Scientific Research Publishing

Open Journal of Nursing, 2025, 15(7), 488-502
https://www.scirp.org/journal/ojn
ISSN Online: 2162-5344
ISSN Print: 2162-5336

Leadership Dynamics in Healthcare: Examining Micro, Meso, and Macro Level Influences on Workforce Conditions and Patient Care

Alice P. Lindström

Sahlgrenska University Hospital, Gothenburg, Sweden
Email: parvaneh.shariat@vgregion.se

How to cite this paper: Lindström, A.P. (2025) Leadership Dynamics in Healthcare: Examining Micro, Meso, and Macro Level Influences on Workforce Conditions and Patient Care. *Open Journal of Nursing*, **15**, 488-502.
https://doi.org/10.4236/ojn.2025.157036

Received: June 4, 2025
Accepted: July 22, 2025
Published: July 25, 2025

Abstract

Background: Effective leadership is crucial in healthcare, profoundly influencing staff well-being, job satisfaction, and patient outcomes. This study investigates how various leadership styles impact healthcare environments at different organizational levels. **Aim:** The study aims to examine the influence of diverse leadership styles at micro, meso, and macro levels within healthcare settings, identifying their effects on staff conditions and patient care quality. **Method:** This study explores the effects of leadership styles across three levels: micro (transformative, genuine, ethical, and laissez-faire), meso (health-focused and digital), and macro (healthcare policy, budget, and resource distribution). It identifies their associations with stress, job satisfaction, patient care, organizational culture, staff retention, and mental health. **Results:** At the micro level, transformative, genuine, and ethical leadership correlate with lower stress, higher job satisfaction, and improved patient care, while laissez-faire leadership contributes to ambiguity and reduced responsibility. At the meso level, health-focused and digital leadership positively affect organizational culture, staff retention, and mental health. At the macro level, healthcare policy, budget allocation, and resource distribution significantly impact workforce conditions and patient care quality. The findings highlight crucial gaps between leadership and working environments. **Conclusion:** These insights emphasize the need for systemic changes, leadership training programs, and enhanced organizational tactics to address identified issues. Legislative changes and focused interventions can foster healthier, more sustainable healthcare staff, ultimately benefiting patients.

Keywords

Leadership Styles, Transformational Leadership, Digital Leadership, Policy Reforms, Healthcare Workforce

1. Introduction

In healthcare settings, workplace environment gaps represent significant discrepancies between optimal working conditions and the actual environments in which healthcare professionals operate [1]. These gaps manifest as structural, procedural, cultural, and leadership deficiencies that adversely affect healthcare workers' physical and mental wellbeing while compromising their ability to deliver high-quality patient care [2]. The healthcare sector, characterized by high-stress environments, life-or-death decisions, and complex interpersonal dynamics, is particularly vulnerable to the effects of poor leadership practices [3]. Toxic leadership behaviors (characterized by abusive supervision, narcissism, and destructive actions) [4], autocratic leadership approaches (marked by centralized decision-making and limited autonomy) [5], and bureaucratic leadership styles (defined by rigid adherence to rules and hierarchical structures) [6], create particularly problematic workplace environments that generate cascading negative effects throughout healthcare organizations.

These workplace gaps have tangible consequences for patient safety and care quality. Understaffing, a common manifestation of these gaps, directly contributes to increased medication errors, delayed responses to clinical deterioration, and missed essential care activities [7]. Research indicates that each additional patient assigned beyond recommended nurse-to-patient ratios increases mortality risk by 7% and failure-to-rescue incidents by 7% - 12% [8]. Similarly, inadequate training compromises healthcare workers' ability to manage complex clinical scenarios, resulting in preventable complications and suboptimal interventions [9]. Unsafe practices arising from resource constraints—such as reusing single-use devices and deferring equipment maintenance—further jeopardize patient outcomes through increased infection risks and critical equipment failures [10].

1.1. Manifestation at Different Levels

Micro-level

Individually, working environment disparities create major pressures that have a profound influence on healthcare workers' well-being and clinical performance [11]. Excessive workloads and lengthy shifts produce circumstances of chronic cognitive overload, reducing physicians' ability to make complicated decisions and raising mistake risk [12]. The physiological consequences include sleep disruption [13], compromised immune function [14], and increased susceptibility to illness [14], while psychological impacts manifest as anxiety, depression, and burnout syndrome [15]. Recent epidemiological research show that 35 - 54% of healthcare professionals have signs of clinical depression, with burnout rates surpassing 45% among physicians and nurses in high-stress situations [16].

The relationship between provider well-being and patient outcomes is direct and quantitative. Burnout among healthcare personnel is characterized by less empathy [17], poorer protocol adherence, and impaired clinical reasoning ability [18]. Research documents a 16% increase in reported medical errors among clini-

cians with burnout symptoms compared to their non-burned-out colleagues [17]. This deterioration in clinical performance directly compromises patient safety through medication errors, missed deterioration signs, and inadequate patient monitoring [19].

