadership, and cross-disciplinary collaboration can help align professional values and reduce fragmentation within complex healthcare systems. Ultimately, aligning health security policies with human-centered values supports both ethical governance and sustainable healthcare delivery.

9. CONCLUSION

This study has examined health security as a cultural framework that supports mental health within complex healthcare systems, using a qualitative conceptual cultural-analytical approach. By integrating perspectives from nursing, pharmacy, laboratory, and dental disciplines, the analysis demonstrates that mental health is not a peripheral concern but a foundational condition for effective health security practice.

The findings underscore that health security is deeply embedded in institutional culture, professional values, and interprofessional relationships. When mental well-being is prioritized, healthcare professionals are better equipped to navigate complexity, uphold safety standards, and sustain ethical practice. Conversely, neglecting mental health risks undermining both security objectives and workforce sustainability.

By framing mental health as a pillar of health security culture, this study contributes a value-based perspective that extends existing discourse beyond technical and regulatory models. The analysis calls for a cultural shift in how health security is conceptualized and implemented, emphasizing the ethical responsibility of healthcare institutions to protect the psychological well-being of their workforce. Such an approach is essential for building resilient, trustworthy, and human-centered healthcare systems.

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