Meso-level

Organizational problems such as weak leadership structures, inadequate resource allocation, and communication breakdowns all play a crucial role in working climate gaps [20]. Hierarchical management techniques that limit employee participation in decision-making foster cultures in which safety concerns are ignored and harmful activities become normalized [21]. When executives prioritize production over safety, healthcare workers must choose between efficiency and complete care delivery [22].

Resource allocation inadequacies, reflected as recurrent understaffing, equipment shortages [23], and a lack of investment in safety systems, create settings in which healthcare professionals habitually operate in crisis mode [23]. These organizational restrictions push doctors to devise workarounds that avoid safety procedures, resulting in documentation gaps and hasty patient encounters that jeopardize both safety and care experience [24]. Communication failures compound these issues, with information transmission breakdowns accounting for nearly 70% of sentinel events in healthcare [25].

Macro-level

Broader socioeconomic, political, and policy variables influence the underlying circumstances under which healthcare organization's function. Healthcare finance structures that prioritize volume over value generate systemic pressures that jeopardize safety measures. For example, fee-for-service payment methods that encourage operation number rather than outcome quality might result in high patient throughput at the expense of proper staffing and safety precautions [26]. Regulatory frameworks frequently approach healthcare worker safety in a reactive rather than proactive manner, acting only when severe adverse occurrences occur [27]. The fragmented nature of healthcare oversight—with distinct agencies regulating different areas of healthcare delivery—leaves regulatory loopholes if occupational safety issues cross jurisdictional lines [28]. Geographic inequalities in healthcare funding compound these difficulties, with rural and underprivileged areas facing more severe workplace environment gaps as a result of chronic resource shortages and personnel constraints [29].

1.2. Significance of the Study

Addressing working environment gaps is critical for both healthcare worker well-being and patient outcomes. Improved workplace circumstances minimize burnout, despair, and anxiety among healthcare workers, while also increasing job satisfaction and retention [30]. These advantages lead to better patient care, including fewer prescription mistakes, fewer hospital-acquired infections, and decreased death rates [31]. If left neglected, these deficiencies endanger healthcare systems

by aggravating personnel shortages, increasing cost burdens due to staff turnover and adverse occurrences, and eroding public faith in healthcare institutions [32]. As healthcare needs rise due to ageing populations, bridging these job gaps becomes crucial to guaranteeing system sustainability and excellent service delivery [33].

1.3. Aims of the Study

This study critically examines the elements that contribute to working environment gaps at the micro, meso, and macro levels, using an evidence-based approach and meta-analytic methodologies to synthesize current research.

1.4. Research Questions

Micro-level: How can working environment disparities impact healthcare workers' physical and emotional health, safety, and job satisfaction?

Meso-level: How do organizational elements like leadership, communication, and personnel impact working environment disparities in healthcare settings?

At the macro-level, how do political and societal variables like healthcare policy, finance, and resource distribution impact working environment gaps?

2. Methodology

2.1. Search Strategy

This study used a systematic approach to discover, assess, and synthesize research on workplace environment deficiencies in healthcare settings. The search technique was intended to gather literature on micro, meso, and macro levels of analysis published between 2013 and 2024. The inclusion criteria included peer-reviewed studies on healthcare working environments that affected worker well-being, safety, or patient outcomes, while eliminating non-healthcare settings, pre-2013 publications, and non-empirical works. Systematic searches were conducted on PubMed/MEDLINE, CINAHL, Cochrane Library, Scopus, PsycINFO, Web of Science, and ProQuest, as well as grey literature from organizational archives.

This review purposefully combined quantitative and qualitative research approaches to give complete insights. Quantitative studies enabled the identification of statistical associations between workplace factors and measurable outcomes, such as physiological stress markers, absenteeism rates, and patient safety indicators, providing strong evidence for the relationships between variables across large samples.

Qualitative research supplemented this technique by providing crucial contextual knowledge of healthcare workers' lived experiences, including subtle insights on organizational cultures, leadership behaviors, and policy implementations that are difficult to capture using metrics alone. The combination of two research techniques allowed for triangulation of findings, with quantitative data establishing patterns and qualitative insights illuminating the mechanisms behind these relationships.

In all stages of the review process, including screening, eligibility assessment, and data extraction, two independent reviewers were involved. Any discrepancies were resolved through discussion and consensus, and a third senior researcher was consulted when necessary.

2.2. Quality Appraisal

The Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU) offers a methodologically sound approach for assessing working environment interventions. This evidence-based approach emphasizes systematic evaluation, contextual relevance, and implementation concerns, resulting in a complete technique for addressing workplace gaps across a variety of healthcare contexts [34].

Meta-analytic tools supplement this paradigm by combining data from several research to discover interventions that are consistently beneficial [35]. Meta-analysis may establish which techniques have the strongest evidence for addressing certain workplace environment deficiencies by pooling data from various healthcare settings. Together, SBU's evidence-based approach and meta-analytic synthesis form a strong methodological foundation for comprehensively addressing working environment deficiencies at the micro, meso, and macro levels [36].

2.3. Theoretical Framework

Micro-level—Individual Health and Well-being

Stress Theories

Two notable theoretical models offer frameworks for studying occupational pressures in healthcare. Karasek's Job Demand-Control Model posits that psychological strain is caused by high job demands mixed with limited decision-making freedom [37]. In healthcare, this expresses itself when professionals encounter large patient loads with little control over workflow decisions, resulting in burnout and decreasing health [38].

Siegrist's Effort-Reward Imbalance (ERI) Model investigates workplace reciprocity, arguing that unhappiness occurs when high efforts are not matched by suitable incentives [39]. This occurs for healthcare professionals when intensive emotional labor and cognitive demands are not balanced by proper remuneration or acknowledgement, resulting in physiological stress reactions and health concerns [40].

Individual Differences

The influence of working environment gaps varies according to individual characteristics. Age appears as a crucial determinant, with early-career professionals being more vulnerable to burnout but possessing stronger physical resilience [41]. Gender differences impact how employees respond to workplace gaps, with female healthcare professionals reporting more work-family conflict when faced with unexpected scheduling [42]. Individual reactions to workplace stresses are further moderated by professional job and personality variables, including con-

scientiousness and neuroticism [43].

Meso-level—Organizational Structure and Culture

Organizational Health Models

At the organizational level, Siegrist's model reveals how institutions create structural imbalances by implementing demanding performance metrics without corresponding investments in staffing and support [44]. Leadership practices serve as either protective or risk factors for workplace gaps, with destructive leadership correlated with team deterioration and psychological unsafety [45] [46].

Organizational Practices

Communication mechanisms, resource allocation, and team dynamics are three key organizational practices that influence workplace gaps. Hierarchical communication inhibits safety concerns from reaching decision-makers [47], but resource allocation that prioritizes short-term economics above employee well-being has negative repercussions, including turnover [47]. High-functioning interprofessional teams with psychological safety show resilience to environmental stressors, while organizational justice appears to be a significant moderator of workplace gaps [48].

Macro-level—Policy and Society

Systems Theory

Systems Theory views healthcare organizations as open systems that interact with larger political, economic, and societal settings [49]. Policy decisions have far-reaching consequences for healthcare systems, with budget allocations having a direct impact on frontline conditions [50]. The idea explains how apparently distant policies (immigration, education, and housing) affect healthcare workplaces by influencing workforce adequacy and workplace functioning [51].

Cross-Country Comparisons

Nations with universal healthcare systems tend to have more fair resource allocation across regions than market-based systems [52]. Countries with stricter regulations governing working hours and staffing needs had lower rates of healthcare professional burnout [52]. Societal views towards healthcare worker well-being differ greatly, with some countries seeing worker safety as a necessity for patient safety and including it into healthcare quality indicators [53].

3. Results

A total of 242 articles were retrieved from databases using the search approach described in the "Materials and Methods" section. Unrelated articles from the available complete text were removed. Brief messages, comprehensive appraisals, and policy pronouncements were also used to eliminate the articles. The review included a total of 9 publications related to our study topic. **Table 1** provides an overview of the key findings from the studies included in the review, highlighting the leadership styles examined, their reported impacts on mental health and organizational performance, and the role of organizational or professional culture.

Table 1. Extracted data from the included studies.

Study	Leadership style	Mental health impact	Organizational performance impact	Role of organizational & professional culture
[54]	Transformational and transactional leadership	Not directly addressed	Transformational leadership linked to higher performance under promotion focus; transactional leadership linked to performance under prevention focus	Highlights that alignment between leadership style and employees' regulatory focus is crucial for performance
[55]	Health-oriented leadership	Positive effect on employees' mental health and well-being	Improved job satisfaction and reduced absenteeism	Suggests that leadership interventions focusing on health can enhance organizational outcomes
[56]	Transformational leadership	Reduced nurse burnout and increased job satisfaction	Improved patient safety outcomes	Indicates that transformational leadership fosters a safety culture
[57]	Various leadership styles	Positive leadership behaviors linked to lower nurse burnout	Improved job satisfaction and retention	Highlights that effective leadership is essential for a healthy work environment
[58]	Health-oriented leadership	Positive impact on employees' mental health	Not directly addressed	Emphasizes the importance of supervisors' health-oriented leadership behaviors on employees' mental health
[59]	Digital leadership	Reduces anxiety and depression by promoting organizational identity	Improves work-life balance and job satisfaction	Digital communication fosters a more connected professional culture
[60]	Transformational, authentic, ethical leadership	Higher job satisfaction, lower stress levels	Increased patient care quality and innovation	Leadership training enhances workplace culture
[61]	Laissez-faire leadership	Increased workplace uncertainty Higher stress levels Role ambiguity	Poor decision-making Decreased accountability	A supportive workplace culture helps counterbalance the lack of direct leadership
[62]	Various leadership styles	Investigates the relationship between leadership and healthcare employee burnout	Explores how leadership behaviors relate to employee satisfaction and burnout	Suggests that Leadership behaviors are linked to employee well-being and organizational outcomes

4. Discussion

The findings emphasize the interconnected nature of leadership styles at the micro, meso, and macro levels in creating healthcare settings and patient outcomes. At the macro level, national policies governing healthcare financing, staffing laws, and resource allocation have a direct impact on meso-level organizational practices including leadership effectiveness, workplace culture, and employee support networks. These, in turn, influence micro-level health outcomes such as staff well-being, work satisfaction, and the quality of patient treatment [54] [62].

While each level—micro, meso, and macro—has been investigated independently, the dynamic interaction between them provides a broader view of healthcare stresses. For example, macro-level financial limits frequently result in inadequate personnel and training possibilities at the meso level, forcing organizational leaders into reactive leadership strategies. These pressures percolate down to the micro level, where healthcare professionals confront greater workloads, limited autonomy, and emotional tiredness, resulting in burnout, disengagement, and increased mistake rates. Understanding the cascading impact is critical for recognizing systemic problems and designing effective, multilayered remedies [63].

At the micro level, burnout and stress in healthcare professionals are closely related to leadership behaviors. For example, transformative, genuine, and ethical leadership styles were linked to increased work satisfaction and lower stress, resulting in better patient care [54]. Laissez-faire leadership, on the other hand, was associated with increased workplace ambiguity, stress, and poor decision-making, all of which might jeopardize patient safety.

At the meso level, organizational leadership styles had a major influence on staff retention, job satisfaction, and workplace culture. Health-oriented leadership was critical in mitigating mental health concerns [54], whereas digital leadership promoted a stronger organizational identity and work-life balance, thereby reducing anxiety and depression.

Digital leadership, while referenced in the literature, deserves further investigation. It entails the strategic use of digital tools to improve communication, coherence, and decision-making within healthcare teams [64]. Leaders may promote psychological safety and prevent isolation by implementing virtual feedback platforms, healthcare coordination, and digital recognition systems. These methods, particularly in high-pressure and distant contexts, aid in the establishment of shared values and purpose, which is critical for preventing burnout and role ambiguity. However, empirical evaluations of digital leadership are still sparse and should be prioritized in future study [64].

Furthermore, while this survey contains international literature, it is critical to situate leadership within cultural contexts. Cultural norms greatly impact how leadership approaches are seen and accepted. Bureaucratic and autocratic leadership may be viewed as efficient and stabilizing in high-power civilizations, but in cultures that emphasize equality and participative management, the same tactics may be met with hostility. Without understanding these differences, leadership initiatives may fail to resonate or generate the desired results in a variety of circumstances [65].

At the macro level, healthcare policy and financing systems influence resource availability and worker circumstances. The findings highlight the domino consequences of underfunded healthcare systems, which result in staff shortages, higher workloads, and increased stress on healthcare personnel, eventually jeopardizing patient safety [62]. Addressing these gaps through legislative changes can have a major impact on both healthcare personnel' well-being and the quality of patient

treatment.

5. Limitations and Challenges

Despite these impressive findings, the examined studies had many limitations. Methodological variation among research, including differences in measuring techniques, sample sizes, and cultural settings, makes direct comparisons difficult. Furthermore, many studies use self-reported data, which might cause bias. The complexities of workplace dynamics make it difficult to distinguish the precise influence of leadership behaviors from other organizational elements [62].

In addition to these difficulties, selection bias must be considered. Studies with substantial or favorable outcomes are more likely to be published and included in systematic reviews, thereby skewing the evidence base and exaggerating the influence of specific leadership styles [66]. Furthermore, relevant research from non-English sources or under-represented locations may have been removed, reducing the generalizability of the findings. These biases underscore the need for caution in interpretation and emphasize the significance of larger, more inclusive research in future assessments [67].

6. Future Research and Policy Recommendations

Future study should examine the impact of leadership interventions in reducing workplace stress and improving patient care outcomes. Investigating how various leadership styles combine with organizational policies to impact employee well-being might yield more information. Furthermore, research should look at the function of digital leadership in healthcare contexts, evaluating its long-term effects on organizational identity, job satisfaction, and staff engagement [54]. Cross-cultural comparisons might also aid in the identification of best practices that can be applied across other healthcare systems, assuring the scalability of leadership initiatives. Finally, incorporating quantitative and qualitative methodologies into future research will increase the reliability and depth of findings, resulting in more evidence-based policy recommendations [62].

Micro-Level Recommendations

To minimize burnout and improve well-being among healthcare workers, implement targeted mental health support programs, stress management courses, and peer support networks [54].

Leadership Development: Offer frontline leaders training programs to improve their transformational and health-oriented leadership abilities, with an emphasis on emotional intelligence and crisis management [54].

Meso-Level Recommendations

Organizational Culture Enhancement: Create a supportive working atmosphere by improving communication tactics, feedback systems, and conflict resolution training.

Digital Leadership Integration: Use technology to foster remote collaboration, real-time feedback systems, and virtual well-being initiatives to retain a strong

organizational identity and staff engagement [54].

Workforce Retention Strategies: Implement rules that eliminate workload imbalances, improve employee autonomy, and incentivize professional growth and development [62].

Macro-Level Recommendations

Healthcare Policy Reforms: Advocate for more healthcare financing, workforce growth, and better working conditions to reduce burnout and improve patient care quality [62]. Regulatory Oversight: Develop rules and accountability measures for healthcare leadership practices to ensure a balance of performance objectives and staff well-being [54]. Equitable Resource Distribution: Address inequities in healthcare access by assuring enough personnel, up-to-date equipment, and mental health services in underfunded healthcare systems [62].

7. Conclusion

This study emphasizes the importance of leadership in influencing healthcare work environments and patient outcomes. Effective leadership at the micro and meso levels can reduce burnout, increase work satisfaction, and improve patient care [54]. However, structural changes at the macro level, such as greater financing, legislative reforms, and better staff management, are required to continue these gains [62]. Future research should concentrate on assessing particular interventions, investigating cross-cultural leadership dynamics, and adopting evidence-based policies to build healthier and more resilient healthcare systems.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

[1] Montgomery, A. and Lainidi, O. (2023) Creating Healthy Workplaces in Healthcare: Are We Delaying Progress by Focusing on What We Can Do Rather than What We Should Do? *Frontiers in Public Health*, **11**, Article 1105009. https://doi.org/10.3389/fpubh.2023.1105009

[2] Lu, L., Ko, Y., Chen, H., Chueh, J., Chen, P. and Cooper, C.L. (2022) Patient Safety and Staff Well-Being: Organizational Culture as a Resource. *International Journal of Environmental Research and Public Health*, **19**, Article 3722. https://doi.org/10.3390/ijerph19063722

[3] Hesgrove, B., Zebrak, K., Yount, N., Sorra, J. and Ginsberg, C. (2024) Associations between Patient Safety Culture and Workplace Safety Culture in Hospital Settings. *BMC Health Services Research*, **24**, Article No. 568. https://doi.org/10.1186/s12913-024-10984-3

[4] Kariem, G., Rezk, H., El Magd, N.S.A. and Ali, H.M. (2025) Effect of Toxic Leadership on Nurses' Counterproductive Work Behavior and Psychological Immunity. *Assiut Scientific Nursing Journal*, **13**, 132-142.

[5] Spanos, S., Leask, E., Patel, R., Datyner, M., Loh, E. and Braithwaite, J. (2024) Healthcare Leaders Navigating Complexity: A Scoping Review of Key Trends in Fu-

ture Roles and Competencies. *BMC Medical Education*, **24**, Article No. 720. https://doi.org/10.1186/s12909-024-05689-4

[6] Segel, K.T. (2017) Bureaucracy Is Keeping Health Care from Getting Better. *Harvard Business Review*. https://hbr.org/2017/10/bureaucracy-is-keeping-health-care-from-getting-better

[7] Alotiabi, J.S. (2024) Causes of Medication Administration Errors and Barriers to Reporting as Perceived by Nurses in Saudi Arabia: A Qualitative Study. *Belitung Nursing Journal*, **10**, 215-221. https://doi.org/10.33546/bnj.3249

[8] Witczak, I., Rypicz, Ł., Karniej, P., Młynarska, A., Kubielas, G. and Uchmanowicz, I. (2021) Rationing of Nursing Care and Patient Safety. *Frontiers in Psychology*, **12**, Article 676970. https://doi.org/10.3389/fpsyg.2021.676970

[9] Lasater, K.B., Aiken, L.H., Sloane, D., French, R., Martin, B., Alexander, M., *et al.* (2021) Patient Outcomes and Cost Savings Associated with Hospital Safe Nurse Staffing Legislation: An Observational Study. *BMJ Open*, **11**, e052899. https://doi.org/10.1136/bmjopen-2021-052899

[10] Kumah, A. (2025) Poor Quality Care in Healthcare Settings: An Overlooked Epidemic. *Frontiers in Public Health*, **13**, Article 1504172. https://doi.org/10.3389/fpubh.2025.1504172

[11] Norful, A.A., Brewer, K.C., Cahir, K.M. and Dierkes, A.M. (2024) Individual and Organizational Factors Influencing Well-Being and Burnout Amongst Healthcare Assistants: A Systematic Review. *International Journal of Nursing Studies Advances*, **6**, Article 100187. https://doi.org/10.1016/j.ijnsa.2024.100187

[12] Rahman, S.A., Sullivan, J.P., Barger, L.K., St. Hilaire, M.A., O'Brien, C.S., Stone, K.L., *et al.* (2021) Extended Work Shifts and Neurobehavioral Performance in Resident-physicians. *Pediatrics*, **147**, e2020009936. https://doi.org/10.1542/peds.2020-009936

[13] Marković, S., Kostić, O., Terzić-Supic, Z., Tomic Mihajlovic, S., Milovanović, J., Radovanovic, S., *et al.* (2024) Exposure to Stress and Burnout Syndrome in Healthcare Workers, Expert Workers, Professional Associates, and Associates in Social Service Institutions. *Medicina*, **60**, Article 499. https://doi.org/10.3390/medicina60030499

[14] Kelly, D., Schroeder, S. and Leighton, K. (2022) Anxiety, Depression, Stress, Burnout, and Professional Quality of Life among the Hospital Workforce during a Global Health Pandemic. *The Journal of Rural Health*, **38**, 795-804. https://doi.org/10.1111/jrh.12659

[15] Batanda, I. (2024) Prevalence of Burnout among Healthcare Professionals: A Survey at Fort Portal Regional Referral Hospital. *npj Mental Health Research*, **3**, Article No. 16. https://doi.org/10.1038/s44184-024-00061-2

[16] Sialakis, C., Antoniou Sialaki, P., Frantzana, A., Iliadis, C., Ouzounakis, P. and Kourkouta, L. (2023) Prevalence of Anxiety and Depression of Health Care Workers during COVID-19—A Systematic Review and Meta-Analysis. *Medicine and Pharmacy Reports*, **96**, 246-253. https://doi.org/10.15386/mpr-2579

[17] Salyers, M.P., Bonfils, K.A., Luther, L., Firmin, R.L., White, D.A., Adams, E.L., *et al.* (2016) The Relationship between Professional Burnout and Quality and Safety in Healthcare: A Meta-Analysis. *Journal of General Internal Medicine*, **32**, 475-482. https://doi.org/10.1007/s11606-016-3886-9

[18] Tanios, M., Haberman, D., Bouchard, J., Motherwell, M. and Patel, J. (2022) Analyses of Burn-Out among Medical Professionals and Suggested Solutions—A Narrative Review. *Journal of Hospital Management and Health Policy*, **6**, Article 7. https://doi.org/10.21037/jhmhp-20-153

[19] Cecconi, M., Hutanu, A.L., Beard, J., Gonzalez-Pizarro, P., Ostermann, M., Batchelor, A., *et al.* (2025) Unlocking Opportunities to Transform Patient Care: An Expert Insight on Limitations and Opportunities in Patient Monitoring. *Intensive Care Medicine Experimental*, **13**, Article No. 24. https://doi.org/10.1186/s40635-025-00733-z

[20] Wray, B., Veidis, E.M., Flores, E.C., Phillips, A.A., Alani, O. and Barry, M. (2023) A Call to Action for Gender Equity in Climate Leadership. *The American Journal of Tropical Medicine and Hygiene*, **108**, 1088-1092. https://doi.org/10.4269/ajtmh.22-0674

[21] Assens-Serra, J., Boada-Cuerva, M., Serrano-Fernández, M. and Agulló-Tomás, E. (2021) Gaining a Better Understanding of the Types of Organizational Culture to Manage Suffering at Work. *Frontiers in Psychology*, **12**, Article 782488. https://doi.org/10.3389/fpsyg.2021.782488

[22] Cai, Y., Liu, Y., Wang, C., Liu, S., Zhang, M. and Jiang, Y. (2024) Patient and Family Engagement Interventions for Hospitalized Patient Safety: A Scoping Review. *Journal of Clinical Nursing*, **33**, 2099-2111. https://doi.org/10.1111/jocn.17022

[23] Suneel, N., Naseem, S. and Amir, Z. (2024) Effect of Staff Shortage on Patient Safety and Quality of Care. *Annals of Human and Social Sciences*, **5**, 158-164.

[24] Fraczkowski, D., Matson, J. and Lopez, K.D. (2020) Nurse Workarounds in the Electronic Health Record: An Integrative Review. J*ournal of the American Medical Informatics Association*, **27**, 1149-1165. https://doi.org/10.1093/jamia/ocaa050

[25] Bender, J.A., Thiyagarajan, S., Morrish, W., Mims, M. and Yackel, E.E. (2024) A Framework for the Analysis of Communication Errors in Health Care. *Journal of Patient Safety*, **21**, 69-81. https://doi.org/10.1097/pts.0000000000001303

[26] Wang, Y., Hou, W., Wang, X., Zhang, H. and Wang, J. (2021) Bad to All? A Novel Way to Analyze the Effects of Fee-for-Service on Multiple Grades Hospitals Operation Outcomes. *International Journal of Environmental Research and Public Health*, **18**, Article 12723. https://doi.org/10.3390/ijerph182312723

[27] World Health Organization (2020) Health Worker Safety: A Priority for Patient Safety. World Patient Safety Day.

[28] Gatome-Munyua, A., Sparkes, S., Mtei, G., Sabignoso, M., Soewondo, P., Yameogo, P., *et al.* (2025) Reducing Fragmentation of Primary Healthcare Financing for More Equitable, People-Centred Primary Healthcare. *BMJ Global Health*, **10**, e015088. https://doi.org/10.1136/bmjgh-2024-015088

[29] Akinleye, D.D., McNutt, L., Lazariu, V. and McLaughlin, C.C. (2019) Correlation between Hospital Finances and Quality and Safety of Patient Care. *PLOS ONE*, **14**, e0219124. https://doi.org/10.1371/journal.pone.0219124

[30] Roberto, L., Lezzi, A., Conte, L., *et al.* (2021) Work Environment and Related Burnout Levels: Survey among Healthcare Workers in Two Hospitals of Southern Italy. *Acta Bio Medica*: *Atenei Parmensis*, **92**, e2021009.

[31] Mihdawi, M., Al-Amer, R., Darwish, R., Randall, S. and Afaneh, T. (2020) The Influence of Nursing Work Environment on Patient Safety. *Workplace Health & Safety*, **68**, 384-390. https://doi.org/10.1177/2165079920901533

[32] NSI Nursing Solutions (2020) NSI National Health Care Retention & RN Staffing Report.

[33] Williams, A.O., Rojanasarot, S., McGovern, A.M. and Kumar, A. (2023) A Systematic Review of Discounting in National Health Economic Evaluation Guidelines: Healthcare Value Implications. *Journal of Comparative Effectiveness Research*, **12**, e220167. https://doi.org/10.2217/cer-2022-0167

[34] SBU (2023) Evaluation of Methods in Healthcare and Social Services: A Methodological Guide. Swedish Agency for Health Technology Assessment and Assessment of Social Services. https://www.sbu.se/metodbok

[35] Haraldsson, P., Nylander, E., Jonker, D., Ros, A. and Josefsson, K.A. (2024) Workplace Interventions Focusing on How to Plan, Organize and Design the Work Environment in Hospital Settings: A Systematic Review. *Work*, **78**, 331-348. https://doi.org/10.3233/wor-230205

[36] Cohen, C., Pignata, S., Bezak, E., Tie, M. and Childs, J. (2023) Workplace Interventions to Improve Well-Being and Reduce Burnout for Nurses, Physicians and Allied Healthcare Professionals: A Systematic Review. *BMJ Open*, **13**, e071203. https://doi.org/10.1136/bmjopen-2022-071203

[37] Schechter, J., Green, L.W., Olsen, L., Kruse, K. and Cargo, M. (1997) Application of Karasek's Demand/Control Model in a Canadian Occupational Setting Including Shift Workers during a Period of Reorganization and Downsizing. *American Journal of Health Promotion*, **11**, 394-399. https://doi.org/10.4278/0890-1171-11.6.394

[38] Navajas-Romero, V., Ariza-Montes, A. and Hernández-Perlines, F. (2020) Analyzing the Job Demands-Control-Support Model in Work-Life Balance: A Study among Nurses in the European Context. *International Journal of Environmental Research and Public Health*, **17**, Article 2847. https://doi.org/10.3390/ijerph17082847

[39] Siegrist, J., Wege, N., Pühlhofer, F. and Wahrendorf, M. (2008) A Short Generic Measure of Work Stress in the Era of Globalization: Effort-Reward Imbalance. *International Archives of Occupational and Environmental Health*, **82**, 1005-1013. https://doi.org/10.1007/s00420-008-0384-3

[40] van Vegchel, N., de Jonge, J., Bosma, H. and Schaufeli, W. (2005) Reviewing the Effort-Reward Imbalance Model: Drawing up the Balance of 45 Empirical Studies. *Social Science & Medicine*, **60**, 1117-1131. https://doi.org/10.1016/j.socscimed.2004.06.043

[41] Nahas, A.R.F., Elnaem, M.H., Mubarak, N., Khatwa, M.A., Barakat, M., Faller, E., *et al.* (2024) Assessment of Burnout, Resilience, and Thriving among Academic Health Professionals: Findings from an International Study. *Frontiers in Public Health*, **12**, Article 1366612. https://doi.org/10.3389/fpubh.2024.1366612

[42] Guille, C., Frank, E., Zhao, Z., Kalmbach, D.A., Nietert, P.J., Mata, D.A., *et al.* (2017) Work-Family Conflict and the Sex Difference in Depression among Training Physicians. *JAMA Internal Medicine*, **177**, 1766-1772. https://doi.org/10.1001/jamainternmed.2017.5138

[43] Petasis, A. and Economides, O. (2020) The Big Five Personality Traits, Occupational Stress, and Job Satisfaction. *European Journal of Business and Management Research*, **5**, 1-7. https://doi.org/10.24018/ejbmr.2020.5.4.410

[44] Ren, C., Li, X., Yao, X., Pi, Z. and Qi, S. (2019) Psychometric Properties of the Effort-Reward Imbalance Questionnaire for Teachers (Teacher Eriq). *Frontiers in Psychology*, **10**, Article 2047. https://doi.org/10.3389/fpsyg.2019.02047

[45] Choi, S.B., Jung, K.B. and Kang, S. (2022) What Hinders Team Innovation Performance? Three-Way Interaction of Destructive Leadership, Intra-Team Conflict, and Organizational Diversity. *Frontiers in Psychology*, **13**, Article 879412. https://doi.org/10.3389/fpsyg.2022.879412

[46] Eckardt, R., Tsai, C., Dionne, S.D., Dunne, D., Spain, S.M., Park, J.W., *et al.* (2020) Human Capital Resource Emergence and Leadership. *Journal of Organizational Behavior*, **42**, 269-295. https://doi.org/10.1002/job.2446

[47] Jahn, J.L.S. and Black, A.E. (2017) A Model of Communicative and Hierarchical Foundations of High Reliability Organizing in Wildland Firefighting Teams. *Management Communication Quarterly*, **31**, 356-379. https://doi.org/10.1177/0893318917691358

[48] Omar, A., Salessi, S., Vaamonde, J.D. and Urteaga, F. (2018) Psychometric Properties of Colquitt's Organizational Justice Scale in Argentine Workers. *Liberabit*, **24**, 61-79.

[49] Friedman, B.D. and Allen, K.N. (2011) Systems Theory. *Theory & Practice in Clinical Social Work*, **2**, 3-20.

[50] Moritz, P.F., Barroy, H., Pivodic, F. and Margini, F. (2021) Budget Execution in Health: Concepts, Trends and Policy Issues. World Bank.

[51] Martinez, O., Wu, E., Sandfort, T., Dodge, B., Carballo-Dieguez, A., Pinto, R., *et al.* (2013) Evaluating the Impact of Immigration Policies on Health Status among Undocumented Immigrants: A Systematic Review. *Journal of Immigrant and Minority Health*, **17**, 947-970. https://doi.org/10.1007/s10903-013-9968-4

[52] Rudiger, A. (2023) The Equity Effect of Universal Health Care. *Health Human Rights*, **25**, 171-176.

[53] Søvold, L.E., Naslund, J.A., Kousoulis, A.A., Saxena, S., Qoronfleh, M.W., Grobler, C., *et al.* (2021) Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority. *Frontiers in Public Health*, **9**, Article 679397. https://doi.org/10.3389/fpubh.2021.679397

[54] Hamstra, M.R.W., Van Yperen, N.W., Wisse, B. and Sassenberg, K. (2013) Transformational and Transactional Leadership and Followers' Achievement Goals. *Journal of Business and Psychology*, **29**, 413-425. https://doi.org/10.1007/s10869-013-9322-9

[55] Montano, D., Reeske, A., Franke, F. and Hüffmeier, J. (2016) Leadership, Followers' Mental Health and Job Performance in Organizations: A Comprehensive Meta-Analysis from an Occupational Health Perspective. *Journal of Organizational Behavior*, **38**, 327-350. https://doi.org/10.1002/job.2124

[56] Boamah, S.A. (2017) The Influence of Transformational Leadership on Nurse-Reported Patient Safety Outcomes. The University of Western Ontario (Canada).

[57] Cummings, G.G., Tate, K., Lee, S., Wong, C.A., Paananen, T., Micaroni, S.P.M., *et al.* (2018) Leadership Styles and Outcome Patterns for the Nursing Workforce and Work Environment: A Systematic Review. *International Journal of Nursing Studies*, **85**, 19-60. https://doi.org/10.1016/j.ijnurstu.2018.04.016

[58] Vonderlin, R., Schmidt, B., Müller, G., Biermann, M., Kleindienst, N., Bohus, M., *et al.* (2021) Health-Oriented Leadership and Mental Health from Supervisor and Employee Perspectives: A Multilevel and Multisource Approach. *Frontiers in Psychology*, **11**, Article 614803. https://doi.org/10.3389/fpsyg.2020.614803

[59] Zhou, X., Yang, X., Chen, S., Wen, Q., Xie, F. and Zhang, S. (2024) Relieving Anxiety and Depression Symptoms through Promoting Organizational Identity and Mitigating Family-Work Conflict among Medical Professionals in Digital Leadership. *BMC Public Health*, **24**, Article No. 3563. https://doi.org/10.1186/s12889-024-20992-x

[60] Wu, Y., Awang, S.R., Ahmad, T. and You, C. (2024) A Systematic Review of Leadership Styles in Healthcare Sector: Insights and Future Directions. *Geriatric Nursing*, **59**, 48-59. https://doi.org/10.1016/j.gerinurse.2024.06.033

[61] Krug, H., Haslam, S.A., Otto, K. and Steffens, N.K. (2021) Identity Leadership, Social Identity Continuity, and Well-Being at Work during Covid-19. *Frontiers in Psychology*, **12**, Article 684475. https://doi.org/10.3389/fpsyg.2021.684475

[62] Shanafelt, T. and Swensen, S. (2017) Leadership and Physician Burnout: Using the Annual Review to Reduce Burnout and Promote Engagement. *American Journal of Medical Quality*, **32**, 563-565. https://doi.org/10.1177/1062860617691605

[63] Harrison, M.I. and Shortell, S.M. (2020) Multi-Level Analysis of the Learning Health System: Integrating Contributions from Research on Organizations and Implementation. *Learning Health Systems*, **5**, e10226. https://doi.org/10.1002/lrh2.10226

[64] Laukka, E., Pölkki, T. and Kanste, O. (2022) Leadership in the Context of Digital Health Services: A Concept Analysis. *Journal of Nursing Management*, **30**, 2763-2780. https://doi.org/10.1111/jonm.13763

[65] Sunarso, B., Chowdary, R.M., Hamid, R., Dash, I., Sharma, S.K., Ramana, T.V., *et al.* (2024) Cultural Impacts on Leadership Styles: A Perspective in Social Science Management. *Journal of Infrastructure, Policy and Development*, **8**, Article 7360. https://doi.org/10.24294/jipd.v8i10.7360

[66] Harrison, J.S., Banks, G.C., Pollack, J.M., O'Boyle, E.H. and Short, J. (2016) Publication Bias in Strategic Management Research. *Journal of Management*, **43**, 400-425. https://doi.org/10.1177/0149206314535438

[67] Jackson, J.L. and Kuriyama, A. (2017) From the Editors' Desk: Bias in Systematic Reviews—Let the Reader Beware. *Journal of General Internal Medicine*, **33**, 133-135. https://doi.org/10.1007/s11606-017-4236-2